Influences on smoking among Greek-Australians aged 50 and over: A mixed-methods study

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By

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Declaration

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Masoud Mohammadnezhad **Date and Signature**

List of publications/conference presentations

1. M Mohammadnezhad, P Ward, G Tsourtos, C Wilson, J Ratcliffe. (2010) *A review of the effectiveness of smoking cessation behavioural interventions among people of non-English-speaking background: An implication for Greek- Australian elderly smokers*. 9th International Conference on Greek Research. 30th June- 3rd July 2011. Adelaide. (Oral Presentation)

2. M Mohammadnezhad, P Ward, G Tsourtos, C Wilson, J Ratcliffe. (2011). *Smoking Cessation Based on Behavioural Intervention Methods: A Systematic Review*. 2011 State Population Health Conference. 29th October 2011. Adelaide. (Oral Presentation)

3- M Mohammadnezhad, P Ward , G Tsourtos, C Wilson, J Ratcliffe. (2012). *Behavioural Intervention Traits from Smoking Cessation: A Systematic Review*. Australian Association Population (APA) Conference. 5-7th December 2012. Melbourne. (Oral Presentation)

4- M Mohammadnezhad, J Ratcliffe, G Tsourtos, P Ward, C Wilson. (2013). *An Exploratory Study of the Smoking among Greek-Australian Elderly People*. The 10th International Conference on Greek Research and the 2nd International Conference on Ageing in a Foreign Land. 27th – 30 June 2013. Flinders University, Adelaide. (Oral Presentation)

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7- M Mohammadnezhad, P Ward, G Tsourtos, C Wilson, J Ratcliffe. (2014). *An Investigation of Smoking-related Self-efficacy Among Greek-Australian Smokers and Anglo-Australian Smokers Aged 50 and Over*. The 15th National Nurse Education Conference 2014. 30th April to the 2nd May, Adelaide. (Oral Presentation)

Abstract

Influences on smoking among Greek-Australians aged 50 and over: A mixed-methods study

INTRODUCTION: Cigarette smokers have a higher probability of developing several chronic health disorders. Smokers of all ages can benefit by quitting, but many Australians continue to smoke. Older Greek-Australians have the highest prevalence of cigarette use in Australia. This study assesses smoking among Greek-Australians aged 50 and over and compares predictors of smoking behaviour in this group with the predictors for older Anglo-Australians.

METHODS: This investigation included three complementary studies: first, a systematic review of articles on smoking published between 1980 and 2011. The review focused on Randomized Controlled Trials (RCTs) and Quasi-RCTs in which the effects of specific behavioural interventions were examined. Papers were evaluated for inclusion and then data were extracted and interpreted. Second, snowball sampling techniques were used to identify 20 current smokers (12 males and 8 females) aged 50 or older. A qualitative study was designed to gather information on participants' perspectives and understandings regarding their reasons for smoking and their attitudes to quitting. Responses were collected via a semi-structured, face-to-face interview, conducted with the assistance of a Greek translator. The audio-taped interviews were translated and then their content was analysed. Third, a convenience sampling method was used to collect data for a cross-sectional survey of older smokers and non-smokers, including both Greek-Australians and Anglo-Australians in four subgroups: Greek-Australian Smokers (GSs), Greek-Australian non-smokers (GNSs), Anglo-Australian smokers (ASs), and Anglo-Australian non-smokers (ANSs). The data were collected over a six-month time frame from 27 October 2012 to 30 April 2013; subsequent analysis explored participants' knowledge of the health impacts of smoking and attitudes to smoking and/or quitting. Interview questions were designed to test possible differences in predictors of behaviour, knowledge, and attitudes between the four

subgroups. Overall, 387 people (106 ANSs, 82 ASs, 103 GNSs, and 96 GSs) participated in this study.

RESULTS: The systematic review identified some facilitators and predictors of effective smoking cessation programs targeting older smokers, and smokers with a non-English speaking background (NESB). The qualitative study results showed that older GSs had poorer knowledge about the negative health consequences of smoking as well as a more positive attitude to smoking consumption. They scored low for perceived benefits of smoking cessation and perceived risks of smoking use, while scoring high for perceived barriers to quitting. Few of the older Greek smokers expressed intention to quit, and their level of self-efficacy to embark on smoking cessation was low. Finally, comparing the results of the cross-sectional survey confirmed that GSs had poorer knowledge about the health consequences of smoking and had a more positive attitude to smoking. An integrated model (I-Model) was then developed based on four behavioural change models and theories, to illustrate the relationships of the research variables and to highlight smoking behavioural patterns among older Greek-Australians.

CONCLUSION: Older Greek-Australians have been identified as a priority group for smoking cessation interventions in Australia. The new proposed I-Model can be regarded as a comprehensive tool to help health care providers and researchers develop effective strategies to promote smoking cessation for older Greek-Australians.

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Dedication

This study is dedicated to my late father, and to my beloved daughter, Ava, who sustained me and motivated me when I encountered many difficulties along the way.

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Glossary of terms

Attitude "is defined as a function of beliefs. In other words, a person who believes that performing a particular behaviour will lead to positive outcomes will have a favourable attitude toward performing that behaviour" (Ajzen and Fishbein, 1980). In this study, 'attitude' refers to the participants' attitude to smoking, that attitude being measured by a self-administrated questionnaire using a 14-point Likert scale.

Knowledge "refers to all that a person knows"(Chang, 2005). In the present study, it is defined as participants' knowledge about smoking cessation benefits and smoking harms, and it was measured by a self-administrated questionnaire which included 15 true-or-false questions.

Intention "refers to a person's perceived likelihood of performing a particular behaviour"(Ajzen and Fishbein, 1980). In the present study, 'intention' measures the smoker's likelihood of quitting in the next three months and was measured by one question which based on the Likert scale.

Behaviour "is defined as a series of actions" (Ajzen and Fishbein, 1980) and in this work it refers to smoking consumption. It was measured by a question about the number of cigarettes smoked during the preceding 24 hours.

As a minor determinant within social cognitive theory, **self-efficacy** describes an individual's confidence in their ability to coordinate and carry out the actions necessary to quit with perceived personal competence and overcoming perceived obstacles and costs (Bandura, 1998, Abraham et al., 2000). It was measured by a standard questionnaire which included a 9-point Likert scale.

Chapter One: An Introduction

1.1 Overview of smoking and smoking-related problems

Approximately 7,000 chemicals have been identified in cigarette smoke, and more than 70 of these have been identified as causing cancer (U.S. Department of Health and Human Services, 2014). "Tobacco smoking remains the single greatest cause of preventable illness and death worldwide" (WHO, 2008), and globally it kills one person every 10 seconds (Mackay and Eriksen, 2002). Current projections indicate that smoking will be responsible for more than 10 million deaths annually by 2030 (Fagerström, 2002, Warner, 2005, Jha and Chaloupka, 2000). Smoking seriously reduces life expectancy (WHO, 2007) and it has been estimated that, on average, smokers lose about 10 years of life compared with non-smokers (Doll et al., 2004). Moreover, smokers have an average of 6.5 more days off work annually due to ill health than non-smokers; they experience between 7 and 15 percent more outpatient hospital visits, and are admitted to hospital about 30 percent to 40 percent more often than non-smokers (Andrews et al., 2004).

1.1.1 Prevalence of smoking

Globally, tobacco consumption has significantly increased during the 21stcentury, and this has been accompanied by a marked expansion of the tobacco industry. About 1.2 billion adults (that is, one-third of the world adult population) used tobacco at the beginning of the present century and this number is predicted to increase to 1.6 billion by 2025 (WHO, 2008). The rate of smoking is increasing more rapidly in developing countries than in developed countries (Shafey et al., 2009), but this trend will not be controlled unless effective anti-smoking interventions are conducted (WHO, 2008).

In Europe, Bulgaria (40.9 percent) and Greece (38.9 percent) recorded the highest prevalence of smoking, the lowest being in England (24.9 percent), Italy (22.0 percent), and Sweden (16.3 percent) (Lugo et al., 2013). In Australia, two different patterns in the reduction of smoking have been noted for men and women. That is, a reduction in smoking among males became evident in the late 1950s, but for women a reduction in smoking rates was not recorded until the 1980s (Woodward, 1984). The overall national prevalence of smoking slowly decreased and by the mid-1990s it was 27 percent, but it

did not reach the goal set by public health authorities which aimed for 20 percent (or lower) by 2000 (Hill et al., 1998, White et al., 2003). However, the average annual decrease in smoking prevalence (0.66 percentage points) accelerated after 2000 (Chapman, 2007) so that by 2007 only 17.9 percent of Australians aged 14 and over were daily or weekly smokers (Gartner et al., 2009). The National Preventative Taskforce has predicted that the prevalence of daily smoking in Australia will be less than 10 percent by 2020 (Bryant et al., 2011).

1.1.2 Smoking: health consequences and mortality

Smoking is the main preventable cause of death in the world today (MacDonald, 2007, CDC, 2003). An extensive body of literature has conclusively demonstrated that all forms of tobacco use cause health-related problems that result in death or disability (Nakamura et al., 2008). In 2000 about five million premature deaths worldwide were estimated to have been caused by smoking, approximately half of those deaths occurring in developed countries and the other half in developing nations. According to the Who, tobacco use will cause 1 billion deaths in this century (Daube, 2011). The leading cause of death attributable to smoking was cardiovascular disease, this being followed by COPD, and then lung cancer. Smoking in adults was responsible for about 22 percent of all deaths from cancer and for about 11 percent of all cardiovascular disease deaths worldwide (Ezzati and Lopez, 2003). Moreover, mortality rates from smoking-related diseases is anticipated to increase in developing countries due to rising rates of tobacco use (Jha et al., 2002, Peto et al., 1996a).

According to the WHO report for 2004 (WHO 2004), in developing countries about 12 percent of women and 33 percent of men aged between 30 and 69 died as a consequence of smoking, whilst in industrialized countries the mortality rate was 12 percent among women and 33 percent among men. New estimates from the WHO (Mathers et al., 2009) forecast a dramatic increase in deaths worldwide due to smoking; for females smoking-related deaths are predicted to increase by 80 percent between 2004 and 2030, and for males the increase will be about 60 percent(Samet and Yoon, 2010).

According to a report by the US Surgeon-General smoking is the cause of more 30 kinds of illness and medical conditions (General Surgeon, 2000). Even in older people smoking has been identified as a major risk factor in eight of the top 16 causes of death.

Rimer et al., (1990) found that smoking is responsible for about 41 percent of cancer deaths in older men, and 15 percent of cancer deaths in older women (Rimer et al., 1990). In another study it was revealed that 42 percent of older males and 48 percent of older female smokers had received at least one smoking-related diagnosis (Orleans et al., 1991). The mortality rate among older smokers is about two times higher than for older non smokers (OR of 2.1 for men, 1.8 for women) (LaCroix et al., 1991). Smoking is also one of the strongest risk factors for chronic diseases (van Loon et al., 2005), smokers being more likely to contract coronary heart disease, stroke, cancer, and chronic obstructive pulmonary disease (COPD)(CDC, 2003).

1.1.2.1 Lung cancer

Lung cancer is the most common form of cancer worldwide; approximately 90 percent of cases in men and 69 percent of cases in women have been attributed to smoking (Quinn and Britain, 2001, Sasco et al., 2004) and the prevalence of lung cancer is typically between four and six times higher in men and women smokers than in non-smokers (Quinn and Britain, 2001). In 2008, about 1.37 million deaths were due to lung cancer worldwide and it is estimated that this figure will continue to increase (WHO, 2013). It has been estimated that smoking between one and 14 cigarettes per day increases the risk of dying from lung cancer eightfold, and those who smoke 25 or more cigarettes each day are 25 times more likely to die from lung cancer compared with non-smokers. The duration of smoking has also been found to be a stronger factor in lung cancer causation than the amount consumed. For example, smoking one pack of cigarettes a day for 40 years has been shown to be more dangerous to an individual's health than smoking two packs daily for 20 years (Lubin et al., 2007).

The International Agency for Research on Cancer (IARC) conducted a systematic meta-analysis of observational studies between 1961 and 2003 to assess the risks for 13 different types of cancer. The results revealed that lung cancer had the highest relative risk (RR) for current smokers (RR=8.96; 95% CI: 6.73–12.11) and for each additional cigarette smoked each day the risk of developing lung cancer increased by 7 percent (RR=1.07; 95% CI: 1.06–1.08) and it seems to be somewhat higher in women (RR=1.08; 95% CI: 1.07–1.10) than in men (RR=1.07; 95% CI: 1.05–1.08) ($p < .001$)(Gandini et al., 2008).

Moreover, smoking will increase the risk of lung cancer among non-smokers in close proximity to smokers (Taylor et al., 2001). It has been noted that lifelong non-smoking spouses of smokers who smoke at home have a 20 to 30 percent increased risk of developing lung cancer relative to members of the general population who are not exposed. The chance of developing lung cancer is also increased by about 16 to 19 percent among never-smokers who are regularly exposed to second-hand tobacco smoke in the workplace (Sasco et al., 2004).

1.1.2.2 Respiratory diseases

Smoking has been shown to gradually change the structure and function of the lung (Hanrahan et al., 1996, Bano et al., 2011). It "is the main risk factor for developing Chronic Obstructive Pulmonary Disease (COPD)" (Pitsavos et al., 2002, Siahpush et al., 2006a), and smokers are nearly 10 times more likely to suffer COPD compared with non-smokers (Wald and Hackshaw, 1996). The main respiratory symptoms among adults are coughing, phlegm, wheezing and dyspnea (Guo, 2008, Gupta et al., 2006). Smoking during pregnancy causes COPD, pneumonia, and reduction of lung function in infants (Gilliland et al., 2002). The effects of smoking on the older smoker are also more serious and generally lead to poor health status (Allen, 2009). Among older people, COPD is more prevalent and it is consistently ranked as one of the top ten most common chronic diseases and causes of daily activity limitation. COPD has an increasing trend in older people and is predicted to become the third most common cause of death by 2020 (Services, 2000).

The WHO estimates that 65 million people suffer moderate to severe COPD. More than three million deaths in 2005 were attributed to COPD, this figure representing five percent of all deaths worldwide. COPD is a main health issue among older people. The prevalence of smoking increases with ageing. In a study among 1500 Swedish subjects, Lindberg et al, (2006) found that the prevalence of COPD was 6.5% at 46-47 years, 17.1% at 61-62 years, and 28.7% 76-77 years (Lindberg et al., 2006). In another study in the USA, the prevalence of COPD among older people averaged 136 per 1000 men, and 118 per 1000 women (Janssens et al., 2001). Most deaths due to COPD (90 percent) occur in low- and middle-income countries (WHO, 2012); moreover, smoking has been responsible for 73 percent of COPD mortality in high-income countries, whilst 40 percent of deaths due to COPD have been found to be related to smoking in countries

with low and middle income (Lopez et al., 2006). Historically, COPD has been more prevalent in men but, due to increased smoking consumption among women, it now affects both genders equally (WHO, 2012). Many factors can predict COPD mortality including the age at which smoking commenced, duration and frequency of cigarette smoking, and current smoking status. It has been found that passive smoking has a slight effect on lung function, and its clinical relevance for developing COPD is restricted (Pauwels and Rabe, 2004).

1.1.2.3 Cardiovascular disease (CVD)

Tobacco has the strongest influence on cardiovascular mortality (Weil et al., 2012). It causes aortic aneurysm, coronary heart diseases, and other arterial diseases, including cerebrovascular events (Mazzone et al., 2010). Smoking is also responsible for more than half of all premature myocardial infarctions (MI) (Weil et al., 2012). It was estimated that in 2000, globally, more than one in every ten cardiovascular deaths was related to smoking (Ezzati et al., 2005). Smoking also affects older smokers more seriously. For example, older male smokers are twice as likely to die from stroke as non-smokers, while this rate in older female smokers is about one-and-a-half times. For older smokers the risk of dying from heart attack is about 60 percent higher than older non smokers (CDC, 2002). For each ten cigarettes smoked per day the cardiovascular mortality rate increases in males by 18 percent and in females by 31 percent (Kannel and Higgins, 1990). It has also been estimated that for current male and female smokers in Asia the mortality risk of CVD is 40 percent higher than for non-smokers (Barzi et al., 2008) and generally non-smokers live many years longer and without CVD than smokers (Al Mamun et al., 2004). Smoking contributes to CVD in different ways including increasing the risk of elevated blood pressure, coronary heart disease, stroke, and cardiac failure (Kurth et al., 2003, Nicita-Mauro et al., 2008).

1.1.2.4 Other diseases

According to the US Surgeon General (2004), numerous other diseases have recently been recognized as being related to smoking. They include cancers of the stomach, uterus, cervix, pancreas, and kidney; acute myeloid leukaemia; pneumonia; abdominal aortic aneurysm; periodontal disease (USDHHS, 2004) and cataract (Cumming et al., 1997). Cancers of the nasal cavities and nasal sinuses, liver, and bone marrow (myeloid leukaemia) have also been linked to smoking (Cancer, 2004). The risk of developing

oesophageal cancer is about 7.5 times greater in smokers than in lifetime non-smokers and they are two to three times more likely to develop cancer of the bladder and other urinary organs than lifelong non-smokers (Wald and Hackshaw, 1996, Doll et al., 1994).

Smoking is a contributing factor in some serious diseases and conditions such as asthma, diabetes, and osteoporosis (Rapuri et al., 2007, Andrews et al., 2004). "It has been shown to be an independent risk factor for Type II diabetes" (Willi et al., 2007). Reproductive health can also be affected adversely by smoking; it can reduce fertility in both men and women, and it can harm the health of the developing foetus (Curtis et al., 1997).

Many musculoskeletal diseases are associated with smoking, including bone fracture, impaired wound healing, compromised bone-mineral density, lumbar disk problems, and the risk of sustained hip or forearm fractures (Porter and Hanley, 2001, Lincoln et al., 2003).

Smoking has also been linked to the development of some mental-health conditions. For example, "smokers are more than twice as likely as non-smokers to develop Alzheimer's disease" (Arday et al., 2003, Stuck et al., 1999, Wang et al., 2001). Schizophrenia and post-traumatic stress disorder (PTSD) are linked with higher than average rates of smoking. For example, a study in the US found that individuals with schizophrenia were three times more likely to smoke than members of the general population, and the rate of smoking among individuals diagnosed with schizophrenia is at least 60 percent (Williams and Foulds, 2007, McFall et al., 2005). Moreover, older smokers may encounter difficulties with a range of drug therapies and it may adversely influence the drug dosages they use (Rimer et al., 1990). Smoking can create problems when people undergo surgery because it can delay the recovery process through its effects on body physiology, such as tissue oxygenation, heart rate, airway clearance, immune response, and circulation (LaCroix et al., 1991).

1.1.3 Smoking and nicotine addiction

Nicotine is a key ingredient in tobacco smoke and has a causal association with smoking addiction. By the process of combustion, nicotine is extracted from tobacco and passed to the level of the alveoli via tar droplets (Benowitz, 1992, Zevin et al.,

1998). Nicotine addiction can be explained as a condition created by long-term use of nicotine, which causes physiological reactions during withdrawal, with those reactions being reversed by re-administration of the drug (Fagerström, 1978). Physical dependence, tolerance, severe symptoms during withdrawal, and lack of control over future consumption are the main addictive influences of nicotine (APA, 2000, Fiore, 2008, Rigotti, 2002). Indeed, the effects are similar to the dependence which is caused by many narcotics and amphetamines (Fiore, 2008).

1.1.3.1 Symptoms of nicotine dependence

Nicotine dependence can cause complex symptoms. Anxiety disorders (which are highlighted by phobias, agoraphobia, or obsessive-compulsive disorders) are a common symptom (Becoña et al., 2002) and smoking "increases risk for the later development of certain anxiety disorders" (Morissette et al., 2007, Fu et al., 2007b). Smokers experience higher rates of affective disorders and major depressive disorder (MDD) than do non-smokers (Haas et al., 2004), and it has been noted that smokers tend to be more anxious, tense, and impulsive (van Loon et al., 2005). A number of other psychological characteristics are associated with smoking behaviour, the most notable being neuroticism. Smokers who are more 'neurotic' appear less motivated to quit smoking, even when provoked with the subjective norms; additionally, they can feel stronger reinforcing effects of nicotine than individuals who are more emotionally stable. High neuroticism leads individuals to respond to stress with more intense emotional reactions and higher levels of cortical stimulation, so that in order to decrease tension and autonomic arousal they will often choose to smoke when stressed (Spielberger and Reheiser, 2006). When individuals with high neuroticism are blamed by peers for their non-conforming, rebellious behaviour, they are more likely to engage in aggressive and antisocial activities (Spielberger and Reheiser, 2006). Spielberger et al. (2006) also demonstrated that smokers tend to use smoking to overcome negative emotions in situations that evoke anxiety and anger. Smokers also tend to use tobacco products in order to improve positive feelings when bored. The effect of smoking on reduction of negative feelings and relief of boredom has been found in other similar studies (Spielberger and Reheiser, 2006). On this aspect of smoking, Berlin, et al. (2003) reported that the pattern of smoking consumption is different between women and men, women tending to smoke more in order to reduce tension, for stimulation, and in social situations.

1.1.3.2 Symptoms of nicotine withdrawal

When a smoker quits he/she experiences a syndrome of withdrawal that is caused by the body's craving for nicotine. This syndrome is usually characterized by anger, anxiety, low concentration, irritability, depression, and sleep disturbance (APA, 2000). Smokers who quit also typically experience hunger, fatigue, and restlessness. Although many of these symptoms disappear with time, their presence and degree of severity create a tendency to start smoking again (Hughes et al., 1992).

1.1.4 Health and economic costs of smoking

Smoking entails very high direct and indirect costs for individual smokers, for families, and for the wider community. Costs include a reduction in smokers' productivity, absenteeism from work, natural events like fire-damage because of carelessness, the cost of health care due to active and passive smoking, and the damage caused by environmental pollution (Yili, 2010).

Tobacco use can cause smokers to die about 10 years sooner than comparable non-smokers (Doll et al., 2004). Globally, smoking is an economic burden, most obviously related to the prevalence smoking-related diseases. The costs of smoking can be evaluated in two categories — direct and indirect costs (Rehm et al., 2006). The direct economic costs include the resources required for health care: that is, hospitals, medicines, medical staff, and related infrastructure. Indirect economic costs include loss in productivity because of smoking-induced premature morbidity and mortality, and also the effects of smoking on quality of life (Ruff et al., 2000). According to CDC, smoking and exposure to second-hand smoke (SHS) in the USA cost "5.5 million Years of Potential Life Lost (YPLL) and $92 billion annually in lost productivity" (Torabi et al., 2010). In a study in Germany in 2003, more than 114 thousands "deaths and 1.6 million YPLL were attributable to smoking". Total costs were €21.0 billion, including €7.5 billion for acute hospital care, rehabilitation services, ambulatory care and medication. Indirect cost of mortality was €4.7 billion; and the rest €8.8 billion was due to work loss days and early retirement (Neubauer et al., 2006). In Canada, the estimated economic burden of smoking use was almost $18 billion in 2002 (Gorber et al., 2009). In a study in Taiwan, the smoking-attributable expenditure amounted to $397.6 million and 6.8% of total medical expenditures (Yang et al., 2005). This amount was $79.35

million in China. Of the total costs of tobacco, direct costs and indirect costs were $94.66 million and $0.85 million for smoking (Cai et al., 2014).

In Australia the overall cost of smoking in 2004–05 was estimated at $31.5 billion, a marked increase of 23.5 percent from the 1998–99 estimate. Australia's national cost of hospitalization due to smoking-related diseases was $669.6 million in 2004–05 (Collins and Lapsley, 2008). As noted, smoking produces a number of indirect costs, one notable cost being the reduced productivity of workers who smoke. Smokers are usually less productive because they experience higher rates of illness and debilitating disease, the main smoking-related condition being heart disease (Collins and Lapsley, 2008). It has been estimated that in 2002–03 European countries paid approximately €74 billion annually to treat cardiovascular diseases as a direct cost and €106 billion annually in indirect costs (Rayner and Rayner, 2003).

However, smoking cessation can significantly decrease all of these costs. For example, an Australian study showed that if 1000 Australian smokers quit smoking, the health costs from smoking-related diseases (such as heart attacks, lung cancer, stroke, and COPD) would decrease by about $373,000 over ten years (Collins and Lapsley, 2008). The results of another study showed that the cost of hospitalization due to myocardial infarction and stroke would decrease by over $60 million within seven years if five percent of Australian smokers were to quit (Hurley, 2005).

1.2 Socioeconomic and demographic predictors of smoking

The overall prevalence of smoking has gradually reduced in most developed countries in recent decades, but conversely tobacco consumption has risen in some sub-groups. For instance, people in lower socioeconomic status (SES) groups are more likely to be smokers (Jarvis and Wardle, 2005) and hence have a bigger burden of smoking-related diseases (Sheahan et al., 2003, White et al., 2003). SES has long been recognized as a main predictor of smoking consumption (Jarvis and Wardle, 2005, Siahpush et al., 2006b). In Canada, for example, a recent study recorded that the prevalence of smoking among blue-collar workers (36 percent) was twice as high as for workers in administrative positions (18 percent) (CTUMS, 2003). Similarly, a US study reported that people with an annual household income less than $20 000 were 47 percent more

likely to be smokers and were 49 percent more likely to smoke daily than those with an annual household income greater than $20,000. Moreover, young adults not undertaking tertiary study were more than twice as likely to be current and daily smokers than those enrolled for higher education (Lawrence et al., 2007). An important finding was recorded by the Centre for Disease Control (CDC, 2007) which noted that, 31 percent of persons around the world who were living below the poverty level were smoker compared with 20 percent of persons who were living at or above the poverty level in 2006 (Moritsugu, 2007). In Australia, smoking has been found to have an inverse relationship with SES, with lower SES groups in the population being more likely to smoke despite the very high cost of cigarettes (White et al., 2003, Siahpush, 2004, Siahpush and Borland, 2002). In another study Hill et al. (2003) found that the prevalence of smoking among lower-income blue-collar workers in Australia was 36 percent, while it was 16 percent among people who worked in higher-paid white-collar positions (White et al., 2003).

1.2.1 Age and smoking

Smoking generally commences during adolescence, and the prevalence of smoking increases until early or middle adulthood, then it diminishes steadily with age (Sulander et al., 2004, John et al., 2005). However, despite a reduction in rates of smoking with increasing age, the cumulative negative effects on health remain, and they may contribute to early death. This pattern varies between societies and countries according to the age of commencement, the number of cigarettes smoked daily, the cultural acceptability of smoking, and patterns of smoking cessation — and all of these factors have tended to fluctuate over time as a result of the interactions between pro-tobacco and anti-tobacco activities (Samet and Yoon, 2010).

The relationships between smoking initiation and the numerous risk factors and smoking-related patterns is well-known today (Lantz, 2003). Indeed there is evidence that starting smoking at an early age is associated with the following outcomes:

- a greater likelihood of the individual becoming a regular smoker, (Reidpath et al., 2013),
- a greater likelihood that he/she will smoke more cigarettes per day (Fernandez et al., 1999),
- a reduced likelihood of quitting (Lando et al., 1999),

- a greater likelihood that he/she will become nicotine-dependent (Park et al., 2004),
- a higher incidence of smoking-related disease (Wilkinson et al., 2007).

The onset of many chronic illnesses linked to smoking has been found to be linked to the age at which a person starts smoking (Chen, 2003), and smoking from an early age is related to relatively greater health and behavioural problems later in life. For instance, compared with those who commence smoking in later life, early-onset smoking is a stronger predictor of the development of physical ill-health such as peripheral arterial disease (Planas et al., 2002) and lung cancer (Hara et al., 2010) in later life. A study among Canadian smokers found that people who started to smoke in adolescence experienced a higher incidence of COPD, ischaemic heart disease, and rheumatoid arthritis than those who commenced smoking later in life (Chen, 2003).

1.2.2 Gender and smoking

In 2006, the global rate of smoking was higher for men (40 percent) than for women (nearly nine percent), and males accounted for 80 percent of all smokers in the world. When compared with previous decades, the level of smoking amongst males is currently at a peak (Yili, 2010) and worldwide there are about one billion male smokers (Shafey et al., 2009). While, globally, five times more men than women smoke, the ratios of male-to-female smoking prevalence rates differs significantly across countries. In developed countries such as Australia, Canada, the USA, and most countries of Western Europe, the prevalence of smoking is similar between men and women. However the gender gaps are much larger in many low- and middle-income countries. For example, in China, 61 percent of men are currently reported to be smokers while only 4.2 percent of women smoke. While smoking rates among men in numerous developed European countries have dropped steadily in recent years, the prevalence of smoking among women has increased, remained steady, or reduced only slightly (Hitchman and Fong, 2011).

Many studies have revealed that there is a significant difference between the genders in regard to the age at which smoking commences, with men generally starting smoking much earlier than women (Andreeva et al., 2007) and being more likely to die from smoking-related diseases. Peto et al. (1996) have reported that in developed countries

the rate of male deaths attributable to smoking has been triple that for females (24 percent vs seven percent respectively) (Peto et al., 1996b).

1.2.3 Education and smoking

Educational level has also been recognized as an influence on the frequency of an individual's tobacco consumption (Goesling, 2007), "people with low educational levels being more likely to be smokers" (Dragano et al., 2007). For example, in a study in the United States it was found that the frequency of smoking was highest (43.2 percent) among adults who had acquired a General Education Development (GED) diploma (which is considered a very basic level of schooling); this was followed by those with 9 to 11 years of education (32.6 percent), while the prevalence of smoking reduced further with enhanced education (CDC, 2006). The results also showed that individuals with a GED diploma and those with 9 to 11 years of education were 8 times and 3 times respectively more likely to smoke compared with people who had attained a college degree (Barbeau et al., 2004). The prevalence of smoking among those with graduate degrees was seven percent (CDC, 2007).

A similar pattern has been noted in Australia where between 2001 and 2010 it was found that those who had completed education to Year 12 (or above) were less likely to smoke than those with less education or with a trade certificate. It has been found that in Australia, educational attainment is independently and significantly associated with the probability of smoking for both sexes (Siahpush and Borland, 2001). Additionally, it has been shown that individuals with limited education are generally less aware of the health consequences of smoking, and thus they are more likely to engage in hazardous behaviour (Bobak et al., 2000).

1.2.4 Ethnicity and smoking

Three countries which have been major migrant destinations are the United States, Canada, and Australia. For example, in 2006 the United States received 1.2 million immigrants, Canada took 250,000, and Australia 125,000 (Martin and Zürcher, 2008). But these host nations have smoking norms which are often at variance with those of the immigrants. Smoking prevalence may be similar in ethnic groups from cultures with high smoking rates such as in Southeast Asia (Jenkins et al., 1997, Wewers et al., 2000) and in Hispanic countries of Central America (Shankar et al., 2000). Those smoking rates commonly continue for several years post-immigration. For instance, a study of

Asian men in the US has shown that even after seven years in the new country smoking rates remained similar to those of their native countries (Wewers et al., 1995).

Numerous studies have shown significant differences in smoking consumption between ethnic groups. For instance, according to the CDC (2003) smoking rates by white girls were double those of black girls. The differences in smoking rates may be due to the belief (especially among women) that smoking helps with weight control (CDC, 2003). Based on national smoking prevalence data, smoking rates are markedly different between males and females — males being more likely to smoke than females. In fact gender seems to have a slight protective effect on smoking prevalence (CDC, 2007). In the US the numbers of males who smoke are all noticeably higher in the Hispanic populations, such as Salvadorian immigrants (Shankar et al., 2000), in the Eastern European communities (Shafey et al., 2003), and among Asian-Americans (Yu et al., 2002a). In Australia, different levels of smoking consumption have been reported among different ethnic groups. One study found that 42% of Indigenous Australians aged between 15 to 24 years were smokers (Johnston et al., 2012), while only 29.7% of Arabic speakers were smoker (Girgis et al., 2009).

Smoking rates can be different in ethnic groups based on SES. The differences in smoking rates in ethnic groups may be associated with varying educational levels, because smoking rates are lower among more highly-educated people than among people with lower levels of schooling. On the other hand, smoking cessation rates can vary considerably due to demographic factors. As a general finding, people with higher incomes quit smoking at much higher rates than those of lower economic status. In a study by McGrady and Pederson (2002), success in quitting was found to be independent of ethnicity. They found that differences in age of commencement were creating a statistical association between ethnicity and cessation rates. In regard to the factors which affect quitting, smoking cessation interventions may differ across racial, ethnic, and economic groups (Benowitz, 2002).

1.2.4.1 Smoking behaviour in cultural contexts

'Culture' refers to a collection of values, beliefs, customs, and traditions transmitted through generations, Culture may shift slightly but it generally remains a stable force particular to a group over time (Berry, 2002). Smoking prevalence between genders varies widely in some ethnicities but not in others, suggesting that gender ideologies

across cultures have an influence on smoking behaviour (Unger et al., 2003). In addition, the context of smoking may differ between genders, a French study found that the reasons for smoking were different for males and females (Berlin et al., 2003).

The environment and attitudes of family, friends, and co-workers toward smoking in a cultural group may likewise impact individual smoking status. Culture influences the reasons for smoking and it can limit or encourage individuals from a similar culture to smoke. Moreover, the decision to smoke or to attempt cessation is affected by the individual's perception of the costs and benefits of smoking (Prochaska et al., 1985). Reasons for smoking include stimulation, pleasure, craving, and coping with negative feelings (Ikard and Tomkins, 1973), and smokers may be affected by culture if smoking is regarded as an acceptable way of meeting psychological needs. Different reasons for smoking have been found to influence the severity of nicotine withdrawal symptoms during tobacco cessation (Niaura et al., 1989). Culture is central to the understanding of ethnicity because it shapes the norms, customs, and worldview of a group (Berry, 2002). Cultural identification may be important in influencing health beliefs, habits, and values. Ethnic identity, both in individuals viewing themselves as belonging to a certain group and society categorizing them into that group, may also help to create a unique cultural milieu around health behaviours (Laditka et al., 2011).

The effects of cultural beliefs on smoking have been studied in some detail. In general, smoking is associated with lower body weight, this effect being particularly strong in determining the initiation of smoking behaviour. Young women who are overweight or trying to lose weight are more likely to begin smoking. Interestingly, it has been found that as the cost of smoking has increased, smoking rates have declined and there has been a concomitant increase in levels of overweight and obesity in the community (Cawley et al., 2004, Chou et al., 2004). In their research Cawley et al. (2004) found that the cost factor was a strong deterrent for young men, but not for young women (Cawley et al., 2004).

Variations between groups in prevalence and in gender patterns of tobacco use underline the influence of culture. While a number of twin studies have shown a genetic basis for smoking behaviour, much of the variance in smoking can be attributed to environmental factors, many of which are influenced by cultural context (Unger et al.,

2003). That is, culture shapes tobacco use, but physical and psychological addiction to nicotine are also tied to social and coping factors that affect the ability to quit smoking. These factors could be influenced by culture, that is the attitudes, behaviours, and symbols shared by a group (Shiraev and Levy, 2004).

1.2.4.2 Acculturation and smoking

According to Berry et al. (2002), acculturation is a process that an individual experiences as a result of people of different cultures coming into continuous contact, and is usually measured on a continuum rather than as a dichotomous outcome (Berry, 2002). Acculturation is not confined to immigrants but also applies to native-born ethnic minorities (Stephenson, 2000). Levels of acculturation have been associated with smoking behaviour in a number of studies with immigrants of various ethnicities. Usually, when acculturation level is higher toward the dominant culture, smoking behaviour becomes more like the adopted culture. Higher linguistic acculturation was found to be associated with decreased smoking in Chinese-American men (Fu et al., 2003), there being a higher smoking prevalence in China than in the US. A survey of 103 recent immigrant adolescent girls from former Soviet countries then resident in New York showed that acculturation was positively correlated to risky health behaviours, such as smoking (Jeltova et al., 2005). Girls who scored higher on identification with American culture reported more risky health behaviours, including smoking, than those who were less acculturated. A study of the smoking behaviour of 8,882 Latino men and women in the US found that high acculturation was associated with more smoking in females and less smoking in males compared to the native country (Pérez-Stable et al., 2001). Likewise, a survey of 356 Korean-Americans showed that higher acculturation to the dominant US culture was associated with more smoking in women and less smoking in men compared with those with less acculturation (Lee et al., 2000).

1.3 Research evidence on why people start and continue to smoke

Psychosocial factors have been identified as a key reason for smoking initiation (Chiou et al., 2010). Young people may start smoking to show their perception of adulthood or as an expression of rebellion. The chance of starting smoking is higher among children who have close contact with parents, siblings or peers who smoke (de Vries et al., 2003). Also, smoking initiation is associated with low self-esteem (Yang and

Schaninger, 2010), low levels of education, living in a low SES neighbourhood or family (Goldade et al., 2012), or attending a school where a high proportion of students smoke (Huang et al., 2010). However, a study by Jarvi et al (2004) revealed that the majority of young smokers (80 percent) regret starting smoking before the age of 20, and they attempt to quit smoking in later life (Jarvis, 2004).

The reasons young people start smoking may also influence how they receive anti-smoking messages and how likely they are to successfully quit. The most general smoking motives are automatic (where a smoker does not remember lighting up); psychosocial (smoking to increase self-confidence); sedatory (where a smoker use smoking to calm down); addictive (where an individual has a compulsion to smoke after quitting for a period of time); stimulation (where a smoker use smoking to remain alert); indulgent (smoking for enjoyment); and sensory-motor manipulation (smoking to enjoy the ritual of lighting up) (Tate et al., 1994).

The reasons for smoking can be different according to age. While youths and adolescents commonly smoke because of peer influence, a Scottish study by (Parry et al., 2002), noted that elderly smokers use cigarettes mostly as a support for social interaction; that is, the shared camaraderie derived from "the process of sharing cigarettes, lighting up, and enjoying the effects of nicotine with friends" (Allen, 2009). They smoke for enjoyment, and believe that smoking is their right as a personal freedom (Borland et al., 2006b).

Many reasons to start smoking have been made as consequence of incorrect perceptions. For instance, some individuals believe that smoking cigarettes will help to relieve anxiety (Copeland, 2003), but this has been shown to be false, and we now know that smoking does not help smokers to relax; rather, it may promote anxiety disorders (Wiltshire et al., 2003). Another false belief, especially among women, is that smoking can help control weight (Pirie et al., 1991). This belief has been found to be more widely accepted among some minority groups — studies conducted in the US have reported that Latinos (Pletsch and Johnson, 1996) and African-Americans (Pomerleau et al., 2001) use this belief as a justification for smoking.

1.4 Smoking cessation and benefits of quitting/reducing smoking

Smoking cessation has immediate, substantial, and wide-ranging health benefits to everybody regardless of age or smoking history (USDHHS, 2004). Smoking cessation

has numerous benefits, even in older smokers, with significantly enhanced outcomes to health, quality of life, and extended life expectancy (Strandberg et al., 2008). For instance, in older male smokers it has been reported that smoking cessation at age 60 can extend life expectancy by at least three years (Doll et al., 2004).

Many studies have confirmed that while young adults are more likely than older smokers to make attempts to quit (Hatziandreu et al., 1990), success rates generally increase with age (Ferguson et al., 2005, Hyland et al., 2004). The reasons for quitting differ between younger and older people, younger smokers wanting to quit because smoking is not an entrenched habit, while older smokers may be more likely to be successful at quitting due to more experience with quitting or greater motivation because of the desire for better health (Chassin et al., 1990).

Smoking cessation has both short- and long-term advantages to health (Taylor Jr et al., 2002). Stopping smoking at an early age can avoid smoking-related premature death (Qiao et al., 2000). For example, smoking cessation before the age of 50 reduces the risk of death by 50 percent over the subsequent 15 years as compared with those who continue to smoke (Ossip-Klein et al., 1999, Doll et al., 2004). Smoking cessation can strongly decrease the risk of developing lung cancer; quitting even at ages 50 or 60 can markedly reduce the risk of developing lung cancer, and if quitting occurs before the age of 30, more than 90 percent of the risk attributed to tobacco use will be prevented (Peto et al., 2000, General, 1990). By the age of 75, a lifetime male smoker has a cumulative risk of 15.9 percent of death due to lung cancer. For male smokers who quit at ages 60, 50, 40, and 30 years, their cumulative risk of death due to lung cancer reduces by 9.9 %, 6.0 %, 3.0 %, and 1.7 %, respectively (Peto et al., 2000). The benefits of quitting can be immediate or they can take longer to become evident. For instance, a reduction in lung-cancer risk is apparent usually 5 to 15 years after cessation (Thun et al., 1997). About 10 years after quitting, the risk of lung cancer has reduced by approximately 30 to 50 percent when compared with continuing smokers (CDC, 2005, Godtfredsen et al., 2005).

The benefits of smoking cessation on cardiovascular and respiratory functions has been noted, even in older smokers (Burns, 2000). For instance, previous studies have found that quitting smoking at an older age reduced the risk of heart disease after one year by

about 50 percent (Taylor Jr et al., 2002). Similarly, among cardiac patients smoking cessation can improve the function of the heart at any age (Critchley and Capewell, 2003, Goldenberg et al., 2003).

Overall, smoking cessation will probably improve the health status of the individual and also generate other social and economic benefits (He et al., 1999). It will save the cost of the cigarettes, the costs of disability caused by smoking, the losses arising from premature mortality, the costs of care-givers, and the various family costs stemming from smoking-related problems (Mackay and Eriksen, 2002). Smoking cessation has many benefits even for smokers' family members by reducing their health risks due to exposure to second-hand smoke. The results of several previous studies have shown that some parents (Robinson et al., 2010) and children (Rowa-Dewar and Ritchie, 2010) prefer smokers to smoke outdoors and well away from non-smokers. However, this can have the effect of making smoking a solitary activity, and so older smokers may be liable to become more and more socially isolated.

1.5 Overview of smoking among older people

Tobacco smoking is one of the major preventable causes of disease and premature death for older people (Abrams and Biener, 1992). The prevalence of smoking among older people is less than younger people (CDC, 2008). In England, for instance, in 2008, 12 percent of people aged 65 years or over (NHS, 2008) were smokers, while nine percent of Americans over 65 years of age were current smokers (CDC, 2008). In Australia, the prevalence of smoking was reported to be 21.4 percent among people aged 50 to 59 years, 15.4 percent among people aged 60 to 69, and only 7.8 percent of those older than 70 years were smokers (AIHW, 2010).

The harmful effects of smoking are particularly serious for older people (Rowa-Dewar and Ritchie, 2010, Byles et al., 2012), and the mortality rate among older people is double that of non-smokers of similar ages (Donzé et al., 2007). In older people, smoking is major contributory factor to a range of diseases including heart disease, stroke, respiratory disease and cancer (NHS, 2002).

Smoking consumption in older smokers has a number of characteristics which need to be taken into account for any intervention designed to reduce or eliminate smoking in this group; these include smoking history, higher dependence on nicotine (Messer et al., 2008, Dawel and Anstey, 2011), number of previous unsuccessful attempts to quit

(Orleans et al., 1994, Breitling et al., 2009), and doubts about the benefits of cessation (Yong et al., 2005, Orleans et al., 1994).

Older smokers usually may not accept that they are at risk of many diseases. Consequently, they have low attention to health issues and are generally unconcerned about smoking-related health effects (Clark et al., 1997a, Yong et al., 2005, Rimer et al., 1990). For those reasons they also show low levels of self-confidence and an unwillingness to quit (Yong et al., 2005). However, some recent research disputes this perception, claiming that smoking cessation will improve the health status of older people (Hunter, 2011, Nicita-Mauro et al., 2008, Ossip-Klein et al., 1999, Taylor Jr et al., 2002). Among older smokers, the benefits of quitting in terms of "heart disease and stroke are almost immediate, with a rapid decrease in rates of mortality". Considerable improvements in lung function "occur rapidly when older people stop smoking, most of the improvements occurring in the first year. Moderately ill patients display improved survival rates when they quit smoking" (Rimer et al., 1990). Hence, older adults should be an important target group for cessation interventions (Rimer and Orleans, 1994). Individuals are more motivated to quit when they have suffered from a smoking-related health problem, finding that quitting can help them enhance their overall health and well-being (Breitling et al., 2009). For example, Ossip-Klein et al (2000) revealed that most smokers aged 50 and older welcomed physician advice, and were more likely to receive this advice if they had poor health status, including previous hospital stays (Ossip-Klein et al., 2000). However, the harmful effects of smoking are more serious in older people compared with younger people. Moreover, older individuals are usually asked less often to stop smoking, they have access to fewer supportive resources, and they receive less guidance in quitting (Houston et al., 2005a, Maguire et al., 2000).

1.5.1 Effectiveness of smoking cessation in older people

Incorrect information and misconceptions amongst some older people can lead them to believe that quitting is unnecessary or impossibly difficult. For example, many older smokers believe that smoking cessation in later life does not have any benefits for them, or they believe that some anti-smoking aids (such as nicotine-replacement patches) have many risks attached (Kerr et al., 2004). Another common belief is that, because they have smoked for a long time, all the possible damage has already happened and so there would not be any benefit in quitting (Kerr et al., 2006). Some health practitioners and

policy makers have concluded that it may be too late to intervene, and so older smokers are rarely targeted in interventions (Donzé et al., 2007). However, the results of various studies have revealed that quitting at any age yields immediate health benefits. The benefits of smoking cessation on health are cumulative and they will become apparent as soon as quitting is initiated. For older smokers, the benefits of quitting have long been recognized (Doll et al., 2004). Also, the risk of death due to smoking will be reduced within one or two years after quitting for older smokers compared to those who continue smoking (LaCroix and Omenn, 1992). Numerous studies have reported that older age is a significant predictor of smoking cessation (Van Der Rijt and Westerik, 2004, Khuder et al., 1999). On the other hand, it has been recognized that age is related to nicotine dependence (Kviz et al., 1994) and this could represent a significant barrier to cessation for older smokers (Van Der Rijt and Westerik, 2004).

The main reason older people quit is because of the effects of smoking on their health; hence the influence of age may be diminished (and they may be less inclined to quit) if they have no obvious disease (McWhorter, 1990). Older smokers' sensitivity to perceived risks of smoking, and their trust in their physician, have enabled physician-led quit programs to yield success rates of 20 to 28 percent in older people (Rimer and Orleans, 2006, Dale et al., 1997).

1.5.2 Desire to quit in older people

Evidence documenting the desire of older smokers to quit is unclear. Some studies conclude that older smokers have lower intention to quit while others show that they have higher intention than younger people. For example, a study which compared different groups' smoking behaviour found that while older smokers had smoked for longer, they did not report using different types of quitting methods (Orleans et al., 1994). In another study which compared smoking behaviour of smokers in different age groups, Kviz et al. (1994) found that smokers aged more than 50 had lower intentions to quit than did younger age groups (Kviz et al., 1994). Similarly, some studies found more attempts to quit among younger smokers than amongst older people (Levy et al., 2005), but most the studies of older smokers' behaviour have concluded that older smokers have higher cessation rates than younger smokers (Hurt et al., 2002, Levy et al., 2005).

In contrast, some studies have shown a higher desire to quit among older people than among younger people. Burns (2000) found that older smokers have a higher desire to quit, and smokers who are more than 65 years old are more successful at quitting than younger smokers (Burns, 2000). Another study showed that the desire to quit is higher in older smokers, especially those who had heart disease (Breitling et al., 2009). Ossip-Klein et al, (2000) found that smokers aged 50 and over are willing to receive anti-smoking advice from physicians and those who received advice showed stronger intention to quit; one-third of respondents displayed higher self-confidence in their ability to quit (Ossip-Klein et al., 2000).

Many factors can influence older smokers' desire to quit, self confidence being one of the most important. Smokers with high self confidence are more likely to quit (Kviz et al., 1994). Higher self-efficacy is also related to smoking cessation (for at least six months) in older smokers (Ossip-Klein et al., 1997). In comparison with younger people, older smokers underestimate both the cost of smoking and the benefits of quitting (Orleans et al., 1994) and so these beliefs influence their smoking cessation behaviour and their intention and readiness to quit (Orleans et al., 1994, Kviz et al., 1994). Older smokers who were alert to smoking-related diseases and symptoms reportedly are more ready and have stronger intentions to quit (Clark et al., 1999, Keenan, 2009). A study in the UK showed that health-related reasons were the strongest predictors of intention by older smokers to quit. The second reason for quitting cited by older smokers was the cost and financial burden (Keenan, 2009). This includes not only the cost of cigarettes but the effects of smoking on the health of the smoker and his/her family. Higher levels of education, being hospitalized at the time of receiving smoking-cessation advice, and having a non-smoking spouse are the other key influences on older smokers' intentions to quit (Lewis, 2010).

1.5.3 Why it is so difficult for older people to quit

Quitting permanently entails many factors. For instance a smoker needs to have a strong intention to quit, a plan of action, and a supportive environment (Brega et al., 2008). Despite the benefits of smoking cessation on reducing the risk of cancer, heart disease, respiratory problems, and premature death (USDHHS, 2004) older people are less interested in receiving anti-smoking advice than are younger smokers (Maguire et al., 2000). Due to particular physiological changes, tobacco dependence treatment in older

smokers is more difficult than in younger smokers. In addition, age-related cognitive change is also another challenge. For example, the results of one study showed a deficiency in age-related executive function which led to older people making fewer attempts to quit (Brega et al., 2008). Another factor which affects older smokers' desire and ability to quit relates to physical changes; that is, increase in body fat, change in liver size, and liver blood-flow — changes which interfere with medication metabolism. For instance, older people in one study had lower nicotine clearance and volume of distribution after intravenous nicotine injections compared with younger persons (Molander et al., 2001).

The habit of smoking, and addiction to nicotine, makes quitting by older smokers quite complicated (Appel and Aldrich, 2003, Kerr et al., 2006). This issue leads even smokers with an established COPD diagnosis to attribute their condition to other factors such as environment, work, pollution, age, and fitness (Schofield et al., 2007).

As a project by Kerr et al. (2006) showed, many older smokers are less interested in quitting because they believe that the damage to their health has already been done. Smoking has become a comfortable habit and an integral part of their social lifestyle, so they are less motivated to access the resources that could help them to stop smoking (Kerr et al., 2006). A study among minority groups in the UK showed that quitting was difficult because they believed that stress, and fear of withdrawal symptoms, prevented them from quitting permanently. They also believed that resisting temptation when in contact with smokers was very difficult (White et al., 2006). Indeed, ongoing contact with smokers is a significant influence which prevents some older smokers from quitting. Some smokers with serious established diseases even report that friends and family create barriers to smoking cessation (Medbø et al., 2011, Schofield et al., 2007). In a study by Honjo et al. (2006) the results showed that smoking by other family members can encourage a smoker to continue smoking. They also found that the family SES is significantly related to their smoking status, and greater exposure to smoking in the home was found among those with lower SES (Honjo et al., 2006). The same findings have been found to apply in the work environment (Albertsen et al., 2003).

Psychological distress can lead older smokers to smoke more. Byles et al. (2012) found that there is a significant association between low income and high psychological

distress among older people (Byles et al., 2012), and these two factors have been recognized as major barriers to quitting by older people. Lower SES populations are more likely to start smoking, but they also have a lower chance of quitting (Lawrence et al., 2007, Fagan et al., 2007). In contrast, higher SES enjoy higher levels of education, better economic circumstances, and elevated living/working status, all of which promote smoking cessation (Bobak et al., 2000). Previous studies showed that lower-SES people have lower health awareness regarding the harmfulness of smoking (Siahpush et al., 2006b). People with lower incomes probably have less to lose from future health issues and subsequent losses caused by smoking (Bobak et al., 2000).

1.6 Smoking cessation and health promotion

The World Health Organization defines 'health' as more than the absence of disease; rather it is considered to be a condition of comprehensive physical, mental, and social well-being (WHO, 1947), and 'health promotion' has been explained as a course of action wherein people are enabled to improve control over their health (WHO, 1985). Health promotion also includes individual education and a process that enhances the health status of individuals, groups, and society. Health promotion activities cover more than just knowledge and beliefs; they include structural aspects of the environment (Kerr et al., 2005) as well as public-health policies and programs. The main focus of health promotion is often social in structure and content, thus requiring approaches which foster population participation and which identify and deal with social forces. Health promotion activities necessarily take into account the social determinants of health, and this is particularly pertinent to the many factors that lead to smoking (Keane and Coverdale, 2010).

Health-promotion theories, and research on the determinants of health, highlight the roles played by social and physical environments in achieving positive health outcomes (Minkler and Wallerstein, 2010, Mabry et al., 2013). As a consequence community-based strategies may be particularly effective in preventing disease and promoting health (Brown, 1991). It has also been suggested that the focus on community arises from the acknowledgment that long-term, important behavioural change is most likely to be achieved not by focusing on individuals but rather by changing community standards (ie. established and expected forms of social behaviour) regarding health-related behaviour (Bullock et al., 1988).

To increase the effectiveness of health promotion, activities which use individual-level theories such as social-learning theory, (Bandura and McClelland, 1977) and the theory of reasoned action (Ajzen and Fishbein, 1980) are still important even in system-changing health promotion contexts. These theories directly focus on the individual but they also indirectly emphasize behavioural change by way of social influences and social norms. Slama (2005) believes that "health promotion is to enable people to realize and change the factors influencing health in order to progress their own health". Slama (2005) also suggested that "health promotion to reduce tobacco consumption comprises reorienting health services to include smoking information, cessation, and motivational counselling via all levels of smokers' contacts" (Slama, 2005).

"Health-promotion strategies that develop public awareness of the health-related diseases associated with tobacco use have been shown to encourage healthy lifestyles, reduce disability, and extend life expectancy" (Peters and Elster, 2002). Developing health promotion efforts by community-based organizations could encourage people to quit through promoting a smoke-free environment, legislation, creating social support to smokers as they attempt to quit, and providing appropriate services for treating addiction amongst low-income groups. These activities have been linked to positive results in smoking cessation in the UK (Owen, 2000), the US (McAfee et al., 1995), and Hong Kong (Abdullah et al., 2004). For example, in Australia a range of important health-promotion activities succeeded in reducing the overall rate of smoking in Australia from 31 percent in 1986 to 19 percent in 2007. However the greatest influence of these activities was in the major cities, while rural and remote areas need more support (Sweet, 2012).

"Health-promotion policies are considered key mechanisms of primary prevention and can be directed towards individuals, groups, communities, or society in general" (Peters and Elster, 2002). "However, unless health promotion policies are communicated efficiently by leaders and implemented by followers or stakeholders, it is unlikely that behavioural change will be achieved" (Fiore, 2000).

1.6.1 Health-behaviour change theories and related models

'Theories' are an organized set of statements or knowledge that help to analyse, predict, or explain a particular phenomenon (Naidoo and Wills, 2005). By considering the relationship between research and practice, health professionals are able to use the

theories of their discipline to support their practice, and experimental evidence can inform a better conception of the theoretical structure. In health topics too, theories can help to develop different stages of policies and programs, from the initial aims, objectives and needs assessment, through to the design, action, and evaluation of an intervention or policy initiative (Naidoo and Wills, 2005).

Multiple interactions between the environment, social groups, individual attitudes and beliefs, and psychological factors can shape human behaviour. For instance, DiClemente (2003) shows that there are numerous elements involved in the process of ending an addiction. These include personal factors such as impulsiveness and compulsion; impact of family (which can support the development of attitudes, expectancies and beliefs); interpersonal communication (which may include peer pressure); social support for the behaviour (which may include a social network that encourages or discourages an addictive behaviour); and social factors (such as government strategies) and subjective norms such as tobacco taxation or stigma for smoking (DiClemente, 2003).

Most health-behaviour change interventions implemented by health practitioners to produce positive health outcomes are based on behaviour-change theories and models ingrained in the social cognitive area of the brain. Health behaviours are too complex to be completely described by a single model or theory. Consequently, several models and theories have been developed to explain the predictors of health-behaviour change, each model with its strengths and limitations (Rhodes and Mark, 2012, Angus et al., 2013). Four common health-behaviour theories or models which have been used to study smoking cessation are explained below.

1.6.1.1 Health Belief Model (HBM)

"The Health Belief Model (HBM) was developed in the 1950's and is one of the most widely-used social cognition models". First described by Rosenstock (1966) and subsequently promoted by Becker, Haefner and Maiman (1977) and by Abraham and Sheeran, (2005), it seeks to explain why many people fail to participate in programs to detect or prevent diseases. Later, it was extended to assess what people do after a disease, as well as to explain compliance with medical regimens (Glanz et al., 2008).

This model is a 'value-expectancy' model which predicts health behaviour. It also predicts "an individual's likelihood of engaging in a behaviour" depending on the value

placed in a specific outcome from that behaviour (Becker, 1974). The HBM distinguishes the effects of three factors on healthy behaviour. They are individual factors (e.g. age, sex, educational level, and SES), modifiable psychological factors (e.g. beliefs, attitudes), and cues to action (e.g. the effects of "media campaigns, general practitioner advice, and symptoms" that prompt a specific behaviour). Among numerous influences, the HBM considers "those factors that are changeable and therefore can be targeted to impact health behaviours" (Dawel and Anstey, 2011). This model emphasizes two main factors which can shape behaviour. Firstly, to change behaviour an individual must feel personally threatened by a disease with serious adverse outcomes. Secondly, he/she must believe that the advantages of taking the suggested preventative behaviour will offset the perceived barriers and/or costs of the behaviour (Cappella et al., 2001).

The HBM consists of four main components (Glanz et al., 2008). They are, first, 'perceived susceptibility'; this refers to an individual's subjective perception about the risk of developing a particular disease. The second component is 'perceived severity' which shows an individual's feelings about the potential personal outcomes of the occurrence of an illness. This component covers broad domains of stimulation and includes both physical outcomes (such as pain, disability and death) and social consequences (such as effects on job and family life). The third component is 'perceived benefits', which are the beliefs an individual has regarding the effectiveness of the various available actions to reduce the threat of illness or disease, or the perceived health benefits of a particular behaviour. The fourth component is 'perceived barriers', these being the obstacles to a particular behaviour (Glanz et al., 2008). This model shows that individuals are likely to adopt a specific health behaviour if they believe they are susceptible to a particular disease (which they consider to be serious) and believe that the advantage of the action outweighs the costs (Abraham and Sheeran, 2005). The model contains two other variables which are 'cues to action' and 'health motivation'. Cues to action include a wide range of activities to take up an action, and can be internal (such as pain and other physical symptoms) or external (such as TV or radio advertisements). Becker (1974) pointed out that certain individuals may be predisposed to react to such cues because of the value they place on their health (Conner and Norman, 2005).

1.6.1.2 Theory of Reasoned Action (TRA)

Fishbein et al (1950) studied human actions and the influences that motivate individuals to take action. In 1967, the TRA was advanced to test the relationship between attitudes and behaviour. Glanz and Rimmer (1997) explained that TRA "...focuses on theoretical constructs concerned with individual motivational factors as determinants of the likelihood of performing a specified behaviour." The TRA explains that there is one core determinant to change a behaviour (Ajzen and Fishbein, 1980); that is, a person's intention to execute it. This theory also states that a person's intention to execute a behavioural change depends on two factors: the individual's attitude regarding the costs and benefits of the change, and the perceived subjective norms (i.e., the perceived social pressure to perform or avoid that behaviour) which affect him or her to implement the suggested behaviour (Cappella et al., 2001).

Attitudes are also based on two elements: behavioural beliefs, and evaluation of behavioural outcomes. 'Behavioural belief' refers to the beliefs that a given consequence will happen as a result of the behaviour, while the evaluation of behavioural outcomes focuses on the individual's perception of the personal positive or negative outcomes and their likelihood of occurrence. Subjective norms are also affected through two factors. First, 'normative beliefs' which reflect the influence of important referents on an individual, and second, 'motivation to comply' which refers to the likelihood an individual will comply with recommendations from a special referent (Glanz and Rimer, 1997).

Consequently, in order to change a particular behaviour it is first necessary to change the attitudes and subjective norms that impact the intention to perform that behaviour. Bledsoe (2006), in a study on smokers' intentions to quit smoking, realized that the TRA accounted for a large portion of the variance in intention to quit smoking and stage a change. Developing a person's perceived behavioural control over a specific behaviour should improve the chance of performing that behaviour (Bledsoe, 2006). It also needs to be considered that "changing one or more of the existing salient beliefs, presenting new salient beliefs, or changing the person's evaluation of the attitudes can change attitudes and subjective norms" (Aarts and Dijksterhuis, 2003).

1.6.1.3 'Stages of Change' Model

According to the trans-theoretical model (TTM), which incorporates a stage-based model of change (Morera et al., 1998), when a smoker seeks to quit smoking he/she needs to move via a series of stages (Munafò, 2003). They include 'pre-contemplation', a stage in which a smoker is not motivated to change smoking behaviour. 'Contemplation' is the next stage and entails a smoker thinking about quitting within the next six months. 'Preparation' is the stage in which a smoker evaluates resources and makes a plan for change. 'Action' consists of quitting and continues for six months or more. It is at this stage that most quitters relapse (DiClemente et al., 1991). It has been estimated that each smoker averages three to four cycles through these stages before being able to cease permanently (Munafò, 2003, General, 1990).

'Self-efficacy' is an individuals' ability to evaluate his/her capacity to abstain or quit smoking and it is an important predictor of behavioural change in TTM (Bandura, 1977, Prochaska and Velicer, 1997). Hence, knowing the level of self-efficacy that exists at each stage can help the process of behavioural change which happens in each phase, and this, too, assists the individual to move to a new phase. DiClemente (2003) believes that the role of self-efficacy during the action and maintenance stages of behavioural change is very important, though for the previous stages self-efficacy is based on "hopeful expectations or feelings of despair" (DiClemente, 2003). However, different people with similar skills, or one person implementing varying situations, may perform their skills ineffectively, capably, or remarkably according to the variability of their perceived self-efficacy (Bandura, 1977).

As West et al (2010) have noted, whenever a smoker finds that he/she is able to quit, the individual can evaluate how difficult the overall behavioural change will be and what level of attempt is needed to achieve and maintain a new behaviour. Based on TTM, and understanding individual motivation, it is possible to rapidly categorize individuals into a specific stage of change (Rollnick et al., 1992). Stage of change distribution helps the health professional to proceed with an intervention that is appropriate to a person's particular stage. Moreover, a tailored intervention can match an intervention to the relevant stage and so according to the TTM it is possible to help an individual progress from one stage to the next. The assumption is that the processes of change construct

based on TTM can be applied to a wide range of behaviours (Prochaska and Velicer, 1997).

1.6.1.4 Social Cognitive Theory (SCT)

Social Cognitive Theory (SCT) is one of the commonly-used theories to describe health-related behaviour (Bandura, 1986). Bandura (2004) explains that most models offer substantial concentration on the determinants of health behaviours, but how they change health habits is not clear. Instead, "social cognitive theory offers both predictors and principles on how to inform, enable, guide, and motivate people to adopt habits that promote health and reduce those that impair it" (Bandura, 2004). It explains that determinants such as behaviour, personal factors, and environmental influences are involved in an active and reciprocal manner to affect behaviour (Baranowski et al., 2002), and these three determinants impact each other simultaneously (Bandura, 1977). Environmental factors include both the physical environment (such as the climate) and social environment (such as family, friends and co-workers) (Glanz and Rimer, 1997).

SCT is a comprehensive theory and it has been applied widely to health-behaviour research (McDonald et al., 2003, Langlois et al., 1999). For example, in studies which were related to individual smoking status McDonald et al (2003) found that implementing an intervention based on SCT had sufficient validity to be recommended for future cessation programs. He found that cognitive-behavioural interventions can significantly increase smoking cessation rates (McDonald et al., 2003).

Self-efficacy is a main determinant in SCT for predicting and influencing health behaviour change. Self-efficacy is defined as "the conviction that one can successfully execute the behaviour required to produce the outcomes" (Glanz and Rimer, 1997). The role of self-efficacy to change many health behaviours (such as smoking, physical exercise, nutrition, and weight control) has been noted earlier (Schwarzer and Fuchs, 1995, Allen, 2004). SCT states that in order to initiate a health-behaviour change, positive expectations of the outcomes are likely to arise from making the behavioural change.

Bandura (1997) asserts that perceived personal efficacy plays a critical role in each individual's life (Bandura, 1977). Self-efficacy depends on the perception of what a

person can do with his/her skills, and not necessarily with the skills that one possesses (Bandura, 1986). Enabling people to start a positive behavioural change via self-efficacy and health behaviour is a more challenging task than merely providing health information (Bandura, 2004). Self-efficacy is not merely used in SCT; it is also associated with a number of other addictive health behaviour theories including the TTM, HBM, and TRA. However, among these models only the TTM coincides with social cognitive theory's use of self-efficacy as a predictor of behavioural change (Rollins, 2008). People cognitively process the outcomes of a behavioural action via self-experience, or by way of vicarious or symbolic observation.(Bandura, 1977, Baranowski et al., 2002).

1.6.2 Older smokers and readiness to quit

For the many reasons cited above, older smokers are often more willing to continue smoking and are less desirous to quit. The more motivated smokers may have already quit, so the fact that smokers age 50 and over have lower levels of intention to quit may reflect that fact that these are the smokers who are left. The CDC reported that smokers aged 50 and over have lower levels of intention to quit smoking compared with those younger than 50 (Novello, 1990). The same result has been found when smokers aged 55 and over were compared with those aged less than 55 (Lichtenstein et al., 1994). If older smokers are asked to quit smoking they usually prefer to quit later not sooner. For example, a study in which three different age groups were questioned about smoking cessation, the results showed that the oldest smokers (aged over 50) mentioned that they planned to quit within the next three months (Kviz et al., 1994). In contrast, some studies found that older smokers were happy to quit smoking even when they receive a short advice from a doctor (Orleans et al., 1994, Vetter and Ford, 1990).

The different expressions of motivations and intent to quit among older smokers show that this cohort requires more encouragement for quitting. The current models of smoking cessation assume that to motivate and support smokers to quit entails advanced planning and more assessment of smokers' situations. This assumption has been shaped based on theories of behavioural change such as the Stages of Change concept, which is based on a smoker's readiness to attempt to quit (Larabie, 2005). However some studies have shown that there is not any association between age and stages of change (Etter et al., 1997). This is illustrated by Velicer et al. (1995) who found that older smokers can

report different stages of smoking cessation from pre-contemplation to preparation (Velicer et al., 1995).

In regard to smoking cessation, the perceived attributions may be different based on the stage-of-change model. Smokers in higher stages showed more perceived symptoms than those in the lower stages of change. For example, in a study by Rohren et al. (1994) it was reported that smokers in the Action stage of readiness reported higher current conditions which they perceived to be worsened by smoking than did those in the Contemplation stage of readiness. On the other hand, smokers who currently had a disease which they perceived to be worsened by smoking had experienced six months more of smoking cessation than did other smokers (Rohren et al., 1994). Smokers who are in a higher degree of readiness to quit smoking are more motivated (Wong and Cappella, 2009), and in a study by Twardella et al. (2006) it was noted that smokers who had stronger smoking-related symptoms had higher readiness to quit (Twardella et al., 2006).

By considering the different stages of readiness to quit among older smokers, and also their sensitivity to perceived disease symptoms, it is better to design an intervention program to quit based on their smoking status. An anti-smoking intervention program that matches materials to a smoker's stage of readiness to change has the potential for significant influence by basing the intervention on the needs and characteristics of smokers at each stage (Velicer and DiClement, 1993, Doolan and Froelicher, 2008). Tailored interventions "particularly need to address the underestimation by older smokers of the risks and real damage caused by smoking, the cognitive factors" that protect their smoking habit, the perceived barriers to cessation, and the misconceptions that there are no advantages to cessation (Yong et al., 2005).

1.7 Rational and significance of the study

1.7.1 Background to the problem among Greek-Australian migrants

"Despite the decrease in the prevalence of smoking in the Australian population over the past few decades, smoking rates for some non-English speaking (NES) groups remain high"(Culpin et al., 1996b). The Greek community is the most established migrant community in Australia. Greeks are an important ethnic group and Greek is the second-most-common language spoken at home in Australia. In comparison to the

different languages used in Australia, Greek is the fourth most frequently spoken language. Both Greek migrants and their Australian-born children are willing to protect their ethnic identity by speaking Greek in the home, protecting Greek religious and social beliefs, and marrying within the same community (Brown et al., 1996).

There is a paucity of research on Greek-Australian smoking status and this is more apparent when researching older Greek-Australians. No recent data are available, but older data indicate that smoking is very common among older Greeks. For example, a previous study showing a higher smoking rate among Greek-Australians compared to other ethnic groups. In 1998, a household survey in the Marrickville Local Government Area (LGA) in Sydney revealed that smoking among Greek males (43 percent smoked) was significantly higher than for the general population (23 percent). Other studies have reported similar findings in smoking prevalence among Greek-born males (Culpin et al., 1996a). The smoking rate among elderly Greek-Australians is also higher than the average older Australian. It has been estimated that 18.4 percent of Greek-born Australians over age 70 are regular smokers whereas the figure for older Australians is 12 percent (Kouris-Blazos, 2002). Carroll, Katz & Carvill (1999) undertook a telephone survey in 1998 to test whether mainstream anti-tobacco advertising in Australia had impacted people aged between 18 and 40 years from non-English speaking backgrounds (NESB): in particular they focused on speakers of Greek (n=130), Vietnamese (n=130), Cantonese (n=131) and Arabic (n=131). Results indicated that the advertising campaign had less impact on NESB (n = 522) participants than the general population (n = 2,981). Other results of the survey were lower levels of awareness of illnesses linked to smoking (80 v 93 percent), and proportionally more NESB participants indicated an intention to quit in the next six months (53 percent and 39 percent) or in the next 30 days (22 percent and 18 percent). The Greek participants were predominantly males (65 percent) aged 18 to 29 years (52 percent) and 83 percent had been born in Australia. Greek and Arab participants were less likely to agree that smoking had done damage to their bodies (45 percent and 45 percent) than were Cantonese and Vietnamese speakers (56 percent and 55 percent). All NESB groups had limited knowledge of the links between smoking and heart disease. Greek smokers indicated the fewest number of those intending to quit in the next six months (44 percent), or 30 days (13 percent), and tended to be in the pre-contemplation stage of quitting (56 percent).

Greek-Australians represent a large and important component of the population and their smoking behaviour is particularly relevant to the national goal of reducing and eliminating smoking. An analysis of all the factors that influence their behaviour can greatly enhance community education programs in the future, and the research project reported in this thesis sheds valuable data on the vexed issue of smoking.

1.7.2 Statement of the Problem

The general problem addressed in this thesis was the apparent lack of knowledge by older Greek-Australian smokers about advantages of smoking cessation and disadvantages of continuing smoking. The specific problem was that little was known about the current behavioural interventions and their effectiveness on smoking cessation or reducing smoking among older Greek-Australian smokers. The apparent lack of awareness of the effects of smoking, attitudes to smoking, and intentions and self-efficacy of older Greek-Australian smokers were the issues explored in this project. Smoking has been recognized as a social activity (Poland et al., 2006), so it will be affected by social factors. For example, the degree of trust in other people and also level of social participation can influence when someone starts smoking and also when they quit the habit. This issue is critical among older people and especially those who have migrated to a foreign country. In addition, the issues of social capital and personal relationships affect patterns of smoking and the complex issues that influence success or failure in quitting.

1.7.3 Significance of the Study

As noted above, smokers of all ages can benefit by quitting, but many older Greek-Australians continue to smoke. This enquiry explores all the factors that influence their behaviour, this being the first study of the issue. High rates of smoking within this ethnic group, and lack of knowledge about the harms of smoking and benefits of smoking cessation and about the elements which affect their smoking behaviour, make this research a matter of high priority – and one which is pertinent to the health-promotion work of the Australian government.

1.7.4 Research aims and objectives

This thesis includes three different types of study (a systematic review, a qualitative study, and a quantitative study) which are internally linked and lead to the proposition

of an integrated model (I-Model) which could assist older Greek-Australian smokers to quit the habit. A systematic review was undertaken to better understand the nature of anti-smoking interventions in the general populace, and also among NESBs and older people.

Following the systematic review a qualitative study was undertaken to explore drivers of smoking and cessation in older Greeks living in Australia; this was designed to assess the participants' knowledge of the harmful effects of smoking and of the benefits of quitting, and it aimed to identify attitudes to smoking amongst older Greek-Australians and Anglo-Australians aged 50 and over. The qualitative study also aimed to test the hypothesis that smoking knowledge, attitudes, and behaviour in older people in South Australia vary according to ethnic background.

The objectives of this study were to:

1- Examine the socio-demographic composition of the population.

2- Compare sub-groups' knowledge of the harmful effects of smoking and of the benefits of quitting, and attitudes to smoking.

3- Compare the two sub-groups in terms of their smoking characteristics.

4- Compare the two sub-groups in regard to their stated intention to quit, readiness to quit based on stage of change, and level of self-efficacy.

5- Compare the sub-groups in regard to their social capital.

6- Identify significant predictors (if any) of knowledge in relation to the harmful effects of smoking or benefits of quitting smoking, and attitudes to smoking in different groups.

1.8 Overview of research aims, questions and methodology

1.8.1 Research questions and hypotheses

The research questions which form the focus of this research were:

1. What knowledge and attitudes regarding smoking are held by Greek-Australian smokers aged 50 and over?
2. What are smoking experiences of Greek-Australian smokers aged 50 and over?

To provide a framework for the research project the following hypotheses were applied:

- There is a significant difference in sub-groups' knowledge about the harmful effects of smoking or benefits of quitting smoking, attitude towards smoking, intention to quit smoking, and self-efficacy.

- There is a significant difference between the two smoking sub-groups in terms of their smoking characteristics.
- There is a significant difference between the two smoking sub-groups with their stated intention to quit, readiness to quit smoking based on stage of change, and self-efficacy.
- There is a significant difference between the sub-groups in social capital.
- There is a significant difference between subgroups in predictors of knowledge in relation to the harmful effects of smoking or benefits of quitting smoking, and attitude towards smoking, and also between two smoking subgroups in smoking behaviour, intention to quit smoking, and self-efficacy.

Addressing these issues will help fill the gap in knowledge which is needed for the future intervention.

Chapter Two contains a review of the literature, with particular emphasis on the behavioural interventions that have been used with minority groups.

Chapter three details the qualitative study conducted among older Greek-Australian smokers.

Chapter four provides the results of the study conducted among Greek-Australian and Anglo-Australian smokers and non-smokers. The survey included four sub-groups: Greek-Australian smokers (GSs); Greek-Australian non-smokers (GNSs); Anglo-Australian smokers (ASs); and Anglo-Australian non-smokers (ANSs).

1.8.2 Overview of methodology

In the systematic review a focus was on Randomized Controlled Trials (RCTs) and Quasi-RCTs in which the specific effects of behavioural interventions on smoking were examined. Papers were evaluated for inclusion and then data were extracted and interpreted. In a qualitative study, a 'snowball' sampling technique was used to identify twenty current smokers (12 males and eight females) aged 50 or older. Responses were collected using a semi-structured, face-to-face interview undertaken in Greek with the assistance of a Greek translator. The audio-taped interviews were translated and then analysed using content-analysis. In the quantitative study, a convenience sampling method was used to collect data from a cross-sectional survey of smokers and non-smokers. The data were collected over six months between 27th October 2012 and April

30, 2013 and they were designed to obtain information about knowledge of the health impacts of smoking and attitudes to smoking and quitting amongst older Greek-Australians and non-Greek Australians. Four sub-groups were targeted to test possible differences in predictors of behaviour, knowledge and attitudes. Overall, 387 people (106 ANS, 82 AS, 103 GNS, and 96 GS) participated in this study.

1.9 Structure of the thesis

This thesis consists of five chapters including this introductory chapter. In Chapter One the general introduction and rationale for the study has been provided. It also includes the background which is followed by the significance and outline of the study.

Chapter Two presents a systematic review of articles published between 1990 and 2010 (Study One). The review focused on Randomized Controlled Trials (RCTs) and Quasi-RCTs in which the specific effects of behavioural interventions on smoking were examined. The results of a descriptive analysis of the extracted data along with a discussion are presented.

Chapter Three presents a qualitative study involving 20 Greeks who currently smoke; it provides information on older Greek-Australians' perspectives and understandings about their reasons for smoking and their attitudes to quitting (Study Two). The results of the content analysis of the data are presented and the results discussed.

Chapter Four explains a cross-sectional survey of smokers and non-smokers (Study Three). This chapter provides information about participants' knowledge of the health impacts of smoking, and the attitudes to smoking and quitting held by older Greek-Australians and older Anglo-Australians. The research methodology, the results, and discussion are explained.

Lastly, the findings of these three studies are discussed in Chapter Five which also contains a synthesis of the results which led to an integrated model (I-Model). Implication, limitations, and recommendations for future research are provided (Figure 1).

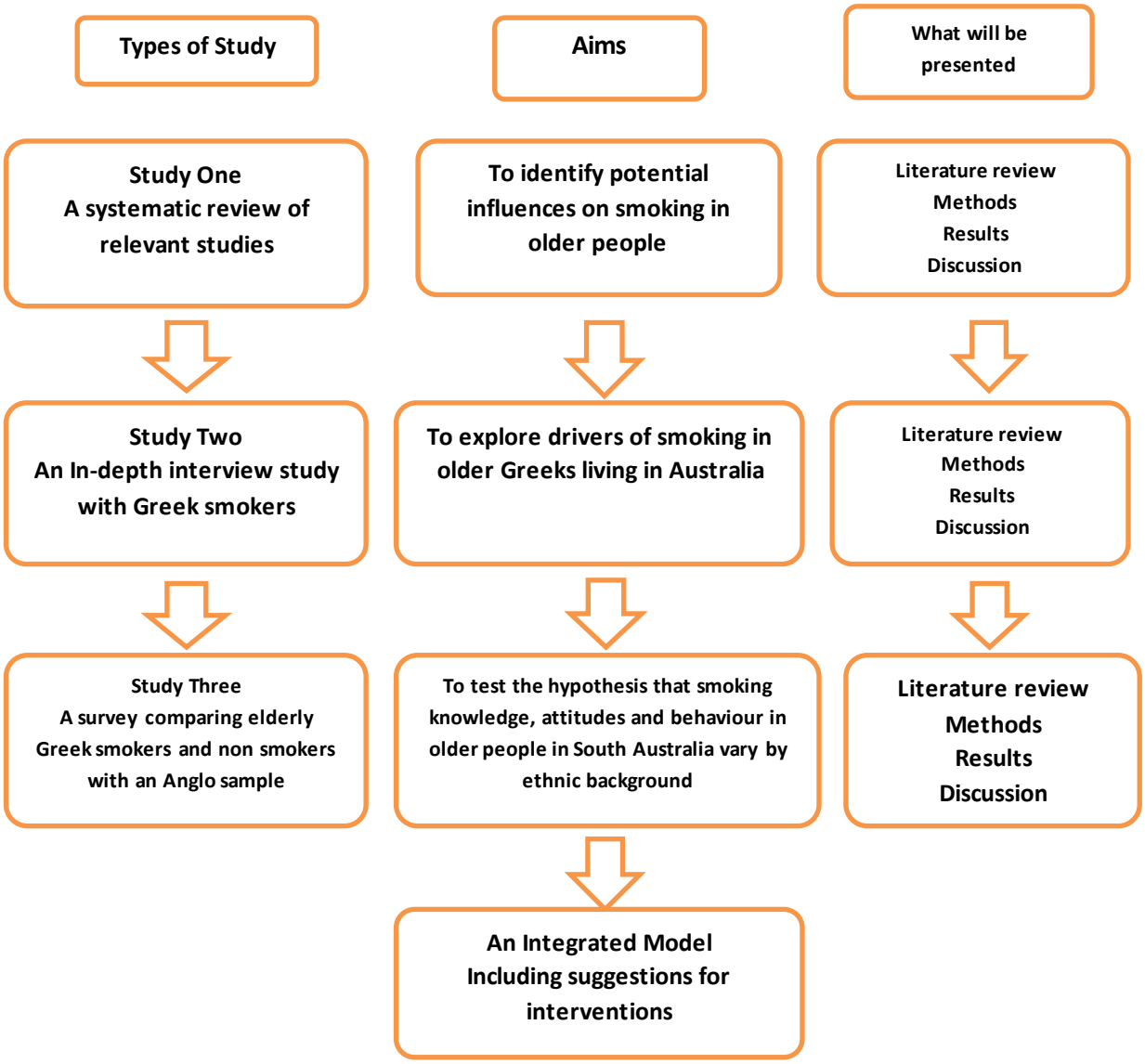

Figure 1: Structure of the study

Chapter Two: Smoking Cessation Based on Behavioural Interventions: A Systematic Review

Only a few previous research investigations have examined the effectiveness of behavioural interventions that have targeted older smokers (Rimer et al., 1994, Ossip-Klein et al., 1997), however interest is this question has increased in recent years (Phillips, 2012, Rowa-Dewar and Ritchie, 2010). "There are a number of established aids to smoking cessation, including a range of pharmacotherapies" [such as nicotine replacement therapy (NRT), Bupropin, and Varenicline] and behavioural approaches (such as group or individual counselling, and self-help materials). In this chapter all behavioural interventions used to help smokers to quit will be assessed systematically, and then selected data will be analysed based on the aims of this study, which is concerned with older smokers and ethnicity.

"Behavioural interventions are defined as verbal instructions aimed at modifying health-related behaviours, are commonly used to encourage smoking cessation" (Mottillo et al., 2009). In this review, a broad definition of 'behavioural intervention' is used and it encompasses a range of non-pharmacologic activities delivered directly to smokers. To examine this issue this chapter reviews a wide range of literature on the subject, and in particular it appraises the results of randomized controlled trials (RCTs) and quasi-randomized controlled trials (QRCTs) on smoking cessation. The review addresses gaps in the literature relating to smoking cessation interventions based on behavioural methods among older smokers.

The chapter consists of four sections. Current behavioural intervention methods are described in the first section of the review as we seek to identify a knowledge gap in the literature about behavioural intervention methods among older smokers. The methodology of the systematic review will be discussed in the second section. In section three the results of the research articles which meet the inclusion and exclusion criteria will be presented. Section four compares the findings of the current study with those of other relevant studies.

2.1 Smoking-cessation intervention methods

Current smoking cessation interventions fall into two broad categories; pharmacological and non-pharmacological/behavioural therapies. The former focus on nicotine replacement therapy (NRT), the latter apply non-NRT methods (such as the use of Bupropion and Varenicline) as well as behaviour modification.

Non-pharmacological or behavioural interventions include a wide variety of methods to support smokers to quit without the use of drugs or medications. Many types of non-pharmacological applications have been used; these are usually categorized according to the number of people who receive them, intensity, time of delivery, the person who delivers them, or the location of the intervention. In one review these behavioural methods have been classified as individual interventions, self-help interventions, telephone counselling, and group interventions (Mottillo et al., 2009). Another review classifies such interventions as 'minimal', 'brief', and 'intensive' (Naidoo, 2004). Other researchers have described proactive methods of smoking cessation or the resources provided for smokers who seek help to quit, including computer-tailored letters or referrals of smokers to Quitline (Lin, 2009).

The results of many studies confirm that a number of smoking cessation methods can be effective, though many people prefer to quit without any form of cessation supports (Key et al., 2004, Mason et al., 2012). However, the chances of quitting increases by between 1.4 to 2.1 times for those who seek intervention-support compared with those who do not receive any assistance (Whittaker, 2011). In general, intensive methods of smoking cessation tend to achieve higher rates of abstinence (Schnoll et al., 2003) and evidence indicates that intensive methods may increase the potential success rate for quitting by up to four times when behavioural methods are combined with medications (Carrozzi et al., 2008).

One of the most important factors that help smokers to quit is their willingness to change their behaviour, the most effective interventions being based on both physical and psychological aspects of dependence (Elfeddali et al., 2012). In older smokers, previous studies suggest that more intensive methods, which combine both behavioural and pharmacotherapy methods, lead to higher success rates than when any one method

is used in isolation (Phillips, 2012, Stead and Lancaster, 2012b). So that, after a brief explanation of pharmacotherapies methods, different types of behavioural methods of quitting smoking will be introduced in this part.

2.1.1 Pharmacotherapies

It has been shown that pharmaceutical therapies can lead to quitting success rates about double those of placebo groups (Eisenberg et al., 2008). There are now numerous types of pharmacotherapy that are proving effective for smoking cessation (Anderson et al., 2002, Rigotti, 2002), and Anderson et al (2002) assert that they should be used by all smokers attempting to quit. The most common forms of pharmacotherapy are related to 'first line' medications which include NRT, bupropion sustained-release tablets, and varenicline tablets (Cataldo, 2007).

2.1.1.1 Nicotine replacement therapy

Nicotine replacement therapy (NRT) is a common method of helping smokers (Fiore, 2008) and can increase the chances of smoking cessation by 50-100 percent (Etter and Stapleton, 2006, Stead et al., 2008a). NRT replaces the effects of nicotine from cigarettes by stimulating the receptors of the nicotinic in the brain to release dopamine (Tiili and Hirvonen, 2013). There are many ways to apply the nicotine, though the most effective is the transdermic method which entails the use of patches (Jorenby et al., 1999). Moreover, patches and gum used together are even more effective - especially in response to cravings or stressful situations (McNeill et al., 2001). The results of other studies have confirmed that if these two techniques are used together their effect on reducing nicotine withdrawal symptoms are higher than either treatment alone (Fagerström et al., 1993). A systematic review of 132 studies found that the pooled odds ratio (OR) of cessation for any form of NRT compared to a control was 1.58 (95% CI: 1.50 to 1.66). This result was higher than each type of NRT considered separately. For example, this value was lowest (1.43) for nicotine gum and highest (2.02) for the nasal spray (95% CI: 1.33 to 1.53 and 1.49 to 3.73 respectively) (Stead et al., 2008b). Because NRT has been known as a safe and effective pharmacotherapy, and its side-effects are rare, it can be recommended to older smokers (Cataldo, 2007). NRT is useful as an intervention for older smokers who suffer from high levels of anxiety if it is applied with structured personal support (Tait et al., 2007).

2.1.1.2 Non-nicotine pharmacotherapies

As smoking has long been regarded as a way of dealing with depression it has been assumed that there may be a role for antidepressant drugs in quitting. The reasons for using antidepressants to aid quitting include the need to deal with deepening depression that may accompany abstinence, and the need to deal with depression that may arise from relapse (Cryan et al., 2003). The usefulness of antidepressants has been confirmed in several clinical trials, and it has been shown that such medications are more effective than a placebo; particularly effective are bupropion and nortriptyline (Haggsträm et al., 2006).

2.1.1.2.1 Bupropion

Bupropion as a first-line non-nicotine replacement therapy for treating nicotine dependence has been approved by the U.S. Food and Drug Administration (FDA). This antidepressant agent works through the blocking of norepinephrine and receptors (Hurt et al., 1997). Bupropion roughly doubles the likelihood of successful smoking cessation than a placebo (Croghan et al., 2007). For example, in a review of 31 trials which compared the effectiveness of smoking cessation among smokers who received bupropion and a placebo, the results of the review confirmed that bupropion produced a pooled OR of 1.94 (95% CI 1.72 to 2.19) (Hughes et al., 2007).

2.1.1.2.2 Nortriptyline

Nortriptyline functions as an anti-depressant which alleviates withdrawal symptoms of smoking cessation via a noradrenergic mechanism (McRobbie et al., 2005). Numerous review articles have found nortriptyline is effective for smoking cessation (George and O'Malley, 2004), but compared with bupropion it produces more side effects so that it is considered a second-line treatment for tobacco dependence (Stead et al., 2012). Moreover, a review reported that compared with a placebo, smokers who received nortriptyline showed significant rates of smoking cessation (OR 2.34, 95% CI: 1.61 to 3.41) (Hughes et al., 2007).

2.1.1.2.3 Varenicline

Varenicline, approved by the FDA in 2006, was the first new pharmacotherapy to aid smoking cessation since the approval of bupropion in 1996 (Williams et al., 2007). Varenicline blocks nicotinic receptors in the brain and prevents nicotine from doing so, this mechanism helping reduce both the craving for cigarettes and withdrawal

symptoms during cessation. The effectiveness of varenicline in smoking cessation has been demonstrated in different clinical trials which demonstrated that varenicline is more effective than a placebo as an aid to quitting (Gonzales et al., 2006). Indeed, a 12-week treatment by varenicline found it to be more effective than bupropion and a placebo (Jorenby et al., 2006). Additionally, the result of many studies have shown that at the end of treatment the odds of cessation are roughly quadrupled compared with placebo, and nearly tripled at one year follow-up (Tonstad et al., 2006).

2.1.2 Justification for behavioural interventions for smoking cessation

Behavioural methods of smoking cessation are an important aspect of treatment for tobacco dependence. There are different definitions of behavioural intervention for smoking cessation: it can comprise verbal instructions to smokers to encourage and support them when quitting (Mottillo et al., 2009): and it can be an important non-pharmacologic treatment delivered directly to individual smokers (Brandon, 2001). Behavioural interventions generally apply a variety of theories of behavioural change in the form of advice, discussion, encouragement, and other activities to support smokers to quit. These theories include the Trans-theoretical model (Aveyard et al., 2009) the Health-Belief Model (Kim and Bae, 2011), and Social Cognitive/Learning Theory (Bricker et al., 2010b). All of these behavioural theories focus on factors which are important to change smokers behaviour; factors such as motivation, self-efficacy, subjective norms, attitudes, cues to action, perceived barriers, and benefits to change (Roberts et al.). Using behavioural interventions is important for several reasons. They are commonly delivered in health-care centres, they address complex behaviours, and they actively engage patients in self-management activities to create healthy behaviour (Whitlock et al., 2002). Another consideration is that they have been shown to be cost-effective ways of protecting life and decreasing ill-health (Hiscock et al., 2013). Indeed, the health improvements which flow from quitting benefit both the individual and society. For example, it enhances the health status of smokers, reduces medical costs, and improves productivity in the workplace (Stolz et al., 2013). Behavioural intervention methods are more effective for encouraging smokers in their repeated attempts to quit following initial intervention. These methods will have a greater chance for improving long-term maintenance especially if they are provided in combination with drug therapies. Using behavioural interventions together with pharmacological

treatments measurably increases success rates, and more intensive intervention is usually associated with higher cessation rates (Stead and Lancaster, 2012a).

2.1.2.1 Smoking interventions by types of counselling

There are different categories of behavioural interventions to aid quitting. As explained below, different types of behavioural intervention may be conducted in different places and by different people. The most common and readily-available behavioural interventions are explained here.

2.1.2.1.1 Clinical practice guidelines for smoking cessation

Well-established clinical-practice guidelines (CPGs) are now available for aiding smokers to quit (Okuyemi et al., 2006). CPGs provide recommendations for clinicians to evaluate and record the smoking status of patients, informing them about the advantages of smoking cessation, assessment of smokers' readiness to quit, planning to support them based on their motivation, providing support for smokers, prescribing pharmacotherapies, and finally referring them to smoking-cessation support services such as Quitline (Rigotti, 2002, Alzoubi et al., 2010). In Australia there is a guideline entitled *Smoking Cessation Guidelines for Australian General Practice* (Zwar et al., 2005). Many documents confirm that smoking cessation advice by health professionals is effective (Stead et al., 2008a, Schauer et al., 2013). There is the opportunity to support smokers in primary-care centres because for example, 81 percent of Australians visit a GP at least once per year (ABS, 2012), and smokers have even more visits . On the other hand, smoking cessation advice by GPs is provided very briefly, generally in less than one minute (Fiore et al., 2000). For example, one Cochrane review examined the evidence from 34 trials involving approximately 27,000 smokers: in the results of 16 trials, in which brief advice was provided to smokers, the pooled data revealed a small but significant increase in the odds of quitting at six months when compared with a group which had not received any advice (OR 1.69, 95% CI 1.45-1.98). This result showed that following the brief advice from a GP there was an absolute difference between two groups in the cessation rate of about 2.5 percent. If the brief advice is combined with other effective interventions, such as pharmacotherapy, the effectiveness increases even further (Colby et al., 2012, Zwar et al., 2006). When the results of brief advice have been compared with intensive advice, the results of 13 trials showed a small but significant advantage of more intensive advice (OR 1.44, 95% CI 1.23, 1.68)

(Silagy and Stead, 2004). In another meta-analysis based on the US Clinical Practice Guideline, the results showed that delivering brief counselling (up to three minutes) by GPs can produce an abstinence rate of 13.4 percent at six months (2.5 percent higher than controls) (Fiore et al., 2000).

2.1.2.1.2 Smoking cessation interventions based on 5 A's construct

This model was initially recommended by Fiore et al (2000) in the U.S. Public Health Service (USPHS) clinical practice guideline entitled *Treating Tobacco Use and Dependence* for brief smoking-cessation interventions (Fiore et al., 2000). The 5 A model was developed for physicians to increase their range of counselling methods when helping their patients to quit. The model supports physicians through the steps in behaviour change counselling and each 'A' constitutes a brief behavioural intervention strategy (Glasgow et al., 2003). The 5 A's construct is really intended for use with patients willing to quit. The strategies are designed to be brief, needing only about three minutes of clinician time (Cataldo, 2007). The first 'A' entails asking; that is, asking patients about their smoking status at each visit. The documents showed that this stage significantly increases the rate of clinician intervention (Tønnesen, 2004). The second A refers to advice; this entails recommendations which clinicians deliver to smokers. At this stage the importance and benefits of smoking cessation will be explained. The third A is assess; that is, a clinician seeks to assess a smokers' willingness to try to stop smoking. The fourth A, assist, contains the use of counselling, pharmacotherapy, and referrals if needed. The fifth A, arrange, provides for follow-up contact and schedules follow-up contacts with smokers (Rigotti et al., 2009). To increase motivation for smokers who are not ready to quit, some additional strategies might be needed. This additional strategy can be conducted through motivational interviewing that focuses on the ''5 R's''; relevance, risks, rewards, roadblocks, repetition (Hanioka et al., 2012). Use of the 5 A's construct is not limited to smoking cessation advice and it has been used for other risky and harmful behaviours such as alcohol consumption, sedentary lifestyle, and obesity, and it is particularly useful in primary health-care settings (Whitlock et al., 2002).

2.1.2.1.3 Brief interventions for smoking cessation

Based on the work of the Cochrane Tobacco Addiction Group, 'brief advice' for smoking cessation is defined as "verbal instructions to stop smoking with or without

added information about the harmful effects of smoking" (Coleman, 2004). Brief advice is a form of intervention that is usually delivered by a GP and it results in about 1 to 3 percent of smokers quitting for at least six months (West et al., 2000). The results of many studies into brief-advice interventions confirm that this kind of intervention is cost-effective and generally increases smokers' motivation to cease (Ong and Glantz, 2005, Tønnesen, 2004, Etter, 2010). Because patients trust and respect their GP, this kind of advice provides an opportunity for the GP to help smokers (Coleman, 2004). Although a brief-advice intervention can be provided by a clinician, these methods are also appropriate for use by dentists, pharmacists, and primary-care providers (Cofta-Woerpel et al., 2007). The strategies are brief and if there was not an exceptional situation each smoker should be advised to quit at each visit; smokers should be asked by a wide range of clinicians about how interested they are in ceasing (Fiore, 2000). However, there is not agreement among clinicians about the necessity of providing anti-smoking advice to smokers on each visit. Some believe that smoking cessation advice should be delivered periodically (Coleman, 2001), others consider that delivering brief advice to asymptomatic smokers might create a strong negative reinforcement for quitting (Senore et al., 1998); but most acknowledge that advice should be given at every session (McEwen et al., 2001). There are different approaches to delivering advice to smokers about quitting. It can be effectively delivered in a face-to-face encounter, by telephone, or in a personal or group setting, and it may be brief or intensive (Fiore, 2000). The results of previous research suggest that brief-advice interventions increase rates of smoking cessation (Tønnesen, 2004). For example, a Cochrane review of 16 trials consisting of over 28,000 smokers compared the effects of brief-advice interventions with control groups which received only routine advice or no advice. The results were a small but statistically significant increase in the odds of quitting (OR 1.69, 95% CI 1.45-1.98) in brief-advice groups than in control groups (Silagy and Stead, 2004).

2.1.2.1.4 Telephone counselling intervention for smoking cessation

Nowadays, telephone counselling has become a popular medium to support smokers to quit, and it appears to be effective (Solomon et al., 2005). Telephone counselling can be used in different situations. It can be used in planning a quit attempt, and for preventing relapse when a smoker commences the process of quitting (Brandon et al., 2000). Telephone counselling as an indirect method can be compared with intensive face-to-

face interventions, but the latter have proved to be more effective. Telephone counselling is inexpensive, an easy form of contact, and it has the extra advantage of providing a means of helping large numbers of smokers to quit (Borland et al., 2006a). Telephone counselling can be applied as a separate method, it may be used as a substitute for face-to-face contact through combining with self-help interventions and pharmacotherapy, or as a supplement to face-to-face counselling (Brandon et al., 2000). There are two common telephone counselling methods; reactive and proactive. In the latter the first calls are initiated by the counsellor (Lichtenstein et al., 1996b). For smokers who are interested in quitting this kind of counselling is effective, and there is a direct relationship between the number of calls and the degree of success in quitting (Stead et al., 2006). The effect of frequent telephone contacts can be more effective than other low-intensity interventions such as self-help materials, brief advice, or pharmacotherapy alone. The likelihood of smoking cessation after the first contact will be increased by 25-50 percent, and these figures might even be higher if the smoker receives one more additional call (Roberts et al., 2013).

In reactive telephone counselling some specific services such as helplines or hotlines are provided (Zhu et al., 2002). The results of a number of studies have shown a significant benefit from reactive counselling. For instance, a review of 13 randomized trials concluded that most showed significant short-term (3 to 6 month) effects between intervention and control groups, and four found substantial long-term differences. The result of a meta-analysis of proactive studies showed a significant increase in cessation rates in the intervention group in a short-term (OR=1. 34, 95% CI 1.19-1.51) and long-term follow up (RR=1.20, 955% CI 1.06-137) compared with control conditions (Lichtenstein et al., 1996a). In another Cochrane review which assessed 65 trials, quit rates were higher in the intervention groups which received multiple sessions of proactive counselling (RR= 1.37, 95% CI 1.26-1.50). The results also showed that telephone counselling not initiated by calls to helplines also increased cessation (RR=1.29, 95% CI 1.20 to 1.38) (Stead et al., 2006).

2.1.2.1.5 Internet interventions

The internet, too, has become an accepted method to deliver behaviour-changing interventions (Graham et al., 2007). Using the internet to deliver smoking cessation supports has many potential benefits including its negligible cost, its ease of

accessibility, and its broad reach into the community (Swartz et al., 2006). The internet user will find it convenient, and he/she can remain anonymous. The internet has a powerful role in influencing young peoples' culture, and it may therefore be considered as an appropriate and effective way of supporting young people who wish to quit. Web-based programs can be used either as an adjunct to pharmacotherapy or as a stand-alone method (Graham et al., 2007). Web-based interventions are often tailored for the circumstances of users and it has been shown that tailored programs have significant advantages over generalized non-tailored programs (Strecher et al., 2005). Although few research projects have sought to measure the effectiveness of web-based interventions, nevertheless they have reported that the programs have been quite successful. For example, a review of 20 showed a significant effect on "sustained abstinence at 12 months compared to a self-help control (RR, 2.94, 95% CI, 1.49-5.81) or tested as an adjunct to NRT (RR, 1.71, 95% CI, 1.10-2.66)" (Civljak et al., 2010). In another review Myung (2009) examined nine trials which used internet-based interventions and 13 computer-based interventions for adult and adolescent smokers. The results showed a similar significant effect size for both web-based interventions (RR, 1.40; 95% CI, 1.13-1.72) and a computer-based intervention (RR, 1.48; 95% CI, 1.25-1.76). Based on these results the researchers suggested using these two methods of quitting for adult smokers, but not for adolescent smokers (Myung et al., 2009). It has also been reported that tailored web-based anti-smoking interventions have been more effective than non-tailored ones. A review of 11 trials by Shahab and McEwen (2009) found that a tailored and interactive web-based intervention resulted in abstinence rates that were markedly higher than controls which used booklets or emails (RR, 1.8; 95% CI, 1.4–2.3) and the abstinence rate increased by 17 percent in six months (95% CI, 12–21%).

2.1.2.1.6 Self-help interventions

'Self-help intervention' has been defined as any manual or program (such as written material, audio- or videotapes, and computer programmes) which support smokers to quit without receiving any personal assistance from health professionals, counsellors, or group supports. In this intensive behavioural method a smoker receives anti-smoking advice without the need to present for treatment (Curry, 1993). Such self-help interventions enable many smokers to access smoking-cessation advice at the same time and they do not include other behavioural methods such as face-to-face or telephone

counselling. The effectiveness of self-help interventions are noticeably enhanced by tailoring the materials to each smoker's circumstances and characteristics. The results of a review of 11 trials showed that there was a significantly higher benefit from self-help materials sent by post than from the control groups that did not receive any information (OR, 1.24, 95% CI, 1.07-1.45). The result of the review also showed an insignificant effect of self-help materials which were delivered as an adjunct to direct advice from a health practitioner or as a supplement to NRT (McNeill et al., 2001). In a Cochrane review the effect of self-help materials on quitting were evaluated. It assessed 12 studies, the results showing a significantly higher pooled effect from self-help materials in the intervention group than from the control group which did not receive any advice (RR, 1.21; 95% CI, 1.05-1.39). When the effects of tailored self-help materials were measured by a meta-analysis of 25 trials the results showed that tailored materials are more effective than standard materials (RR, 1.31; 95% CI, 1.20-1.42, I^2 = 19%) (Lancaster and Stead, 2005b).

2.1.2.1.7 Group interventions

Group interventions are proving to be even more effective than methods which entail individual contact; however both these intensive methods increase the chances of quitting (Stead and Lancaster, 2005, Lancaster and Stead, 2005a). A group-based intervention is an intensive method which is usually offered to 20 to 25 smokers simultaneously (Coleman, 2004). This kind of intervention supports people to change their behaviour through the influence of mutual encouragement provided by the peer group. The abstinence rate from such methods is double that of those who only receive self-help material (Stead and Lancaster, 2005). Group-based interventions are generally quite cost-effective, however there is a limitation in recruiting and retaining participants (Hollis et al., 1993). Delivering advice through group-based interventions requires some resources such as the cost of counsellors. It is limited in its delivery to a smaller target audience than other intensive behavioural methods such as print material and telephone intervention, but it yields a higher success rate for quitting than other less intensive approaches and so it may be appropriate for smokers who have not been satisfied with their previous attempts (Manske et al., 2004). In a Cochrane review which analysed 13 trials by comparing a group programme with a self-help programme, the results showed a higher significant effect of cessation in the group programme (RR, 1.98, 95% CI, 1.60-2.46) than in the control group. However the study did not show a significant

difference between group therapy and a similar intensity of individual counselling (Stead and Lancaster, 2005).

2.1.2.1.8 Peer-led interventions

'Peer-led' education is defined as the "teaching or sharing of information, values, and behaviours by members of similar age or status group,"(Sciacca, 1987). Peer-led intervention has been known as an informal educational approach which uses ordinary lay people to encourage healthy behaviour. Peer education is used mostly to prevent smoking, alcohol consumption, and other forms of drug use (Starkey et al., 2005). People in every age group can receive support from peers, and peer-led education is used widely in all forms of education and training. It has long been used as a valuable method of providing health education in schools through the sharing of information between people of a similar age (Mellanby et al., 2000). The results of previous studies into peer-led education showed positive effects on health-related behaviour. For instance, in a review of 25 trials that analysed the effects of peer-led interventions on health-related behaviour in adults the effect sizes ranged from -0.50 to 2.86 for different behaviours such as physical activity, smoking consumption, and condom use (Webel et al., 2010). In a RCT of students in 59 schools in England the results showed that students in intervention groups which received anti-smoking advice from peer supporters had a lower chance of becoming smokers than those in the control group. The odds ratio of being a smoker after the program in the intervention group was 0·75 (95% CI 0.55–1.01) compared with the control group, while the odds ratio after one year and two years of follow-up was 0.77 (0.59–0.99) and 0·85 (0.72–101), respectively (Campbell et al., 2008). In another RCT study among students the results of the interventions (which were led by peers and by adults) showed a significant difference in both of the intervention groups than in the control group which had not received any support (p =.0001) (Prince, 1995).

2.1.2.1.9 Motivational interviewing

To change smoking-related behaviour, interventions can be provided in different forms in order to advise, discuss, encourage, and otherwise support smokers to quit successfully (Michie et al., 2011b). Each behavioural-change intervention applies techniques to address factors such as self-efficacy and motivation (Michie et al., 2011a). Motivational interviewing (MI) is patient-centred counselling to help individuals to explore and resolve ambivalence about behavioural change through

increasing their motivation. MI has been used frequently for treating alcohol abuse as well as for smoking cessation. It functions through a brief psychotherapeutic counselling intervention which focuses on the behaviour to be changed (Lai et al., 2010). For smoking cessation MI is generally conducted by a face-to-face meeting with a trained counsellor (Hall et al., 2004). MI delivers support to smokers through at least four weekly sessions, each session extending for 15-45 minutes, and it can be combined with other forms of smoking cessation such as pharmacotherapy. If the MI sessions are frequent and of long duration the likelihood of success is increased (Roberts et al., 2013). For example, a Cochrane review of 14 trials involving over 10,000 smokers noted that the MI technique was generally compared with brief advice or usual care in the trials. The results of a meta-analysis showed a higher significant effect of MI than brief advice or usual care in quitting (RR, 1.27; 95% CI, 1.14-1.42). The results also revealed that delivering MI for a longer period of time (at least 20 minutes per session) was more effective for quitting (RR 1.31; 95% CI 1.16 to 1.49) (Lai et al., 2010).

2.1.2.1.10 Stage-based interventions

One of the most frequently-used behavioural interventions is the 'stages of change' or transtheoretical model (TTM) offered by Prochaska and Goldstein (1991). This model has been used to aid quitting and it assumes that to change smokers' behaviour a discrete series of motivational stages need to be passed (Prochaska and Norcross, 2001). This model consists of five stages: (1) Precontemplation: a smoker does not perceive smoking as a serious problem and doesn't have any intention to quit smoking, at least over the following six months. (2) Contemplation: a smoker is informed about the harmfulness of smoking and perceives smoking as an issue; however he/she has not made any decision to attempt to quit immediately. At this stage a smoker is seriously considering changing smoking behaviour within the subsequent six months. (3) Preparation: a smoker seriously intends to quit within the next month. (4) Action: a smoker starts to quit smoking and stops for a period of a few days to six months. (5) Maintenance: a smoker tries to prevent relapse and continues to be abstinent for more than six months. According to this model, "individuals move sequentially through the stages, but may return to earlier stages" before ceasing completely (Campbell et al., 2013).

In a Cochrane review, twenty-three RCTs based on stage of change intervention have been reviewed; "two reported details of an economic evaluation; eight trials reported effects in favour of stage-based interventions, three showed mixed results, and 12 trials found no statistically significant differences between a staged intervention and a non-staged intervention or no intervention. Eleven trials compared a staged intervention with a non-staged intervention, only one reporting statistically significant effects in favour of the staged process. Two of the studies reported mixed effects, and eight trials reported no statistically significant differences between groups. The methodological quality of the trials was mixed, and few reported any validation of the instrument used to assess participants' stage of change. Overall, the evidence suggests that staged interventions are no more effective than non-staged interventions or no intervention in changing smoking behaviour" (Riemsma et al., 2003). Conversely, numerous other systematic reviews have shown the effectiveness of using staged interventions to quit. For instance, a review of 41 trials which implemented staged interventions reported that only four did not show a significant effect on smoking cessation compared with non-staged interventions. The results showed a higher significant effect on smoking cessation using stage-based interventions versus standard self-help materials (RR, 0.93, 95% CI, 0.62-1.39), and standard counselling (RR, 1.00, 95% CI, 0.82-1.22), any standard self-help support (RR, 1.27, 95% CI, 1.01-1.59), and 'usual care' groups (RR, 1.32, 95% CI, 1.17-1.48) (Cahill et al., 2010). In another systematic review, the meta-analysis of 12 smoking cessation trials showed a significant difference in quitting rates favouring the intervention group over the control group (Riemsma et al., 2002).

2.1.2.2 Smoking interventions by providers

As smoking can create many health burdens, treatment for smoking dependence can be considered as a priority for the health care system. The results of numerous previous studies have demonstrated the positive influences of professional assistance and support for quitting. The abstinence success-rate can be doubled or even tripled when it has been supported by a trained health-care provider (Ranney et al., 2006). Ideally, all health-care providers have a responsibility to identify, evaluate, treat, and follow-up those who smoke but who wish to quit; however, three health professions (physicians, nurses and dentists) have been shown to be more effective in enhancing smoking cessation (Gorin and Heck, 2004). The effectiveness of anti-smoking interventions can

be significantly enhanced if administered by more than two health practitioners (An et al., 2008b).

2.1.2.2.1 Nurse-delivered interventions

Smoking cessation assistance which is provided by health workers has a greater likelihood of success than some other interventions. There are two reasons that this may be so: firstly, most smokers (79-90 percent) intend to cease smoking (Coultas, 1991) and most (about 70 percent) visit at least one health care practitioner each year (Cherry and Woodwell, 2002). Nurses work in a very wide range of health-care settings and so can play an important role for both smokers (through helping them to quit) and non smokers (protecting them from second-and smoke) (Chan et al., 2008). Nurses are frequently involved in helping smokers to quit, usually with a positive effect on the reduction in tobacco consumption (Percival et al., 2003). Nurses' responsibilities for assisting people to quit is even more important now because they provide about 90 percent of primary-care services, and patients also know them as a respected major group within the medical sector (Taylor, 2007). There are numerous documents that testify to the effectiveness of nurses' interventions in smoking cessation (Martin et al., 2000). In a RCT study among patients who suffered from myocardial infarction the nurses delivering interventions achieved a cessation rate of 71 percent in the intervention group while the cessation rate was 45 percent in the control group (Taylor et al., 1990). Moreover, the cessation rate was higher than in the general population which had not received any support for quitting (7.33 percent) (Baillie et al., 1995). The effectiveness of nurse-delivered interventions have been demonstrated to be higher than self-help material, and "nurse interventions are particularly effective among smokers with an identified smoking-related medical diagnosis" (Johnson et al., 1999). In a review of 31 nurse-delivered trials, the results of a meta-analysis showed a significantly higher increase in quitting in the intervention group compared with a control or in usual care (RR, 1.28, 95% CI, 1.18-1.38) in a hospital context (Rice and Stead, 2008). In another systematic review the results of nurse interventions showed a significant increase in the odds of smoking cessation than in a control or in usual care. The results also showed a higher cessation rate resulting from interventions delivered by nurses in both hospitalised and non-hospitalized patients than in control groups (Rice, 1999).

2.1.2.2.2 Physician-delivered Interventions

The results of previous studies have shown that physician-delivered anti-smoking advice to motivate and help smokers to quit is an important strategy for several reasons (Ulbricht et al., 2006). Firstly, this kind of anti-smoking advice is cost-effective (Goldstein et al., 1998). For example, about 5-8 percent of smokers ceased smoking within 12 months if they received only three to five minutes of smoking-cessation advice along with self-help materials to reinforce the advice of the physicians (Figlie et al., 2000, Law and Tang, 1995). Secondly, because physicians regularly visit patients their support can be integrated as a routine health-care service. Thirdly, advice from physicians can motivate smokers in poor health to reconsider their behaviour (Ulbricht et al., 2006). In the light of these findings it is important for physicians to routinely identify smokers and to provide them with anti-smoking support (West et al., 2000). On the other hand, some previous studies found that physicians may be uninterested in intervening with patients' smoking status because they perceive that they experience a low success rate with smokers (Williams et al., 2003). Other reasons which may inhibit physicians from intervening include respect for patient privacy, negative reactions from patients (Solberg et al., 2001), lack of time or expertise, and limited financial incentive (Schroeder, 2005). Increasing physicians' knowledge about the importance of their role in smoking cessation and teaching them effective methods of smoking cessation can enable them to be more willing to intervene (Ockene, 1987).

Numerous studies have reported the positive impacts of physicians' advice on quitting. The result of a Cochrane review which examined physician-delivered anti-smoking interventions in "17 trials of brief advice versus no advice (or usual care) showed a significant increase in the odds of quitting (OR, 1.74, 95% CI, 1.48-2.05)" compared with the control group (usual care) (Stead et al., 2008a).

2.1.2.2.3 Dental health care interventions

There are several reasons that dental practices are important settings for smoking interventions. One reason is that many people have at least one dental visit per year (Gordon and Severson, 2001). Another is that smoking is responsible for oral problems such as oral cancer (EU Work group 1998), tooth decay (Tomar and Winn, 1999), and discoloration of dental restorations (Mucosa, 2000). "It is also harmful to periodontal health" (Tomar and Winn, 1999). Visiting a dental clinic provides an opportunity for

dental practitioners to evaluate the effects of smoking on oral and general health. Therefore, dental-practice settings are well placed to assist smokers to quit since dentists are trusted and because dentists can accurately assess the effects of tobacco use (Block et al., 1999). Dentists are a main resource for interventions, however, like physicians, not all are interested in supporting smokers to quit or in participating in smoking interventions. Studies show that more than 40 percent of dentists do not ask about the smoking status of their patients and about 60 percent do not advise their patients to quit (Tomar, 2001). It is evident that some dentists need to be informed about intervention techniques. For example, brief anti-smoking advice can be appropriate for dentists who see large numbers of patients for short periods of time (Cofta-Woerpel et al., 2007). In one Cochrane review the results of a meta-analysis of six trials, which have been conducted on interventions by oral-health practitioners, showed a significant increase in abstinence rates (OR, 1.44; 95% CI, 1.16-1.78) at 12 months or longer (Carr and Ebbert, 2006).

2.1.2.3 Smoking interventions by location

As explained in chapter one of this thesis, smoking cessation interventions can also be delivered according to location. Anti-smoking interventions need to consider such factors as accessibility to smokers, the feasibility of implementation, and the need to focus on the higher risk groups affected by smoking. Three common locations where smokers (or likely smokers) can be contacted are hospitals, workplaces, and schools.

2.1.2.3.1 Hospital-based interventions

Smoking is a major reason for hospitalization, especially for heart disease, respiratory diseases, and cancer, and so hospitals are significant points of contact for people who are likely to be receptive to anti-smoking messages. Such contacts are referred to as "teachable moments" (Ockene et al., 1992). To prevent other patients and staff from passive smoking there are usually tight restrictions with most hospital precincts now being smoke-free zones. For these reasons hospitals are places where interventions are more likely to be successful (Willaing et al., 2003). In a review of 17 trials it was noted that a significant cessation rate was achieved in a group which received an intensive hospital-based anti-smoking intervention (OR. 1.82, 95% CI, 1.49-2.22) (Rigotti et al., 2007).

2.1.2.3.2 Workplace-based interventions

The workplace is another locality which provides a valuable setting for interventions. For most adults about one-third of their days are at a worksite where health-promotion activities can be provided for groups of people (Gruman and Lynn, 1993). Indeed, quitting has a high chance of success in the workplace for a number of reasons. The people who work there usually comprise a fairly stable population so that it is possible to provide health advice on a number of issues (smoking being one) which may require time for behaviour to change. Because people are in contact with each other in the same place they may also participate in activities outside the worksite. People in a workplace follow various rules and regulations so it creates an environment whereby behaviour can more readily be modified by peer pressure. Because many people in the workforce are relatively young they may be healthier than older people and so may have fewer visits to their doctor. Consequently, they may be less likely to receive an intervention from a doctor or other health care practitioner. But in the workplace such people may be constrained by occupational health and safety coordinators who can intervene by providing health advice and support (Cahill et al., 2008). Overall, interventions in the workplace have been demonstrated to be a cost-effective approach (Flack and Taylor, 2006). The results of a Cochrane review of 51 workplace interventions showed that most were more effective in increasing smoking cessation than control groups (Cahill et al., 2008).

2.1.2.3.3 School-based intervention

While smoking is primarily an activity of adulthood, most habitual smokers develop their habit during adolescence (Krishnan-Sarin et al., 2013). If smoking commences at an early age it is more likely to persist for decades because quitting is so very difficult. School is the place where most adolescents spend their weekdays; it is also a setting where peer-pressure is strongest, and consequently it is an important venue for interventions. Students need to be educated about the dangers of smoking, they need to be forewarned to avoiding starting smoking, and they need to be strengthened so that they can refuse offers of cigarettes. “Over the past three decades the school has been a particular focus of efforts to influence youth smoking behaviour” (Jamison et al., 2010), and the effectiveness of school-based interventions have been reported in previous studies. One Cochrane review of 134 school-based trials yielded pooled results of a meta-analysis which demonstrated that abstinence was more effective in an intervention

group than in a control when the groups were followed-up for longer than one year (OR, 0.88, 95% CI, 0.82 to 0.96) (Thomas and Perera, 2013).

2.2 Methodology

2.2.1 Objectives of the systematic review

The objectives of this systematic review were to collect and analyse evidence regarding the effectiveness of smoking cessation interventions among adolescents and adults (with particular emphasis on people aged over 50) from non-English speaking backgrounds (NESB), and to identify future research directions.

The review provides a descriptive analysis of the effectiveness of a range of anti-smoking behavioural intervention methods. These include low-intensive methods (brief advice, self-help materials), and more intensive methods (tailored and staged-based intervention, motivational interviewing, theory-based intervention, group and social support interventions, and innovative methods (telephone or web-based interventions). During the analysis we are seeking to define a knowledge gap about smoking cessation programs in older smokers. By comparing programs targeted to all age groups, we can assess the effectiveness of all interventions. For example, it may be helpful to assess methods which have been used with adolescents but never or rarely with older smokers. We will also review studies which have been conducted with NESB groups, migrants and other minority groups, evaluating the effectiveness of the intervention methods described and assessing these for relevance to our own study.

2.2.2 Assessment of study quality

The quality of the reviewed papers was assessed using predefined criteria modelled on specifications from Gough et al., (2012). The criteria were based on study design, effectiveness of the interventions, intervention methods, and other factors.(Gough et al., 2012). Our systematic review of literature covered studies published between 1980 and 2011 and examined smoking cessation interventions that took the form of Randomized Controlled Trials (RCTs). It also included controlled studies with baseline and post-intervention measures (Quasi Randomized Controlled Trials (QRCTs)). Our initial database searches showed that there was no article matching our inclusion and exclusion

criteria before the year 1980, so that enabled us to limit our search to the years between1980 and 2011 (the year of conducting the search). Behavioural interventions found included minimal clinical interventions (e.g., brief advice and self-help material), and intensive interventions, which included individual and group counselling, motivational interviewing, telephone counselling, and web-based tailored interventions.

2.2.3 Search strategy

2.2.3.1 Databases and key words for the search

The following databases were systematically searched to retrieve articles and abstracts using a variety of keywords and search terms:

- PubMed/Medline
- Cochrane Library
- CINAHI
- Web of Sciences
- Informit Search
- Scopus

Databases searched were selected by reviewing other relevant articles and these indicated that the above-mentioned databases have been most regularly used in the topic of smoking cessation (Higgins et al., 2008). All databases selected for the current review were accessed via Flinders University library. Additional papers were located through the bibliographies of retrieved articles. All database searches were restricted to journal articles published in English since 1980.

The search terms were identified via consultation with those listed in Medical Subject Heading (MeSH). In the electronic search, the terms were combined through the use of the conjunctions 'and' and 'or'. Table 1 lists the key words selected for this review:

Table 1: List of key words used to retrieve articles

Key words for smoking parameters	Intervention criteria key words	Study design key words
Smoking Smoking cessation Smoking reduction Smoking quit Tobacco Tobacco use cessation Reduced smoking Tobacco habit Smoking cessation program Tobacco use Stop smoking Smoking abstinence	Behavioural therapy Behaviour modification Behaviour intervention Smoking cessation intervention Stop smoking intervention Intensive intervention Individual counselling Self help intervention Advice Counselling Brief intervention Self help Self help materials Face-to-face Brief leaflet Tailoring materials Telephone counselling Brief cessation advice Smoking cessation advice	Quasi experimental Quasi randomized control trial Pre and post study Randomized controlled trial Case control study

The next step for the researcher was to carefully review the abstracts of all search results, to determine their relevance, and whether to retrieve the full copy.

2.2.3.2 Criteria for inclusion

In this study the criteria to select relevant articles were based on:

• Types of study design (randomized controlled trial, and quasi experimental)

• Types of participant (adolescent, adult, and older smokers)

• Types of intervention precisely defined (behavioural intervention)

• Types of control (a comparison group for which a between-group analysis will be presented)

• Types of outcome (smoking cessation).

In addition, articles were included in this study that met the following topic inclusion criteria:

- If it related to a defined smoking-cessation intervention.

- If it included a controlled (preferably randomized) evaluation design.

- If it included abstinence from smoking for at least one month as an outcome measure.

2.2.4 Identification and selection of relevant studies for review

"Abstracts were assessed once the exclusion criteria relating to year of publication, language, and publication type had been applied. Then the search results were refined on the basis of the abstract content, and the methodology determined for this review. Where the relevance of the paper was uncertain, full copies of articles were obtained to assess suitability for inclusion" (Gough et al., 2012). Finally, the papers selected from each database were evaluated for relevance to this project.

Most smoking cessation intervention studies measure the cessation rate at least one month after conducting the intervention, so therefore the main outcome measure for our study was set at one month (or more) after the start of the intervention. The most rigorous definition of 'abstinence' was used for each trial and biochemically-validated rates were used where available. Key information from each study was extracted according to a checklist (Appendix A). Data extraction was performed after articles were reviewed and interpreted (Appendix B). The data extract sheet includes three types of respondents: smokers less than 50 years old (Appendix B1), NESB smokers (Appendix B2), and smokers aged 50 and over (Appendix B3).

In this systematic review, information from each article has been extracted. It includes:

- Location of study (America, Europe, Australia, and Asia), age of participants (less than 39 years, 40 to 49 years, and more than 50 years), and years in which each study was conducted (before 2000, 2001 to 2005, and after 2006).

- Types of studies (which were selected based on RCTs and QRCs), target group (smokers without disease, patients, and pregnant women), setting for each study (health-care centre, hospital, and community-based interventions including workplaces, quit line, and school). The type of statistical analysis (multivariate analysis, logistic regression, and univariate analysis).

- Cessation verification methods (self-report, self-report plus salivary cotinine test, self-report plus exhaled CO level, self-report plus salivary cotinine test and exhaled level, and self-report plus significant other verification), nicotine-dependence assessment

(Fagerstrom Test of Nicotine Dependence - FTND), Hooked On the Nicotine Checklist (HONC), Heaviness of Smoking index, and others not mentioned.

- Follow-up period after the intervention (up to 3 months, up to six months, up to 12 months, and more than one year), and educator (trained GP, trained health professional except GP, psychologist, nurse or midwife, nurse plus physician and health educator, and peer-educator).

- Overall intervention effectiveness, maintenance of intervention effectiveness at follow-up, intervention effectiveness in people aged over 50, and intervention effectiveness in NESB.

- Overall effectiveness and frequency of educational methods, effectiveness in older groups, and effectiveness in NESB groups.

In this study, six methods have been considered as behavioural anti-smoking interventions. Non-intensive interventions constitute one category (self-help materials and brief advice) and intensive interventions form five categories (motivational interviewing; group and social support; computer-generated and tailored guides based on 5 As, 4 A's, and 3 A's and stage of change; cognitive therapy; and innovative techniques such as proactive telephone counselling, mobile-phone and web-based programs).

A total of 117 articles were found which met the inclusion criteria; these included 88 RCTs and 29 quasi-experimental studies (Figure 2).

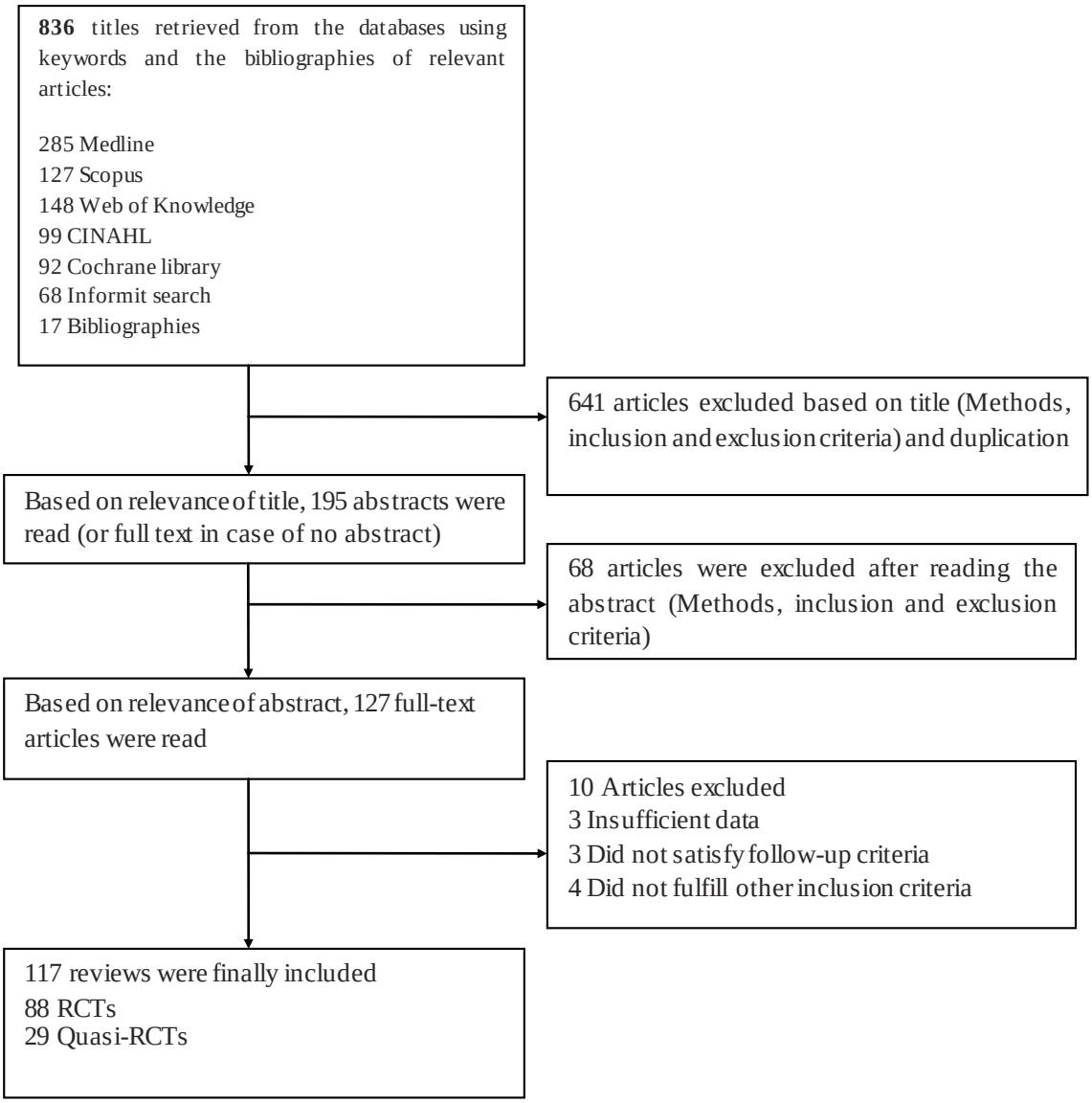

Figure 2: Process of selecting RCTs and QRCTs studies included in the systematic review

2.3 Results of the study

Findings from extracted studies were analysed within the framework of smoking-cessation behavioural interventions, with a focus on exploring effective and feasible interventions. Details of the findings are explained below. One hundred and seventeen relevant articles were identified of which 88 (75 percent) were RCTs and 29 (25 percent) were QRCTs. Seventy nine studies were conducted among people aged less than 50, twenty one studies were conducted among smokers aged 50 and over, and

eighteen studies conducted in NESBs (One study was common between NESBs and older smokers).

2.3.1 Location, age of participants, and year of study

Table 2 shows that most studies (58 articles) were conducted in the USA, only four being conducted in Asia. The USA had the highest frequency of studies, followed by the UK and Australia.

Fifty one articles (43.58 percent) used smokers with a mean age of 39 or less. Thirty-nine articles used participants aged between 40 and 49, and 21 articles reported research into smokers aged 50 and over. Six articles did not mention the mean age of participants. Fifty-six articles were published before 2000. Thirty-two articles were published after 2006 (Table 2)

Table 2: Frequency of articles in terms of location, age of participants, and year of studies

	Location				**Overall**
	America	Europe	Australia	Asia	
Number (%)	58 (49.57)	44 (37.6)	11 (3.41)	4 (9.4)	117 (100)
	Age of participants				
	Not Mentioned	39≤	40-49	>50	
Number (%)	6 (5.12)	51 (43.58)	39 (33.4)	21 (17.9)	117 (100)
	Year of study				
	2000≤	2001-2005	≤2006		
Number (%)	56 (47.86)	29 (24.78)	32 (27.35)		117 (100)

2.3.2 Study design, target group, setting of study, and statistical analysis

Most of the studies (88 articles) were RCTs and 41 studies were Quasi-RCTs which were used to evaluate the effectiveness of particular interventions designed for smoking cessation. Sixty-six articles used smokers without any reported disease. Forty-one articles described research conducted on patients. Ten studies were conducted with

pregnant women. The majority of studies (46 articles) were conducted in health-care centres and primary health systems, followed by 44 studies in locations such as worksites, schools, and quit-lines. Twenty-seven studies were undertaken in hospitals. Multivariate analysis was used in 66 articles, followed by logistic regression (45 studies), and univariate analysis (6 articles) (see Table 3).

Table 3: Frequency of study design, target group, setting of studies, and statistical analysis

	Study design			**Overall**
	Randomized Controlled Trial	Quasi-Randomized Controlled Trial		
Number (%)	88 (75.22)	29 (24.78)		117 (100)
	Target group			
	Smokers without disease	Patient Smoker	Pregnant women	
Number (%)	66 (56.41)	41 (35.04)	10 (17.94)	117 (100)
	Setting of Study			
	Health care centre	Hospital	Community survey (Worksite, Town, Quit line)	
Number (%)	46 (39.31)	27 (23.07)	44 (37.6)	117 (100)
	Statistical Analysis			
	Multivariate analysis	Logistic regression model	Univariate analysis	
Number (%)	66 (56.41)	45 (38.46)	6 (5.12)	117 (100)

2.3.3 Cessation verification and nicotine dependence assessment, follow-up period, and educator

Fifty-two studies only used participants' self-reporting as a cessation verification method. Salivary cotinine concentration and exhaled CO level were other methods used to verify cessation, these being shown in Table 4. The Fagerstrom Index was used in 45 studies. In 70 studies the measurement of nicotine dependence was not mentioned (Table 4).

Fifty-four articles reported research which tracked the results for up to 12 months. Other studies followed participants' smoking cessation for periods up to three months, up to six months, and more than 1 year (Table 4).

Trained health-care staff such as counsellors, interviewers, and researchers were most frequently identified as educators (50 articles), followed by trained general practitioners and physicians. Details of other educators who conducted behavioural interventions are provided in Table 4.

Table 4: Frequency of articles by cessation verification and Nicotine dependence assessment, Follow-up period and educator

	Cessation verification method					**Overall**
	Self-report	Self-report and Salivary Cotinine Test	Self-report and Exhaled CO level	Self-report, Salivary Cotinine and Exhaled CO level	Self-report and Significant Others verification	
Number (%)	52 (44.44)	29 (24.78)	28 (23.98)	7 (5.98)	1 (0.85)	117 (100)
	Nicotine dependence assessment					
	Fagerstrom Index		Hooked on Nicotine Checklist (HONC)	Heaviness of Smoking Index	Not mentioned	
Number (%)	45 (38.46)		1 (0.85)	1 (0.85)	70 (59.82)	117 (100)
	Follow-up period					
	Up to 3 months		Up to 6 months	Up to 12 months	More than 1 year	
Number (%)	17 (14.52)		28 (23.93)	54 (46.15)	18 (15.38)	117 (100)
	Educator					
	Trained GP	Trained Health professional (Counselor, Interviewer…)	Psychologist	Nurse or Midwives	Nurse, Physician and Health Educators	Peer educator (Spouse, partner…)
Number (%)	20 (17.09)	50 (42.73)	7 (5.98)	19 (16.23)	16 (13.67)	5 (4.27)	117 (100)

2.3.4 Behavioural intervention effects on smoking cessation

2.3.4.1 Research outcomes in all studies

Significant differences in rates of quitting were reported in 85 articles while 32 did not indicate significant differences. Among 85 studies the result of 6 interventions disappeared by follow-up; there was no significant difference between control and intervention groups in smoking cessation rates. Differences in rates of smoking cessation were maintained for three months (1 article), six months (1 article), 12 months (three articles) and 18 months (one article) follow-up. In contrast, two articles showed

significant differences at the subsequent follow-up, while they did not have any significant difference before follow-up (after three and 12 months) (Table 5).

2.3.4.2 Research outcomes with people aged 50 and over

Twenty-one articles reported research conducted with people aged 50 and over, 10 of the articles concluding that behavioural interventions were effective for smoking cessation. Eleven articles reported that there were no significant differences in smoking cessation after an intervention had been undertaken. The results show that there were no differences in intervention effectiveness associated with participants' health (Table 5).

2.3.4.3 Research outcomes with NESB people

Eighteen articles described behavioural interventions among the NESB group. The results of these studies showed that there were marked differences in the effectiveness of behavioural interventions among that group. More than two-thirds of the studies (77.8 percent) reported interventions that were effective in achieving smoking cessation while only 22.2 percent of the studies did not show any differences in smoking cessation between the intervention and control groups of NESB participants (Table 5). Effective behavioural interventions can increase cessation rates by 6% to 72% compared with no intervention. Tailored materials and group interventions can augment smoking cessation rates the most: 72% and 53%, respectively.

Table 5: Behavioural intervention effectiveness overall, NESBs, and people aged 50 and over

	Intervention effect				**Overall**
	Significant differences in quit rate		Non significant difference in quit rate		
Number (%)	85 (72.64)		32 (27.35)		117 (100)
	Maintenance of intervention Effect at next follow-up				
	No Significant difference in quitting rate		Significant difference in quitting rate		
Number (%)	6 (75)		2 (25)		8 (100)
	Intervention effect in people more than 50 year olds				
	Significant Difference in quit rate		Non Significant Difference in quit rate		
	People without disease	Patient	People without disease	Patient	
Number (%)	4 (19.04)	6 (28.57)	4 (19.04)	7 (33.33)	21 (100)
	Intervention effect in NESB				
	Significant differences in quit rate		Non significant difference in quit rate		
Number (%)	14 (77.8)		4 (22.2)		18 (100)

2.3.5 The nature of the behavioural interventions

2.3.5.1 Research outcomes overall

Self-help materials and brief telephone counselling were the most frequently-used methods (46 studies). Twenty-eight studies showed an effective change in smoking cessation rates while 18 articles did not report any differences between control and intervention groups.

Social support interventions such as peer-support groups, spousal support, and partner support were the second types of study in terms of frequency (24 articles). Nineteen studies reported that this method was successful for quitting, and only five studies concluded that they were not useful.

Computer-generated tailored letters, brief telephone counselling, and intervention by proactive telephone counselling were described in 16 articles. Mobile-phone text messages and web-based programs (16 articles) were the third most frequent behavioural methods. Fourteen studies of computer-generated methods and 11 studies

of proactive telephone counselling inteventions showed that they were useful for changing smoking behaviour.

Assisting smokers to quit by way of motivational interviewing was described in 12 studies. Ten studies showed significant differences in smoking cessation while two studies reported no statistically-significant alteration in smoking behaviour.

Four studies used interventions which were based on cognitive theory. Three of the studies reported a significant influence in smoking cessation and only one showed no significant difference between the intervention and control groups (Table 6).

2.3.5.2 Research outcomes with people aged 50 and over

Twenty-one studies were conducted among older people. The interventions employed self-help materials and brief telephone-counselling had higher frequencies than other intervention methods (57.13 percent). The interventions which were conducted with self-help materials and brief telephone-counselling also had the highest frequency of ineffectiveness on smoking cessation (38.09 percent).

Studies which were more intensive and based on cognitive therapy methods, which used motivational interviewing, and which were tailored to older participants were more successful than those that were not tailored and which were less intensive.

With regard to social-group support interventions (mentioned above), there were no studies that used this approach for older people. All social-support groups and peer-support interventions have only targeted young smokers. (Table 6).

2.3.5.3 Research outcome with the NESB people

Eighteen articles were conducted among NESB people. The results of these surveys demonstrated that the interventions which were based on cognitive therapy (five studies) and tailored interventions (five studies) were more successful than other methods. It was not possible to locate any studies which employed motivational interviewing among NESB. However, the interventions which were based on cognitive therapy had higher rates of success (27.8 percent) for smoking cessation in the intervention group than the control group, these being followed by tailored interventions and non-intensive methods (22.2 percent). All methods using self-help materials and brief telephone-counselling methods were effective for achieving abstinence. An

interesting result is that the interventions which were based on group support and social support were quite ineffective for smoking cessation (Table 6).

Overall, it is clear that behavioural interventions can be effective for reducing rates of smoking. This review highlights a gap in the knowledge and suggests that there is particular value in conducting research into the use of behavioural interventions among older people; in particular, it will be beneficial to assess the effectiveness of peer supports and other social supports as primary interventions to aid older people to quit smoking.

Table 6: Frequency of educational methods for smoking cessation overall, for NESB people aged over 50

	Motivational Interviewing		Group and Social support		Computer-generated Tailored Guide (based on 5A,4A and3A and stage of change)		Self-help Material and Brief Counselling		Proactive telephone counselling, Mobile Text and Web-based program		Behavioural and Cognitive Therapy	
Overall	Effective	Not Effective	Effective	Not Effective	Effective	Not Effective	Effective	Not Effective	Effective	Not Effective	Effective	Not Effective
Number (%)	10 (8.54)	2 (1.7)	19 (16.23)	5 (4.27)	14 (11.96)	2 (1.7)	28 (23.93)	18 (15.38)	11 (9.4)	5 (4.27)	3 (2.56)	1 (0.85)
	Effective	Not Effective	Effective	No Effective	Effective	Not Effective	Effective	Not Effective	Effective	Not Effective	Effective	Not Effective
50+ year Number (%)	2 (9.52)	1 (4.76)	0 (0)	0 (0)	3 (14.28)	1 (4.76)	4 (19.04)	8 (38.09)	0 (0)	1 (4.76)	1 (4.76)	0 (0)
	Effective	Not Effective	Effective	Not Effective	Effective	Not Effective	Effective	Not Effective	Effective	Not Effective	Effective	Not Effective
NESB Number (%)	0 (0)	0 (0)	0 (0)	2 (11.1)	4 (22.2)	1 (5.6)	4 (22.2)	0 (0)	1 (5.6)	1 (5.6)	5 (27.8)	0 (0)

2.3.5.4 Effective factors in smoking cessation among older people

In order to understand the main psychological factors which were effective in smoking cessation among older people, all studies which have been conducted among older people were assessed. The results demonstrated that the main factors which were associated with behavioural change were intention to quit (14 studies), self-efficacy (12 studies), knowledge of the health consequences of smoking,(11 studies), and attitude to smoking (8 studies).

2.4 Discussion

This review entailed evaluations of all behavioural interventions which were used between 1980 and 2011 to assist people to quit smoking. Overall, 117 studies which were designed as RCTs and QRCTs met the inclusion criteria and were assessed for this enquiry. As the results of the systematic review showed, most of the behavioural interventions were, to some extent, effective as aids to quitting. However, the results of this study showed different effectiveness and ineffectiveness of anti-smoking behavioural intervention methods on smoking cessation, it is important to consider other characteristics of the studies including the sample size or the characteristics of recruited populations when comparing across trials. However the frequency of the different approach methods and the effectiveness of the methods will be discussed here.

2.4.1 Smoking cessation overall

The studies showed that many forms of behavioural intervention are effective as aids to quitting (73 percent) and only 27 percent of the reviewed articles failed to identify any significant level of effectiveness in particular interventions. For those studies we could summarize probable reasons for intervention failure such as the characteristics of participants (younger age, higher level of dependence on nicotine, or lack of motivation to quit); the quality of the intervention (lack of tailoring to the characteristics of participants, inappropriate time or location of providing intervention, or delivery by an inappropriate educator); or technical issues (sample size or smoking cessation verification methods). The results of this study are consistent with other studies which revealed that behavioural interventions are generally effective for quitting (Lancaster and Stead, 2005a). Indeed, the overall conclusion is that behavioural interventions can

be used with confidence in order to change smoking behaviour. The results also confirm that the most effective techniques entailed intensive interventions rather than brief counselling or the use of self-help materials. It is also important to note that even brief interventions were more effective than no intervention. From 46 articles which examined the use of self-help interventions, 28 reported that they were relatively ineffective for achieving abstinence.

The effect of self-help materials on quitting is different based on their nature and intensity. Previous studies showed that if self-help materials are used alone the benefits are small - though some factors cause it to be used frequently. It is a method that can be used by many people and it is cheaper than other methods. However, although success rate is low, due to broad distribution they can result in a large number of successful quitters (Miller and Wood, 2003). Additionally, some studies indicate that using self-help materials in clinical settings does not increase smoking cessation rates. The effectiveness of self-help materials can be enhanced if the smoker's particular circumstances and characteristics are taken into account in self-help materials which are tailored to smoker's needs and smokers' cessation stage (Lancaster and Stead, 2005b). Ranney et al (2006) showed that self-help materials have the least effectiveness if used as a stand-alone process without being complemented by other kinds of intervention. Other research has shown that brief counselling sessions are effective (Fiore, 2008, Lancaster and Stead, 2005a), and it is not well documented that more intensive counselling is more effective (Lancaster and Stead, 2005a, Lancaster et al., 1999). Some studies suggest that to increase the effectiveness of individualized tailored self-help materials, follow-up telephone calls can be useful (Hughes et al., 2007, Prochaska et al., 1993b, Orleans et al., 1994).

More intensive interventions, especially the use of motivational interviewing, were reported to be effective for quitting. The results of a meta-analysis of 41 randomized controlled trials showed that brief interventions which included a single consultation lasting 20 minutes (with or without an information leaflet) and follow-up visit increased the rate of smoking cessation 1.6 times more than a no-advice group (RR 1.66, 95% CI 1.42-1.94). On the other hand, more intensive interventions (which entailed spending more time in the initial consultation and more than one follow-up visit) had higher cessation rates, though those increased rates were not statistically significant. When the results of these two types of intervention were compared, the results indicated a small

advantage of intensive interventions over brief advice (RR 1.37, 95% CI 1.20-1.56) (Stead et al., 2008a). Mottillo et al. (2009) noted that "the use of intensive behavioural interventions, including individual, group, and telephone counselling", were more effective than control conditions with smokers who were motivated to quit (Mottillo et al., 2009).

The findings of this review showed that interest in the use of innovative technology-based behavioural interventions (such as telephone and web-based interventions) has increased and that they were effective aids to quitting. Many studies have tested different types of intervention to support smokers, and a meta-analysis of 65 trials assessed the relative effectiveness of proactive and reactive telephone counselling. The results showed that proactive telephone counselling increased smoking cessation rates among interested smokers (RR 1.37, 95% CI 1.26-1.5) (Whittaker et al., 2008). In another RCT of proactive telephone counselling, smokers in the intervention group had higher continuous abstinence than smokers in the control group who received only a self-help manual at six months (30.9 and 9.8%, respectively, $p<0.001$) (Boyle et al., 2008). Quitlines (telephone hotlines) as another type of telephone counselling, can be effective when associated with advertising campaigns (Stead et al., 2006, Owen, 2000). Another meta-analysis concluded that web-based or computer-based quitting programs had measurable advantages for intervention groups compared with control groups (RR 1.44, 95% CI 1.27-1.67). Similar results were obtained in nine trials which used web-based interventions (RR 1.40, 95% CI 1.13-1.72) and in 13 trials which used a computer-based intervention (RR 1.48, 95% CI 1.25-1.76) (Myung et al., 2009).

In comparison with printed self-help material, the use of computer-based and internet-based interventions are more beneficial insofar as they can be interactive and individually-tailored (Hardin and Reis, 1997, Dijkstra et al., 1999). Hutton et al, (2011) found that, so far, the efficacy of web-based interventions are modest, though multi-component "interventions using the web and other components (such as E-mail and text messages) were more effective than self-help booklets" (Hutton et al., 2011).

2.4.2 Smoking cessation in older people

The results of this review confirm that less than half of the studies (10 of 21 studies) showed that behavioural interventions were effective among people aged 50 and over. Most studies (12 of 21 studies) conducted among older people were based on low-

intensity interventions, and most non-intensive interventions (8 studies) proved to be less successful than intensive interventions. It is clear that there is a strong relationship between the intensity of the intervention (as judged by the number and duration of the interventions) and smoking cessation rates (Fiore, 2008). Based on the results of these various studies, and the fact that nicotine dependence in higher among older smokers, it is apparent that the use of combined behavioural interventions, or using behavioural interventions in conjunction with pharmacotherapy or more tailored and intensive methods, can increase the rate of smoking cessation (Asfar et al., 2011).

Among people aged over 50, self-help materials and brief telephone counselling were the most frequently-used interventions, while the use of group- and social-supports were not implemented among them. Of the different types of intervention, motivational interviews and computer-generated and tailored interventions (which were based on the 5A and stages of change) were more effective as aids to quitting. On the other hand, the brief interventions and those that entailed only self-help materials yielded the lowest frequency of cessation. As it has been noted earlier, the results of this study may be influenced by other factors including the sample size or the characteristics of recruited populations when comparing across trials.

Zbikowski et. al. (2012) reviewed relevant articles about smoking interventions for smokers aged 50 and over, all types of intervention being part of their survey (though none entailed the use of the internet or text-based interventions). Most of the articles reported significant effectiveness of some methods. It was concluded that intensive interventions which combined other aids (such as nicotine replacement therapy, and follow-up counselling) are the more effective techniques for aiding older smokers (Zbikowski et al., 2012). In another systematic review of participants of middle-age, five studies noted that interventions are effective when tailored in some way, and it was concluded that tailored intervention are effective for people of middle-age and over (Dawel and Anstey, 2011).

Research reports highlight the importance of various psychological factors such as the intention to quit, self-efficacy, knowledge of health matters pertaining to smoking, and attitudes to smoking. The results of this study are consistent with several other surveys (Phillips, 2012) which demonstrate that older people who have knowledge of the dangers of smoking, who decide to quit and who follow the treatments which are

provided for them are more likely to attain full abstinence (Gibson et al., 2010). Similarly, Martinez et al. (2010) found that if smokers have high levels of self-efficacy they are more motivated to quit, consequently behavioural interventions will further strengthen their self-efficacy. Martinez et al. (2010) also found that behavioural interventions may be helpful for elevating self-efficacy "to manage cravings stimulated by positive affect/social situation smoking cues". Moreover, they found that behavioural interventions to increase self-efficacy need to be tailored with the particular characteristics of smokers (Martinez et al., 2010).

2.4.3 Smoking cessation in NESB

From eighteen studies which have been conducted among NESB, the results of this review showed that most studies (78 percent) reported marked differences in quitting rates between intervention and control groups after experiencing both intensive and low-intensity methods. There were significantly higher smoking cessation rates in intervention groups (6% to 72%) compared with control groups. Tailored materials and group interventions had augmented smoking cessation rates the most (72% and 53%, respectively). The study also indicated that smoking cessation which was based on social-support groups, peer-led interventions, and led by family/spouse were not effective for quitting. The results of this survey are consistent with the results of other studies. For example, the results of two meta-analyses which evaluated 51 and 13 studies in the workplace concluded that there was no significant benefit from a comprehensive program that used social supports, environmental supports, or incentives to enable smokers to quit, though those forces can help a smoker to make an attempt at quitting (Cahill et al., 2008, Cahill and Perera, 2008).

Some factors may explain the influence (or lack of influence) of group and social-support interventions for NESB smokers. Apparently smokers with NESB are less interested in participating in quitting programs. Lack of attention to NESB by health-care providers or governments, and language barriers, can also limit the willingness of NESB people to quit (Maneze et al., 2012). Finally, it might because the group or family members are smokers and so are not supportive of fellow immigrants who wish to quit.

2.4.4 Other characteristics of behavioural interventions

It has been noted from this review that most studies evaluated participants under the age of about 30, few survey participants being over 50. Because most smokers start smoking at a young age it is understandable that most research effort has focused on this age. This is so because preventing young people from smoking, and assisting young smokers to quit at a young age can prevent subsequent ill-health and disease relating to smoking (An et al., 2010). Nevertheless, the results of recent research into older smokers demonstrates that quitting even in older age can prevent many diseases and has many benefits (Taylor Jr et al., 2002).

The results of this review also highlight the fact that most of the research has been conducted in developed countries where the proportions of older people are larger than in developing countries. However, considering the high percentage of smokers in developing countries and considering the population growth of developing countries it is inevitable that they will face high levels of smoking-related health burdens in the future. Consequently, there is an urgent need for such countries to be researching and planning in the expectation of future health-care problems (Aghamolaei et al., 2010).

The results of this survey showed that most research has been conducted in health-care centres, while a few have been within community-based facilities and hospitals. Rigotti et al, (2007) confirmed that intensive interventions (supported by telephone contacts for at least one month after discharge) when conducted within a hospital have been more effective than low-intensity interventions (OR 1.65, 95% CI 1.44-1.90) (Rigotti et al., 2007). In another meta-analysis it has been noted that workplaces which conducted smoking-cessation interventions were generally effective in helping people quit; however the evidence was not clear for the self-help methods (Pratima and ubodh, 2010).

This review also shows that trained health counsellors were the group most frequently employed in the interventions. This group was followed by trained GPs, and then psychologists. Conversely, the use of peers and other support groups was uncommon in the different behavioural interventions. While doctors (Silagy and Stead, 2004) and nurses (Rice and Stead, 2008) frequently were used to provide anti-smoking advice in clinical settings, the key elements of effective, brief, opportunistic advice are transferable to many health-care settings and other practitioners. For example, several

reports tested the effectiveness of delivering smoking cessation advice by dentists (Wood et al., 1997) and midwives (Dunkley, 1996).

Many studies have confirmed that anti-smoking advice from a physician or trained health-care providers has consistently been a most effective avenue for quitting. Fiore et al, (2008) implemented a test of brief counselling sessions by physicians and compared it with a group without any intervention. Prolonged abstinence by smokers with intensive counselling was double that of smokers who received only brief counselling (Fiore, 2008). Another review was conducted by using physicians' advice, the result being a markedly higher cessation rate (OR 2.04, 95% IC 1.71-2.43) (Lemmens et al., 2008). In another study which was conducted in a hospital, quitting advice was delivered to smokers every day, the participants showing high satisfaction when they received an intervention from a physician (OR 1.74; 95% CI 1.04-1.49) (Bernstein et al., 2006).

Another study showed that smoking advice from dental personnel significantly increased the rate of quitting (Ramseier and Fundak, 2009). In a meta-analysis which evaluated 42 randomized controlled trials, the interventions which were delivered by nurses increased the rate of prolonged abstention (RR 1.28, 95% CI 1.18-1.38) among the intervention group compared with the control group (Rice and Stead, 2008).

Considered overall, interventions conducted by nurses, physicians, or other health-care providers are generally effective, but the degree of effectiveness depends on the intensity of the intervention. Moreover, the cessation rate can be increased if complementary advice is provided by more than one educator (Fiore, 2008).

2.4.5 Gaps in the research

Most studies target specific populations of young people, but it is necessary to assess the effectiveness of interventions targeted for older people. Such a research project needs to be tailored to the particular motivations and factors that characterize this stage in life and must consider the substantial health benefits of smoking cessation in smokers aged 50 and over. Interventions should be appropriate to this group which differs from younger adults in their smoking behaviours and attitudes as highlighted in the previous chapter. Assessment of socially-supportive and group interventions (such as peer-led interventions) and also considering the factors which inhibit older Greek-Australian

smokers from quitting, it will be of great benefit to quit campaigns in the future to close the gap in the knowledge of the behaviour of this cohort. This forms the basis of the research detailed in subsequent chapters in this thesis.

2.5 Conclusions

A wide range of behavioural interventions, including low intensity interventions (such as brief counselling and self-help materials) and intensive interventions (such as motivational interviewing, group-based interventions, and tailored and stage-based interventions) can result in substantial improvements in the rate of smoking cessation. Although minimal intervention strategies may lead to smoking cessation, the results of this review show that the more-intensive interventions, specifically the methods which are based on group intervention and motivational interviewing, can yield high rates of abstention (however considering this issue is important that group interventions may attract more motivated smokers and reach a smaller percent of smokers than other interventions that do not require continued face to face attendance). That is, the more intense the intervention the greater the likelihood that participants will quit. The results of this review show that smoking cessation interventions need to be considered based on the participants' characteristics. While low-intensity interventions are effective in NESB, using tailored and more intensive intervention would be appropriate for older smokers. To increase the effectiveness of behavioural interventions it is necessary to consider not only the intensity of intervention: it is important, too, to take account of other factors such as the characteristics of the educator, the setting and duration of the intervention. Similarly, effectiveness can be enhanced if the proposed intervention takes account of psychological factors such as smoking-related knowledge, self-efficacy, intention to quit, and attitude to smoking. To be really successful interventions must be holistic.

The results of this systematic review identified two main knowledge gaps which helped us to formulate new research questions which will be examined in the next chapter. We identified that there has been no behavioural intervention based on peer-led support among older smokers. Also we found that to increase smoking cessation rates for older smokers, we need to consider more closely psychological factors such as smoking-related knowledge, attitudes towards smoking and intention or self-efficacy to quit smoking. Results of previous studies among ethnic groups in Australia have indicated

that older Greek-Australian smokers, one of the largest ethnic groups in Australia, have higher rates of smoking than other groups of older Australians. Behavioural intervention programs to support older smokers need to be designed from the perspective of the smoker, and so we designed a qualitative study to investigate whether older Greek-Australians would consider a peer-led intervention to be useful or feasible. The next chapter describes the qualitative study that we designed to answer that question and to collect the participants' views on the psychological aspects of smoking listed above.

Chapter Three: An Exploratory Study of Smoking among Greek-Australian Older People

The previous chapter explored various behavioural interventions which have been implemented in previous studies to support smokers to quit the habit. As some of the main findings of the systematic review indicate, it is well known that there are many behavioural intervention methods — mostly quite effective — that can help adults and older people to quit smoking. To date there has been little interest in using only behavioural methods to support older smokers and there has been no study of peer-led behavioural intervention among older smokers. However, it has been found that behavioural interventions can help both older smokers and smokers with a non-English speaking background (NESB) to quit or reduce their smoking. This chapter presents a qualitative study of a group of Greek-Australian older smokers to gauge the feasibility of conducting a behavioural intervention based on peer-led support. These participants' opinions, smoking histories, previous quit attempts and perceived barriers to smoking cessation will all be examined in this chapter.

The chapter is divided into four main sections: the first section presents a literature review of previous studies about smoking among older people and studies specifically on smoking in older Greek-Australians. The second section outlines the aims and methodology of the study, formulates the research questions, describes study design, sampling, recruitment, data collection and ethical considerations. The third section presents the main results from the qualitative interviews and the final section discusses these in relation to literature in the field.

3.1 Literature Review

3.1.1 Ethnicity, age and smoking

An older immigrant encounters many new experiences in their new country that may make it more difficult for them to quit smoking. For example, they usually have to access health services through health providers with a different language and culture, a fact that in itself presents a barrier to them receiving appropriate advice about how to stop smoking (Landow, 2008). In a study of four ethnic minority communities, including American-Indians, Vietnamese, Hmong and African-Americans, Fu and et al.,

(2007) found that smoking cessation counselling was rarely provided for immigrant smokers and that participants (especially African-Americans and American-Indians) did not seek support during doctor visits because of feelings of mistrust and/or having had negative experiences with doctors (Fu et al., 2007a). Cultural and social beliefs and values are important external factors which affect the smoking status of older immigrants and which govern whether smokers continue the habit or succeed in quitting. In a qualitative study among American-Indian smokers, Gryczynski and colleagues (2010) found that smoking behaviour is affected by the socio-cultural context of participants (Gryczynski et al., 2010). In a similar study among African-American smokers, it was found that smoking was normative (Webb et al., 2007). Thompson et al., (2003) found that the main influences on older heavy smokers were the social environment and emotional identity. In another study, Vietnamese participants emphasized that cultural values were the most important factors in their successful quitting of smoking (Fu et al., 2007a).

It is well understood that cultural context and values can affect older peoples' smoking status. In a study by Parry and colleagues (2002) among 22 current Scottish smokers aged between 65 and 84 years who suffered from arterial disease, the results showed that older smokers' health-related behaviour and beliefs changed radically during their lifetimes. Smoking was accepted socially for them when they were young; however, later in life, because of a combination of social restrictions, there was less social opportunity to smoke. The results of the study showed that although 'social' smoking continued for some, the wider social context did restrict patterns and levels of smoking for this group of older smokers. Important social factors at play included losing their job, losing their friends or spouses, sickness and disability, along with low socioeconomic status (Parry et al., 2002).

The role of the social environment in starting, continuing and stopping smoking among older people has been recognized as a main driver. In a study by Medbø and et al. (2011) of older smokers in Tromsø, northern Norway, smokers highlighted the role of family members, especially spouses, in regulating their smoking status (Medbø et al., 2011). The importance of a smoker's relationship with other smokers and the effect of social networks on quitting or continuing smoking were emphasized in a study by Nguyent and others (2012). Study results revealed that older smokers follow smoking norms in their established social networks; they also Results also indicated that older

smokers were stimulated to smoke by members of their social networks, like friends or family members. When older smokers gave up smoking, this changed their relationships with other smokers in their social networks (Nguyen et al., 2012). In another study of older workers in the construction and renovation industry in Canada and the United States, the results showed that smokers associated smoking with low social value. Smokers also acknowledged the role of peer support for cessation as an important factor (Bondy and Bercovitz, 2013).

3.1.2 Smoking-related knowledge and perceptions among older people

Health-related knowledge can be an important factor that contributes to disparate views on smoking-related disease, such as cancer (Baranowski et al., 2003). The results of previous studies among older smokers show that they have different levels of knowledge and varying perceptions about the harms of smoking and the benefits of smoking cessation. For instance, Kerr et al., (2011) implemented a semi-structured interview among 20 Scottish smokers and ex-smokers aged 60 and over. The authors found that the majority of current smokers were aware of the harmful effects of smoking on their health, although some of them were not fully aware of the most serious health dangers. Some of them had tried quitting and they indicated that health-related factors were important motivation to quit (Courneya et al., 2006). Knowledge of health-related dangers of smoking was lower among older minority groups (Baranowski et al., 2003). In one study of four ethnic minority communities, including American-Indians, Vietnamese, Hmong and African-Americans, all the groups mentioned that they only used a limited range of pharmacotherapy to aid cessation; their knowledge of the benefits of pharmacotherapy in this regard was low (Fu et al., 2007a). In a similar study of African-American smokers, researchers found that the participants had limited awareness of race-related health or risk aspects (Webb et al., 2007). The prevalent community attitude towards smoking can also help smokers to have a health-based perception about smoking. For example, in one study smokers were aware of the risks of smoking because in that community there was a strongly negative attitude towards smoking (Medbø et al., 2011). One of the important factors which can affect migrant perception of smoking is the effect of acculturation in different ethnic groups. For instance, in a study of Chinese and Russian immigrants to America, researchers found that Russian and Chinese groups with different levels of acculturation also differed in their smoking attitudes (Sussman et al., 2011). The results showed that acculturation

effects varied by ethnicity. The Russian participants had a more positive attitude towards smoking than the Chinese and this was linked to English language proficiency as a main predictor. Russians who were more acculturated were more likely to smoke than Russians who were less acculturated (*B*=0.69, OR=1.99, p=.002). "As predicted, the interaction between gender and English language significantly predicted smoking status (OR= 0.47, p=.02)". In both ethnic groups, smoking incidence was higher among females and they were more likely to be smokers and to have more positive smoking attitudes than males. Results of the study confirmed that women in these two ethnic groups followed the smoking patterns of American females, in which the rate of smoking is higher than for Russian or Chinese females. (Sussman and Truong, 2011)

3.1.3 Greek migrants and smoking

"Despite the decrease in the prevalence of smoking in the Australian population over the past two decades, smoking rates for some non-English-speaking background (NESB) groups remain high" (Tong et al., 2010, Baker et al., 2011). Greeks form an important ethnic group in Australia and Greek is an established language there. Greek is spoken as the second most common language at home in Australia (ABS, 1999), and is the fourth most frequently spoken language (Wilson et al., 1993). "Both Greek migrants and their Australian-born children are eager to preserve their ethnic identity, speaking Greek in the home, protecting Greek religious and social beliefs, and marrying within the same community" (Brown et al., 1996).

Previous studies have shown a high smoking rate among Greek-Australians compared to other ethnic groups. In 1998, a household survey in the Marrickville Local Government Area (LGA) revealed that "smoking among males was significantly higher than for the general population (43 percent compared to 23 percent)". Other studies of smoking prevalence among Greek-born males have shown similar results (Culpin et al., 1996a). The smoking rate among Greek-Australian older people is also higher than the average for other older Australians; it is roughly 18.4 percent for Greek-born Australians aged more than 70 in comparison with Australian-born people in the same age group, where the figure is 12 percent (Kouris-Blazos, 2002). Greek-Australian smokers not only smoke more than other NESB groups; they have less smoking-related knowledge and less intention to quit smoking compared with other minority groups. This makes consideration of or commitment to smoking cessation a topic of

considerable concern for the welfare of Greek-Australians. For instance, Carroll, Katz & Carvill (1999) carried out a telephone survey to test whether mainstream anti-tobacco advertising in Australia in 1998 impacted NESB participants aged between 18 and 40 years, specifically, Greek (n=130), Vietnamese (n=130), Cantonese (n=131) and Arabic (n=131) speakers. Results indicated the campaign had less impact on NESB (n=522) participants than on the general population (n=2981); there was less unprompted awareness of illnesses linked to smoking (80 v. 93%), although more NESB participants indicated an intention to quit in the next six months (53 v. 39%) or in the next 30 days (22 v. 18%). Greek and Arabic participants were less likely to agree that smoking had done damage to their bodies than Cantonese and Vietnamese speakers (45 and 45 v. 56 and 55%). All NESB groups had limited knowledge of the links between smoking and heart disease. Greek smokers were the least likely to be intending to quit in the next six months (44%), or 30 days (13%) and tended to be in the precontemplation stage of quitting (56%).

Whether this attitude persists in 2013 among older Greek-Australians is unknown. As far as we know, there are very few studies of smoking in the Greek-Australian community in general and there is no study on Greek-Australian older people specifically. Considering the fact that Greeks form one of the main ethnic groups in Australia, and that smoking rates in older Greek-Australians are higher than the average rates for other older Australians, understanding the smoking-related knowledge and perceptions of older Greek-Australians could illuminate effective measures to reduce smoking rates for this group. Eliciting the views of older Greek-Australians about smoking will help us to see and understand the patterns of smoking-related health behaviours among this ethnic group. Moreover, this information can be used as the basis for designing and developing effective, ethnically-specific smoking preventative strategies which could be useful for both Greeks and other minority groups. Older Greek-Australian smokers have usually been living in Australia for a long time and any decrease in their smoking rate since their arrival in Australia could indicate the positive influence of acculturation on their smoking patterns. Hence, this study sets out to explore older Greek-Australian smokers' perceptions and experiences of smoking and smoking cessation.

3.1.4 Aim

The purpose of this exploratory qualitative study was to elicit older Greek-Australian smokers' views and perspectives on smoking cessation in order to understand their knowledge and opinions of smoking-related health issues, smoking cessation and perceived barriers to cessation. In addition, the results of this study should help us to understand whether or not peer-led behavioural intervention is a feasible strategy to use with older Greek-Australian smokers.

3.1.5 Research questions

The previous chapter, a systematic literature review, showed there have been no peer-led behavioural interventions to date to support older smokers to quit. It also highlighted the importance of considering smoking-related knowledge, attitudes to smoking, intention to quit and levels of self efficacy when designing successful behavioural interventions for this group of participants. This qualitative study therefore set the following questions:

1. What smoking-related knowledge, perceptions, attitude, and intention to quit exist among older Greek-Australian smokers?
2. What types of smoking and smoking cessation experiences have Greek-Australian smokers had?
3. Is peer-led anti-smoking behavioural intervention feasible for older Greek-Australians?

3.2 Materials and Methods

3.2.1 Design

In order to identify underlying attitudes to smoking and motivations for quitting, a qualitative study was undertaken with a group of male and female older Greek-Australians. A phenomenological study was conducted among twenty older Greek-Australian smokers to understand their experiences about smoking. Phenomenology is concerned with “the study of experience from the perspective of the individual, ‘bracketing’ taken-for-granted assumptions and usual ways of perceiving" (Merriam, 2014). As Christensen, Johnson, and Turner (2011) mentioned, the main aim of a

phenomenological study is to explain the meaning, structure, and essence of the lived experience of a person, or a group of people, around a certain phenomenon. The phenomenologist efforts to realise people behaviour through the eyes of the participants in the study (Christensen et al., 2011). "In the human sphere this normally translates into gathering 'deep' information and perceptions through inductive, qualitative methods such as interviews, discussions and participant observation, and representing it from the perspective of the research participant(s)" (Wilding and Whiteford, 2005).

Participants were interviewed individually using a semi-structured interview schedule and where a previous quit attempt had been made subjects were encouraged to 'tell their stories about smoking cessation'. Face-to-face in-depth interviews were used in collecting the data. This kind of method has numerous benefits. It is a convenient method for the respondent and also suits people who are not able to read English or fill out a written questionnaire. It is useful for untangling a topic which is complex (Silverman, 2010). The interview situation provides an opportunity for the interviewer to see and interpret the body language and reaction of participants (Teddlie, 2009). It also enables the researcher to solicit the participant's cooperation (Leedy and Ormrod, 2005) in order to produce a higher response rate (Creswell and Clark, 2007). Interviews allow the interviewer to evaluate the respondent's understanding and interpretation of the questions; the interviewer also has an opportunity to clarify any confusion about the meaning of a question or a response by asking further questions (Bryman, 2006).

3.2.2 Sample and setting

We recruited older Greek-Australian smokers into the study using a snowball sampling (Silverman, 2010), where individuals identify potential participants known to them. Snowball sampling is a special non-probability approach for developing a research sample. To access an enough sample size, "existing study subjects recruit future subjects from among their acquaintances" (Noy, 2007). Snowball sampling method "is often used in hidden populations which are difficult for researchers to access, or in cases where a sampling frame is hard to establish and it is assumed that cases are affiliated through links that can be exploited to locate other respondents based on existing ones" (Noy, 2008).

We asked early participants to name smokers who may also be interested in participating in the study. Participants were adults aged 50 or over who self-identified

as Greek-Australians residing in metropolitan Adelaide and who currently smoke at least one cigarette a day. They were recruited through the Greek Orthodox Community Centre of South Australia (GOCSSA). Smokers who met the inclusion criteria were invited to participate in the study. Participants included both attendees and staff of the centre.

3.2.3 The interview

The interviews were conducted by a trained and experienced researcher who was expert (PhD student) in human communication according to his previous study background and career field and who had previously conducted similar interviews. Face-to-face interviews that lasted 45 to 60 minutes were conducted. For the first ten smokers the researcher needed more time to perform the interviews (about 60 minutes) because of the large amount of data but for the next ten smokers the interview mostly focused on less saturated data, so less time (about 45 minutes) was needed to collect the data. Every interview started with an invitation to participants to speak freely about their experience of and attitude towards smoking. Interviews were continued until data saturation was achieved. "Data saturation is defined as the completion point of the dataset and results" (Sawford et al., 2012). At this point all the themes and the relationships between the themes have been completely explored and there is no new information or themes to emerge by prolonging the interview. If the interview continues, data replication or redundancy will happen (Bowen, 2008). To understand how data saturation might apply to this study, the researcher reviewed the content of transcribed interviews and also all the codes, concepts, categories, relationships and themes. Finally, the researcher concluded that there was an element of data redundancy and that the categories, themes and inter-relationships had been thoroughly described. At this point, when the researcher felt that interviewing would not lead to new information or themes, it was concluded that data saturation had been achieved and no further interviews were conducted. A nationally accredited translator was used where necessary. This person translated questions and prompts from English to Greek and responses from Greek to English. All interviews were recorded for later transcription.

Thirty dollars reimbursement was offered to compensate the respondents for time and out-of-pocket expenses associated with their participation.

3.2.4 Interview schedule and content

An interview schedule was developed based on the relevant literature and the study's research aims and questions. Semi-structured interviews were used because they have the required flexibility to allow participants to draw on their life experiences when describing their smoking status (Kohlbacher, 2006). The interview schedule was developed through an iterative process (where interviews and analysis occur in parallel). The iterative process continued until data saturation was achieved (Flick, 2009). This approach enabled us to explore multiple aspects of participants' smoking status and it helped participants to talk openly about personal issues. "Some questions encouraged participants to reflect on their experiences, a technique known to increase the validity of participants' responses" (Silverman, 2010).

The interviews included open-ended questions aimed at exploring the participants' knowledge, attitudes and beliefs about smoking or matters associated with smoking, including their experience of barriers to quitting. Demographic information such as (age, marital status, education, employment status and, preferred language) were also collected. Participants were asked to describe their smoking history, cultural norms, environmental cues and their personal attitudes towards smoking. They were also asked about their understanding of the health-related risks of smoking and how they saw the benefits of quitting. Table 7 summarizes the topics discussed during the interview.

Table 7: Summary of the topics discussed during the interview

Smoking antecedents (i.e. kind of smoking, starting age of smoking, reasons started, number of years as a smoker, country of starting smoking)
Relationship between disease occurrence and smoking
What was good about smoking
What was bad about smoking — knowledge about benefits of smoking cessation
Intention to quit smoking and the role of family and friends, subject norms
Self-confidence and stage of motivation to quit smoking
Previous quit attempts (i.e. number of attempts, duration of quitting)
Reasons for relapse in later life and their experience of what led to successful quitting
Barriers to smoking cessation in later life
Counselling by health professionals (doctor, psychologist and so on)
The role of friends, family member and local community member in smoking status
Knowledge of local smoking cessation services
Views on tailored smoking cessation services for older people who smoke
Any other issues participant wishes to discuss

3.2.5 Recruitment and data collection

After visiting GOCSSA and obtaining primary information from the community managers, the researcher realized that most Greek-Australians, even though living in the Australian community, prefer to speak Greek. Hence, the researcher used a bilingual, qualified translator during the qualitative interviews and all written materials were offered in both Greek and English. These included the consent form, letter of introduction, information sheet and questionnaires. To make the English written materials understandable and readable for the participants, all of them were translated into Greek by a bilingual translator; then to ensure the accuracy of the translation all the translated materials were reviewed by another Greek translator. The translator also helped the researcher in carrying out the interviews. She had long experience of working with Greek-Australian Adelaide residents, including as a translator. The aims and procedures of the study were explained to the translator to assist her. We saw translation as an active procedure, with the translator playing an intermediary role during the interviews themselves. The translator was actively involved in translating back and forth and interpreting responses between the interviewer and interviewees. She was asked to eliminate any potential bias in her reporting and also not to exclude any information even if she believed it to be irrelevant.

To develop aspects of a conceptual category and to reach data saturation, 20 current smokers (twelve males and eight females), were recruited in two sessions, each of two-month duration over a one-year period. An in-principle letter was obtained from the GOCSSA manager (Appendix C) and the interviews were implemented in a private and quiet room in the centre. In the first session the first ten smokers were interviewed and then their interview transcripts were reviewed. Following analysis and interpretation of the data and extraction of themes, the researcher found that there was a need for more interviews to gather additional information; it was therefore decided to recruit ten more smokers to take part in the second session.

3.2.6 Data transcription and analysis

Transcription of the interview content was conducted in an empty room to minimize intrusion of the translator's judgments, and to eliminate background noise, which might reduce clarity and introduce guesswork into the transcription. To achieve accuracy in the transcription, a copy of the text was provided and the transcribers listened to the tape

a second or third time and corrected any errors. The entire taped text was checked several times and at different speeds to ensure completeness and accuracy.

Manual data analysis started after completing the data collection. The resulting text was analysed using qualitative content analysis to identify the final themes. Content analysis helps the researcher to 'sanitize' words into a number of content-related categories then count the number of instances that fall into each category (Silverman, 2011). It has been suggested that "when classified into the same categories, words, phrases and the like come to share similar meanings" (Cavanagh, 1997). The purpose of creating categories for content analysis is "to provide a means of describing a phenomenon, to increase understanding and generate knowledge" (Elo and Kyngäs, 2008). To create the final themes, two stages occur during the process of content analysis. At the first stage, "less relevant passages and paraphrases with the same meaning will be skipped" (Harland, 2011). To achieve greater similarity between the categorized meanings, similar paraphrases are bundled and summarized at the second stage (Flick, 2009).

All the texts were read and re-read closely; then key words or phrases that appeared relevant to the research questions were categorized according to content, a process which generated many units of meaning or codes (Elo and Kyngäs, 2008). Codes were then analyzed in terms of their frequency so that their occurrence in each category could be specified and compared (e.g.,'five of seven interviewees have said…', 'the majority of the answers focused…'). "As is common in a content analysis, the written summary included details of the number of people who provided similar responses and qualitative quotes were used to exemplify each category of response" (Clifford, 1997, Kerr et al., 2006). The text that corresponded to how the participant perceived their smoking experiences in different field of factors as categorized in Table 7, extracted from the transcripts and categorized a similar answers to each question. The interview data were then synthesized under each of the question headings (e.g. 'Why do you like smoking? What makes you interested in smoking?'); a content analysis of the complete dataset was undertaken (Clifford, 1997) and emerging themes were identified.

The researcher used SPSS (version 19) to generate descriptive statistics to illustrate smokers' education, age, and health status.

3.2.7 Ethical considerations

This study was approved by the Social and Behavioural Research Ethic Committee (SBREC) of Flinders University, South Australia (Appendix D1). The participants were

provided with a consent form, an introduction letter, and an information sheet in both English and Greek versions (Appendix E). The aim of the study was clearly explained to the participants and they were aware that their participation in the study was voluntary and they could leave the study at any time. All participants were informed that their transcribed information would remain confidential. Transcripts and audio tape recordings were labelled with a code only and no identifiable names were used.

3.3 Results

This section presents the result of this study in two main parts which include the characteristics of the sample, and the themes which have been identified under the heading 'Participants' description of their smoking behaviour'.

3.3.1 Characteristics of the sample

3.3.1.1 Participant background/demographics

Twenty Greek smokers who were more than 50 years old were interviewed for this study (twelve males and eight females). Their mean age was 64.6 years (SD=9. 96 years). Most of the participants had completed high school level of education (12) and most of them preferred to communicate in Greek (12). Majority of the participants (12) identified as pensioners. Most (13) were suffering currently from diseases such as cancer or heart disease (Table 8).

3.3.1.2 Participant smoking characteristics

Most of the participants (17) agreed that they smoked cigarettes only and all of them smoked daily. All of the participants said that they started smoking when they were young. The mean age of smoking commencement was 19 years (SD=3. 72 years) and 14 of the respondents said that they started smoking when they still lived in Greece. The mean years of smoking were 45.5 years (SD=10.8 years), and most of the respondents (11) said that they had smoked for more than 50 years.

The mean number of cigarettes smoked each day was 16.5 (SD=9.98 cigarettes). Five people smoked 11 to 20 cigarettes per day; seven smoked more than 21 cigarettes per day and eight of the interviewees smoked more than ten cigarettes per day. Fourteen of

the participants indicated that they started smoking within 30 minutes of waking up. Eleven of the participants mentioned that they had attempted quitting at least twice, with a maximum of 15 times. Among the 16 smokers who had tried to quit smoking, 11 of them had quit for at least three months, (maximum 20 years) and five of the participants had quit for less than two weeks. (Table 9).

Table 8: General characteristics of participants

Participants Code/Gender	Age	Education Level	Preferred Language	Occupation	Health Situation
1. Male	79	Primary school	Greek	Pensioner	3 heart attacks and bladder cancer
2. Male	71	Primary school	Greek	Fitter/welder/blacksmith (Pensioner)	No disease
3. Female	51	High school	English	Work in nursing home (GOCSA)	No disease
4. Male	76	Primary school	Greek	Farmer/ laying cement foundations (Pensioner)	Heart surgery twice (coronary obstruction)
5. Male	73	Primary school	Greek	Pensioner	Colon cancer
6. Male	73	Primary school	Greek	Pensioner	No disease
7. Male	74	Primary school	Greek	Gas company (Pensioner)	No disease
8. Male	74	Primary school	Greek	Assembler (pensioner)	Respiratory problems
9. Female	61	High school	Both English and Greek	Translator	Respiratory problems
10. Female	65	High school	Both English and Greek	Pensioner	High blood pressure and hyperthyroid
11. Male	66	High school	Greek and English	Taxi driver	Diabetes and sarcoidosis
12. Male	62	High school	Greek	Pensioner	Back pain
13. Male	51	High school	Greek	Taxi driver	No disease
14. Female	53	Bachelor degree	English	School teacher	High blood pressure
15. Female	70	High school	Greek	Pensioner	Osteoporosis
16. Male	72	High school	Greek	Pensioner	Emphysema and liver problem
17. Male	53	High school	English	Taxi driver	No disease
18. Female	69	High school	Greek	Pensioner	No disease
19. Female	50	High school	English	Bank teller	Hyperthyroid
20. Female	50	High school	English	Unemployed	Crohn's disease

Table 9: Smoking-related characteristics of participants

P.C	Kind of smoking	Smoking consumption	Starting age/country	Years as a smoker	Average of cigarettes daily	Approximate starting time after waking up	Number of quitting attempts	Longest episode of quitting
1	Cigarette	Daily	22/Greece	57	18-20	5 min	3	20 years
1	Tobacco	Daily	17/ Greece	54	20-25	30 min	0	-
3	Cigarette	Daily	27/Australia	24	12	30 min	4	2 weeks
4	Cigarette	Daily	16/Greece	58	25	2-3 hours	1	2 years
5	Tobacco	Daily	12/Greece	61	2-3	30 min	1	3 days
6	Cigarette	Daily	22/Greece	51	10-12	20 min	1	**2 weeks
7	*Cigarette	Daily	19/Greece	55	25-30	20-30 min	0	-
8	Cigarette	Daily	24/Greece	50	20	30 min	1	***4 days
9	Cigarette	Daily	16/Greece	45	6-10	10 min	10	1 year
10	Cigarette	Daily	20/Greece	47	4	10 min	10-15	6 months
11	Cigarette	Daily	15/Greece	49	30	5 min	4-5	9 months
12	Cigarette	Daily	14/Greece	48	18-20	20 min	2-3	6 days
13	Cigarette	Daily	19/Australia	32	25	1-2 hours	0	-
14	Cigarette	Daily	18/Australia	30	10	1 hours	3-4	11 years
15	Cigarette	Daily	25/Greece	45	2-3	No	2	****3 years
16	Cigarette	Daily	17/Greece	55	25	15 min	2	2 years
17	Tobacco	Daily	18/Australia	35	30	5 min	3	5 years
18	Cigarette	Daily	19/Greece	50	10	30 min	4	****9 Months
19	Cigarette	Daily	20/Australia	30	2-3	No	1	3 months
20	Cigarette	Daily	20/Australia	35	3-4	No	0	-

*He started with tobacco but now smokes cigarettes.

** Due to getting cold

*** Due to stay in hospital

**** Due to pregnancy

3.3.2 Participants' description of their smoking behavior

The smoking experiences these respondents shared led to the emergence of four themes. These included: reasons for smoking, knowledge or perception of smoking and its effects on health; barriers to cessation; and identifying potential facilitators for cessation support.

3.3.2.1 Reasons for smoking

When they were asked about their reasons for smoking, the majority of the respondents mentioned that smoking assists them to deal with tiredness and stress and helps them to relax.

P17 (a 53-year-old male) was a taxi driver. He had four brothers and one sister and said just one of his brothers was a light smoker. His sister's husband smokes cigarettes. P17 genuinely believed that smoking could reduce his stress:

> *I think stress is a big factor. When you have a problem or you are worried you smoke more. It reduces my stress and when I go to the doctor or somebody else and my anxiety builds up I smoke cigarettes. The reasons that I started smoking were that we had a lot of stress. Now whenever I am under stress I probably light up.*

When participants were asked about the evidence that smoking actually reduces stress, most of them were not aware of the facts.

P 11 (66-year-old male), used to be a taxi driver for many years and before that he worked on building houses. He has been a smoker for a long time — about 50 years. He has diabetes and sarcoidosis. His father died of lung cancer when he was 69 and had suffered from other diseases which were TB-related when he was young. He believes that all of his relations smoked and that smoking has been accepted as a norm in his family. His uncles, his father and his cousins all smoke. One uncle smoked and died when he was 68. P11 describes below how he is almost sure that there is a link between smoking and stress relief and it all comes from his mind:

> *Yes that is in my mind and maybe that is wrong. We think it does. But I think it is not true. Might be just a myth. For me it does. It seems it does help me. For me it is true. It is in my mind.*

P3 (51-year-old female), used to smoke up to 25 to 28 cigarettes a day but now only 10 to 12 per day. Her father has been a long-term smoker — he started smoking at 14 and now he is 81. Her father hasn't been affected by smoking and is still very healthy. Her mother died because of cancer even though she was not a smoker. In this data extract P3 is unclear about the exact association of smoking and stress relief, but says she uses it as a means of forgetting her problems:

> *Oh, I suppose it just relaxes me. I don't know how it does but for me it just relaxes me. It's my time, you know, forgetting about anything else I suppose it's like having a social drink. I think having a cigarette calms me down as well.*

The majority of participants (14 smokers) agreed that smoking is an addiction. P2 (a 71-year-old male), started smoking when he was 17 and he still smokes after 50 years. He maintains that he is now 72 and has no [health] problem. P2 explains here that smoking is part of his social life as well as being a nicotine addiction:

> *I am addicted to smoking, my body needs nicotine, and this is the main cause of my smoking. It is also a social thing. I do like to smoke. When you go out you like to have a coffee and then have a cigarette. It is part of your routine. You have a coffee, you have a cigarette and you have a conversation. You know it is a social part of your life more than anything else, even when at home. But when I am at home I still smoke even when people are not around. So it really is an addiction and a habit.*

P7 (74-year-old male), used to work for the gas company. He has smoked cigarettes for 55 years and started smoking when he was 19 or 20 years old in Greece. He now smokes between 25 and 30 cigarettes per day. P7 explains that for him cigarettes are a drug that his body craves:

> *[I smoke] because, this is what I should call a drug. Like anything else. It is in my system. This is in my blood. I need nicotine. I need to smoke. Just like when people need a drug and the government wants to protect them so it sends them to a special room to take the drug. So if I can find any tobacco to smoke, I do smoke.*

Three of the participants admitted that for them smoking is an addiction. P4 (a 76-year-old male) had undergone heart surgery twice and had a stent in his heart to keep the artery open. His son had a heart attack because he smokes a lot. He has smoked now for around 60 years. His father smoked three or four packets a day and his father died due to smoking. P4 describes the severity of his addiction and compares it to dependence on alcohol:

> *It's like alcohol, when you are addicted to alcohol, it's the same with smoking. You get addicted to nicotine. It is an addiction. I think it is more addictive than anything else. You are addicted to it and you even enjoy buying it. Yes. It is an addiction.*

Three participants indicated that they smoke for enjoyment. P14 (a 53-year-old female), was a secondary school teacher. She has high blood pressure. She started smoking when she was 18 and she has smoked for about 35 years. Her mother smoked all her life. Her father was a smoker and he died because of cancer. She has a daughter aged 20 and a son who is 17. Her daughter also smokes. P14 explains here that she smokes for enjoyment even though she knows it can damage her health:

> *I have no idea. I just enjoy it. I know that smoking is very harmful but I as I said before, I still enjoy it. Really the best part is the light up for the first puff. Then, you know, when I go home I rest and I have a cigarette and I look at my garden and smoke a cigarette. I enjoy a cigarette.*

P19 (a 50-year-old female) who was born in Australia and works as a bank teller. She started smoking when she was 20. She suffers from hyperthyroidism. Her father is 90 and he recently developed emphysema. He used to smoke but stopped smoking many years ago when he was 65 or 70. She has two sons and neither of them are smokers. When asked why she smokes, P19 says that she enjoys the social aspects of smoking:

> *I don't know, it is a social thing. It makes me relaxed. The more company that I have the more I smoke — I enjoy it. I like to smoke after drinking alcohol or coffee or after a lot of food.*

3.3.2.2 Knowledge or perception of smoking and effects on health

Of the 13 respondents who suffered from different kinds of diseases, eight had smoking-related diseases such as cancer and had experienced heart attack. When they were asked about the relationship between smoking and their disease, four of them denied any relationship. The other four were uncertain about the relationship.

P8 (74-year-old male), was an assembler and now he works in the garden. He has respiratory problems. He had three children but two of them are now married and he lives with his wife and one child. His first daughter started smoking but gave it up.

In this data extract P8 refuses to accept any relationship between smoking and his symptoms and seems unaware of the health dangers of smoking:

> *I don't know[the cause of] this trouble. When my phlegm went black I went to the doctor and he checked me over and said there was nothing wrong. It came clear but after four years it happened again. The doctor sent me for an X-ray and it showed that nothing was wrong.*

Eight participants who had signs of disease made judgements about the relationship between smoking and their health condition based on their own or their family's personal experiences rather than on the medical facts. P14 (a 53-year-old female) believes that her high blood pressure is hereditary and has nothing to do with her smoking. Similarly, her close relatives got cancer, so she believes she will probably get it too, whether or not she smokes:

> *No[I discount any relationship] because I was diagnosed with [high blood pressure] in 2000 and I was not smoking at that time. It is more a hereditary thing and clearly smoking doesn't affect it. I have smoked a lot of cigarettes in the past because my father was dying of lung cancer and his younger brother also got lung cancer. I probably am a good candidate [for lung cancer] and I could get it because I used to smoke at one stage a lot but now I don't smoke a lot and so it is not a problem.*

P16 (a 72-year-old male) was a taxi driver but now is a pensioner. He suffered a spasm in his liver and he has slight emphysema. He has four sisters of whom none have smoked. He has two sons of whom one smoked a little but now has given up. His wife

is also a smoker. P16 says he believes that smoking is not a risk for disease (low perceived risk) and sees only a vague connection between smoking and his symptoms:

> *For me [there is no relationship] except for a few problems in my chest; that's because when I was working I sometimes had chest pain.*

In some cases participants mentioned that their doctor or books they had read were their sources of knowledge about the relationship between smoking and health. P11 (66-year-old male) said he had had a stressful life bringing up his family and they all encouraged him to smoke. He got married in 1967 and had three children and two grandchildren; then he got divorced and later his ex-wife died of leukaemia. He did not re-marry again. His daughter smoked for only one-and-a-half years and his son is a light smoker. In the data extract below, P11 says he is reluctant to take his doctor's advice to cease smoking and take exercise. He is uncertain whether the doctor is linking smoking to the health problems he is experiencing and he is willing to mislead the doctor about the extent of his smoking:

> *Yes, my doctor told me that it could be because of that [smoking]. He told me that exercise is good but I have got some inflammation and I need to be careful* […] *The doctor tells me 'don't smoke'; he doesn't know how many cigarettes I smoke but he tells me that it is not good.*

The majority of participants (14) were not fully aware of the dangers of smoking, only being exposed to very general information. Only six smokers, who were mostly women (four), were well informed about the dangers of smoking. It is notable that all of these had a higher level of education in comparison with other respondents. One of them worked in GOCSA, and her previous study background was related to health. Another worked as a schoolteacher and another was a bank teller. Two of them worked as taxi drivers. One female was a pensioner.

P2 (a 71-year-old male), believed that not only was smoking not dangerous but it was actually good for his health:

> *So far I have never experienced any problem with my health. So far, It hasn't been harmful […] I can't stay in places when I can't smoke. I have been sick whenever I*

have quit. [When I smoke] I can think better. It improves my breathing and my mental state.

Five of the participants, however, indicated that they realized there were some negative side-effects associated with smoking but that the low number of cigarettes they smoked (3 to 12 cigarettes a day) meant they were not at risk. P6 (a 73-year-old male) has smoked for about 51 years. He smokes about ten to twelve cigarettes per day. His wife has had an operation.

Here P6 explains that he thinks smoking a few cigarettes a day is not a health risk (low perceived risk), so he doesn't need any smoking cessation advice or services:

I believe that 10 to 12 cigarettes a day is not harmful to me and that is why I haven't asked for help [to quit]. The amount of cigarettes that I smoke, no, but if you smoke more, yes.

P15 (a 70-year-old female) used to work as a cleaner but she is now a pensioner. She suffers from osteoporosis. She started smoking when she was 25-years-old and after arriving in Australia. Her husband is a smoker and she started smoking after her marriage. She has reduced her number of cigarettes to two or three per day. P15 believes that her low consumption of cigarettes will protect her from smoking-related disease (low perceived risk):

It affects your brunch your heart and your blood but I believe that because I don't smoke many it doesn't affect me […] I don't smoke when I am busy with my garden, and my grandchildren, and so I believe it is in my mind. I don't smoke a lot and it doesn't affect me.

Four of the respondents confined their remarks to agreeing that smoking consumption is harmful for their health without describing any effects or supplying further information. However, one of them, in responding to the question 'Is there any relationship between smoking and disease?' (he had bladder cancer and three heart attacks/strokes) denied that there was any relationship.

P5 (a 73-year-old male), started smoking when he was 12. He is now a pensioner but used to be a market gardener. He had an operation following a colonoscopy and cancer diagnosis four years ago. He now smokes just two cigarettes a day. His three children

are all smokers. P5 agreed that smoking was harmful and he named some of the symptoms; however, he denied any relationship between his own disease and smoking. He believes that the kind of tobacco he smokes is not harmful and free of side-effects. He also believes that his low consumption of cigarettes protected him from harm. Here P5 explains these perceptions:

> *Up to now I have never coughed because I have never changed tobacco. I have smoked all the time since 1960. I started off with Drum tobacco and. I have never changed. If you get some from somebody else one cigarette or two days before I want to smoke I stop coughing. With a Dram smoke no cough, no nothing.*

Three of the respondents said that while they believed that smoking is harmful, they also thought that quitting smoking has no health benefits. To justify this claim, they referred to people who had died of cancer even when they had never been smokers or they said they knew a lot of doctors who smoked cigarettes.

P2 (a 71-year-old male) quit smoking only once, when he travelled to Singapore, and it was only for the six-hour flight. He maintains smoking is not harmful (postitive attitude towards smoking) because he knows many non-smokers who have died of cancer.

> *Government tries to money to me. Because I can't give up smoking it means I am left with only 33 dollars. I smoke Drum tobacco. […]. Its cost maybe is two dollars and the government makes 500 percent profit! Want to stop making tobacco it means they make profit from cigarettes and put this advertise on cigarette packets that it makes your health damage, it causes cancer. I don't believe it. There are a lot of people who have never smoked and who get cancer.*

Five of the respondents judged smoking's harmful effects based on their own physical experiences; for instance, one stated, *'Smoking is harmful to my lungs but not to my heart'*(P8). or *'If I smoke a lot, I feel more tired'*(P19).

Overall, the side-effects of smoking that respondents identified were related to long-term effects like cancer and heart disease; they could not identify short-term effects or recognize any of the social or mental effects of smoking.

Eight of the participants acknowledged that quitting smoking would be advantageous to their health, although they did not identify in what way and their decisions seemed mostly influenced by their own previous experiences of smoking-related diseases.

Three of the participants, while acknowledging the positive effects of quitting smoking on their health, limited the claimed benefits to their own particular health issues and evidently had not based the decision to quit on comprehensive information from health professionals. For example, they claimed that their decision to quit smoking was caused by their phlegm, breathing problems, cough, headache, or just to reduce their eye soreness.

P19 (a 50-year-old female) quit only once and only for three months. Her husband was a heavy smoker and had had a heart attack and so he had to stop smoking. Her knowledge of the benefits of quitting was confined to minor symptoms such as headaches and sore eyes, as she explained below:

> *Probably. How do I know? Because I find if I smoke too much I feel tired and my breathing is affected. Well, I feel better when I don't smoke. If I smoke too much I get headaches and sore eyes. That is how it affects me. Other people don't get this. Everybody is different.*

P16 (a 72-year-old male), knew little about the health benefits of quitting but remembered some of the minor positive effects. His judgement was largely based on his own previous experiences.

> *Yes about two years ago I stopped smoking I could smell much better and I liked the taste of food.*

One of the interviewees, even though he had had three heart attacks, and gall-bladder cancer, only mentioned that quitting smoking improved his lung function, as well as bringing some financial benefit.

Four of the participants mentioned that smoking cessation was a good idea but not for the elderly. They believed that the damage had already been done and quitting smoking would not be beneficial for them. For example, P11 (a 66-year-old male) smoked 30 cigarettes a day; however, when he was younger he smoked less. In the interview he showed some awareness of the health benefits of cessation, but concluded that in his case the damage had been done:

> *I think it probably would be beneficial but it is a bit late. I mean I have smoked so long the damage has been done. Even so, it could benefit rather than be harmful.*

Eight of the interviewees believed strongly that quitting smoking did not have any positive effect on health; rather, it could be harmful to one's health. P7 (a 74-year-old male), discounted the benefits of smoking cessation and also had a low perception of risk. He judged that, at his age, with his smoking history, there might actually be more risk in quitting:

> *Listen. If you've smoked for 55 years like I have you have to run with it. If you quit smoking now, your body may not cope with the change; it might even make you sick in some way.*

Only five of the respondents believed that smoking cigarettes is a "crazy habit". Some had a positive attitude towards smoking. They expressed beliefs such as: *Smoking is an enjoyable activity* (P1 and P4),*' A cigarette is my best friend'* (P2*), 'I can't live without smoking'* (P9 and P19), *'The amount of cigarettes I smoke is not harmful'* (P6 and P15) and *'I don't believe that I will get cancer from smoking cigarettes'* (P2).

Some of their life events may have influenced participants to adopt a positive attitude towards smoking. For instance, one of the respondents mentioned that *'Smoking doesn't have any harmful effect on my body (my chest X-ray was clear) so therefore I don't need to quit smoking'* (P1); or another smoker said: *'I know a lot of people who didn't smoke, but they are in the cemetery'* (P2). One of the participants recalled:*'When I went to my doctor's office, he told me not to smoke but then I saw he was smoking'* (P5). Another rationalized her continuing smoking by pointing out that in her family the smokers are healthy while some non-smokers have cancer:

> *In my family all family members who smoke cigarettes are healthy while two of [my wife's] family members who haven't ever smoked have cancer.* (P10).

3.3.2.3 Barriers to cessation

The majority of the respondents (16) had very low confidence in their capacity to quit smoking (Most indicated less than ten percent when asked to specify a percentage). One of the participants felt that he was too old now to quit, and he had more willpower when

he was younger. He believed that changing behaviours at his age was not easy, and he could not change his level of smoking consumption. He suggested that tackling smoking cessation at a younger age was more likely to lead to success and that if he were younger he would be able to quit smoking.

One of the respondents, however, claimed that he had very high confidence in his ability to quit smoking (100%), but the one time he tried, the attempt lasted only two weeks. He explained that he had quit smoking because he caught a cold, and he started smoking again after recovering.

Two of the interviewees told us that they tried very hard to quit smoking, but had little confidence that they could succeed.

P18 (a 69-year-old female), was a housewife. Her only health concern was an accident which had caused pain in her back and neck and some anxiety. She started at 19 years and had smoked for about 50 years. She was married to a husband who was a light smoker and she herself smoked no more than ten cigarettes a day. She stopped smoking just once for nine months. Her daughter also smoked and she stopped for two years and then started again. Her son was a smoker and he stopped nine years ago. Here she explains that she has strong intentions to quit but due to low self-confidence she is not able to stick with her resolution (high perceived barrier):

> *Look every night I tell myself that I am not going to smoke tomorrow and I must be strong, but next morning when I have my coffee I start smoking again.*

Only one of the participants stated that if she decided to quit smoking she could do it. She had been successful in previous attempts but some influences, especially her brother, who was a heavy smoker, led her to start again.

According to Table 2, sixteen of the respondents had stopped smoking at some point in their past for either a long time (more than three months) or a short time (less than two weeks), but they had all begun smoking again. Two of the participants had never attempted to quit.

Of the 16 participants who had attempted to quit, three of them mentioned that their wife or child's death was the main reason for their smoking relapse. Others mentioned the following factors as leading to their failure: mental and nervous problem (six),

visiting other smokers including friends and family members (six), the role of the environment (eight), loneliness (two), stress (two), fun (one) and lack of knowledge (one).

P3 (a 51-year-old female), had tried to quit four times and so far two weeks had been her longest attempt. The first attempt took place when her son was approaching teenage years and she believed that her smoking set a bad example for him. In interview, P3 described the powerful effect of withdrawal symptoms and nicotine craving and how these created a barrier to her successful cessation (high perceived barrier to smoking cessation):

> *I was agitated. I was restless. I felt full of tension. You know my body was just reacting and I found that if I had a coffee I associated it with having a cigarette. If I had a coffee without a cigarette I tended to crave food. It was a case of what do you do with your hands… it's a similar feeling to being pregnant. That's why I found it hard to stop.*

P9 (a 61-year-old female) was an interpreter and she had a breathing problem. She had been a smoker since the age of 16 but she had stopped many times; the longest quit episode was one year because of her pregnancy. She had smoked for about 45 years and claimed that she was trying very hard to stop but she had not been successful to date. Her son used to smoke; however, he had now stopped smoking. She was trying again to stop smoking because she did not want her son to start smoking again. P9 described her many quit attempts and her high perception of barriers to smoking cessation:

> *It is bad influence I think. It is a sort of company. All the time that I had stopped I couldn't get [smoking] out of my mind but I tried to do things to forget about it. If you are with someone that smokes it is easy to start again by having one and then another and from then on go and buy a packet.*

P11 (a 66-year-old male) had attempted to quit about five times. His wife's death made him smoke again to ease all the stress he was feeling. He started smoking after migrating to Australia. He went into farming and he first picked up a cigarette when he

was 15 years old. Here P11 highlighted the role of life events and stress as a barrier to smoking cessation:

> *Because your life is full of ups and downs happening every day. You have to cope with a lot of problems every day. That is your lifestyle and then you go somewhere, sit down with smokers and have a coffee. You have stress because of your family or your kids and they all push you to do something…*

P12 (a 62-year-old male) was a pensioner. He finished technical school as an electrician and started smoking when he was 14. He had two children, a son aged 36 and a daughter aged 34. His son used to smoke two or three cigarettes a day but he had now stopped. His own father had been a smoker and he died from a disease that was not related to smoking. P12 highlighted the role of social networks, especially the pressure of friends, as a barrier to quitting smoking:

> *It was because of the company. I have two or three friends. They offer me cigarettes and I say I am quitting but they urge me to take a cigarette. They tell me to take just this one and then I start again. It is not because of weak willpower. I just enjoy it.*

In responding to the question 'How can you overcome these barriers? most of the respondents (eight) had no ideas (*I don't know)*. Six of the interviewees believed that if your brain is ready and you are psyched up you can be successful in quitting. They also hinted at other factors such as: stress control, the role of friends and relatives and the role of knowledge about smoking's harmful effects on health, all of which are important factors in dealing with the urge to start to smoke again.

3.3.2.4 Guidelines/potential facilitators for cessation

Among the respondents only three said that habitually smoking cigarettes was not a financial burden. Other interviewees stressed clearly that the financial burden was a major issue linked to their smoking.

When interviewees were asked about the role of financial factors in decisions to reduce or quit smoking, they declared that, while they were conscious of the financial burden, being addicted to smoking was the main factor that kept them smoking.

Some of the respondents were concerned about the financial burden (seven respondents); but they preferred to budget for cigarettes by saving their money. Four of the respondents believed that the financial burden was not a serious problem for them because they only smoked a little.

P20 (a 50-year-old female), was born in Australia and was married in Italy. She said she was unemployed at the moment but previously she had worked in business. She had suffered from Chrohn's disease since 1997. She started smoking when she was 20 or 25 and she had never attempted to quit. P20 here minimizes the financial burden of smoking because she considers herself only a light smoker:

> *Yes. It costs but it is okay. I am not a big smoker — like a packet a day — so it doesn't affect me.*

P7 (a 74-year-old male) had never quit smoking even for one day in over 55 years of smoking. However, P7 acknowledged the cost of smoking as a disincentive:

> *Yes. It is especially harder now because before it was too cheap but now it is expensive. For one packet of 25 cigarettes it's 16 dollars. In my case I sometimes smoke one-and-a-half packets a day. If I smoke about one packet that is 16 dollars a day and 365 days in a year— you work it out. It is a problem.*

A few of the participants (three) did not consider the financial issue to be as important as the health issues. In their opinion, health is more important than cost considerations. P11 (a 66-year-old male), for example, stressed the importance of health vs. the costs of smoking:

> *Yes that is another problem because a packet of cigarettes is about 18 to 20 dollars. That is not at the forefront of my mind because I am more concerned about health. My health is important.*

When asked about the possibility of receiving free help to quit smoking, most of the respondents (14) completely agreed with it, and they were eager to receive free aids to quit smoking. Only one of the interviewees was not sure whether to participate in the quit smoking program. The main reasons given for accepting support were health and cost.

P1 (a 79-year-old male), was 22 when he started smoking. He is now a pensioner. He had experienced three heart attacks and was also suffering from bladder cancer. He stopped smoking for 20 years but started again after his wife died. His son had been a smoker and had given it up and had organized a plan (three cigarettes per day at different times) to help his father to quit smoking. P1 specifies cost and health (in that order) as his reasons for accepting support to quit smoking:

> *First for my pocket and second for my health because I am 79 and since I lost my wife life is difficult for me. Even if I die tomorrow, I would say welcome.*

The majority of participants (10) who agreed to receive support would prefer it to be administered by their doctor. P17 (53-year-old male) expressed a high level of intention to quit and had discussed the new technological aids with his doctor:

> *Yes I would accept and I am talking with my doctor at the moment. I asked him about electronic tobacco and I am thinking a lot about giving up. I want to start to cut down and you know I have heard about electronic cigarettes and a lot of people have used it and it makes you more healthy.*

Six of the participants were not willing to try free cessation services. They mentioned some reasons for their lack of willingness: too old, long-term smoking consumption and their belief that their body and brain needed them to continue smoking.

P4 (a 76-year-old male) said he had reduced his smoking. When he was in Greece he used to smoke a packet a day but here he smoked one packet every two days. He had quit smoking only once for a period of two years. P4 cites the factors that make him unwilling to participate in the cessation program — age, long-term consumption, physical dependence on nicotine:

> *I'm getting to the end of my life now. I don't smoke too much. I smoke sometimes about 10 or 15 cigarettes in half a day and then stop for six or seven hours. My body doesn't want it then... I don't need anyone to help me. If I want to stop I will quit because you know everything comes from the brain — when your brain tell you to smoke, you smoke.*

P11 (a 66-year-old male) sees the role of the individual's willpower as paramount, so external help is less important:

> *I still believe that if you can't stop yourself other people can't help you. That is my belief. You need to seriously want to [stop]. If you really don't want to give up, nobody can help you. If you quit and then start again you will convince yourself psychologically that you can't ever stop again. You need to work at it — really work hard. I've never got help — I know a lot of people do get help but I doubt it would do any good. I still believe that it is up to you to decide what you are going to do. A lot of people have told me to go and get help. I did take some tablets once for nine months but it didn't help me to quit.*

Five of the interviewees asserted that if they did decide to quit smoking they would just do it without help from anyone; their said their brain's readiness to quit was the most important factor and therefore they would make the decision for themselves.

P6 (a 73-year-old male) had not tried to quit smoking. He stopped smoking two weeks before the interview because of a cold but as soon as he recovered, he started again. P6 explains here that only he can decide to quit and he will succeed when he is ready to make up his mind to do it:

> *I believe that if I decide to quit I will do it by myself and I don't need anyone else. Whenever my brain is ready, I can stop by myself.*

All of the interviewees stressed that increased fruit and vegetable consumption was an important part of their nutrition program. Most of them (12) described themselves as gardeners, and said they preferred to eat vegetables than meat.

Although only four respondents mentioned that they did some exercise, such as swimming or basketball, all of the participants had an appropriate physically active lifestyle. This could take the shape of working at home, in the garden or at a workplace. Only three of the interviewees said that they could not exercise because of their age or their limited free time.

P13 (a 51-year-old male) was a taxi driver. He started smoking at 19 and he had smoked for about 32 years. Nobody else in his family smoked except his 104-year-old

grandfather. He admitted that lack of free time and increasing age affected his level of physical activity:

> *No, unfortunately, because of my job. I am a taxi driver and I work 12 hours a day. Sometimes I do a long walk.*

Among the respondents, only six mentioned that they had received very limited advice about how to quit smoking from their physician (psychologist or cardiologist), but they had not taken this up.

Most of the participants (14) indicated that they had not received any help with quitting smoking, and they hinted at some contributory factors, such as lack of any evident health problem or disease, which they thought made it inappropriate for them to access special support.

P5 (a 73-year-old male) said he had not sought support to quit because he had no obvious health problems and so he had no need of such help:

> *I haven't noticed any bad effects. Smoking hasn't affected my lungs, such as with coughing or breathing problem, or…*

One participant mentioned that nobody had suggested that she could get any support; one believed that receiving support services would not be appropriate or acceptable in her case.

P3 (a 51-year-old female) said that she felt reluctant to stop doing something that she enjoyed doing. She also said she would feel resentful if someone pressured her to stop when she did not feel ready.

> *because probably I didn't want somebody telling me 'you shouldn't be smoking' and 'it's not good for you' and 'this is what you should do', because I know all of this but at that particular time, maybe, I wasn't ready to quit. you know either I didn't want to or didn't think it was urgent to quit, so why should I have somebody in my face telling me things I already know and making me feel bad for something that I am enjoying doing?*

All of the participants mentioned that they had not received any support to quit smoking. Whenever they went to their doctor he/she advised them to quit smoking, but did not suggest anything practical for them — they just advised them to quit smoking or

else prescribed them medication. P9 (a 61-year-old female) had a family where most members smoked cigarettes. Her brother was a heavy smoker and her two sisters, in Greece and Sydney, also smoked. Her other two sisters got breast and leg cancer although they did not smoke at all. P9's doctor told her to stop smoking but did not offer any supportive program:

> *My doctor just tells me off and says 'you should just quit' but I haven't listened to him — I stop and then start again usually.*

Four of the participants mentioned that their doctor had prescribed nicotine patches for them, but they could not continue this treatment due to side-effects such as abdominal pain, finger swelling and other problems. P5 (a 73-year-old male) describes his problems with side-effects:

> *I tried once [to give up] and went to the doctor and he gave me some tablets to help with stopping smoking. After I took them my hands swelled up and I couldn't get my ring off my finger; I had to cut the ring off. I went to the Queen Elizabeth hospital and I saw the doctor and he gave me three small tablets.*

P3 (a 51-year-old female) was wary of the side-effects of nicotine patches:

> *No nothing. My doctor has offered me some medication; he says the medications are available but again I think, you take medication you solve one problem, great! but then you have got side-effects from that. I'm afraid of the side effects now. Those side-effects won't affect everybody, of course, but I don't know how my body might react. You know the medication is pricy as well — it is about a hundred dollars — but that is not the issue because if it makes me quit cigarettes, so a hundred dollars doesn't really matter to me but I am a bit sceptical of the effects that it will have and is it [the cure] a guaranteed thing?*

One of the interviewees said that when he worked in the factory, some people from the government came to see the workers and advised them to quit smoking, but he did not take this up. P2 (a 71-year-old male) was cynical about the motivations of government when there are such big profits to be made from the sale of cigarettes:

> *The government is ripping money off me because I can't give up smoking. It means they left up 33 dollars I smoke drum tobacco. It is difficult [to afford?]. The basic cost [of a packet of cigarettes] is maybe two dollars and the government makes 500 percent profit. They make a huge profit from cigarettes and yet put this advertising on cigarette packets that it damages your health and causes cancer I don't believe it. There are a lot of people who have never smoked and yet get cancer.*

A few of the respondents mentioned that that is too late to seek help from the doctor. P14 (a 53-year-old female), had attempted to quit smoking three times and the longest quit episode lasted 11 years. She separated from her husband and she was then surrounded by people who smoked. Her mother and three brothers and friends were all smokers. She believed that educational programs were appropriate for younger people, not for older adults:

> *The only thing that I would say is that young people today are more willing to get educated, you know when they are 20 or 25, but older people don't care about that so much. Even they go to the doctor and the doctor tells them 'you are in danger and you have to stop', most of them don't care. That is my belief. I know probably I smoke and I'm guilty too but it's just the way that we think, like tomorrow is another day.*

Six of the participants had a less than positive attitude about other smokers in their community and in commenting on their ability to quit smoking they said just 'I don't know' or 'not able to quit smoking'.

Seven of the respondents had a positive attitude to the idea of quitting and mentioned some quitting methods that smokers in their community could try, such as: education and increasing their knowledge about the harm of smoking or benefits of smoking cessation (three), preparing themselves mentally by using nicotine patches (two), emphasizing their health and its importance (three) and anti-smoking education programs in early childhood and adolescents education. P2 (a 71-year-old male) believed young people needed to be prevented from starting smoking:

> *If they are young and they have just started smoking and the body hasn't actually absorbed the nicotine, they had better not continue.*

P7 (a 74-year-old male) thought that pharmacotherapy could increase one's readiness to quit:

> *If someone doesn't want to quit themselves, nothing can make them. But in the first place if you want to quit smoking, you might take some tablets if you think it helps. Then if your brain wants to quit you will quit.*

Fourteen of the interviewees highlighted the role of the environment in quitting smoking, and they hinted at other factors such as: the role of friends and other smokers, legislation for limiting smoking like smoke-free areas 'no smoking in the hospital or bus' and monitoring smokers; knowing society characters and making appropriate communication with specific groups like Greek community, religious groups, and so on. P3 (a 51-year-old female) believes that a change of environment might help smokers to quit:

> *I think there should be a service where we are monitored. You know take us away from our environment and put us into a new fresh environment geared towards non-smoking. I think that would help a lot of people as well.*

P10 (a 65-year-old female), had slightly high blood pressure and she had a hypothyroid condition. She started smoking when she was about 20 and she smokes about two packets a week. Life stress and family arguments lead her to smoke more. Her husband used to smoke but he has stopped. She has quit smoking many times and she even kept this up for six months — she went to visit her brother and she started smoking because he was smoking. She came from a family with many smokers; her father died of lung cancer. Her uncle had lung cancer. She believes that she is probably a good candidate for developing cancer. P10 considered that tailored programs delivered by trained educators might be a means of helping Greek older smokers to quit:

> *What would help? I don't know a lot about this and I don't know about Greek people, especially about Greek elderly people and how much they understand of the information they are given. I guess having different programs, maybe doctors you know showing them how the body works, the damage if they continue [to smoke].. Teach them it is addictive so people […] I really don't know what you can do, whether you need to have great information in Greek.*

> *Because if you know the language you can put across a lot of information without realising it — if you don't know [the language] you will miss out quite a bit of information and not only about smoking but about of a lot of things. A lot of people tell me when we discuss with each other have you known about? … I tell them 'I sold it', 'I heard it' and 'I have a program about that'. Because they don't know the language well enough they miss out on a lot of information that other people pick up easily every day. Everyday information you know and the kind of help you don't need a university degree to understand…*

Analysing the respondents' answers, it is clear that there are four supportive foci to support them in quitting smoking: family members, friends, Greek community members and the physician. Although the degree of influence of these supportive foci is not equal, it is useful to consider each factor separately as potentially powerful.

3.3.2.4.1 Family members

When they were asked about the supportive role of family members, the majority of the respondents (16) mentioned that a close family member (wife and children) had advised them to quit smoking. After constant repetition of this advice, when they realized their recommendation was useless, they would tell them to smoke only outdoors. P4 (a 76-year-old male) explained how other smokers made judgements about his smoking status and the role his wife played in supporting him to quit:

> *No that didn't help me. My wife kept telling me to stop smoking but I know a lot of people that used to smoke three packets a day and don't know how to quit and they say to me well, you don't smoke a lot just three or four cigarettes a day — why don't you want to stop? You know they smoke a lot more than I do and smoking hasn't really affected me, that is why.*

P13 (a 51-year-old male) identified his wife as the best person to support him to quit:

> *My wife. If she tells me to quit and if she will support me, then I will quit.*

Most of the interviewees (five) said that they had reached an agreement with their family to smoke only outdoors. However, their families are still not happy with their smoking. Two of the respondents mentioned that their children had drawn up a plan to

help them to quit smoking. One said his children advised him to smoke three cigarettes a day, one in the morning-after coffee, one in the afternoon after lunch, and finally one cigarette after coffee, before going to the bed. P1 (a 79-year-old male) described the plan his son had drawn up to help him to quit:

> *A lot of friends are asking me why I smoke. My son is 55 years old now he used to smoke and gave up and he keeps telling me to do the same. One time he said to me 'I will bring you three cigarettes every morning before I go to work:— one for the morning, one for lunch and one for after tea.*

Most of the interviewees said they felt uncomfortable when they were under pressure to quit from family members and one of them mentioned that her sister ridiculed her and made her angry, and so she stopped listening to her advice about quitting smoking. She said she wanted advice to be given respectfully. P3 (a 51-year-old female) highlighted the negative influence of constant nagging:

> *Oh. Yes. She will support me. She will support me. Absolutely, but her support is nagging and I don't want to be nagged. If you are going to nag me I will switch off. I'll walk away I'll go and light a cigarette. I'll do the upset to why to telling me too if you are nagging me. You know it is like a child — the mother tells him not do something so the child then does it.*

3.3.2.4.2 Friends

Eight of the respondents declared that their friends just advised them to quit smoking, but did not offer serious support. Analysing their responses, however, shows that their friends do have potential to help them. For example, 12 of the interviewees claimed that when they were with non-smoking friends, they were reluctant to smoke more; conversely, when they were with smokers, they tended to smoke more. P20 (a 50-year-old female) highlighted the positive role of non-smoker friends:

> *Yes less. When you are with a person who doesn't smoke you smoke less because she doesn't smoke.*

Conversely, P13 (a 51-year-old male) pointed out the negative role played by smoker friends:

> *It makes a difference. If I am invited to go with a group and they don't smoke, I will not smoke; if they smoke, I like to smoke. I smoke normally. But there's something funny about me — I can't smoke indoors if I am in a house or any building.*

Six of the respondents stressed that they did not wish to receive any support from their friends and if their friend did try to help them, they would reject that. Their reasoning was related to 'individual freedom' and 'I don't like to be dictated to by anybody'. For them smoking is a personal issue. P2 (a 71-year-old male) stressed his personal freedom to smoke and said that advice from friends about giving up would be unwelcome:

> *I don't want to blame you if you want to help me or if anyone else wants to help me. But it won't work with me. I am happy that I can express my freedom to smoke in a free country.*

3.3.2.4.3 Greek community

The majority of the participants (16) were members of the Greek Community, and they saw other members of the community and their friends at least once a week. When they visited other members of their community, they preferred to sit with their closest friends. Whether they were smokers or not was not a criterion for friendship. P6 (a 73-year-old male) mentioned the importance to him of friendship with other community members:

> *I like to sit with my friends who are very close to me. It doesn't matter who is a smoker orwho is not.*

Most of the respondents (15) mentioned that they preferred to receive help for quitting smoking from a family member. Two of the respondents were not willing to receive help from anybody. They believed that just as they don't like to interfere in other people's affairs, they do not like others interfering in theirs.

Four of the interviewees acknowledged the role of doctors and specialists to help them in quitting smoking. They agreed that if their physicians provided support to quit smoking they would accept.

3.3.2.4.4 Family member's smoking situation

The most common problem among the respondents was that smoking cigarettes had become the 'norm' within their group. Most of them (15) have a family member who is also a smoker. Apart from five respondents, the all rest had children who were currently smoking or who had experienced smoking in their lifetime. Most of their parents (for 16 smokers) had been smokers, and most of the respondents (14) live in a family group where other members, like a brother or sister, are smokers or have been smokers. Most of the respondents (11) live in a family where one parent or both died due to smoking-related disease, such as cancer or heart disease.

3.3.2.4.5 Stage of change

Seven of the respondents were at the *pre-contemplation stage*, indicating that they had no intention to quit smoking in the foreseeable future. Many individuals in this stage were unaware or under-aware of their problems.

Most of the participants (10) were at the *contemplation stage*, indicating that they were aware that a problem existed and were seriously thinking about overcoming it, but had not yet made a commitment to take action.

3.3.2.4.6 Perceived risk

Most of the participants (18), in responding to the question, 'Would you quit smoking after getting health problems like cancer or heart attack?' said they would be very scared and if they began to have such health problems, it would make them decide to quit smoking.

3.3.2.4.7 Self-efficacy

The majority of the respondents (16) had a low level of self-efficacy. They said things like: *'You sometimes think about quitting smoking, but then you smoke again',* or '*I need to be stronger and tell myself that I don't need cigarettes',* or *'Quitting smoking is a very difficult challenge',* or *'Quitting smoking is very difficult, especially in the early days'.*

3.3.2.4.8 Education instruments and their language

When they were asked 'What kind of educational tools could help you to quit smoking?' most of the respondents (15) believed that these methods could not be effective or that no-one can quit until his/her brain is ready. Some of the participants considered educational methods to be a commercial ploy and took a pessimistic view

about the capacity of educational methods to make a difference. They believed that education about quitting brings no positive outcomes.

When they were pushed to choose between visual or written educational aids, most of them (12) preferred to use visual methods, over readable methods (six). Low literacy or disability in reading and the perceived greater effectiveness of visual methods were cited as reasons for preferring visual methods. A few of the respondents (eight) believed that the pictures on cigarette packets led them to think about the harmful effects of smoking. Eight respondents indicated a preference for materials in the Greek language and four preferred them in English; however, seven of them indicated that the language medium chosen for educational materials made no difference to them.

3.4 Discussion

The results of the current qualitative study provide a first assessment of older Greek Australian smokers aged 50 and over in terms of their experiences, knowledge, beliefs, intentions, attitudes, readiness to change, and other relevant factors that affect their smoking status. Following content analysis of the data four themes have emerged which will be discussed in the next section of this chapter.

3.4.1 Knowledge and perceptions of smoking and its effect on health

Study results showed that participants had a low level of knowledge about the harmfulness of smoking or the benefits of smoking cessation. Indeed, it was clear that some participants had a positive attitude towards smoking consumption and this therefore highlights a need to address older Greek-Australians' smoking-related knowledge and attitudes towards smoking. One of the characteristics of older smokers is that they are less likely than other age groups to believe that smoking harms their health (Haas et al., 2005). Our results are in agreement with the results of previous studies. They found that smokers with low knowledge of the benefits of smoking cessation and a positive attitude towards smoking are more likely to have high rates of smoking. It has also been found that smoking-related knowledge and attitudes towards smoking are the main predictors of smoking behaviour (An et al., 2008a, Ohida et al., 2001). Smoking-related knowledge is an important issue because it can help smokers to change their

behaviour (Roberts et al., 2012). Attitude towards smoking is another main factor which could play an important role in the initiation and maintenance of self-motivated smoking behaviour (Han et al., 2012, Otten et al., 2008). This study also revealed that some of the participants were aware of the general harms of smoking, but they were not well-informed about the detail or the extent of the harm caused. In a study among oral patients in Switzerland, Bornstein et al., (2012) found that current smokers were significantly less aware of the effect of smoking on oral health than others (Bornstein et al., 2012). Among those who were aware about the harmfulness of smoking on health, most of them were not aware about the negative effects of smoking on oral health (Lung et al., 2005).

These results show that older Greek-Australian smokers are a high-priority group to receive advice or smoking-related knowledge in the hope of changing attitudes towards smoking. It has been suggested that public education is an important initiative to support them to both reduce initiation of tobacco use and also to encourage smoking cessation (Jamrozik, 2004). "Disseminating accurate health information to older people could significantly affect their readiness to quit and the likely success of their future attempts to quit" (Donzé et al., 2007). For minority groups or population subgroups, such as Greek-Australians, it may be necessary to target specific anti-smoking messages (An et al., 2013). To improve knowledge about health issues related to smoking, a variety of sources needs to be provided. One study found that smokers are willing to receive information about smoking harms and smoking cessation benefits, and "that television advertisements, posters and pamphlets were at least going some way towards keeping smokers informed" (Glover and Cowie, 2010). In another study, a combination of methods was used to increase smokers' knowledge. They included providing information from doctors and other sources, societal interventions through new legislation on tobacco restrictions, and increasing the retail price of tobacco, all of which measures were effective in making the informants more aware of smoking's negative issues (Medbø et al., 2011).

The results of our study showed that older Greek-Australian smokers had a lower level of intention to quit and most of the smokers were at the pre-contemplation and contemplation stage, based on the 'stage of change' model. Intention to quit smoking is the first step towards initiation of a quitting attempt and successfully quitting, and so identifying the predictors of intention to quit is important in targeting people who are

more willing to quit (Abdullah et al., 2006). In agreement with our results, Yang et al (2009), in a study which was designed to examine current, former and non-smokers' health knowledge and intention to quit, found that most of the smokers had low intention to quit. The relation between smokers' intention to quit and their health-related beliefs about smoking has been also explored in previous studies (Hammond et al., 2006, Romer and Jamieson, 2001). These studies revealed that smokers who have a positive attitude towards their future health status and smokers who have reported health benefits from quitting are more likely to intend to quit. If a smoker has a higher level of health expectations, they are more likely to have a stronger intention to quit, so that strengthening their intention to quit will also increase their perception of risk and recognition of health-related effects.

In another study among Turkish and Moroccan immigrants in the Netherlands it was shown that intention could be "determined by three types of (psychosocial) factors: attitudes, social influences and self-efficacy". Results revealed that smokers saw more advantages in smoking and less in smoking cessation. It also appeared that higher social pressure encourages smoking (for example, when offered cigarettes) and low self-efficacy in terms of being able to successfully quit (Nierkens et al., 2005). According to the 'stage of change' model, there is an association between the level of smokers' intention to quit and their smoking behaviour.

In our study most of the older Greek-Australian smokers were in the pre-contemplation or contemplation stages, which indicates that they are not serious about quitting soon and they are relatively unaware of the risks of cigarette smoking. Our particular study subjects were unlikely to think that smoking is affecting their health now, or that they face a strong likelihood of serious health problems in the future because of smoking. Carosella et al (2002) in a study among older (more than 50-year-old) nursing home residents confirmed the results of previous studies among older smokers that the most of them were in pre-contemplation (no interest in quitting within the next six months) (Carosella et al., 2002). In another study among Surinamese immigrants in Amsterdam by Nierkens et al (2006), the results also showed that most of the smokers (73%) were in the pre-contemplation phase (Nierkens et al., 2006).

With the majority of current older Greek-Australian smokers in the pre-contemplation and contemplation stages, a strong emphasis is needed on raising their awareness that

their behaviour presents a serious threat to their health, in an effort to move them towards a higher stage of readiness to quit. When smokers are in the contemplation and pre-contemplation stages of readiness they need support to start cessation. It has been shown that interventions that "match materials to a participant's stage of readiness to change have the potential for significant impact" on smoking cessation but they need to be tailored to the needs and characteristics of smokers in each stage (Clark et al., 1997a). The results of this study showed that most of the participants had a low perception of smoking risk. Other factors that affected smoking status were low perceived benefits of quitting and low perception of the severity of smoking-related disease.

In another study of smokers in US households, Ayanian and Cleary (1999) evaluated the smokers' perceptions of their risk of heart disease and cancer. They found that most smokers did not regard themselves at risk of such smoking-related diseases (Ayanian and Cleary, 1999). The same results were found in a study of Italian parents of children. They found that current smokers were less prone to consider smoking as a major risk to their health (Nobile et al., 2000). Another study also confirmed that older smokers thought themselves at elevated risk for lung cancer, regardless of whether they continued or quit smoking (Lyna et al., 2002).

Smokers' perceived attitudes towards smoking can influence their smoking behaviour and their attempts to quit smoking. Health behavioural models explain the role of "psychosocial risks and how protective factors, like beliefs about the risks and perceived benefits of smoking, are related to smoking behavior" (Unger et al., 2001, Flay, 1999). Smokers who perceive the risks rather than the benefits of smoking are more motivated to quit smoking (Aryal et al., 2013). In another study among female smokers McKee et al (2005) found that smokers who perceived the benefits of quitting smoking formed stronger intentions to quit smoking (McKee et al., 2005).

The Agency for Health Care Policy and Research (Fiore et al., 2000) state that to increase smokers' motivation to quit, health professionals need to inform smokers about the negative health effects of smoking (for example, heart attack, stroke, lung and other cancers) and highlight the benefits of cessation to health and feelings of self-worth (Fiore et al., 2000). Clark (1999) found that "smokers who had experienced at least three or five health symptoms in the previous two weeks were more likely to be at a

higher stage of readiness. Those who attributed symptoms to smoking were both more likely to be in the higher stages of readiness and to have more intention to quit. Given that attributing symptoms to smoking was important in readiness to stop smoking, regardless of age, health care providers should be encouraged to counsel all smokers about smoking-related symptomatology and the benefits associated with quitting" (Clark et al., 1999).

3.4.2 The reasons for smoking

The results of our study show that the majority of older Greek-Australian smokers continue to smoke due to their belief that smoking helps them to reduce their life stress and to feel relaxed. Addiction to nicotine and being habituated to smoking was also cited by participants as a reason why they continued to smoke. Many saw smoking as a way to to increase their enjoyment of life. These findings conform with those of other studies. In a studies of older people, it is often mentioned that cigarettes have become a habit. Smoking was commenced the first thing in the morning, and was continued whenever possible; in the car, at the office or after dinner. Smoking was associated with relaxation, handling stress and mixing with friends (Medbø et al., 2011).

"In addition, many smokers view tobacco use solely as a means to cope with stress and anxiety" (Shi et al., 2011). There is a relationship between daily negative events and stress and smoking (Tsourtos and O'Dwyer, 2008). Many studies have found that people smoke because they consider it enjoyable (Smith, 2007, Fidler and West, 2011). Older smokers are more highly nicotine-dependent (Haas et al., 2005).

Smoking is known as a social activity and it "appears to act not only as a means of coping with stress and exclusion, but also as a means of expressing identification and belonging" (Stead et al., 2001a). Similar results are seen when older smokers are compared with younger smokers. "Differences emerged in one study between older and younger respondents, with older respondents experiencing more of the stress associated with maintaining a household and caring for a family, and with coping with long-term unemployment" (Stead et al., 2001b). Smoking helps smokers to link to other people and share their experiences and the collective aspects of smoking-sharing, lending and borrowing cigarettes help to bind people together.

3.4.3 Barriers to smoking cessation

The results of the present study show that older Greek-Australian smokers have a high sense of perceived barriers due to low self-efficacy and self-confidence. The role of self-efficacy in changing adverse behaviours, like smoking, has been highlighted in many studies (Badr and Moody, 2005) and smokers with higher self-efficacy achieve a higher rate of tobacco cessation (Badr and Moody, 2005). It also has been found that there is a statistically significant relationship between confidence (self-efficacy) and willingness to attempt smoking cessation (Froelicher et al., 2002). Even the perception of having higher self-efficacy levels has been recognized as a predictor of successful smoking cessation (Badr and Moody, 2005) and prevention of relapse over six months (Boardman et al., 2005), or 12 months (Froelicher et al., 2002).

Shelley et al. (2010) showed that among Chinese-American smokers, the level of self-efficacy to quit smoking was strongly associated with cessation status. It was found that smokers who were strongly confident about quitting could quit successfully while those who were not strongly confident continued smoking ($P<0.001$) (Shelley et al., 2010). In another study among Surinamese immigrants in Amsterdam, smokers who were in the preparation stage of change had higher self-efficacy to quit smoking than those who were in the pre-contemplation stage (Nierkens et al., 2006).

The role of social networks, like family members and friends, in starting smoking or continuing smoking has been highlighted as a barrier of smoking cessation in this study, meaning that a smoker is more likely to smoke when he/she is with another smoker (Chan et al., 2007).

The result of the study is in agreement with the another study which was conducted among Asian-Americans (Ma et al., 2005a). Here there was a positive relation between having more cigarettes and having more smoker friends. This study also showed if a person has a smoker father, they had more chance of being a smoker. In another study among UK Bangladeshi and Pakistani communities by White et al (2006) results showed that the main "perceived barriers to success included being tempted by others" (White et al., 2006). "Similar barriers to smoking cessation have been highlighted in other studies" (Bott et al., 1997, Cook and Bellis, 2001).

The effect of other family members and friends on smoking status is not always considered as a barrier and sometimes can be supportive to those quitting. In a study among smokers in the US, Rosenthal et al., (2013) found that social support (from doctors, friends, and family), and social influence were the main factors in both disincentives and motivations to quit (Rosenthal et al., 2012). Ossip-Klein et al (1997) found that having fewer friends and family members who smoked was an associated factor in successful cessation (for six months) among older smokers (Ossip-Klein et al., 1997). Williams et al, (2001) "reported that continuing smoking was associated with having a spouse or another member of the social network who smoked. Thus, living in an environment with other smokers may not be the only factor hampering cessation efforts: social interactions connected with smoking may also serve to reinforce the behaviour" (Williams et al., 2001).

Withdrawal symptoms and nicotine craving was also found to be a significant barrier for older Greek-Australian smokers in attempts to quit. Anxiety, stress, loneliness, and putting on weight were the main withdrawal symptoms mentioned by our cohort of older Greek-Australian smokers.

It has been found that if a smoker anticipates negative withdrawal symptoms, this issue can be considered as a risk for failed smoking cessation and usually women are more distressed than men about the possibility of withdrawal symptoms (McKee et al., 2005). The results of that study are confirmed by other studies which found that smokers who are worried about putting on weight after smoking cessation have a reduced chance of successfully quitting smoking (Aubin et al., 2009, Baha and Le Faou, 2013). "Many older smokers may also be anxious about quitting, citing reasons such as missing or craving cigarettes, losing a pleasure, being nervous or irritable, and weight gain" (Orleans et al., 1994). "Smokers with a high degree of dependence can also present with low motivation due to their lack of confidence in their ability to succeed; they believe they are incapable of quitting and are afraid of suffering from the withdrawal syndrome which had undermined their previous attempts" (Carvalho et al., 2010).

3.4.4 Guidelines for practice

The results of our study also showed the significance of cost in reviewing the smoking consumption of older Greek-Australian smokers. Most of the participants considered smoking to be unduly expensive and were financially burdened in purchasing cigarettes.

A study of 440 patients in the UK showed that financial reasons were cited in decisions to quit smoking (Wilkes and Evans, 1999). Increasing the price of cigarettes is, of course, a government policy to aimed at limiting smoking. Another study also found that tax "increases were reluctantly acknowledged as a good tactic for encouraging smokers to stop, as the cost of cigarettes was a concern for most participants" (Marewa et al., 2012). A similar study in New Zealand also found that older smokers were sensitive to price (Wilson et al., 2010). Policy makers "did not necessarily want the price of tobacco to be increased, but they did believe that" increasing the price would prompt people to stop smoking (Marewa et al., 2012). Thus, continuing the regular "increase in taxation on tobacco products should be retained as part of the strategy to control smoking consumption. These increases should be accompanied by the promotion of cessation services and products to maximize successsful cessation" (Glover et al., 2012).

A lack of anti-smoking advice by physicians or other health professionals has been highlighted by our cohort of older Greek-Australian smokers. They also mentioned some factors like extreme old age, and addiction to nicotine as important factors which affect their readiness to receive anti smoking services and advice.

Some participants also had a negative attitude towards taking a doctor's advice to quit smoking; they saw an incongruence between the doctors' behaviours and their recommendations. For example, it has been pointed out that the doctor smoked while advising them to quit smoking.

However, some previous studies found that because older smokers are unconvinced about the effectiveness of anti-smoking advice from a doctor, they have a low chance of successfully quitting (Carosella et al., 2002, Orleans, 1997). According to the International Guidelines recommendations, physicians need to assess the smoking status of their patients and provide brief supportive advice to smokers about quitting (Aboyans et al., 2009). In one study it was found that few UK Bangladeshi and Pakistani "participants had sought advice from health services, or received cessation aids such as nicotine replacement therapy (NRT); moreover, family doctors were not viewed as accessible sources of advice on quitting" (White et al., 2006). Some opportunities for intervention have been suggested aimed at enhancing "motivation to quit and supporting cessation efforts. Such interventions may include educational programs on health

impacts of smoking and cessation, increased training and support of healthcare providers to give brief advice, formal and self-help treatment opportunities, and adjunct pharmacotherapy for nicotine withdrawal" (Carosella et al., 2002). Taking this further, special strategies should also be considered for older smokers. Health professionals should particularly "emphasize the health consequences of smoking, as we found that those who believed that smoking was affecting their current health status and would likely cause them serious health problems in the future were at a higher stage of readiness to quit" (Clark et al., 1997b). In this light, "health professionals should treat their older patients in the same way as their younger-adult patients. Guidelines recommend that practitioners: ask *all* patients about their smoking habits, advise *all* smokers about the risks, assess their willingness to change, assist them in setting a quit timeline, provide resources such as NRT, and arrange a follow-up appointment to monitor progress. In addition to using this standard approach, clinicians may be able to identify and incorporate social factors to increase motivation to quit in older smokers" (Tait et al., 2007).

The results also showed that most of the participants (18) had a high level of perceived risk however they continued smoking. These results show that having a high level of perceived risk can be considered as a factor to quit smoking, but it is not guaranteed and we need to consider other relevant factors. For example, the results of the showed that most of the participants had a high level of perceived benefits of smoking consumption and some of them mentioned that smoking is useful for their health status. It is also necessary to say that participants who had cancer or heart attack, tried to quit smoking, but many barriers that have been mentioned in the study led them to start smoking again.

This study has sought to address the knowledge gap which emerged from the previous systematic review study and to test the feasibility of a peer-led intervention in older Greek-Australian smokers. The results of the present qualitative study suggest that peer-led intervention might not be an appropriate approach. The role of family members to support smoking cessation has been found to be the major source of support. The role of friends, community member, and doctors was seen as minor and respondents were not seriously interested in getting support from these groups.

Our study confirmed that smoking is a socially and culturally accepted activity among older Greek-Australians and every smoker interviewed has at least one other smoker in his/her family. Smoking has been accepted as a norm in this particular group. There was no blame associated with smoking and indeed there seemed to be a positive attitude towards smoking among the Greek community. According to the theory of planned behaviour (TPB), which incorporates the subjective norm, individuals "with a more positive attitude towards smoking cessation and a high subjective norm, intended to quit smoking" significantly more often (Norman et al., 1999). In regard to smoking cessation, the "subjective norm considers normative beliefs about how smoking cessation is valued by others, like friends and significant people, and the respondents' motivation to comply with the opinion of others" (Droomers et al., 2004). In relation to older Greek-Australian smokers the situation was completely different. Due to their positive attitude towards smoking and also low subjective norm, they were quite happy to smoke and most of them had no plan to quit in the near future. In the case of smoking cessation there is a relation between the subjective norm and intention to quit (Abrams and Biener, 1992). "In general, a more favourable attitude towards smoking cessation is related to a stronger intention to quit" (Manfredi et al., 1998, Clark et al., 1998).

3.5 Conclusion

As evidenced in previous chapters, smoking cessation is the single most important behaviour that older smokers can engage in to protect their health. The present study has identified many key points in understanding the unique characteristics of older Greek-Australian smokers related to smoking and smoking cessation. We found that for this group smoking has been accepted as a social and cultural norm. Participants had a positive attitude towards smoking, low knowledge about smoking health dangers and smoking cessation health benefits. The intention to quit smoking was very low among them and they had a low level of self-efficacy to quit smoking. They quoted many factors as barriers to smoking cessation, including withdrawal symptoms, and the negative influence of family members or friends who are smokers. "This kind of understanding is critically important if we wish to provide appropriate cessation assistance to" (Thompson et al., 2003) older Greek-Australian smokers. Promoting

adaptive behaviours and improving health literacy will undoubtedly help reduce smoking-related morbidity and mortality in the elderly.

"Understanding cultural issues might help to increase the efficacy of health counselling; this understanding also might help in the development of educational programs" (Marutani and Miyazaki, 2010) for older Greek-Australian smokers. Smoking cessation programs should be tailored to this minority group, and in the provision of advice, smokers aged 50 or older should be treated in the same way as younger smokers.

"Data on how best to use this information to motivate attempts to quit in older adults, coupled with evidence-based information on how elderly individuals quit smoking most effectively, could improve health outcomes significantly for older adults" (Miller et al., 2008). According to the results of this study, the idea that peer-led behavioural intervention can be effective and feasible in older Greek-Australian smokers, as suggested in the previous review study, was not supported. However, we did find that four groups are important to support smoking cessation in older Greek-Australian smokers: these include family members, Greek community members, friends and doctors. The role of family members stands out as the main factor that could be effective with this group. The other groups may be useful, but the idea of a peer-led intervention was not supported by participants' responses. However, another finding of the previous study has been supported by the current one. We identified that even in older smokers, increased knowledge about smoking effects, attitudes, intentions, and self-efficacy are the major factors that could influence successful smoking cessation. Future cessation research should focus on efforts to better understand the characteristics of minority group smokers and continue work that helps us to unravel the complicated nature of smoking cessation.

Chapter Four: Comparing smoking-related knowledge, attitudes and intentions-to- quit among older Greek-Australians and Anglo-Australians

The results of the qualitative study of older Greek-Australian smokers (GSs) showed that they had a limited understanding of both the dangers of smoking and the benefits of quitting. In general they believed that smoking was beneficial and few expressed any meaningful intention to quit. They evinced a low-level of understanding of the severity of smoking-related diseases, acknowledging that smoking had become a comfortable habit. Equally significant, they perceived a number of serious barriers to quitting, including difficult withdrawal symptoms. The results also showed that older GSs had low levels of self-efficacy in regard to quitting smoking.

Knowledge and attitudes constitute a baseline for human behavioural change, and so to modify smoking-related behaviour it is necessary to take account of current knowledge and attitudes. However, other factors, such as intention to quit and self-efficacy can function as mediating influences to change. All these factors are subject to change through long-term residency in another country; smoking-related behaviour can often adapt and resemble that of the dominant culture. Consequently, by identifying the particular beliefs, attitudes, and understandings of older Greek-Australians who smoke, and by comparing those factors with the dominant Anglo culture of Australia, it will be possible to shape more effective anti-smoking strategies not only for the Greek people but also for other minority groups in Australia.

In this chapter it is explained that a comparison group of Anglo-Australians was added to help test the hypotheses detailed in the introduction chapter. The study could then compare two ethnic groups, older Greek-Australians, and Anglo-Australians. In this thesis, we have hypothesized that all social factors which have been identified in previous studies (factors such as knowledge, attitudes, intentions, and self-efficacy) may differ between older Greek-Australian non-smokers (GNSs), older Anglo-Australian smokers (ASs), and Anglo-Australian non-smokers (ANSs).

This chapter is presented in four parts. The first part consists of a literature review of relevant studies which have been conducted among different ethnic groups. In the

second part, the methodology of the study will be explained, and then the results are presented in part three. Finally, a discussion of the study results (together with other relevant studies) will be contained in part four.

4.1 Literature Review

The psychological factors which influence people in different ethnic groups to start, continue, and quit smoking are presented below.

4.1.1 The necessity for conducting smoking-related studies among ethnic groups

Australia has long been a major destination for immigrants (Antecol et al., 2003). There is a need to study the various immigrant groups because many do not speak English; moreover, in regard to smoking, they often bring with them distinctive attitudes and beliefs which influence their behaviour.. For example, the results of the latest Census of Population and Housing in Australia showed that 23.2 percent of the populace speak languages other than English; for instance, Mandarin (1.6 percent), Italian (1.4 per cent), Arabic (1.3 percent), Cantonese (1.2 per cent) and Greek (1.2 percent) (ABS, 2011).

Smoking as a health issue can be assessed based on different aspects. It may include the predictors of smoking, target groups which have a high prevalence of smoking, the factors which prompt people to quit, and the various barriers to quitting. Ethnicity is a predictor of the likelihood of smoking, different ethnic groups have specific characteristics and rates of smoking in Australia (Chen et al., 2000). But quitting behaviour and quitting rates by ethnic groups are rarely examined. “Consideration of ethnicity in the development of tobacco control policies is important because ethnic groups vary widely in their attitudes to and beliefs about tobacco use and in the type and extent of tobacco used” (Smaje, 1995, S. Alexander et al., 1999, Bush et al., 2003).

4.1.2 Smoking-related knowledge and perceptions among ethnic groups

Studying smoking-related knowledge, attitudes, and behaviour among different ethnic groups is important because such background information is essential if effective interventions are to be implemented. Insufficient information about smoking-related knowledge, the difficulties of quitting, and cultural influences among immigrant groups

in Australia have been highlighted in some recent. For instance, Trotter et al, (1997) conducted a survey to compare the cultural influences on smoking knowledge and perceptions of Greek and Chinese smokers and non-smokers in Victoria. The results confirmed that smoking was very common in both groups, about 80 percent of smokers in both groups reported sharing cigarettes with friends. Overall, only small differences were found between Greek and Chinese groups in their smoking-related knowledge, attitudes, and behaviour. The findings also showed that the Greek participants had noticeably lower intentions to quit compared with Chinese smokers (15 percent vs 27 percent, respectively). On the other hand, Chinese smokers were less knowledgable about the dangers of smoking than Greek smokers. There were some differences between smokers in the two groups in their attitudes to the images and benefits associated with smoking. Smokers in both groups showed a positive attitude towards receiving anti-smoking assistance, though Greek smokers were generally more receptive than Chinese smokers (81 percent vs 51 percent, respectively) and Greeks believed that written support material in their own language was more helpful for quitting (Trotter, 1997).

Similar results about predictors of smoking among other minority groups have been confirmed. In a survey of 1102 Arabic people in Sydney Perusco et al (2007) examined the participants' knowledge of the health-effects of smoking, their smoking behaviour, and their attempts to quit. The results showed that a low-level of knowledge was one of the main predictors of smoking behaviour among Arabic-Australians (Perusco et al., 2007).

Research about smoking status among other Australian ethnic groups is limited but there have been numerous studies among different ethnic groups in other high-immigration countries, the results being generally similar to those undertaken in Australia. These studies highlighted the point that some predictors of smoking (such as a lack of knowledge) can be serious; moreover there is a widespread lack of awareness even among smokers who suffer from smoking-related diseases. The lack of knowledge could be higher among older patients. Bjurlin et al., (2012) conducted a cross-sectional study of 535 patients from different ethnicities who attended a urology clinic in the USA. This study sought to evaluate smokers' knowledge of smoking as a risk factor for urinary tract disease and lung cancer. In the study, almost half of the participants were aged 60 or older and it was clear that the participants had little knowledge of smoking

as a risk factor for urinary tract cancer though 94.0 percent identified smoking as a risk factor for lung cancer. The lack of knowledge of the relationship between smoking and these diseases were more severe (two or three times) amongst particular ethnic groups and amongst smokers. Smokers from ethnic minorities, such as Hispanics and African-Americans, (p=0.0019 to 0.059) had low levels of knowledge. Compared with white participants and nonsmokers, the levels of knowledge of the risk of smoking as a cause of kidney and bladder cancer were very limited in smokers and ethnic minorities (OR 2.35, 95% CI 1.21–4.57, p=0. 012 and OR 1.82, 95% CI 1.04– 3.20, p=0.037). Additionally, smokers and minorities were even less aware of smoking as a risk of for bladder cancer (OR 3.26, 95% CI 1.55–6.87, p=0. 0019and OR 2.01, 95% CI 1.10–3.68, p=0.023, respectively). The lack of knowledge of smoking-related urinary tract cancer in current smokers was higher compared to nonsmokers and ex-smokers (OR 1.82, 95% CI 1.08–3.08, p=0.025 and OR 1.84, 95% CI 1.00–3.39, p=0.0509, respectively) (Bjurlin et al., 2012).

The results of numerous studies have clearly demonstrated that there is an association between smoking-related disease-awareness and smoking cessation among ethnic groups. According to the health belief model (HBM), it is well documented that a lower perceived vulnerability and fewer perceived smoking risks are negatively associated with abstinence (Borrelli et al., 2010, Gibbons et al., 1997). Indeed, the effects of ethnicity on different aspects of human life can be considered as a main predictor of smoking consumption, of the desire to quit, and of readiness to continue smoking - especially among older smokers. The influence of ethnicity on smoking attitudes is evident in its effect on human interactions, on the responsibility for other people's health, on human emotions, and on lifestyle.

Pérez-Stable et al. (1998), in a cross-sectional study, conducted open-ended individual telephone interviews with Latinos (198 men and 114 women) and white smokers (186 men and 168 women) in San Francisco. Ethnicity and gender were notable predictors of smoking behaviour, there being marked differences between the two groups in regard to smoking experiences, in regard to reasons for quitting, and in regard to the willingness to continue smoking. In Pérez-Stable et al. (1998), study, the predictors of smoking in older people were different. They were not willing to smoke when they drink alcohol or if they suffered intense emotional and mental situations. They were also less sensitive

about the influence of smoking on children's health, the harmful effects of smoke on others, and the importance of being a good model for children (Pérez-Stable et al., 1998).

Predictors of smoking among older smokers, especially in ethnic groups and immigrants, are different (Cooper et al., 2000). A better understanding of smoking predictors can help educators to provide effective preventative programs for older smokers. Predictors of smoking and predictors of quitting include a wide variety of factors, and as noted above, awareness of the harm of smoking has been established as a strong predictor of the likelihood of quitting. For instance, Yang et al. (2009), in a population-based survey in six different cities in China, examined former and never-smokers' health-awareness about smoking and the influence of health knowledge on smokers' intention to quit. The results of the study showed that there was a significant difference between the awareness of current, former, and never-smokers. Compared with former smokers (mean=5.5; p<.001) and never-smokers (mean=5.5; p<.001), current smokers had less knowledge of the health consequences of smoking (mean=3. 82 out of 8). There was not a significant difference between ex-smokers and never-smokers in respect of their awareness of the health effects of smoking. Older smokers (40-54 years vs 25-39 years, OR=1.78 p=0.018), smokers with higher education (high vs. low, OR= 2.56 p=.007), and those who smoked few cigarettes per day (CPD) (21-30 vs 0-10 CPD, OR=0.42 p=.008; 11-20 vs 0-10 CPD, OR=0.72 p=.02) were more aware. There was also a strong association between the health beliefs of current smokers and intentions to quit (Yang et al., 2010)

4.1.3 Smoking related self-efficacy and intentions to quit among ethnic groups

Other main predictors of smoking consumption and quitting which have been reported in numerous studies were self-efficacy (i.e., the confidence in one's ability to quit smoking) (DiClemente, 1981, Gwaltney et al., 2009) and the intention to quit (Hymowitz et al., 1997, Peters and Hughes, 2009, Smit et al., 2011). These factors predicted smoking behaviour especially among ethnic groups. For example, Chan et al (2007) conducted a longitudinal study which surveyed 509 Vietnamese men (18–64 years) who were selected randomly in Seattle, Washington. Current smokers had less knowledge than non-smokers (OR=0. 83, 95% CI 0.71–0.97), and they reported having

more positive attitudes to smoking when with their friends (96 percent). Considered overall, the participants had good knowledge of the harmful effects of smoking, but the mean level of knowledge was higher in non-smokers than current smokers (6.1 vs. 5.8, p=0.02). Except for smoking-related knowledge and attitudes, they reported low self-confidence for quitting (Chan et al., 2007).

Intentions to quit can be expressed differently among different ethnic groups. For instance, Karvoen-Gutierres et al. (2012) assessed older smokers' intention to quit in different ethnic groups in America, 42 percent of the participants being various non-White groups and the majority African-Americans. The non-White participants showed a low interest in receiving nurse-delivered counselling and cessation medications, and compared with White smokers they had 3.5 times higher chance of expressing positive attitudes towards the health benefits of quitting (OR = 3.50, 95% CI 1.31, 9.37, P = 0.01). The odds of intention to quit in the following 30 days was four times higher among non-Whites (OR = 3.95, 95% CI 1.56, 9.98, P = 0.004) (Karvonen-gutierrez et al., 2012).

4.1.4 Cultural context, social capital, and smoking in ethnic groups

"When people move to a new cultural context, or interact with others from different cultural contexts, they might alter their notions of leisure, style of speech, social behaviour, attitudes, beliefs, and customs, including those relevant to tobacco use" (Unger et al., 2003). On the other hand, some cultural beliefs do not change easily, even long after the immigrant has settled into a country with a different culture. One of the cultural aspects of smoking-related behaviour is positive cultural beliefs about the benefits of tobacco products.

Mukheriea et al (2012) conducted a qualitative study among four minority South-Asian ethnic groups (from India, Bangladesh, Pakistan and Sri Lanka) in the USA. The study aimed to distinguish the influence of cultural context on consumption of smoking. Participants had different perspectives about the influence of culturally-specific tobacco use, but overall, they reported a lack of, or inaccurate awareness about, the risks of traditional products. To the contrary, they expressed positive perceptions of the health benefits of traditional tobacco products, such as improving sleep, and freshening the breath. It was also believed to be antibacterial and to be useful for anaesthetics and pain-relief. Respondents showed a cultural dependence and a willingness to use traditional

tobacco products as a way of showing their ethnic identity in a new culture. Their beliefs about the efficacy of traditional tobacco products, and the effects of socio-cultural influences, provided the justification for continuing to use culturally-specific tobacco products (Mukherjea et al., 2012).

The perceived meaning of smoking, and reactions against it in different cultural contexts, is deeply-rooted and this perception affects women more than men in some communities. Lock et al. (2010) conducted a study to understand the social and behavioural effects of English smoke-free legislation (SFL) among Turkish, Somali and White (British or Irish) ethnic groups before and after implementation of SFL. The results of the study showed that SFL reduced the number of smokers and increased smoking cessation. However, the SFL affected older people and women differently according to their cultural context. The effect of SFL on smokers aged over 60 was rather negative and it led to some older smokers becoming socially isolated and depressed (Lock et al, 2010). Compared with the other two ethnic groups, the Somali participants showed the most negative attitudes to the services that were provided for them to quit. After SFL, most of the older participants (>60 years old) expressed difficulty in quitting, some perceived a threat of getting infections in bad weather, and most of the Somali women were no longer willing to smoke in public because of stigma, instead preferring to stay at home. However, even at home they encountered pressure from the family to not smoke indoors, a situation that led some to report feeling lonely and depressed (Lock et al., 2010).

The same result has been found in a study of Vietnamese immigrants by Chan et al (2007). In that study the role of culture and traditional attitudes to smoking were well documented. Smoking as a behaviour was not acceptable to the majority of Vietnamese men (65 percent) and their attitude to women smoking was strongly negative (Chan et al., 2007).

Social capital is an element which affects smoking status and it has been measured by different factors. The common elements of social capital are social participation and trust (Lindström et al., 2000). Gao et al, (2013) conducted a study among male Chinese smokers in a workplace. In that investigation the role of individual-level social capital and the smoking status of participants were surveyed. To measure the participants' social capital, their trust and reciprocity, as well as practices of collective action in their

workplace, were examined, the results showing that the prevalence of smoking was relatively higher among people with lower social capital in the workplace (1.39, 95% CI: 1.24–1.51): conversely, smoking was less common among workers with higher social capital (1.26, 95% CI: 1.11–1.38). Overall, however, the relationship between the smoking status of workers and their social capital was not significantly different (Gao et al., 2013). This apparent lack of association between social capital and smoking status has been shown in other studies (Lindström et al., 2000, Lindstrom, 2005).

The relationship between smoking status and different aspects of social capital has been examined rarely among ethnic groups. In one such study by Li et al (2012) the effects of different aspects of social capital were surveyed among 998 Asian-American men: in that instance the social capital included family and friends, neighbourhood and family cohesion, and family conflicts regarding smoking. The results were compared with different ethnic groups, the results showing a difference between ethnicity and smoking prevalence. It was higher in Vietnamese-American men and lowest in Chinese-American men. The results also showed a significant inverse relationship between neighbourhood cohesion and the smoking status of Asian-American men; however, there was not an association between family and friend connections or between family cohesion and smoking behaviour (Li and Delva, 2012). Other studies also support the effectiveness (Lindström and Isacsson, 2002, Giordano and Lindström, 2011)(15,16).

4.1.5 Socio-economic status (SES) and smoking among ethnic groups

The smoking behaviour of ethnic groups is varies according to their educational status and income, both of which have been considered ain terms of SES indices. People with different education and income have different health-related behaviour. Education affects smoking behaviour through its influence on people's knowledge; and the effects of income on smoking are also linked to education (people with high incomes are more likely to be educated) and also their ability to buy tobacco products. SES predictors of smoking have been assessed among some ethnic groups. For instance, Malmstadt et al. (2001) undertook a project to understand the prevalence of smoking in Wisconsin and to test whether race, Hispanic ethnicity, and socio-economic status predicted smoking among different subgroups. The conclusion was that there was an inverse relationship between smoking rate and the level of income or education. The smoking rate was over twice as high among the participants in the lowest income group (34 percent) as in the

highest income group (15 percent). The age-adjusted prevalence rate of smoking showed an upward trend according education. Participants with the least education had smoking rates (41 percent) over three-times higher than those with a tertiary education (13 percent). The results of the study also showed that black non-Hispanics had slightly higher prevalence rates (26 percent) than either Hispanics (24 percent) or whites (23 percent): the prevalence was not statistically significant between the different ethnic groups overall or based on education and gender. The higher smoking prevalence rates for Hispanic men over Hispanic women was evident, but the difference was not significant (Malmstadt et al., 2001).

In another study, Scarici and et al. (2000) carried out a descriptive survey to determine the relationship between SES and environmental tobacco smoke (ETS) among 416 females of different ethnicities who self-reported as being non-smokers. Most reported that they encountered ETS at public places (64.4 percent), but those who were exposed to ETS while at home with a smoker was very high (43.8 percent). Female educational level was identified as the only SES indicator that predicted ETS exposure in this population. That is, females with higher education reported less ETS exposure and vice versa (Scarinci et al., 2000). The effect of education on smoking was found in a project by Yu et al. (2002) who reported that the main predictors of smoking among Chinese men were a low level of education (OR: 2.41; 95% CI: 1.31-4.46), and no awareness of early symptoms of cancer (OR=2.52; 95% CI=1.35-4.70) (Yu et al., 2002a).

The effect of income as a SES indicator through its influence on smokers' sensitivity to the price of cigarettes has been identified among different ethnic groups. For example, Mayers et al (2013) conducted a study among smokers from different ethnic groups in California, the results demonstrating that there was a significant difference in price sensitivity by ethnicity when controlling for age, gender, and tobacco consumption. Furthermore, daily versus non-daily smoking consumption had no influence on price sensitivity when controlling for the number of cigarettes used, but Hispanic smokers were more price-sensitive than White smokers. Among non-daily smokers the results showed that there was a greater price sensitivity for Hispanics than non-Hispanic Whites both among never daily non-daily (NDND) smokers and former daily non-daily (FDND) smokers. The differences in perceived price sensitivity between non-Hispanic Whites and Hispanics were also predicted by differences in the participants' literacy or associated variables (Myers et al., 2013).

A low level of ‘health literacy’ is one factor that may be negatively associated with quitting, particularly for low-SES ethnic minorities. ‘Health literacy’ is the ability to obtain, understand, and use health information to make important decisions regarding health and medical care (Services, 2000). Diana et al (2013) ran a study among 402 daily smokers, most of whom were African-Americans. The results revealed that lower health literacy was associated with higher nicotine dependence. That is, participants of low literacy perceived fewer negative effects and more positive effects from smoking. In participants with low literacy there was a limited understanding of the health risks of smoking. However, Stewart et al (2013) did not find any significant statistical association between health literacy and self-efficacy for quitting, for intending to quit, or for quitting completely.

The literature pertaining to previous research into different ethnic groups showed that smokers' knowledge, attitudes, intentions, and self-efficacy are important for assessing smokers’ behaviour. On the other hand, because smoking is a social activity and happens in the context of societies and cultures, a close consideration of a smoker’s social capital and culture could be very helpful, especially for minority groups such as older Greek-Australians. It would be valuable if their smoking status could be compared with the host population which determines most of the policies for the nation.

So far, there has not been any study comparing the smoking-related knowledge, attitudes, and intentions of older Greek-Australians and older Anglo-Australians. Consequently, as a result of this literature review a quantitative survey was conducted to understand the differences in smoking-related knowledge, attitudes, and intentions of four sub groups: older Greek-Australian smokers, older Greek-Australian non-smokers, older Anglo-Australian smokers and older Anglo-Australian non-smokers, these groups being surveyed in order to evaluate the hypotheses proposed in the introduction above.

Based on previous qualitative studies the main hypothesis addressed here was that older Greek-Australian smokers have poor knowledge of the health consequences of smoking and positive attitudes to smoking. Based on this, and the reading of the literature, this chapter details a large cross-sectional quantitative study to test this hypothesis.

4.2 Methodology

This section describes the design of a survey to compare knowledge about the impacts of smoking, attitudes to smoking, and intentions to quit between four groups; older (i.e., aged over 50 years) Greek smokers (GS) and Greek non-smokers (GNS) and older Anglo-Australian smokers (AS) and Anglo-Australian non-smokers (ANS). This section provides an explanation of the research methodology, its purpose, and how it was designed and implemented. It also describes the quantitative methodology selected for the project, and provides the supporting rationale for this research approach. This section also explains the aims, objectives, hypotheses, the study variables, a description of the research sites, the study population, the sampling method and sample size, the inclusion and exclusion criteria, data collection tools, validity and reliability of the questionnaire, data analysis, and ethical considerations.

4.2.1 Research method

Methods are the techniques for collecting and analysing data in response to the research question (Giddings and Grant, 2007). To compare the smoking status of older Greek-Australians and older Anglo-Australians, a quantitative technique was applied, and this allowed objective data to be collected where the researcher had minimal effect on the participants. It also provided reliable and objective results with an examination of their internal and external validity, and the use of statistical methods to analyse data (Kothari, 2004).

In this project a number of hypotheses which had been raised in response to the qualitative study and the literature review were examined. According to Creswell (2002) a quantitative research is an appropriate approach because the researcher defines what to study, asks relevant and specific questions, collects numeric data from participants, and uses statistics to analyse the data in an accurate and unbiased way. In such a quantitative study the data are collected independently through validated and structured methods such as experiments, questionnaires, and secondary data (Carson et al., 2001).

To collect the data a self-administrated questionnaire was compiled, the design being based on the previous study results as well as the findings of the literature review.

Researchers who conduct a quantitative study mostly prefer to collect data via survey/questionnaire instruments (Sarantakos, 2005). To measure the variables a suitable instrument is necessary, and questionnaires are an appropriate method of data collection (Malhotra et al., 2011). A researcher is able to ask specific questions and identify response possibilities in advance of the study. By using survey questionnaires a researcher is often able to apply the results from a small group to a large population. It also may target one or more groups of people in collecting their opinions and attitudes (Dane, 2010).

4.2.2 Research Design

A research design is like a map of the road for the research process, and that process must explain the method for collecting the appropriate data to test the research hypotheses, delineate the research questions, and solve the research problems (Cavana et al., 2001). This quantitative study involved collecting data from a 2 x 2 (smoking status by ethnicity) group by means of a cross-sectional questionnaire survey. The survey was administered between 27th October 2012 and April 30, 2013.

4.2.2.1 Aim of the Study

The study was designed to examine the level of knowledge of the harmful effects of smoking, of the benefits of quitting smoking, and attitudes to smoking amongst Greek-Australians and Anglo-Australians aged 50 or older.

4.2.2.2 Objectives of the Study

1- To compare the four different sub-groups in terms of various aspects of social capital.

2- To compare the four sub-groups in terms of their level of knowledge about the harmful effects of smoking, about the benefits of quitting smoking, and their attitudes to smoking.

3- To compare the different sub-groups in terms of their smoking characteristics (such as age when smoking commenced, Fagerstrom test of nicotine dependence (FTND), attempts at quitting, spouses' smoking status, smoking-related health status, and sources of information).

4- To compare the two smoking sub-groups in relation to their stated intention to quit, and readiness to quit based on stage-of-change and self-efficacy.

5- To identify any significant predictors (such as gender, age, marital status, and educational level) of knowledge in relation to the harmful effects of smoking or benefits of quitting, and attitudes to smoking in the four different sub-groups. The significant predictors of self-efficacy, intention to quit, and smoking behaviour of the two smoking sub-groups are examined.

4.2.2.3 The hypotheses of the study were:

1. There are statistically significant differences between the four sub-groups in regard to their mean levels of knowledge of the harmful effects of smoking, the benefits of quitting, and attitudes to smoking.

2. There is a statistically significant difference between the four sub-groups in social capital.

3. There are statistically significant differences between the two smoking groups (including age when smoking commenced, FTND, and attempts to quit) and the four sub-groups (in regard to spouses' smoking status, smoking-related health status, and sources of information).

4. There is a statistically significant difference between the two smoking sub-groups in regard to their intention to quit, readiness to quit based on stage-of-change, and self-efficacy.

5. There is a statistically significant difference in regard to predictors of knowledge about the harmful effects of smoking, the benefits of quitting smoking, and attitudes to smoking between the four sub-groups, and that there are differences in predictors of self-efficacy, intention to quit, and smoking behaviour in the two smoking sub-groups.

4.2.3 Variables

In this study smokers' knowledge, attitudes, intentions, and self-efficacy were the dependent/outcome variables. The smoking status of the groups and the participants' ethnicity were the independent variables. The participants' background characteristics including age, gender, educational status, and social capital were moderating variables.

For the smokers, quit attempts and score on the Fagerstrom Test for Nicotine dependence (FTND) were considered as moderating variables.

4.2.4 Study Sites

The survey data were collected from participants who identified as either Greek-Australian or Anglo-Australian while attending the Glendi festival at the Adelaide showground in 2012 and from the Greek Orthodox Community of South Australia (GOCSA).

The Glendi Festival is an annual festival that celebrates Greek culture in Australia. The two-day event is the largest multicultural festival in South Australia and is attended by about 40,000 people of all backgrounds.

Some of the Anglo participants were identified from a number of social and community organizations: from bowling clubs at Lockleys, Somerton, Holdfast Bay, and Marion; from the Rotary Club of Adelaide West; from the Richmond Lions Club; and via the Flinders University website (Flinders in Touch).

4.2.5 Target population

The target population was male and female adult Greek-Australians and Anglo-Australians aged 50 and over, resident in South Australia, and both smokers and non-smokers.

4.2.5.1 Inclusion and exclusion criteria

Inclusion criteria: any person who self-identified as either Greek-Australian or Anglo-Australian, who was aged 50 or over, and who consented to be a participant. For the smoking groups they needed to be a current smoker at the time of the survey and who had smoked at least 100 cigarettes during his/her lifetime (Arday et al., 2002, Liu et al., 2014).

4.2.5.2 Sampling and sample size

Convenience sampling was adopted for all participants. This type of the sampling method is common in studies of immigrant and refugee communities (Jackson et al., 1997, Rossiter, 1998, Belknap et al., 2004). In this method, samples from the target group are based on their accessibility or convenience to the researcher (Polgar and

Thomas, 2013). It also enables the researcher to collect sufficient data (and facilitate meaningful statistical analysis where the sample accurately represents the target population) where research funding is limited (Jacobs Jr et al., 1999). Recruiting participants from a non-random sample can lead to bias.

As there is no other study relevant to our study setting, we choose to calculate the power based on posterior power analysis from our dataset. The power analysis was based on three primary outcome measures (knowledge, attitude and intention) between two groups (GSs and ASs). These three outcome measures were basically captured the overall smoking behaviour between two groups. Table 10 shows the mean difference and standard deviation of knowledge, attitude and intention scores from our study. Assuming an alpha error of 0.05 and a beta error of 20%, power analysis indicated that a maximum of 84 participants would be required per group to detect the reported differences in table below with respective standard deviations at 5% level of significance. This sample sizes are exactly matched with our surveyed participants.

Table 10: Mean (SD) of knowledge, attitude, and intention across groups

Outcome	**Mean**	**SD**	**Sample size (per group)**	**Power**	**alpha**
Knowledge	0.85	2.00	84	0.80	0.05
Attitude	4.04	4.83	25	0.80	0.05
Intention	0.4	0.9	81	0.80	0.05

A total of 387 participants (106 ENSs, 82 ESs, 103 GNSs, and 96 GSs) were recruited for this survey. The same sample size has been used in past comparative ethnicity-group studies (Lee et al., 2005a, Karvonen-gutierrez et al., 2012). This sample size was sufficiently large to provide representative and reliable results for factor analysis (Hatcher, 1994) and regression analyses (Peduzzi et al., 1996).

The study was purely in cross-sectional nature and we do not expect equal distribution of participants per group. That is why the number of participants was slightly varied across groups.

4.2.6 Data-collection tools

A self-administrated “smoking behaviour research questionnaire” was developed on the basis of the results of the qualitative study and on the findings of the literature review in

relation to the hypotheses. Two versions of the questionnaire were designed based on language. They were provided in both English and Greek versions, and this enabled Greek participants to select the version with which they felt most comfortable.

"The validity of items for assessing smoking has been analysed several times in previous studies, and the results have consistently shown that self-reported tobacco-smoking information is a valid and reliable way to measure smoking habits in a population" (Hanson et al., 1997, Lindström and Sundquist, 2001, Friis et al., 1998, Williams, 1993, WHO, 1997).

In order to collect information that addresses the objectives of the study, the survey questionnaire comprised seven sections that represented various relevant domains.

4.2.6.1 Smoking characteristics

This part included five questions about the age at which the participant commenced smoking (<19 years, 20-24, 25 and over), the total years he/she had smoked, the type of smoking products (cigarettes, cigars, pipe-tobacco, and other), the number of cigarettes smoked in the preceding 24 hours (Ossip-Klein et al., 2000), and the routine situation in which the participant smoked (i.e. relaxing, feeling anxious, after meals).

4.2.6.2 The Fagerstrom Test for Nicotine Dependence (FTND)

"The most widely used measure for the assessment of nicotine dependence is the Fagerström Test for Nicotine Dependence" (Heatherton et al., 1991). Scores on the FTND have been associated with cotinine levels and withdrawal symptoms (Pomerleau et al., 1994), but it strongly predicts ability to stop smoking (Fagerstrom et al., 1990). The Fagerstrom Test for Nicotine dependence (FTND) is a validated tool (Fagerstrom and Schneider, 1989).

Pomerleau et al. (1994) measured the reliability of the FTND among two cultural groups with three weeks between tests. Test-retest reliability of r=0.783 was achieved for a sample of 237 American smokers and a result of r=0.845 was achieved for a sample of 36 French smokers: Cronbach's alpha was =0.47 for the American sample and =0.61 for the French (Pomerleau et al., 1994). In another study, a modest correlation of FTND scores and plasma cotinine ($r= 0.35$, $p< .001$) and FTND with number of years smoking ($r= 0.38$, $p< 0.001$) was reported (Pomerleau et al., 1990). This amount of

convergent validity (r= 0.40) is sufficient with the same construct measured via a different method (Lowe and Ryan-Wenger, 1992).

Its compactness and reliability in predicting relapse (Piper et al., 2006) has resulted in this tool being used broadly for the evaluation of smoking cessation studies, and its application has been suggested in Australian protocols (Zwar et al., 2005). The FTND consists of six questions with ordinal and dichotomous responses, and it measured the severity of withdrawal symptoms, difficulty in achieving abstinence, and possible relapse (Wetter et al., 2007). The range of total nicotine-dependence scores are divided into five categories: 0-2 very low, 3-4 low, 5 medium, 6-7 high, 8-10 very high dependence (Fagerstrom et al., 1990).

4.2.6.3 Stage of change in readiness to quit smoking, intention to quit, and quit attempts

This part measured readiness-to-quit using the 'stages of change', a key theoretical component of the Trans-theoretical Model (TTM) of health-behaviour change (DiClemente et al., 1991, Prochaska and DiClemente, 1983, Prochaska et al., 1993a). The stages of change included one 5-stage question. In the first stage (the 'Pre-contemplation' stage), smokers are not planning to quit within the next six months. "In the 'Contemplation' stage smokers are seriously thinking about quitting in the next six months. 'Preparation' is the phase in which smokers who have tried to quit in the past year seriously think about quitting in the next month. 'Action' is a period ranging from 0 to 6 months after smokers have commenced the change to quitting, and 'Maintenance' is defined as the period beginning six months after the action has started and continues until smoking has ceased to be a problem" (Prochaska and DiClemente, 1983, Prochaska et al., 1994a). The efficacy of the stages-of-change concept for predicting smoking abstinence and other health behaviours has been shown by the results from numerous studies (Nigg et al., 1999, Williams et al., 2001, Prochaska et al., 1992, Prochaska et al., 1994b) Because this study focused on smokers who were smokers at the time of the study, only the first three stages of readiness-to-quit were measured.

Intention-to-quit was measured by the statement "I plan to quit smoking within the next three months"; to do this use was made of a 5-point scale with end points 'very unlikely' and 'very likely' (van den Putte et al., 2005, van den Putte et al., 2009, van den Putte et al., 2011). Smokers' previous quit attempts (Ossip-Klein et al., 2000), the

reasons for quitting, barriers to quitting, and sources of support for quitting were measured by ten questions (Sussman et al., 1998, Donzé et al., 2007, Hymowitz et al., 1997).

4.2.6.4 Smoking Abstinence Self-efficacy Scale (SASE)

Self-efficacy was measured using the nine-item short form (Fava et al., 1991) of the 20-item self-efficacy scale developed by Velicer et al. (Velicer et al., 1990). The shortened form of the self-efficacy scale provides an overall score which assesses an individual's level of confidence to not smoke in challenging situations. Participants indicated their level of confidence to not smoke in particular situations on a 5-point Likert scale ranging from (1) not at all, to (5) extremely confident. Example situations included "With friends at the party," "When I am very anxious and stressed," and "When I first get up in the morning". High reliability and validity have been reported for the short-form version of the self-efficacy scale (Fava et al., 1995).

4.2.6.5 Participants' Social Capital

The individuals' accessibility to social networks has been considered in many previous studies. It considers two indices: the 'social participation index' which contains a variety of organizational, cultural, and other social activities, and a 'social anchorage' index which consists of close social networks such as family members and relatives, neighbourhood, social contacts in the workplace, and close friends (Lindström et al., 2000, Lindström and Isacsson, 2002). Social capital is identified through social participation and trust. With a small difference, "social participation is regarded as central for the definition of social capital, and trust is regarded as more of a consequence of social capital" (Putnam, 2001a). Lack of social capital can lead to a wide variety of adverse health outcomes (Kawachi et al., 1996, Kawachi et al., 1997, Kawachi et al., 1999). "It may thus also be important to investigate aspects of social capital other than social participation in relation to smoking" (Lindström, 2003).

For this study the social capital of the participants was measured by the content of five tables. One table was designed to measure direct contact with various people (such as friends, family members, and so on). The second table included a question about trust in various groups and people (friends, neighbours and so on). In the third table the participants' engagement in various activities (watching TV, DVDs, or attending

functions such as music concerts) was asked. Table four asked about participants' membership status in different organizations (church, sport clubs), and Table five asked about participants' trust in different organizations. The reliability and validity of this survey as an instrument for measuring social quality was piloted (n = 33) and analysed for test-retest and inter-item reliability in Australia (Ward et al., 2011, Meyer et al., 2010). This part included six more questions about family and important people smoking status, the participant's family and relatives' health status (Ossip-Klein et al., 2000), and sources of information about the adverse effects of smoking (Lazuras et al. 2012).

4.2.6.6 Knowledge and attitudes to smoking

This questionnaire was a self-administrated design and the items were chosen based on the literature review and also the information from the qualitative study. To collect data on these topics a self-administered questionnaire is an appropriate method (Fink et al., 1995). This part included 15 questions to measure participants' knowledge of smoking and health. Response options of 15 items included "True", "False", and "don't know". The maximum score for the knowledge section was 15 and the lowest possible score was 0.

Fourteen items asked about participants' attitudes to smoking. Response options included Likert-scale items; "strongly agree", "agree", "disagree", "strongly disagree", and "no idea". They were assigned numbers 1-5. In this manner the responses to the various items were quantified and then summed across statements to provide a total score for the individual. For example, for some of the items the response scored 1-5 and for the other statement scored 5-1. The maximum score possible for 'attitude' was 70 and the lowest possible score was 14.

4.2.6.7 Participants' demographic information

This component included 13 questions to capture and measure participants' socio-demographic status including information on age, gender, marital status, educational status, ethnicity, employment status, salary, the number of household members, general health status, and the average time spent when attending a consultation with a GP.

4.2.7 Validity and reliability of the questionnaire

Several components of the questionnaire have been used many times in other validated instruments in previous studies. Before their use in this study, all the measures that were developed in English were translated into Greek and then back-translated through a rigorous process; next they were pilot-tested for cross-cultural validation (Kim, 2008, Kim et al., 2009, Kim et al., 2008).

Smoking-history items were adapted from those which have been used in many national surveys (Tait et al., 2007, Rimer and Orleans, 1994). The inter-item reliability for the FTND was measured in previous studies, and Cronbach's alpha was 0.64 (Heatherton et al., 1991). A value of coefficients greater than 0.6 was considered to be an adequate level of reliability to test causal relationships of a set of items for each scale (Hume et al., 2006). This questionnaire had been used before among Greek smokers (Rovina et al., 2007, Gratziou et al., 2012).

The stage-of-change was also used in previous studies. This questionnaire had been used in previous studies of Greek smokers (Beletsioti-Stika and Scriven, 2006). The self-efficacy questionnaire items had been used in many previous research projects and total scores yielded an average item correlation of .68 with a range of .58 to .76 (DiClemente, 1981, Velicer et al., 1990).

To further validate the questionnaire content-validity was applied to this research. The researcher sent the questionnaire to his four academic supervisors who provided guidance and feedback. The content of each item in the questionnaire was then re-evaluated and refined accordingly. Appropriate changes, in accordance to the results of the questionnaire testing, were then made and the revised questionnaire was translated by a nationally-accredited Greek translator. After translation, the questionnaire was checked by four Greek PhD students to ensure the accuracy of the translation.

4.2.8 Pilot study

A pilot study was conducted involving both the English and Greek versions of the questionnaires, the test being administered to 10 people from the target populations (N=5 English and N= 5 Greek) to check for readability and levels of understanding. In response to the feedback some small changes to the layout and wording were made.

"In the pilot study, draft versions of the questionnaire were discussed by the project supervisory team, by bicultural health educators, and by students from the relevant ethnic backgrounds. Based on their face validity and reliability, some questions were altered or dropped from the final version of the questionnaire" (Nierkens et al., 2005) (Appendix G).

Internal consistency was checked to examine the extent to which the items of the scale were measuring the same concepts. In order to guarantee the maximum internal reliability of each of the self-reported scales used in the study, the Cronbach's alpha coefficient was calculated. A value of coefficients greater than 0.6 is considered to be an adequate level of reliability to test causal relationships of a set of items for each scale (Hume et al., 2006).

The internal consistency of the three variables (knowledge, attitude, and self-efficacy) was assessed with Cronbach's alpha with the results indicating acceptable internal consistency of $\alpha = 0.62$, 0.78 and 0.89 for each variable respectively.

4.2.9 Data collection

In-principle agreements were gained from the organization's managers to administer the questionnaire at the Glendi Festival and at other sites (listed above) where Anglo-Australian participants could be recruited (Appendix C). The questionnaire was administered at the Glendi Festival during two days (27th and 28th October 2012) to recruit Greek-Australian and Anglo-Australian participants. Once informed consent had been received an information sheet (both Greek and English versions) and a letter of introduction (both Greek and English versions) were issued to people who met the inclusion criteria; then the questionnaire was distributed (for Greek people two versions in Greek and English were offered). A bilingual translator was available for the Greek participants who may have required assistance to complete the questionnaire. Anglo participants were also administered a self-completion questionnaire face-to-face in English. It nearly took about 30 minutes to complete the questionnaire. Participants could answer at that time, but if they agreed to complete the questionnaire at a later time they were provided with a pre-paid envelope.

4.2.10 Data analysis

Statistical analysis consisted of descriptive statistics (i.e. frequency distributions and cross-tabulations) and inferential statistics. The $\chi 2$ test was used to compare smokers and non-smokers for the categories of variables, and the t test was used to test differences in means between the two smoking sub-groups and dependent variables which were continuous variables. To compare the mean of the continuous variables between four sub-groups, one-way ANOVA was used. The main effects of two factors (smoking status and ethnicity) in relation to the outcome variables (knowledge and attitude) and also any interaction effect were assessed using a 2-way ANOVA.

A multiple regression model was used to examine the significance and direction of the linear relationship between the independent (continuous and categorical) variables or predictors with the continuous (knowledge, attitude, self-efficacy, intention to quit, and smoking behaviour) dependent or outcome variables. Odds ratios (ORs) with 95 percent confidence intervals (CIs) for each variable were calculated "as an estimate of the likelihood of smoking, and probability values were determined" (Jarallah et al., 1999).

Exploratory factor analysis using the principal component method and Varimax rotation was performed on the 14 'attitude to smoking' items to identify the underlying factors of the questionnaire. "Kerlinger and Kaya (1959) recommended factor analysis as a valuable tool in the logical-validity stage of measurement; that is, to explain and identify dimensions relevant to the attitude object" (Schlegel, 1975). Inter-item reliability for each factor was measured using Cronbach's α coefficients for standardized variables. In this study the principal-axis factoring method with Varimax rotation was used. "Before performing this analysis, the Kaiser–Meyer–Olkin measure of sampling adequacy and the Bartlett's test of sphericity were both measured to judge whether the data fulfilled the assumptions for carrying out a factor analysis. The Kaiser–Guttman criterion (eigenvalue>1) was utilized to decide on the number of factors retained" (Spek et al., 2013).

Raw data were coded for data entry (Appendix H). In this study the coded and cleaned data were analysed by using SPSS for Windows software (Version 20.0). All significance tests were two-tailed and a p-value <0.05 was considered statistically significant.

4.2.11 Ethical considerations

This study was approved by the Social and Behavioural Research Ethics Committee (SBREC) of Flinders University (Appendix D2). For the Greek participants the researcher used a bilingual translator to inform them about the aim of the study and to answer any questions they might have had before completing the questionnaire. Two versions of the questionnaires were provided, and they could choose to complete either the English or Greek version depending on their English-language proficiency. Participants who were interested in participating in the study were made aware of the aims of this study and its details by means of a letter of introduction and an information sheet (Appendix F). Invited people were able to participate or reject participation in the study. Permission to carry out this study was obtained from the Glendi festival, GOCSA, and different clubs.

4.3 Results

In this section the results of the quantitative study are presented in six parts. The first part presents the participants' socio-demographic information, and the second describes their social capital. The smoking characteristics of the participants are detailed in the third part, which is followed by the participants' smoking-related knowledge, attitudes to smoking, self-efficacy, and intention to quit. The fifth section examines the results of the factor analysis, and finally the results of the predictors of the dependent variables are detailed.

Overall, 367 people in four sub-groups participated in this study (GSs, GNSs, ASs, and ANSs). As shown in Table 11, in both ethnic groups the response rate was higher for non-smokers than for smokers. ANSs had a higher response rate (53.8 percent), and GSs had the lowest response rate (28.4 percent).

Table 11: Response rates of participants in the four sub-groups

Groups	Distributed Questionnaires (n)	Incomplete returned questionnaires (n)	Completed questionnaires (n)	Percentage rate (%)
ANSs	197	4	106	53.8
ASs	218	4	82	37.6
GNSs	297	3	103	34.7
GSs	338	5	96	28.4

4.3.1 Characteristics of the participants

Table 12 shows the socio-demographic characteristics of the participants according to gender, age, place of birth, annual income, and number of household members. Although there are no significant differences, the frequency of female participation was highest in the AS group (59.8 percent). Male participation was highest among the ANSs (57. 5 percent). Overall, non-smoker groups had a higher mean age and the ANSs had the highest mean age of 68.5 years (SD= 9. 5) ($p<.0001$). There was a significant difference in marital status between the groups ($\chi^2=41.08$, $p<.001$). While the majority of respondents in all groups were married, the frequency of married participants was higher in the non-smoking groups (72.6 percent of ANSs and 69.9 percent of GNSs). On the other hand, the frequency of divorced respondents was higher in the smoking groups (20.7 percent of ASs, and 21.9 percent of GSs).

In terms of place of birth there was a marked difference; most participants in the Anglo groups were born in Australia (79.2 percent of ANSs, 72 percent of ASs). The majority of respondents in the GNS group (80. 6 percent) were born in Greece and the remaining few (19. 4 percent) were born in Australia. On the other hand, the majority of the GSs (66. 7 percent) were born in Australia ($\chi^2=245.97$, $p<.001$). In terms of income, no statistically significant differences were found between groups ($\chi^2=8.99$, $p=.43$). Most respondents reported a 'low' household income (less than $AUD40K) in both ASs (40.2 percent) and GSs (45.8 percent), but for the ANS group the proportion was 32.1 percent and for GNSs 36.9 percent. Mean household membership was higher among GSs (2.35, SD=1.03) compared with other groups, while the mean household size was lower among ANSs (2.03, SD=.85) compared with other groups, $F(1, 383)=1.65$, $p=.17$ (Table 12).

Table 12: Demographic characteristics of different groups

	Anglo		*Greek*		***Statistic***
	Non-smoker (n=106)	***Smoker*** (n=82)	***Non-smoker*** (n=103)	***Smoker*** (n=96)	
Gender *n* (%)					
Female	45 (42.5)	49 (59.8)	57 (55.3)	44 (45.8)	*p*=.061
Male	61 (57.5)	33 (40.2)	46 (44.7)	52 (54.2)	
Mean age in years (SD)	68.5 (9.5)	57.6 (5.9)	65.1(10.4)	59.2 (6.9)	p<.0001
Place of birth *n* (%)					
England	17 (16.0)	13 (15.9)	0 (0.0)	0 (0.0)	
Australia	84 (79.2)	59 (72.0)	20 (19.4)	32 (33.3)	p<.001
Greece	0 (0.0)	0 (0.0)	83 (80.6)	64 (66.7)	
Another	5 (4.7)	10 (12.2)	0 (0.0)	0 (0.0)	
Marital status *n* (%)					
Single	5 (4.7)	8 (9.8)	9 (8.7)	8 (8.3)	
Married	77 (72.6)	34 (41.5)	72 (69.9)	54 (56.2)	
Divorced	7 (6.6)	17 (20.7)	8 (7.8)	21 (21.9)	P<0.001
Widowed	12 (11.3)	8 (9.8)	7 (6.8)	4 (4.2)	
Separated	2 (1.9)	10 (12.2)	3 (2.9)	6 (6.2)	
Defacto	3 (2.8)	5 (6.1)	4 (3.9)	3 (3.1)	
Annual income *n* (%)					
Low	34 (32.1)	33 (40.2)	38 (36.9)	44 (45.8)	p=.43
Middle	48 (45.3)	28 (34.1)	38 (36.9)	34 (35.4)	
High	5 (4.7)	3 (3.7)	8 (7.8)	2 (2.1)	
Don't know	19 (17.9)	18 (22.0)	19 (18.4)	16 (16.7)	
Mean household members (SD)	2.03 (0.85)	2.19 (1.18)	2.26 (1.03)	2.35(1.25)	p=.17

Regarding the educational levels of the participants, of those who had completed school only to primary-school level most were Greek, but the frequency of participants with high school education was higher among GSs (55.2 percent). Members of the ANS group (37.7 percent) scored more often in higher educational categories (such as TAFE and University) compared with other groups. A statistically-significant difference was found between the groups in terms of educational status (χ^2=64.32, P<.001) in Figure 3.

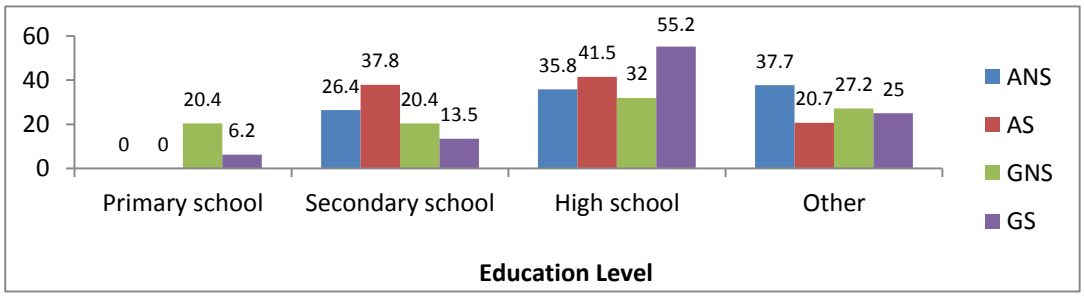

Figure 3: Distribution of Participants based on education level

In reference to competence in the English language, among Greek participants there was no meaningful difference (χ^2=5. 39, p=.14), the majority of Greek participants reporting that they spoke English very well (61.2 percent of GNSs, and 68.8 percent of GSs). Only one person in the GNS group reported that he could not speak English at all (Figure 4).

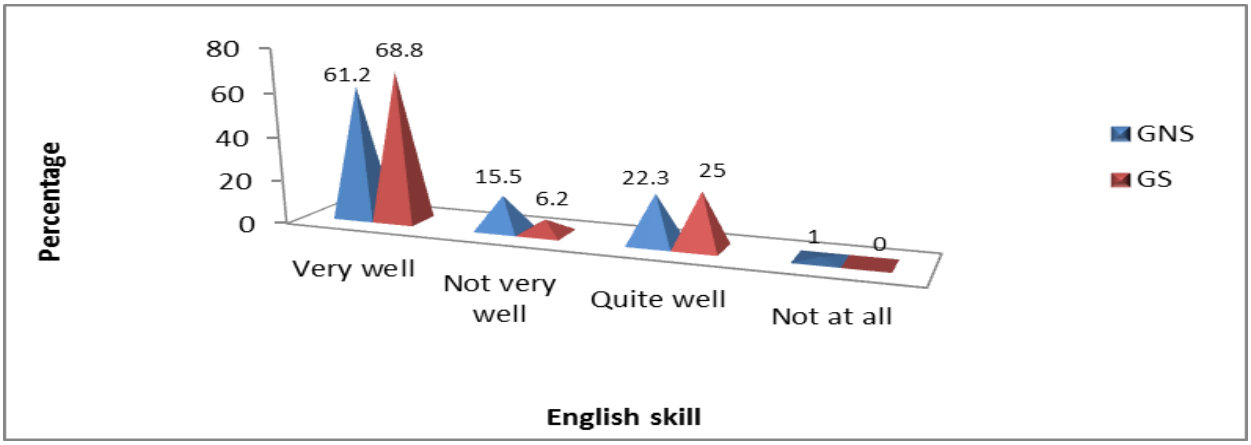

Figure 4: Distribution of participants based on level of competence in English

Many GNSs (42.7 percent) reported that Greek was their preferred language, while 35.4 percent of participants in the GS group preferred to speak English or both English and Greek (χ^2=4.03, p=.13) (Figure 5).

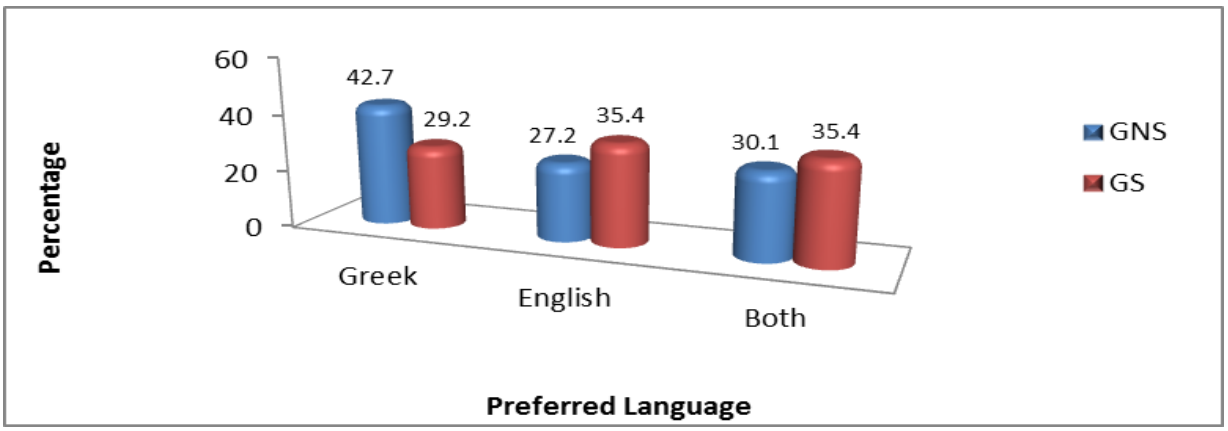

Figure 5: Distribution of Greek participants based on preferred language

Turning to employment, there were marked differences; the percentage of participants who were 'retired and pensioner' was higher in both ANSs (70.8 percent) and GNSs (56.3 percent) compared with smokers in both groups. On the other hand, the

percentage of participants who were employed full time was higher in the ASs (45.1 percent) and GSs (56.2 percent) compared with non-smokers in both groups (χ^2=61.55, p<.001) (Figure 6)

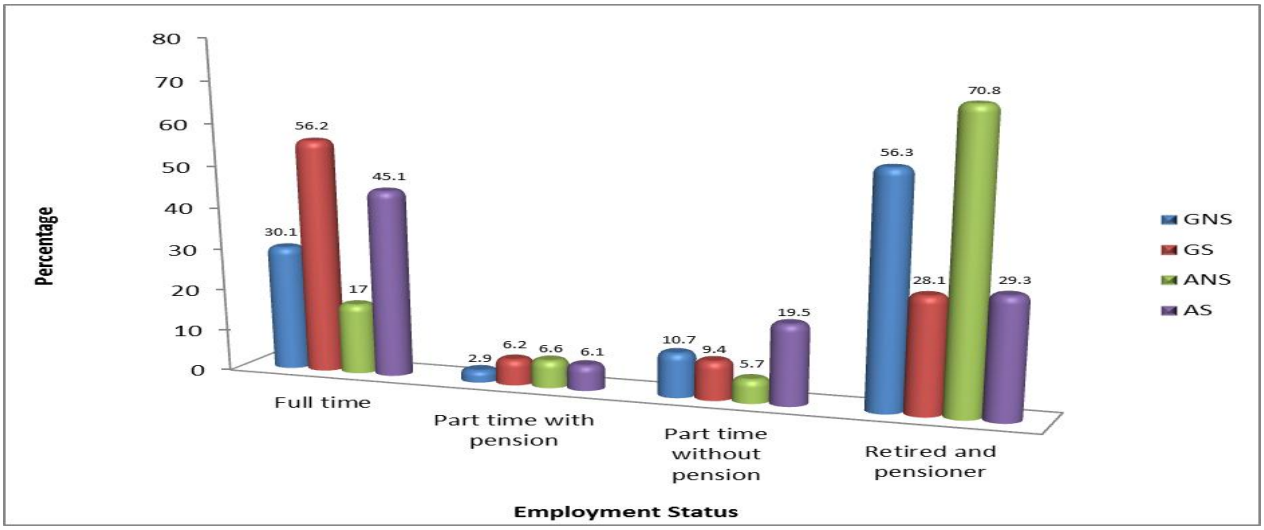

Figure 6: Distribution of participants based on employment status

The distribution of respondents by self-reported health status, medical condition, and GP visits is shown in Table 13. With marked differences, F(1,383)=24.82, p<.001) smokers in both groups were reported to have higher rates of 'bad' health than non-smokers. In contrast, non-smokers in both groups were reported to have higher rates of 'good' health than both smoking groups. Considered overall, there was a noticeable difference between groups in terms of medical condition, F(1,383)=4.38, p=.005. An interesting result was that ANSs had higher levels of cardio-vascular disease (43.4%, χ^2=16.91, p<.001), and cancer (13.2%, χ^2=8.7, p<.03) than the other three groups. On the other hand, both GNSs (11.7 percent) and GSs (21.9 percent) reported having more chronic lung disease than both Anglo groups (11.3 percent of ANS, and 9.8 percent of AS).

The results also showed notable differences in respect of their rates of visiting their general practitioner; many respondents in all groups reported that they had visited a GP less than once in 10 years (59.4 percent of ANS, 32.9 percent of AS, 44.7 percent of GNS, and 29.2 percent of GS). On the other hand, 30.1 percent of GNS and 19.8 percent of GS stated that they had visited a GP within the previous year (χ^2=60.35, p < .001) (Table 13).

Table 13: Medical conditions and visits to GP by group

Variable	*Anglo*		*Greek*		*Statistic*
	Non-smoker (n=106)	***Smoker*** (n=82)	***Non-smoker*** (n=103)	***Smoker*** (n=96)	
Self-reported health status *n* (%)	90 (84.9)	47 (57.3)	73 (70.9)	58 (60.4)	
Good	15 (14.2)	28 (34.1)	28 (27.2)	32 (33.3)	p<.001
Fair	1 (0.9)	7 (8.5)	2 (1.9)	6 (6.2)	
Bad					
Medical Condition *(SD)*	0.84 (0.9)	0.52 (0.8)	0.5 (0.7)	0.6 (0.7)	p=.005
Chronic Lung Disease (CLD) ***n* (%)**	12 (11.3)	8 (9.8)	12 (11.7)	21 (21.9)	
Cardio-Vascular Disease (CVD) ***n* (%)**	46(43.4)	15 (18.3)	24(23.3)	27 (28.1)	
Diabetes ***n* (%)**	14 (13.2)	10 (12.2)	9 (8.7)	8 (8.3)	
Cerebrovascular disease ***n* (%)**	4 (3.8)	5 (6.1)	2 (1.9)	2 (2.1)	
Cancer ***n* (%)**	14 (13.2)	6 (7.3)	4 (3.9)	4 (4.2)	
CLD + CVD ***n* (%)**	8 (7.5)	0 (0.0)	3 (2.9)	6 (6.2)	
CVD + Cancer ***n* (%)**	7 (6.6)	3 (3.7)	1 (1.0)	2 (2.1)	
GP Visits *n* (%)					
Less than one year	5 (4.7)	9 (11.0)	31 (30.1)	19 (19.8)	
1 to 5 years	26 (24.5)	22 (26.8)	12 (11.7)	26 (27.1)	
6 to 10 years	9 (8.5)	17 (20.7)	11 (10.7)	22 (22.9)	p<.001
Over 10 years	63 (59.4)	27 (32.9)	46 (44.7)	28 (29.2)	
No visit	3 (2.8)	7 (8.5)	3 (2.9)	1 (1.0)	

4.3.2 Characteristics of respondents based on social capital

The distribution of respondents based on the various aspects of social capital (which measures participants' social participation and trust) is shown in Table 14. Five elements were used to measure social capital: direct contact with different types of people; trust in different types of people; engagement in different activities; membership of different social groups; and trust in different social groups. In order to evaluate Hypothesis 2 a statistical analysis of social capital was conducted, and the results below show a statistically-significant difference between the means of the four sub-groups.

Table 14: Mean and SD of participants relating to social capital

Variable	*Anglo*		*Greek*		*Statistic*
	Non-smoker (n=106)	*Smoker* (n=82)	*Non-Smoker* (n=103)	*Smoker* (n=96)	
Direct contact with*(SD)*					
Friends	4.31 (0.82)	4.09 (1.0)	4.3 (0.8)	4.2 (0.9)	p=0.35
Colleagues	2.92 (1.7)	3.57 (1.8)	3.06 (1.7)	3.7 (1.7)	p<0.001
Neighbours	3.57 (1.2)	2.52 (1.1)	3.5 (1.2)	2.9 (1.3)	p<0.001
Family	4.0 (1.01)	3.9 (1.2)	4.32 (1.08)	4.16 (1.16)	p=0.04
GP	2.03 (0.43)	1.96 (0.63)	2.15 (0.62)	2.05 (0.62)	p=0.15
Total	18.84 (2.7)	16.07 (3.1)	17.4 (3.1)	17.15 (3.48)	p=0.03
Trust in*(SD)*					
Friends	3.64 (0.6)	3.42 (0.8)	3.28 (0.7)	3.26 (0.9)	p<0.001
Colleagues	2.46 (1.1)	2.6 (0.96)	2.34 (0.98)	2.4 (1.0)	p=0.37
Neighbours	3.13 (0.8)	2.2 (1.1)	2.6 (0.9)	2.4 (0.95)	p<0.001
Family	3.75 (0.53)	3.79 (0.51)	3.64 (0.77)	3.62 (0.78)	p= 0.23
GP	3.59 (0.81)	3.19 (1.01)	3.37 (0.91)	3.36 (0.85)	p=0.25
Total	16.47 (2.04)	15.24 (2.6)	15.22 (2.56)	15.08 (2.78)	p<0.001
Engagement in activities*(SD)*					
Watch TV, DVD, Video	4.88 (0.46)	4.7 (0.7)	4.66 (0.86)	4.7 (0.56)	p=0.10
Go to live theatre	1.73 (0.68)	1.32 (0.54)	1.65 (1.1)	1.46 (0.59)	p=0.002
Go to music concerts	1.69 (0.75)	1.46 (0.78)	1.56 (0.63)	1.52 (0.59)	p=0.11
Go to live sports	2.09 (1.2)	1.74 (1.01)	1.77 (1.17)	1.88 (1.02)	p=0.11
Go to museums	1.68 (0.63)	1.34 (0.5)	1.66 (0.67)	1.45 (0.59)	p<0.001
Go to cinema	2.0 (0.71)	1.84 (0.57)	1.87 (0.77)	1.82 (0.58)	p=0.19
Total	14.13 (2.78)	12.43 (2.09)	13.09 (2.54)	12.89 (2.27)	p<0.001
Membership status *n (%)*					
Church	47 (44.3)	21 (25.6)	51 (49.5)	18 (18.8)	p<0.001
Sport or recreational org.	62 (58.5)	24 (29.3)	32 (31.1)	28 (29.2)	p<0.001
Art, music, educational/cultural org.	29 (27.4)	8 (9.8)	18 (17.5)	5 (5.2)	p<0.001
Other community-based org.	52 (49.1)	16 (19.5)	46 (44.7)	20 (20.8)	p<0.001
Trust in *(SD)*					
Church	2.59 (1.03)	2.10 (1.04)	2.48 (1.06)	2.25 (0.94)	p<0.005
Sport or recreational org.	2.54 (1.01)	2.03 (1.1)	2.16 (0.106)	2.2 (0.99)	p=0.005
Art, music, educational/cultural org.	2.03 (1.1)	1.59 (0.94)	2.02 (1.05)	1.8 (1.05)	p=0.01
Other community-based org.	2.16 (1.06)	1.76 (1.06)	2.11 (1.02)	1.8 (1.0)	p=0.01
Total	9.3 (2.8)	7.5 (3.1)	8.7 (3.1)	8.1 (2.8)	p=0.001

4.3.3 Direct contact with various types of people

The total mean of direct contact with different types of people among the non-smokers was higher than for the smokers in both groups (18.84, SD=2.7 for the ANS group; 17.4, SD=3.1 for the GNS group vs 16.07, SD=3.1 for the ASs, and 17.15, SD=3.48 among the GSs). There was a significant difference between groups in terms of direct contact with different types of people, F(1,383)=2.97, p=0.03; this finding supports Hypothesis 2.

In terms of direct contact with friends, ANSs (4.31, SD=0.82) had a higher mean than the three other groups, the mean of direct contact with friends being lower among GSs (4.2, SD=0.9). The results show no significant differences between groups in terms of

direct contact with friends, F(1,383)=1.08, SD=.35. The mean of direct contact with colleagues was higher in smokers (3.57, SD=1.8 in ASs, and 3.7, SD=1.7 in GSs) than non-smokers (2.92, SD=1.7 in ANSs, and 3.06, SD=1.7 in GNSs), this finding confirming the important role of colleagues in human behaviour in the workplace, F(1,383)=4.8, p<.001. Both ANSs (3.57, SD=1.2) and GNSs (3.5, SD=1.2) had higher mean direct contact with neighbours than ASs (2.52, SD=1.1 and 2.9, SD=1.3) and GSs F(1,383)=16.82, p<.001. The mean of direct contact with family members among GNSs (4.32, SD=1.08) and GSs (4.16, SD=1.16) was higher than ANSs (4, SD=1.01) and ASs (3.9, SD=1.2). These results show that Greek participants had higher levels of family connection than Anglo participants, F(1,383)=2.66, p=.04. In terms of direct contact with a GP, GNSs (2.15, SD=. 62) had a higher mean of direct contact with a GP than the three other. While AS (1.96, SD=.63) had lowest direct contact with a GP, there were no meaningful differences between groups in terms of direct contact with a GP, F(1,383)=1.73, p=.15 (Table 14).

4.3.3.1 Trust in various types of people

Considered overall, non-smokers had a significantly higher mean of trust in different people than did the smokers in the two groups (16.47, SD=2.04 in ANSs and 15.22, SD=2.56 in GNSs vs 15.24, SD=2.6 in ASs and 15.08, SD=2.78 in GSs). There was a significant difference between groups in terms of trust in different types of people, F(1,383)=6.83, p<.001: this result supports Hypothesis 2.

In reference to the issue of trust, the ANS group (3.64, SD=0.6) had a higher mean of trust of friends than the other groups; GSs (3.26, SD=0.9) had the lowest mean of trust of friends F(1,383)=5.35, p<.001. In terms of trust in colleagues, ASs (2.6, SD=0.96) had the highest mean while GSs (2.4, SD=1.0) had the lowest; the figures for GNSs being 2.34, SD=0.98; however, the difference between groups was not statistically significant, F(1,383)=1.04, p=.37. On the issue of trust in neighbours, the mean for non-smokers was 3.13, SD=0.8, and for ANS the figure was 2.6, SD=0.9. ANSs had highest and ASs (2.2, SD=1.1) had lowest mean of trust in neighbours than the other groups F(1,383)=16.1, p<.001. Regarding trust in family members, the results showed that ANSs (3.75, SD=0.53) had the highest level and GSs (3.62, SD=0.78) the lowest. There was no significant difference between groups in terms of trust in family members, F(1,383)=1.43, p=.23). For trust in the general practitioner, non-smokers (3.59,

SD=0.81 in ANSs, and 3.37, SD=0.91 in GNSs) recorded levels higher than smokers in both groups (however for the Greek group the number was nearly similar), though there was no significant difference between groups in terms of trust in a GP, F(1,383)=3.14, p=.25) (Table 14).

4.3.3.2 Engagement in variety of activities

In total, non-smokers (14.13, SD=2.78 in ANSs and 13.09, SD=2.54 in GNSs) reported higher means of engagement with different activities than did smokers (12.43, SD=2.09 in the AS group, and 12.89, SD=2.27 in the GS group). There was a significant difference between groups in terms of engagement in different activities, F(1,383)=8.21, p<.001), so that the results support Hypothesis 2.

The highest mean of engagement with different activities related to watching TV, DVDs, and videos. The ANS group (4.88, SD=0. 46) had the highest mean of engagement in TV, DVD, and videos (4.7, SD=0.7 for the AS group; 4.66, SD=0.86 for the GNSs; and 4.7, SD=0.56 for the GSs), however, there was no significant difference between them F(1,383)=2.03, p=.1. The mean of going to live theatre was ANSs (1.73, SD=0.68) and GNSs (1.65, SD=1.1): and regarding going to museums the figure was ANSs (1.68, SD=0.63) and GNSs (1.66, SD=0.67). It was higher amongst non-smokers than smokers in both groups - there being a significant difference between groups, F(1,383)=5.06, p=.002 for live theatre and F(1,383)=6.78, p<.001 for museums. Non-smokers also had a higher mean for going to concerts (1.69, SD=0.75 for ANSs; 1.56, SD=0.63 for GNSs), live sports (2.09, SD=1.2 for ANSs; 1.77, SD=1.17 for GNSs); for attending the cinema ANSs recorded (2.0, SD=0.71) and GNSs (1.87, SD=0.77). There was no significant difference between groups in these three activities, F(1,383)=1.9, p=.11 for the concert; F(1,383)=1.9, p=0.11 for live sports; and F(1,383)=1.59, p=0.19 for the cinema) (Table 14).

4.3.3.3 Membership of social groups

Overall, non-smokers had higher frequencies of membership in church, sporting, and recreational organizations (eg. art, music) and other community-based organizations than did smokers in both groups. While ANSs had the highest frequency of membership in all different types of social groups than did the other three groups, GSs had the lowest frequency of membership in the church (18.8 percent) (χ^2=27.75, p<.001), in sport or

recreational organizations (29.2 percent) (χ^2=26.9, p<.001), and in art, music, educational and cultural organizations (5.2 percent) (χ^2=21.51, p<.001) than other groups. There was an exception insofar as the AS group had the lowest frequency of membership in other community-based organizations (19.5 percent) than the other groups (χ^2=30.67, p<.001) (Table 14).

4.3.3.4 Trust in social groups compared

Non-smokers (9.3, SD=2.8 for ANSs, and 8.7, SD=3.1 for GNSs) had higher mean trust in church, sport, art, music, and other community organizations than did smokers; and Anglo participants had higher mean trust in these places than did Greek participants. There was a significant difference between groups in terms of trust in different social places, F(1,383=6.43, p=.001) so these results support Hypothesis 2 (Table 14).

4.3.4 Smoking characteristics

This part presents the results of the characteristics of smokers and non-smokers. The statistical analysis was performed to examine Hypothesis 3 regarding the statistical differences between the two smoking groups in respect of smoking characteristics (including age at which smoking commenced, FTND, quit attempts, etc.).

4.3.4.1 Characteristics of smokers

The characteristics of smoker respondents are shown in Table 15. No significant difference was found between the two groups in terms of age at which smoking commenced. The mean age of starting smoking was higher in the GS group (17.8, SD=3.7) than in the ASs (17.6, SD=5.08) (t=.34, p=.73), and the majority of smokers in both the AS (73.2 percent) and GS groups (76 percent) commenced smoking before they turned 19 (χ^2=.24, p=.88), so in terms of the age at which smoking commenced Hypothesis 3 is rejected. The mean of the total years of smoking was significantly higher among GSs (38.9, SD=8.85) than ASs (36.2, SD=9.5) (χ^2=1.98, p<.05), a result that supports Hypothesis 3. There was no statistically significant difference between the two groups in regard to use of tobacco products (t=1.94, P=0.054) and the majority of smokers in both groups were reported to smoke cigarette (96.3 percent of ASs, and 95.8 percent of GSs). Consequently there was insufficient evidence to accept Hypothesis 3.

The mean of the number of cigarettes smoked in the preceding 24 hours was higher amongst GSs (18.14, SD=9.85) than ASs (17.25, SD=9.03). With no significant difference between the two groups (t=0.62, p=.53) in terms of the number of cigarettes smoked in the preceding 24 hours, Hypothesis 3 is rejected. The majority of smokers amongst GSs who reported 'smoking after meals' (79.2 percent) was followed by 'when they were with other smoker's present (72.9 percent), 'when they were relaxed' (72.9 percent), when they 'consumed alcohol' (72.9 percent), and 'when they felt anxious' (68.8 percent). Most respondents in the AS group reported 'smoking after meals' (82.9 percent), followed by 'when they were with other smokers' (69.5 percent), 'when they were relaxed' (69.5 percent), 'when they felt anxious' (65.9 percent), and 'when they consumed alcohol' (63.4 percent). There was no significant difference between the two groups regarding smoking consumption time (t=0.76, P=0.44) so in terms of smoking consumption time Hypothesis 3 is rejected (Table 15).

Table 15: Characteristics of smoker participants

Variable	***Anglo-smoker (n=82)***	***Greek-smoker (n=96)***	***Statistic***
Mean age of start smoking (SD)	17.6 (5.08)	17.8 (3.7)	*p*=.73
Start age of smoking *n* (%)			
<19	60 (73.2)	73 (76.0)	*p*=.88
20-24	16 (19.5)	16 (16.7)	
>25	6 (7.3)	7 (7.3)	
Mean age of the total years smoking (SD)	36.2 (9.5)	38.9 (8.85)	*p*=.049
Tobacco Product *(SD)*	1.03 (0.18)	1.11 (0.32)	*p*=.054
Cigarette *n* (%)	79 (96.3)	92 (95.8)	
Cigars *n* (%)	2 (2.4)	8 (8.3)	
Pipe Tobacco *n* (%)	1 (1.2)	3 (3.1)	
Other *n* (%)	3 (3.7)	4 (4.2)	
Cigarette + Cigars *n* (%)	2 (2.4)	6 (6.2)	
Cigarette + Pipe Tobacco *n* (%)	1 (1.2)	3 (3.1)	
Mean of smoking in the last 24 Hours (SD)	17.25 (9.03)	18.14 (9.85)	*p*=.53
Smoking Consumption Time *(SD)*	4.9 (1.85)	5.08 (1.72)	*p*=.44
Relaxing *n* (%)	57 (69.5)	68 (70.8)	
Feeling anxious *n* (%)	54 (65.9)	66 (68.8)	
To increase concentration *n* (%)	10 (12.2)	16 (16.7)	
In the absence of children *n* (%)	7 (8.5)	9 (9.4)	
After meals *n* (%)	68 (82.9)	76 (79.2)	
After tea or coffee *n* (%)	47 (57.3)	58 (60.4)	
Bored or trying to pass time *n* (%)	39 (47.6)	50 (52.1)	
Drinking alcoholic beverages *n* (%)	52 (63.4)	68 (70.8)	
Around other smokers *n* (%)	57 (69.5)	70 (72.9)	
Other *n* (%)	9 (11.0)	8 (8.3)	

4.3.4.1.1 Fagerstrom Test for Nicotine Dependence (FTND)

The distribution of respondents by smoking characteristics based on the FTND is shown in Table 16. Many smokers in both the AS group (29.3 percent) and the GS group (36.5 percent) reported that they started smoking between six and 30 minutes after waking in the morning. With no significant difference between the two groups (χ^2=3.3, p=.34) in terms of the first cigarette of the morning, Hypothesis 3 is rejected. Many smokers among both ASs (36.6 percent) and GSs (39.6 percent) stated that they smoked 11-20 cigarettes per day. With no significant difference between the two groups (χ^2=3.98, p=.26) in terms of the number of cigarettes smoked per day, Hypothesis 3 is rejected. The mean of the FTND score in the AS group (4.23, SD=2.75) was lower than for the GS group (4.58, SD=2.28). With a statistically insignificant difference between the two groups (t=0.92, p=.35) in terms of the FTND score Hypothesis 3 is rejected. The GS group (30.2 percent) had a higher frequency of 'high' dependence on nicotine than the ASs (19.5 percent), while ASs (24.2 percent) had a higher frequency of 'very high' dependence on nicotine than GSs (22.9 percent). With no significant difference between the two groups (χ^2=3.72, p=.29) in terms of the level of dependence on nicotine, Hypothesis 3 is rejected. The frequency of smokers who called themselves 'light smokers' was higher amongst ASs (29.3 percent) than GSs (21.9 percent), while the frequency of 'heavy smokers' was higher amongst GSs (38.5 percent) than ASs (31.7 percent). With no significant difference between the two groups (χ^2=1.54, p=.46) in terms of the preferred type of cigarette, Hypothesis 3 is rejected (Table 16).

Table 16: The FTND of smoker participants

Variable	*Anglo-smoker (n=82)*	*Greek-smoker (n=96)*	*Statistic*
First cigarette start in the morning *n* (%)			
Within 5 minutes	20 (24.4)	22 (22.9)	*p*=.34
6-30 minutes	24 (29.3)	35 (36.5)	
31-60 minutes	20 (24.4)	27 (28.1)	
After 60 minutes	18 (22.0)	12 (12.5)	
Number of cigarette per day *n* (%)			
10 or fewer	26 (31.7)	21 (21.9)	
11-20	30 (36.6)	38 (39.6)	*p*=.26
21-30	20 (24.4)	33 (34.4)	
31 or more	6 (7.3)	4 (4.2)	
Mean of Fagerstrom Test (SD)	4.23 (2.75)	4.58 (2.28)	p=.35
Level of dependence on nicotine *n* (%)			
Low	22 (26.8)	17 (17.7)	p=.29
Medium	24 (29.3)	28 (29.2)	
High	16 (19.5)	29 (30.2)	
Very High	20 (24.4)	22 (22.9)	
Preferred type of cigarette *n* (%)			
Light	24 (29.3)	21 (21.9)	p=.46
Moderate	32 (39.0)	38 (39.6)	
Heavy	26 (31.7)	37 (38.5)	

4.3.4.1.2 Smokers' characteristics based on quit attempts

The distribution of responses regarding attempts to quit is shown in Table 17. All smokers in both groups had made at least one prior attempt to quit. The mean of quitting attempts in the previous year was higher for ASs (1.92, SD=2.1) than for GSs (1.86, SD=2.35). In contrast, the mean of quit attempts during the lifetime was higher for GSs (7.64, SD=7.34) than for ASs (7.42, SD=8.3). There was not a significant difference between the two groups in both quit attempts in the previous year and during the lifetime (t=.18, p=.85 and t=.19, p=.85, respectively), so in terms of quit attempts Hypothesis 3 is rejected. These results showed that the frequency of the previous longest duration of non-smoking during a quit attempt was higher amongst GSs (39.6 percent) than amongst ASs (35.4 percent). Although the frequency of the previous longest period of non-smoking during a quit attempt was between "one week to one month" was higher for ASs (15.9 percent) than for GSs (7.3 percent), the frequency of the previous longest period of non-smoking during a quit attempt between "six months to one year" was higher among GSs (17.7 percent) than ASs (14.6 percent). There was not a significant difference between the two groups in terms of previous longest duration of quitting (χ^2=6.1, p=.19), so in regard to the previous longest period of non-

smoking during a quit attempt Hypothesis 3 is rejected. The mean of the methods used to quit smoking was not significant between ASs (1.45, SD=.68) and GSs (1.42, SD=.8) (t=.3, p=.76). In both groups, smokers reported that they had attempted to quit by themselves, which was a higher frequency for GSs (82.3 percent) than for ASs (76.8 percent). It was followed by using NRT which was higher among ASs (47.6 percent) than GSs (37.5 percent): so in terms of the method of quitting smoking, Hypothesis 3 is rejected.

In both groups, the main reason cited for quitting was 'health' (78 percent of ASs and 83.3 percent of GSs). This reason was followed by 'saving money' (59.8 percent of ASs and 50 percent of GSs). However, many GSs (31.2 percent) reported that they had attempted to quit for reasons of 'family health'. A number of ASs (19.5 percent) reported that they tried more quit attempts only because of their 'appearance'. There was no significant difference between the two groups in terms of the reasons of quitting (t=1.06, p=.29), so with regard to the reasons for quitting Hypothesis 3 is rejected. Most respondents in both groups reported that the 'habit of smoking' was the main barrier when attempting to quit (78 percent of AS and 77.1 percent of GS). This was followed by 'craving' as the second barrier to quitting (58.5 percent of ASs and 50 percent of GSs). There was no significant difference between the two groups in terms of the barriers to quitting (t=1.08, p=.28) so in terms of the barriers to continuing quitting, Hypothesis 3 is rejected.

The sources of support for quitting were completely different for the two groups. For the ASs the main sources of support when quitting were friends, relatives, and siblings (50 percent, 37.8 percent, and 31.7 percent, respectively): for GSs it was spouse, children, and friends (51 percent, 0.6 percent, and 39.6 percent, respectively). There was no significant difference between the two groups in regard to the barriers to continuing quitting (t=1.001, p=.32) so in terms of the source of support for quitting Hypothesis 3 is rejected.

When smokers were asked about their doctor's advice regarding quitting, many of the respondents in both groups reported that the doctor advised them to quit during 'some visits' (46.3 percent of ASs and 54.2 percent of GSs). There was no significant difference between the two groups in terms of the doctor's advice on quitting (χ^2=1. 65, p=.43). The main sources of advice on quitting in both groups were 'doctor' (64.6

percent of Ass, and 61.5 percent of GSs) followed by 'family member' (61 percent of ASs, and 53.1 percent of GSs). There was no significant difference between the two groups in terms of the doctor's advice on quitting (t=.17, p=.86) so with regard to advice by the doctor to quit, Hypothesis 3 is rejected (Table 17).

Table 17: Quit attempts in different groups

Variable	*Anglo-smoker (n=82)*	*Greek-smoker (n=96)*	*Statistic*
Trying to quit attempt *n* (%)			
Yes	82 (100)	96 (100)	
No	0 (0.0)	0 (0.0)	
Mean of quit attempt in the last year *(SD)*	1.92 (2.1)	1.86 (2.35)	*p*=.85
Mean od quit attempt in the entire life *(SD)*	7.42 (8.03)	7.64 (7.34)	*p*=.85
Longest period of not smoking *n* (%)			
One week or less	6 (7.3)	14 (14.6)	
One week to one month	13 (15.9)	7 (7.3)	*p=.19*
One month to six months	22 (26.8)	20 (20.8)	
Six months to one year	12 (14.6)	17 (17.7)	
>One year	29 (35.4)	38 (39.6)	
The method to quit smoking*(SD)*	1.45 (0.68)	1.42 (0.8)	*p=0.76*
Your own *n* (%)	63 (76.8)	79 (82.3)	
Group or class *n* (%)	4 (4.9)	2 (2.1)	
Individual counselling by health professional *n* (%)	2 (2.4)	4 (4.2)	
Acupuncture/Hypnotism *n* (%)	7 (8.5)	3 (3.1)	
Self-help ,materials (Booklet, brochures) *n* (%)	2 (2.4)	6 (6.2)	
NRT *n* (%)	39 (47.6)	36 (37.5)	
Other *n* (%)	3 (3.7)	8 (8.3)	
Reasons to quit attempt *(SD)*	2.14 (1.19)	1.97 (0.89)	*p=.29*
My health *n* (%)	64 (78.0)	80 (83.3)	
Family's health *n* (%)	13 (15.9)	30 (31.2)	
My appearance *n* (%)	16 (19.5)	7 (7.3)	
Persuaded by relatives *n* (%)	8 (9.8)	11 (11.5)	
Persuaded by friends *n* (%)	3 (3.7)	6 (6.2)	
Advised by healthcare professional *n* (%)	16 (19.5)	8 (8.3)	
Save money *n* (%)	49 (59.8)	48 (50.0)	
Other *n* (%)	7 (8.5)	1 (1.0)	
Barriers to continue quitting *(SD)*	2.34 (1.3)	2.14 (1.11)	*p=.28*
Craving *n* (%)	48 (58.5)	48 (50.0)	
Smoking family member *n* (%)	10 (12.2)	21 (21.9)	
Habit *n* (%)	64 (78.0)	74 (77.1)	
Gained weight *n* (%)	28 (34.1)	20 (20.8)	
Withdrawal symptoms *n* (%)	12 (14.6)	18 (18.8)	
Smoking friends/Colleagues *n* (%)	23 (28.0)	25 (26.0)	
Other *n* (%)	7 (8.5)	0 (0.0)	
Source of support to quit *(SD)*	2.5 (1.54)	2.28 (1.37)	*p=.32*
Spouse *n* (%)	24 (29.3)	49 (51.0)	
Friends *n* (%)	41 (50.0)	38 (39.6)	
Healthcare workers *n* (%)	23 (28.0)	19 (19.8)	
Sibling *n* (%)	26 (31.7)	20 (20.8)	
Children *n* (%)	25 (30.5)	39 (40.6)	
Other relatives *n* (%)	31 (37.8)	24 (25.0)	
Co-workers *n* (%)	24 (29.3)	16 (16.7)	
No one *n* (%)	11 (13.4)	14 (14.6)	
Doctor advice on quit *(SD)*			
None *n* (%)*n* (%)	32 (39.0)	35 (36.5)	
Some visits	38 (46.3)	52 (54.2)	*p=.43*
At each visit *n* (%)	12 (14.6)	9 (9.4)	
Source of advice on quit *(SD)*	1.39 (0.58)	1.41 (0.62)	*p=.86*
Doctor *n* (%)	53 (64.6)	59 (61.5)	
Nurse *n* (%)	3 (3.7)	6 (6.2)	
Family member *n* (%)	50 (61.0)	51 (53.1)	
Other *n* (%)	8 (9.8)	17 (17.7)	

4.3.4.2 Smoking characteristics of four sub-groups

The distribution of responses based on the determinants of smoking is shown in Table 18.

Many of the ANS group (49.1 percent) and of the GNS group (38.8 percent) reported that 'none' of the important people in their life smoked, while the majority of ASs (62.2 percent) and GSs (60.4 percent) stated that 'some' important people in their life smoked cigarettes. There was a statistical difference between groups in terms of important people who smoked (χ^2=75.38, p<.001) so there is sufficient evidence to accept Hypothesis 3. The frequency of 'having another smoker in the household' was significantly higher in the smoker groups (31.7 percent of ASs and 35.4 percent of GSs) than among non-smokers (6.6 percent of ANSs and 17.5 percent of GNSs) (χ^2=30. 48, p<.001) so there is sufficient evidence to accept Hypothesis 3. Greek participants (15.5 percent of GNSs and 26 percent of GSs) had a higher frequency of 'having one smoker in the household' than Anglo participants (4.7 percent of ANSs and 14.6 percent of ASs). The AS group (12.2 percent) had a higher frequency of having two smokers in the household than did the three other groups. There was a statistical difference between groups in terms of having a smoker in the household (χ^2=46.39, p<.001) so there is enough evidence to accept Hypothesis 3.

Many ANSs (46.2 percent) and GNSs (55.3 percent) reported that their spouse or partner had never smoked. Moreover, 15.9 percent of ASs and 12.5 percent of GSs stated that their spouse or partner was a smoker but that they were not trying to quit yet. On the other hand, 14.6 percent of GSs mentioned that their spouse or partner smoked cigarettes; however they were trying to quit. There was a statistical difference between groups in terms of the number of smokers in the household (χ^2=63.6, p<.001) so there is sufficient evidence to accept Hypothesis 3. Most respondents (75.5 percent of ANSs, 69.5 percent of ASs, 61.2 percent of GNSs, and 72.9 percent of GSs) said that they had relatives who were affected by smoking-related illnesses. There was no statistical difference between these groups (χ^2=5. 7, p=.12) so in terms of the health-status of their relatives Hypothesis 3 is rejected.

A high proportion of ANSs (33 percent) reported that they had a friend with a smoking-related disease. It was followed by an acquaintance (24.5 percent), and mother or father (21.7 percent). Similarly, many ASs (24.4 percent) reported that their mother or father had a smoking-related disease. This rate was followed by friends (20.7 percent), and an

acquaintance (18.3 percent). For the GNS group, 21.4 percent reported that they had friends with a smoking-related disease. This rate was followed by mother or father (14.6 percent) and an acquaintance and a brother or sister (13.6 percent). Amongst the GSs, 26 percent reported that they had a friend with a smoking-related disease; this was followed by mother or father (25 percent) and an acquaintance (20.8 percent). There was no statistical difference between these groups in terms of the health status of their relatives, $F(1,383)=1.93$, p=.12.

A high proportion of ANS respondents (46.2 percent) said that they had a relative with lung cancer, this rate being followed by heart attack (27.4 percent) and high blood pressure (18.9 percent). For the ASs respondents, 28 percent reported that they had a relative who had experienced a heart attack; this was followed by lung cancer (27.4 percent), and high blood pressure (18.9 percent). A fairly high percentage of respondents amongst GNSs (32 percent) reported a relative with lung cancer. It was followed by chronic bronchitis (16.5 percent), and heart attack (14.6 percent). For the GS respondents, 25 percent stated that they had a relative with lung cancer. This level was followed by chronic bronchitis (24 percent), and heart attack (22.9 percent). There was no statistical difference between these groups in terms of their relatives' diseases, $F(1,383)=1.93$, p=.12 (Table 18).

Table 18: Other determinants of smoking in different groups

Variable	*Anglo*		*Greek*		*Statistic*
	Non-smoker (n=106)	*Smoker* (n=82)	*Non-smoker* (n=103)	*Smoker* (n=96)	
Important people smoking status *n* (%)					
None	52 (49.1)	11 (13.4)	40 (38.8)	7 (7.3)	
Some of them	45 (42.5)	51 (62.2)	58 (56.3)	58 (60.4)	*p*<.001
Most of them	9 (8.5)	20 (24.4)	5 (4.9)	31 (32.3)	
Other smoker in your household *n* (%)	7 (6.6)	26 (31.7)	18 (17.5)	34 (35.4)	*p*<.001
Number of smokers in household					
0	95 (89.6)	56 (68.3)	85 (82.5)	62 (64.6)	
1	5 (4.7)	12 (14.6)	16 (15.5)	25 (26.0)	
2	4 (3.8)	10 (12.2)	2 (1.9)	3 (3.1)	*p*<.001
3	1 (0.9)	2 (2.4)	0 (0.0)	6 (6.2)	
4	1 (0.9)	2 (2.4)	0 (0.0)	0 (0.0)	
Spouse or partner smoking status *n* (%)					
Also smokes and is trying to quit	3 (2.8)	3 (3.7)	2 (1.9)	14 (14.6)	
Also smokes but is not trying to quit	4 (3.8)	13 (15.9)	8 (7.8)	12 (12.5)	
Is an ex-smoker	26 (24.5)	13 (15.9)	19 (18.4)	20 (20.8)	*p*<.001
Never smokes	49 (46.2)	17 (20.7)	57 (55.3)	23 (24.0)	
Not relevant	24 (22.6)	36 (43.9)	17 (16.5)	27 (28.1)	
Health status of relatives *n* (%)	80 (75.5)	57 (69.5)	63 (61.2)	70 (72.9)	*p*=.12
Relationship with you *(SD)*	1.23 (1.09)	1.01 (1.02)	0.91 (0.98)	1.05 (0.85)	*p=.12*
Mother or father *n* (%)	23 (21.7)	20 (24.4)	15 (14.6)	24 (25.0)	
Husband/wife/partner *n* (%)	8 (7.5)	5 (6.1)	9 (8.7)	9 (9.4)	
Son or daughter *n* (%)	4 (3.8)	5 (6.1)	5 (4.9)	3 (3.1)	
Brother or sister *n* (%)	11 (10.4)	9 (11.0)	14 (13.6)	4 (4.2)	
Other relative (Aunt, uncle, grandparents) *n* (%)	16 (15.1)	11 (13.4)	10 (9.7)	14 (14.6)	
Friends *n* (%)	35 (33.0)	17 (20.7)	22 (21.4)	25 (26.0)	
Acquaintance *n* (%)	26 (24.5)	15 (18.3)	14 (13.6)	20 (20.8)	
Other *n* (%)	8 (7.5)	1 (1.2)	5 (4.9)	3 (3.1)	
Disease (SD)	1.53 (1.35)	1.44 (1.48)	1.2 (1.44)	1.43 (1.38)	*p=.39*
Heart attack *n* (%)	29 (27.4)	23 (28.0)	15 (14.6)	22 (22.9)	
Chronic bronchitis *n* (%)	14 (13.2)	5 (6.1)	17 (16.5)	23 (24.0)	
Stroke *n* (%)	14 (13.2)	7 (8.5)	4 (3.9)	8 (8.3)	
High blood pressure *n* (%)	20 (18.9)	15 (18.3)	14 (13.6)	17 (17.7)	
Osteoporosis *n* (%)	3 (2.8)	0 (0.0)	5 (4.9)	0 (0.0)	
Lung cancer *n* (%)	49 (46.2)	15 (18.3)	33 (32.0)	24 (25.0)	
Diabetes *n* (%)	9 (8.5)	13 (15.9)	5 (4.9)	8 (8.3)	
Asthma *n* (%)	7 (6.6)	12 (14.6)	7 (6.8)	17 (17.7)	
Cataracts *n* (%)	3 (2.8)	0 (0.0)	6 (5.8)	2 (2.1)	
Arthritis *n* (%)	2 (1.9)	3 (3.7)	3 (2.9)	2 (2.1)	
Other disease *n* (%)	12 (11.3)	16 (19.5)	11 (10.7)	9 (9.4)	
None of the above *n* (%)	1 (0.9)	9 (11.0)	4 (3.9)	5 (5.2)	

Many ASs (40.2 percent) reported that 'some' important people let them smoke while 41.7 percent of GSs reported that no important people were willing to let them smoke. There was no statistical difference between the two groups (χ^2=5.49, p=.06) so in terms of the agreement of important people to let them smoke, Hypothesis 3 is rejected (Figure 7).

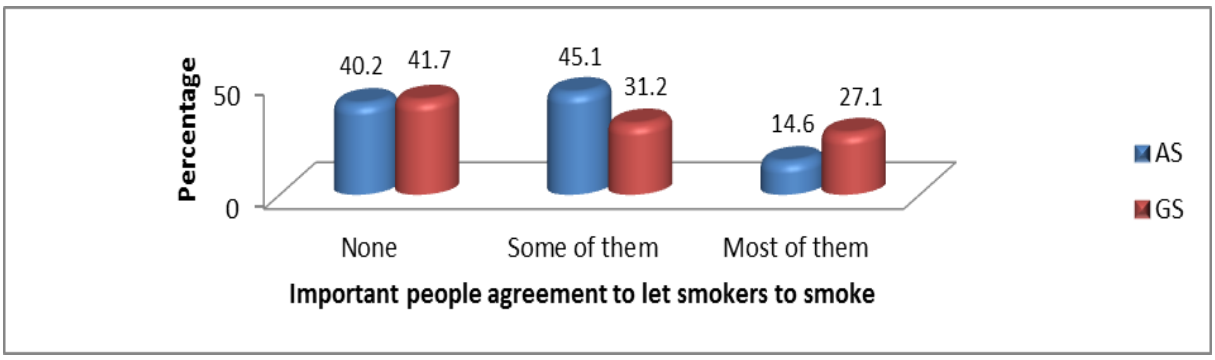

Figure 7: Distribution of smoker participants based on the agreement of important people in their life to let them smoke

Radio and TV were the most frequent sources of information in all groups (86.8 percent of ANSs, 90.2 percent of ASs, 84.5 percent of GNSs, and 78.1 percent of GSs). While ANSs reported that newspapers and physicians (43.4 percent and 24.5 percent respectively) were the most frequent sources of information after radio and TV, ASs reported that friends and physicians (28 percent and 24.4 percent respectively) were more frequent sources of information. For the GNS group, newspapers and family members (39.8 percent and 30.1 percent respectively) were frequent after radio and TV, while for GSs friends and family members (34.4 percent and 32.3 percent respectively) were more frequent. Amongst ANSs, ASs, and GNSs (12.3 percent, 4.9 percent, and 19.4 percent respectively) the internet was a limited source of information, and for GSs (12.5 percent) reading books was the least frequent source of information. There was a statistical difference between these groups in terms of the sources of information, $F(1,383)=3.54$, p=.01 so there was enough evidence to accept Hypothesis 3 (Figure 8).

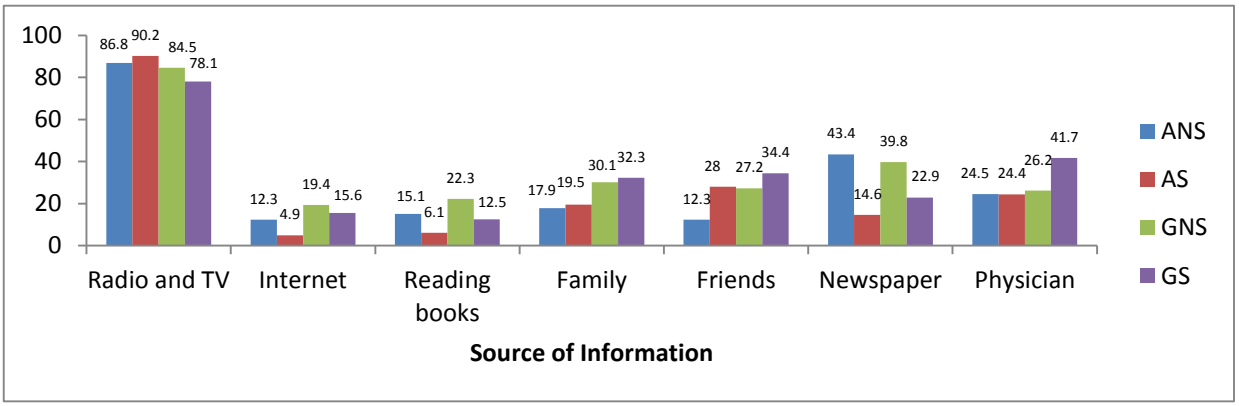

Figure 8: Distribution of participants based on sources of information

4.3.5 Smoking behaviour-related factors

This part presents the four sub-groups with respect to their knowledge of smoking and their attitudes to smoking. It also presents the results of 'readiness to quit' based on the 'stage of change', 'intention to quit', and 'self-efficacy to quit' among the two smoking groups. The statistical analysis was conducted to examine Hypothesis 1 about the statistical differences between the four sub-groups in regard to the mean level of knowledge about the harmful effects of smoking (or the benefits of quitting) and attitudes to smoking. The statistical analysis was performed to examine Hypothesis 4 which respect to the statistical difference between the two smoking sub-groups for intention to quit, readiness to quit based on stage of change, and self-efficacy.

4.3.5.1 Smoking behaviour-related factors in the two groups of smokers

The results of 'readiness to quit' based on the stage of change, intention to quit, and self-efficacy to quit between the two smoking groups are presented in Table 19. The majority of respondents in both AS (62.2 percent) and GS (58.3 percent) reported that they were in the 'contemplation' stage of readiness to quit. This means they were seriously thinking about quitting in the forthcoming six months. The percentage of smokers who were in the 'pre-contemplation' stage and not thinking about quitting (at least not within the subsequent six months) was higher in the GS group (32.3 percent) than in the AS group (29.3 percent). A small percentage of smokers in the AS group (8.5 percent) and GS group (9.4 percent) were in the 'preparation' stage which entailed seriously thinking about quitting in the following month. There was no significant difference between the two groups in terms of 'stage of change' (χ^2=0.27, p=.87) so in terms of smokers' readiness-to-quit according to stage of change, Hypothesis 4 is rejected.

The mean of 'intention to quit' in the following three months was lower amongst GSs (2.5 SD=1.01) than amongst ASs (2.9, SD=1.15). A statistically significant difference was found between the two groups in terms of intention to quit in the next three months (t=2.5, p =.01) so this provides sufficient evidence to accept Hypothesis 4.

The mean of self-efficacy to quit smoking was higher among ASs (20.75, SD=7.02) than among GSs (18.7, SD=6.7). A statistically significant difference was found

between the two groups in terms of 'intention to quit' in the following three months (t=2.02, p =.04) so this provides enough evidence to accept Hypothesis 4 (Table 19).

Table 19: 'Stage of change' (TTM), 'intention to quit', and 'self-efficacy' compared

Variable	*Anglo-smoker (n=82)*	*Greek-smoker (n=96)*	*Statistic*
Stage of Change *n* (%)			
Pre-contemplation	24 (29.3)	31 (32.3)	p=.87
Contemplation	51 (62.2)	56 (58.3)	
Preparation	7 (8.5)	9 (9.4)	
Mean of intention to quit (SD)	2.90 (1.15)	2.5 (1.01)	p=.01
Mean of Self-efficacy to quit (SD)	20.75 (7.02)	18.7 (6.7)	p=.04

4.3.5.2 Smoking behaviour-related factors in four sub-groups

The mean of 'knowledge' was lower in smokers than non-smokers in both groups. The ANS group (10.7, SD=1.83) had a higher mean of knowledge than the other three groups, and GSs (7.9, SD=2.67) had the lowest mean of knowledge. The results of the two-way ANOVA analysis confirmed that there was a significant effect of ethnicity (E) in regard to smoking-related knowledge, F(1,383)=12.10, p<.001) and also in regard to the effects of smoking-status (S) on smoking-related knowledge, F(1,383)=64.90, p<.001). This provides evidence sufficient for the acceptance of Hypothesis 1. However, contrary to Hypothesis 1, the result of the study showed there was not interaction effect in smoking-related knowledge, F(1,383)=.001, p<.974 (Table 20).

Table 20: Adjusted means (SD) for smoking related knowledge across in four sub-groups

Ethnic groups	**Smoking status**		Total	Significant effect
	Smoker Mean(SD)	Non smoker Mean(SD)		
Anglo-Australians	8.75(2.37)	10.70(1.83)	9.9(2.3)	E
Greek-Australians	7.90(2.67)	9.86(2.54)	8.9(2.8)	S
Total	8.3(2.6)	10.3(2.3)		

E: significant main effect of ethnic groups
S: significant main effect of smoking status
ExS: Significant interaction

Figure 9 estimates the marginal means of smoking-related knowledge based on smoking status and ethnicity of the participants. There are parallel lines and no interaction effect. Smokers have higher scores for smoking-related knowledge than non-smokers. Greek-Australians have lower scores for smoking-related knowledge than Anglo-Australians.

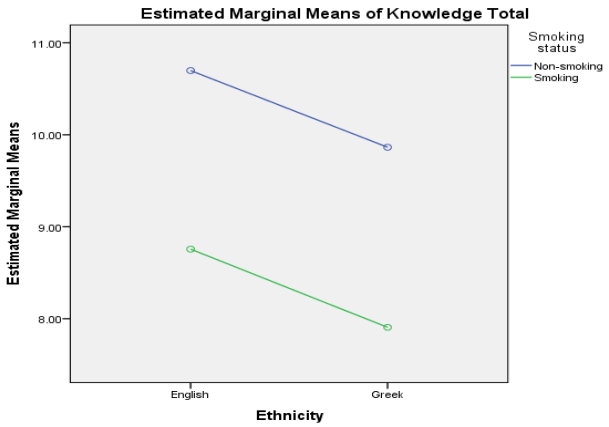

Figure 9: Comparison of estimated marginal means of smoking-related knowledge in different groups

The mean of 'positive attitude' to smoking was higher amongst smokers than amongst non-smokers. The mean of 'total positive attitude' to smoking was highest in GS (45.73, SD=4.7) but lowest in ANS (30.36, SD=6.03). The results of the two-way ANOVA analysis showed that there was a significant effect of ethnicity (E) on influencing attitudes to smoking $F(1,383)=22.44$, $p<.001$: there was also a significant effect of smoking-status (S) in regard to attitude to smoking, $F(1,383)=522.17$, $p<.001$. Consequently, these data provide enough evidence to accept Hypothesis 1. The results of the study showed that there was an interaction between smoking-status and both ethnicity (ExS) and attitude to smoking, $F(1,383)=6.36$, $p<.05$: this yields sufficient evidence to accept Hypothesis 1 (Table 21).

Table 21: Adjusted means (SD) for attitude to smoking in four sub-groups

Ethnic groups	**Smoking status**		Total	Significant effect
	Smoker Mean(SD)	Non smoker Mean(SD)		
Anglo-Australians	41.69(4.83)	30.36(6.03)	35.30(7.90)	E
Greek-Australians	45.73(4.70)	31.60(5.80)	38.40(8.90)	S
Total	43.90(5.20)	30.90(5.90)		ExS

E: significant main effect of ethnic groups
S: significant main effect of smoking status
ExS: Significant interaction

Figure 10 estimates the marginal means of attitude to smoking based on smoking status and ethnicity of the participants. Non-parallel lines and an interaction effect are shown. Smokers have a higher positive attitude towards smoking consumption than non-

smokers. Greeks have higher scores of positive attitude towards smoking than Anglo participants.

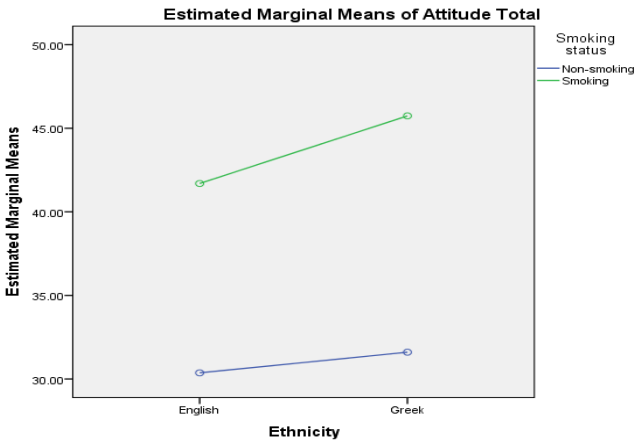

Figure 10: Comparison of estimated marginal means of attitude to smoking

4.3.6 Factor analysis

The Kaiser-Meyer-Olkin measure (0.81) and Bartlett's test of sphericity ($p<0.001$) indicated that the assumptions for factor-analysis were met. Exploratory factor-analysis found three factors (eigenvalue>1) with an eigenvalue of 3.7, explaining 27 percent of the variance for the first factor. The second factor had an eigenvalue of 1.7 which explains 12 percent of the variance; and finally the third factor had an eigenvalue of 1.2 which explains nine percent of the variance. All factor loadings were ≥0.41. They included an anti-smoking sentiment, 'hard not to smoke'/'hard to quit' belief, and education ineffective beliefs (Table 22).

Table 22: Factor analysis: item loadings on rotated factors

Factors and Items	Factor Loading
Factor 1: anti-smoking sentiment	
Smoking makes smoker's feel so bad.	.414
Cigarette smoking is crazy.	.764
Smoking is a waste of money.	.760
All forms of tobacco promotion should be completely banned.	.640
Smoking should be banned in all restaurants and catering venues.	.571
Smokers have the right to smoke in their workplaces without hesitation.	.625
Factor 2: hard not to smoke/hard to quit beliefs	
Smoking cigarettes is enjoyable	.559
Smokers can't think and can't stay at home without smoking.	.581
I don't believe that smokers will get cancer because of smoking.	.615
Doctors' advice to their patients to stop smoking is totally ineffective.	.554
The smoking behaviour of a friend(s) encourages me to smoke.	.647
Family members' support will help a smoker quit.	.445
Factor 3: education ineffective beliefs	
Training programs on TV are not effective in decreasing smoking.	.616
Brief advice (e.g. 3 minutes) to help clients stop smoking is effective.	.695

Eigenvalue factor 1, 3.744 and explained variance, 26.75
Eigenvalue factor 2, 1.668 and explained variance, 11.92
Eigenvalue factor 3, 1.228 and explained variance, 8.78

The mean of three factors was lower for non-smokers than for smokers. It was highest in all three factors in GS than in other three groups.

For the first factor, the result of two way ANOVA showed that there was a significant main effect of ethnicity (E) on anti-smoking sentiment, $F(1,383)=19.37$, $p<.001$ and a significant main effect of smoking status (S) on anti-smoking sentiment, $F(1,383)=170.86$, $p<.001$. There was an interaction effect of ethnicity and smoking status (ExS) on anti-smoking sentiment, $F(1,383)=4.80$, $p<.05$, so there is sufficient evidence to accept Hypothesis 1 (Table 23).

Table 23: Compared adjusted means (SD) for anti-smoking sentiment

Ethnic groups	Smoking status		Total	Significant effect
	Smoker Mean(SD)	Non smoker Mean(SD)		
Anglo-Australians	15.84(3.35)	11.64(4.07)	13.50(4.30)	E
Greek-Australians	18.38(3.67)	12.49(3.86)	15.33(4.80)	S
Total	12.20(3.70)	12.10(3.90)		ExS

E: significant main effect of ethnic groups
S: significant main effect of smoking status
ExS: Significant interaction

Figure 11 estimates the marginal means of anti-smoking sentiment based on smoking status and ethnicity of the participants. Lines are not parallel and there is an interaction

effect. Smokers have higher scores for anti-smoking sentiment than non-smokers. Greeks have higher scores for anti-smoking sentiment than Anglo participants

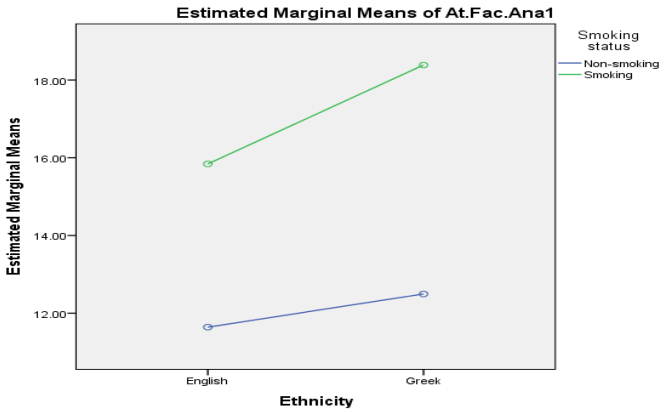

Figure 11: Compared estimated marginal means of anti-smoking sentiment

For the second factor, the result of two way ANOVA showed that there was a significant main effect of ethnicity (E) on not to smoke/hard to quit believing, $F(1,383)=7.94$, $p<.001$. The results showed that there was a significant main effect of smoking status (S) on not to smoke/hard to quit believing, $F(1,383)=354.92$, $p<00.1$. There was not an interaction effect of ethnicity and smoking status on not to smoke/hard to quit believing, $F(1,383)=2.05$, $p=.15$ (Table 24).

Table 24: Compared adjusted means (SD) for 'hard not to smoke'/'hard to quit' beliefs

Ethnic groups	**Smoking status**		Total	Significant effect
	Smoker Mean(SD)	Non smoker Mean(SD)		
Anglo-Australians	18.73(3.40)	12.72(3.18)	15.34(4.40)	E
Greek-Australians	20.19(3.16)	13.20(3.72)	16.60(4.90)	S
Total	19.50(3.30)	12.90(3.50)		

E: significant main effect of ethnic groups
S: significant main effect of smoking status
ExS: Significant interaction

Figure 12 estimates the marginal means of 'hard not to smoke'/'hard to quit' beliefs based on the smoking-status and ethnicity of the participants. The lines are parallel and there is no interaction effect. Smokers have higher 'hard not to smoke'/'hard to quit' beliefs than non-smokers. Greek-Australian groups have higher scores for these beliefs than Anglo-Australian groups.

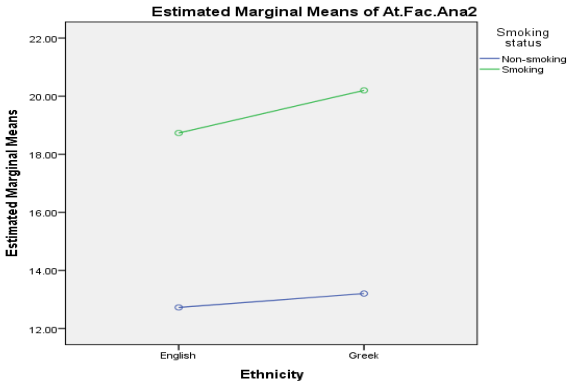

Figure 12: Compared estimated marginal means of 'hard not to smoke'/'hard to quit' beliefs

For the third factor, the two-way ANOVA test showed that there was only a significant main effect of smoking status (S) on educationally ineffective beliefs, $F(1,383)=54.20$, $p<.001$. There was no ethnicity effect on educationally ineffective beliefs, $F(1,383)=.26$, $p=.60$. There was no interaction effect of ethnicity and smoking status on educationally ineffective beliefs, $F(1,383)=.11$, $p=.74$ (Table 25)

Table 25: Compared adjusted means (SD) for educationally ineffective beliefs

Ethnic groups	Smoking status		Total	Significant effect
	Smoker Mean(SD)	Non smoker Mean(SD)		
Anglo-Australians	7.20(1.33)	5.98(1.65)	6.51(1.60)	S
Greek-Australians	7.07(1.48)	5.95(1.69)	6.50(1.70)	
Total	7.10(1.40)	5.90(1.70)		

E: significant main effect of ethnicity groups
S: significant main effect of smoking status
ExS: Significant interaction

Figure 13 estimates the marginal means of education ineffective beliefs based on smoking-status and ethnicity of the participants. There are parallel lines and no interaction effect. Smokers have a significantly higher score for educationally ineffective beliefs than non-smokers.

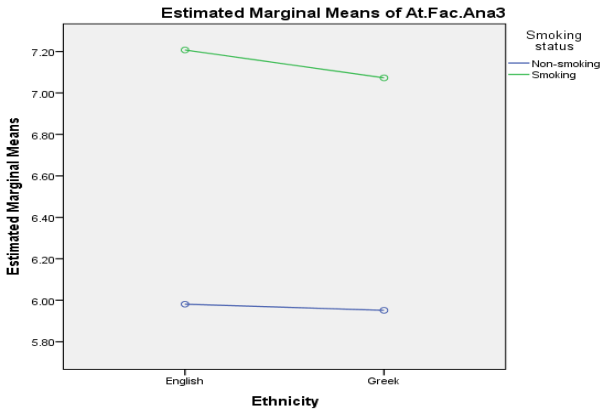

Figure 13: Compared estimated marginal means of educationally ineffective believes

4.3.7 Predictors of smoking-related factors

This part presents the results of the multivariate regression analysis to recognize the predictors of the four sub-groups in regard to the benefits of quitting and attitudes to smoking. It also demonstrates the results of the multivariate regression analysis of the two sub-groups of smokers in regard to their smoking behaviour, intention to quit in the previous three months, and self-efficacy for quitting. The independent variables were chosen according to those found previously, based on the literature, and the probable influence on smoking (Aspa et al., 2006: Dominguez and Zinn, 1994: Shockley, 1981). These included demographic factors (age, gender, marital status, education, and employment-status), smoking characteristics (age when smoking commenced, FTND score, stage-of-change, longest duration of quitting) and income. In addition, self-reported health-status, number of household smokers, and spouse's smoking-status were included. For Greek-Australian participants, two more independent variables were included in the model; preferred language, and skill in the English language. A statistical analysis was conducted to examine Hypothesis 5 which noted a statistical difference in predictors of knowledge about the harmful effects of smoking or benefits of quitting, and attitudes to smoking in the four sub-groups, and the difference in regard to the predictors of self-efficacy, intention to quit, and smoking behaviour in the two sub-groups of smokers.

4.3.7.1 Predictor variables of smoking-related knowledge in four sub-groups.

The predictor variables of the 'participants' knowledge of the benefits of quitting' and of 'the harmful consequences of continuing smoking' in different groups are shown in Table 26.

Table 26: Multiple regression analysis examining the relationships between predictor variables and knowledge

Variables	*Anglo*						*Greek*					
	Non-smoker			*Smoker*			*Non-smoker*			*Smoker*		
	β	*P*	95% CI	*β*	*P*	95% CI	*β*	*P*	95% CI	*β*	*P*	95% CI
Gender	0.18	0.1	-0.12-1.42	-0.12	0.26	-1.65-0.45	-0.14	0.17	-1.77-0.31	-0.17	0.09	-1.94-0.14
Age	0.05	0.7	-0.88-1.31	0.13	0.32	-0.78-2.33	-0.04	0.81	-1.93-1.5	-0.02	0.86	-1.71-1.42
Marital Status	-0.11	0.29	-0.58-0.17	0.15	0.17	-0.11-0.61	-0.01	0.95	-0.51-0.48	-0.11	0.37	-0.88-0.33
Education Status	-0.07	0.47	-0.64-0.29	0.45	**.001**	0.57-2.28	0.21	0.1	-0.09-1.09	0.13	0.25	-0.31-1.19
Employment Status	-0.22	0.1	-0.77-0.07	-0.06	0.64	-0.53-0.33	0.14	0.38	-0.32-0.85	0.1	0.49	-0.38-0.78
Annual Salary	-0.18	0.08	-0.69-0.04	-0.2	0.09	-0.89-0.06	-0.13	0.22	-0.78-0.18	0.03	0.79	-0.496-0.65
Self-reported health status	0.24	**0.04***	0.08-2.21	-0.05	0.72	-1.26-0.88	-0.04	0.74	-1.41-1.01	0.08	0.59	-0.88-1.54
Num. of household smoker	-0.11	0.38	-0.99-0.38	0.07	0.6	-0.46-0.79	-0.3	**0.01**	-3.06- -0.42	-0.1	0.46	-1.16-0.53
Spouse smoking status	-0.06	0.58	-0.56-0.32	0.14	0.23	-0.17-0.72	-0.26	**0.02**	-1.38- -0.1	-0.02	0.85	-0.55-0.46
Preferred Language							0.22	0.09	-0.097-1.4	0.11	0.36	-0.41-1.11
English Skill							-0.02	0.88	-0.73-0.63	-0.36	**0.007**	-1.92- -0.31
Start age of smoking				0.22	**0.04**	0.05-1.67				-0.08	0.43	-1.27-0.55
Fagerstrom Score				0.43	**0.01**	0.2-1.61				-0.23	0.18	-1.47-0.28
Stage of Change				0.33	**0.007**	0.39-2.29				0.04	0.74	-0.87-1.22
Longest time of quitting				0.52	**.000**	0.48-1.39				-0.2	0.1	-0.83-0.08

4.3.7.1.1 Predictor variables of smoking-related knowledge in ANSs

The result of the multivariate regression analysis showed that only one predictor had a statistical association with knowledge by the participants in the ANS group. The self-reported health status of ANSs was the only predictor of knowledge, and the results of the regression analysis showed that the odds of having a higher knowledge were .24 times higher for ANSs who had bad poor health-status compared with ANSs who had good health-status ($p<.05$, 95% CI .08 to 2.21) so this provides sufficient evidence to accept Hypothesis 5 (Table 26).

4.3.7.1.2 Predictor variables of smoking-related knowledge in ASs

The results of the analysis demonstrated that five factors were the predictors of ASs' knowledge of the benefits of quitting and the harmfulness of smoking. Educational status, age at which smoking commenced, FTND score, readiness of ASs to quit based on stage-of-change, and longest duration of previous quitting attempts were the predictors of ASs smoking-related knowledge. Among these five factors, only the first (educational status) was related to ASs demographic factors while the rest were related to the ASs smokers' characteristics. Among the predictors, the longest duration amongst previous attempts to quit was the strongest, and age at which smoking commenced was the weakest predictor of ASs smoking-related knowledge. The results of the multivariate regression analysis showed that the odds of having a higher knowledge were .45 times higher for ASs who had higher education as compared with ASs with lower education ($p<.001$, 95% CI .57 to 2.28). The odds of having a higher knowledge were .22 times higher for ASs who started smoking at an older age as compared with ASs who started smoking at a younger age ($p<.05$, 95% CI .05 to 1.67).

On the other hand, the odds of having higher knowledge were .43 times higher for ASs who had a higher dependence on nicotine as compared with ASs with a lower dependence on nicotine ($p<.01$, 95% CI .2 to 1.61). The results of regression analysis pointed out that the odds of having higher knowledge was .33 times higher for ASs who had more readiness to quit compared with ASs who were not ready to quit ($p<.001$, 95% CI .39 to 2.29).

For the longest duration of previous quitting attempts as the strongest predictor of ASs' smoking-related knowledge, the results demonstrate that the odds of having higher

knowledge were .52 times higher for ASs who had more long-periods of abstention as compared with ASs with shorter long-periods of quitting (p<.001, 95% CI .48 to 1.39); there is enough evidence to accept Hypothesis 5 (Table 26).

4.3.7.1.3 Predictor variables of smoking-related knowledge in GNSs

The results of the multivariate regression analysis of the GNS group showed that two factors were linked to their smoking-related knowledge. They were; the number of household smokers, and spouse's/partner's smoking-status. Odds of having higher knowledge were .3 times lower for GNSs who had more smokers in their household as compared with GNSs who did not have other smokers in their household (p<.01, 95% CI -3.06 to -.42). The odds of having higher knowledge were .26 times lower for GNSs who had a spouse/partner who was a smoker as compared with GNSs who did not have a spouse/partner who smoked (p<.05, 95% CI -1.38 to -.1), so this provides evidence to accept Hypothesis 5 (Table 26).

4.3.7.1.4 Predictor variables of smoking-related knowledge in GSs

Among GSs, only one factor had a significant association with their smoking-related knowledge. 'English skill' of GSs as a predictor of knowledge indicated that the odds of having higher knowledge were 0.36 times lower for GSs who could not speak English very well as compared with GSs who spoke English very well (p<.001, 95% CI -1.92 to -.31): this provides sufficient evidence to accept Hypothesis 5 (Table 26).

4.3.7.2 Predictor variables of positive attitudes-to-smoking

The results of the regression analysis of the participants' positive attitudes to smoking are shown in Table 27.

Table 27: Multiple regression analysis examining the relationships between predictor variables and positive attitude

Variables	*Anglo*						*Greek*					
	Non-smoker			*Smoker*			*Non-smoker*			*Smoker*		
	β	*P*	95% CI	*β*	*P*	95% CI	*β*	*P*	95% CI	*β*	*P*	95% CI
Gender	-0.14	0.15	-4.09-0.66	0.06	0.67	-2.01-3.11	0.03	0.8	-1.85-2.48	0.2	0.06	-0.1-3.97
Age	0.12	0.4	-1.89-4.87	-0.05	0.74	-4.43-3.18	0.07	0.65	-2.75-4.39	0.08	0.56	-2.16-3.97
Marital Status	0.08	0.4	-0.68-1.64	-0.42	**0.001**	-2.34- -0.59	0.08	0.4	-0.59-1.46	-0.23	0.1	-2.16-0.2
Education Status	0.01	0.9	-1.36-1.52	.18	0.26	-0.91-3.28	-0.26	**0.03**	-2.6- -0.14	0.29	**0.02**	0.3-3.24
Employment Status	0.08	0.5	-0.87-1.74	-0.02	0.86	-1.14-0.96	-0.01	0.94	-1.26-1.18	-0.38	**0.02**	-2.52- -0.24
Annual Salary	-0.03	0.7	-1.31-0.93	0.29	**0.04**	0.08-2.4	0.37	**.000**	0.96-2.95	-0.03	0.82	-1.25-0.99
Self-reported health status	0.19	0.09	-0.43-6.15	-0.16	0.38	-3.78-1.47	-0.06	0.57	-3.23-1.79	0.09	0.55	-1.65-3.09
Num. of household smoker	0.37	**.001**	1.41-5.65	0.27	0.08	-0.16-2.9	0.19	0.07	-0.22-5.27	0.23	0.1	-0.29-3.01
Spouse smoking status	0.02	0.8	-1.19-1.52	0.1	0.46	-0.69-1.50	.04	0.66	-1.04-1.63	-0.25	0.08	-1.86-0.11
Preferred Language							-0.19	0.09	-2.88-0.23	0.15	0.22	-0.57-2.42
English Skill							0.09	0.41	-0.83-2.1	-0.01	0.97	-1.61-1.55
Start age of smoking				-0.22	0.08	-3.74-0.22				0.14	0.21	-.65-2.91
Fagerstrom Score				-0.2	0.32	-2.58-0.87				0.33	0.08	-0.17-3.25
Stage of Change				0.06	0.68	-1.85-2.82				-0.29	**0.03**	-4.38- -0.28
Longest time of quitting				-0.33	**0.03**	-2.33- -0.1				-0.18	0.17	-1.52-0.27

4.3.7.2.1 Predictor variables of positive attitude-to-smoking among ANSs

The results of this study showed that only one factor was the predictor of ANSs' attitude to smoking. Odds of having a positive attitude to smoking were 0.37 times higher for ANSs who had more smokers in their household as compared with ANSs without other smokers in the household (p<.001, 95% CI 1.41 to 5.65), so this provides evidence to accept Hypothesis 5 (Table 27).

4.3.7.2.2 Predictor variables for ASs

Three factors were significant predictors of positive attitude to smoking among ASs. They included marital status of the AS participants, their annual income, and their longest duration of previous quitting attempts. Of these predictors, marital status was the strongest while salary was the weakest predictor of ASs' positive attitude to smoking. The result showed that the odds of having a positive attitude to smoking were 0.42 times lower for ASs who were married as compared with ASs who were single (p=.001, 95% CI -2.34 to -.59). It also revealed that the odds of having a positive attitude to smoking were 0.29 times higher for ASs who had a higher salary as compared with ASs who had a lower salary (p<.05, 95% CI .08 to 2.4). The odds of having a positive attitude to smoking were 0.33 times lower for ASs who had the longest period of not smoking during a quit attempt as compared with ASs who had experienced short periods of non-smoking during a quit attempt (p<.05, 95% CI -2.33 to -.1) so there is enough evidence to accept Hypothesis 5 (Table 27).

4.3.7.2.3 Predictor variables of positive attitude to smoking among GNSs

Two factors were the predictors of GNSs' positive attitudes to smoking, and they were related to demographic circumstances. They included the educational status of the participants, and their salary. The odds of having a positive attitude to smoking were 0.26 times lower for GNSs who had higher education as compared with GNSs who had lower educational attainments (p<.05, 95% CI -2.6 to -.14), while the odds of having a positive attitude to smoking were .37 times higher for GNSs who had a higher salary as compared with GNSs who had a lower salary (p<.001, 95% CI .96 to 2.95); this provides enough evidence to accept Hypothesis 5 (Table 27).

4.3.7.2.4 Predictor variables of positive attitude to smoking among GSs

Among GSs, three factors have been recognized as having associations for GSs' positive attitudes to smoking. Employment status was the strongest predictor while the weakest predictors were educational status and readiness to quit based on the stages of charge – with a similar power of prediction.

The results showed that the odds of having a positive attitude to smoking were 0.29 times higher for GNSs who had attained higher education as compared with GNSs who had lower educational levels ($p<.05$, 95% CI .3 to 3.24). On the other hand, the odds of having a positive attitude to smoking were 0.38 times lower for ASs who did not work full-time as compared with ASs who worked full-time ($p<.05$, 95% CI -2.52 to -.24). With the same power of predicting the results, this highlighted that the odds of having a positive attitude to smoking were 0.29 times lower for ASs who had more readiness to quit smoking as compared with ASs who were not ready to quit ($p<.05$, 95% CI -4.38 to -.28); this provides sufficient evidence to accept Hypothesis 5 (Table 27).

Three components have been recognized as factors shaping smokers' attitudes to smoking. The predictors of these three components in the two sub-groups of smokers are detailed below.

4.3.7.3 Predictor variables of anti-smoking sentiment

The predictor variables of anti-smoking sentiment in different groups are shown in Table 28.

Table 28: Multiple regression analysis examining the relationships between predictor variables and anti-smoking sentiment

Variables	*Anglo*						*Greek*					
	Non-Smoker			*Smoker*			*Non-Smoker*			*Smoker*		
	β	*P*	95% CI	*β*	*P*	95% CI	*β*	*P*	95% CI	*β*	*P*	95% CI
Gender	-0.11	0.28	-2.63-0.78	-0.03	0.82	-1.93-1.53	-0.03	0.73	-1.75-1.23	0.26	**0.008**	0.52-3.32
Age	0.03	0.83	-2.17-2.69	-0.17	0.26	-4.04-1.11	0.04	0.8	-2.15-2.77	-0.04	0.76	-2.43-1.79
Marital Status	0.02	0.86	-0.76-0.91	-0.07	0.59	-0.75-0.43	0.07	0.48	-0.46-0.95	-0.22	0.08	-1.54-0.09
Education Status	0.04	0.69	-0.83-1.24	-0.11	0.5	-1.89-0.94	-0.03	0.78	-0.97-0.73	0.18	0.1	-0.16-1.86
Employment Status	0.05	0.72	-0.77-1.11	0.26	0.06	-0.03-1.39	0.26	0.08	-0.09-1.59	-0.2	0.16	-1.34-0.22
Annual Salary	-0.07	0.5	-1.08-0.53	0.13	0.33	-0.40-1.17	0.34	**.001**	0.5-1.87	0.14	0.22	-0.29-1.25
Self-reported health status	0.05	0.68	-1.87-2.86	0.02	0.89	-1.66-1.89	0.07	0.56	-1.22-2.24	-0.1	0.47	-2.22-1.04
Number of household smoker	0.26	**0.03**	0.18-3.23	0.21	0.15	-0.29-1.78	0.23	**0.04**	0.12-3.91	0.06	0.66	-0.88-1.39
Spouse smoking status	0.00	0.99	-0.98-0.97	-0.15	0.28	-1.15-0.34	0.14	0.2	-0.33-1.51	-0.26	**0.04**	-1.37- -0.02
Preferred Language							-0.03	0.78	-1.22-0.92	0.2	0.08	-0.12-1.94
English Skill							0.06	0.57	-0.7-1.26	-0.02	0.1	-1.16-1.01
Start age of smoking				-0.01	0.92	-1.41-1.27				0.16	0.12	-0.25-2.2
Fagestrom Score				-0.32	0.11	-2.12-0.21				-0.05	0.77	-1.35-1.0
Stage of Change				-0.06	0.67	-1.92-1.24				-0.21	0.08	-2.68-0.14
Longest time of quitting				-0.5	**.001**	-2.04- -0.53				-0.22	0.07	-1.18-0.05

4.3.7.3.1 Predictor variables of anti-smoking sentiment in ANSs

The results of regression analysis show that only one factor predicted ANSs' anti-smoking sentiment. It was the number of smokers in the households of ANSs, the results confirming that the odds of having a higher anti-smoking sentiment were .26 times higher for ANSs who had more smokers in their household as compared with ANSs without any smoker in their household ($p<.05$, 95% CI .18 to 3.23); this provides enough evidence to accept Hypothesis 5 (Table 28).

4.3.7.3.2 Predictor variables of anti-smoking sentiment in ASs

Only one factor emerged from this analysis; it was the longest duration of previous attempts to quit. This showed that the odds of having a higher score of anti-smoking sentiment were .5 times lower for ASs who had the longest period of non-smoking during a quit attempt as compared with ASs who experienced short periods of non-smoking during a quit attempt ($p<.001$, 95% CI -2.04 to -.53). This yielded enough evidence to accept Hypothesis 5 (Table 28).

4.3.7.3.3 Predictor variables of anti-smoking sentiment in GNSs

Two predictor variables were identified as having significant associations with the GNSs anti-smoking sentiment; annual salary, and the number of household smokers. The chances of having a higher score of anti-smoking sentiment were 0.34 times higher for GNSs who had a higher annual salary as compared with GNSs with a low salary ($p<.001$, 95% CI .5 to 1.87). The odds of having a higher score of anti-smoking sentiment were .23 times higher for GNS who had more smokers in their household as compared with GNSs without a smoker in their household ($p<.05$, 95% CI .12 to 3.91), and this is sufficient evidence to accept Hypothesis 5 (Table 28).

4.3.7.3.4 Predictor variables of anti-smoking sentiment in GSs

For Greek smokers, two factors were identified as influencing their anti-smoking sentiment. They were the gender of the GS and the smoking-status of the spouse/partner of the GS. The odds of having a higher score of anti-smoking sentiment were 0.26 times higher for GS males than for GS females ($p<.001$, 95% CI .52 to 3.32). On the other hand, the odds of having a higher score of anti-smoking sentiment were 0.26 times lower for a GS who had a spouse/partner who smoked as compared with a GS without a spouse/partner who smoked ($p<.05$, 95% CI -1.37 to -.02); this is enough evidence to accept Hypothesis 5 (Table 28).

4.3.7.4 The predictor variables for belief in 'hard not to smoke'/'hard to quit'

The predictor variables of the belief that it is 'hard not to smoke'/'hard to quit' among the different groups are shown in Table 29.

Table 29: Multiple regression analysis examining the relationships between predictor variables and belief that it is 'hard not to smoke'/'hard to quit'

Variables	*Anglo*						*Greek*					
	Non-Smoker			*Smoker*			*Non-Smoker*			*Smoker*		
	β	***P***	**95% CI**	***β***	***P***	**95% CI**	***β***	***P***	**95% CI**	***β***	***P***	**95% CI**
Gender	-0.06	0.52	-1.65-0.84	0.16	0.22	-0.67-2.9	0.1	0.3	-0.7-2.25	.002	0.99	-1.36-1.39
Age	0.15	0.25	-0.74-2.79	0.01	0.95	-2.57-2.73	0.05	0.78	-2.1-2.77	0.13	0.38	-1.16-2.98
Marital Status	0.07	0.49	-0.4-0.82	-0.38	**0.004**	-1.5- -0.3	0.03	0.8	-0.61-0.79	-0.02	0.89	-0.85-0.74
Education Status	-0.08	0.42	-1.06-0.45	0.09	0.57	-1.04-1.9	-0.41	**.001**	-2.2- -0.55	0.18	0.16	-0.28-1.7
Employment Status	0.06	0.62	-0.51-0.85	-0.11	0.44	-1.02-0.45	-0.18	0.23	-1.33-0.33	-0.19	0.24	-1.23-0.31
Annual Salary	0.05	0.58	-0.42-0.75	0.23	0.1	-0.13-1.49	0.21	**0.04**	0.04-1.4	-0.11	0.38	-1.1-0.42
Self-reported health status	0.31	**.005**	0.8-4.25	-0.2	0.25	-29-0.76	-0.19	0.11	-3.11-0.32	0.09	0.58	-1.15-2.05
Number of household smoker	0.32	**.005**	0.51-2.73	0.08	0.59	-0.78-1.35	0.11	0.32	-0.93-2.82	0.32	**0.03**	0.1-2.33
Spouse smoking status	0.06	0.58	-0.51-0.91	0.23	0.11	-0.15-1.38	-0.05	0.63	-1.13-0.69	-0.07	0.61	-0.84-0.5
Preferred Language							-0.19	0.12	-1.91-0.21	-0.01	0.93	-1.05-0.96
English Skill							0.13	0.27	-0.42-1.51	0.08	0.6	-0.79-1.34
Start age of smoking				-0.21	0.1	-2.53-0.23				0.02	0.83	-1.07-1.33
Fagestrom Score				-0.03	0.89	-1.28-1.12				0.49	**0.01**	0.34-2.65
Stage of Change				0.22	0.11	-0.31-2.94				-0.13	0.32	-2.07-0.7
Longest time of quitting				-0.02	0.87	-0.84-0.71				0.11	0.44	-0.37-0.84

4.3.7.4.1 Predictor variables of 'hard not to smoke'/'hard to quit' beliefs among ANSs

For the ANS group, two factors emerged as being statistically significant in regard to their belief in the statements that it is 'hard not to smoke' or 'hard to quit'. The two factors are their self-reported health-status and the number of smokers in the household of the ANS. The odds of having a higher score for the belief that it is 'hard not to smoke'/'hard to quit' were .31 times higher for ANSs who had bad health as compared with ANSs with good health (p<.001, 95% CI .8 to 4.25). On the other hand, the odds of having a higher score for belief that it is 'hard not to smoke'/'hard to quit' were .32 times higher for ANSs who had more smokers in their household as compared with ANSs without a smoker in their household (p<.001, 95% CI .51 to 2.73); this yields sufficient evidence to accept Hypothesis 5 (Table 29).

4.3.7.4.2 Predictor variables for the belief that it is 'hard not to smoke'/ hard to quit' amongst the AS group

For the AS group, only one factor was related to their belief that it is 'hard not to smoke'/'hard to quit'. The result of regression analysis showed that the odds of having a higher score for the belief that it is 'hard not to smoke'/'hard to quit' were 0.38 times lower for ASs who were married as compared with ASs who were single (p<.001, 95% CI -1.5 to -.3); this is enough evidence to accept Hypothesis 5 (Table 29).

4.3.7.4.3 Predictor variables for the belief that it is 'hard not to smoke'/'hard to quit' among the GNS group

For the GNS group, two demographic factors were predictors of their belief that it is 'hard not to smoke'/'hard to quit': educational status and salary. The odds of having a higher score for the belief that it is 'hard not to smoke'/'hard to quit' were .41 times lower for GNSs who had higher educational levels as compared with GNSs with lower educational attainments (p<.001, 95% CI -2.2 to -.55). While the odds of having a higher score for the belief that it is 'hard not to smoke'/'hard to quit' were .21 times higher for GNSs who had higher salaries compared with GNSs with lower salaries (p<.001, 95% CI .04 to 1.4); this was sufficient evidence to accept Hypothesis 5 (Table 29).

4.3.7.4.4 Predictor variables for the belief that it is 'hard not to smoke'/'hard to quit' among the GS group

Two factors emerged for this group: demographic features, and current smoking status were significant predictors of GSs' belief that it is 'hard not to smoke'/'hard to quit'. The result of the study into the number of household smokers was a predictor of the belief by GSs that it is 'hard not to smoke'/'hard to quit', and the odds of having a higher score in regard to that belief were .32 times higher for a GS who had more smokers in his/her household as compared with a GS without a smoker in the household ($p<.05$, 95% CI 0.1 to 2.33). The FTND score was another predictor and it showed that the odds of having a higher score for that belief were .49 times higher for a GS who had a higher dependence on nicotine as compared with a GS who had a lower dependence ($p<.01$, 95% CI .34 to 2.65); this is enough evidence to accept Hypothesis 5 (Table 29).

4.3.7.5 Predictor variables in regard to ineffective educational beliefs

The predictor variables of ineffective educational beliefs amongst the members of the different groups are shown in Table 30.

Table 30: Multiple regression analysis examining the relationships between predictor variables and ineffective educational beliefs

Variables	*Anglo*						*Greek*					
	Non-Smoker			*Smoker*			*Non-Smoker*			*Smoker*		
	β	*P*	95% CI	*β*	*P*	95% CI	*β*	*P*	95% CI	*β*	*P*	95% CI
Gender	-0.1	0.34	-1.07-0.37	-0.15	0.2	-1.06-0.22	-0.02	0.83	-0.8-0.64	-0.04	0.73	-0.73-0.51
Age	0.08	0.57	-0.73-1.31	0.26	0.06	-0.05-1.86	0.05	0.78	-1.02-1.36	0.16	0.25	-0.39-1.48
Marital Status	0.12	0.26	-0.15-0.55	-0.34	**.005**	-0.54- -0.1	0.05	0.65	-0.26-0.42	-0.13	0.35	-0.53-0.19
Education Status	0.06	0.57	-0.31-0.56	0.67	**.000**	0.66-1.71	0.08	0.54	-0.28-0.54	0.19	0.12	-0.09-0.8
Employment Status	0.05	0.72	-0.32-0.47	-0.4	**.003**	-0.67- -0.14	-0.23	0.16	-0.7-0.11	-0.22	0.16	-0.6-0.1
Annual Salary	-0.03	0.77	-0.39-0.29	0.05	0.66	-0.23-0.35	0.01	0.92	-0.31-0.35	-0.36	**.005**	-0.84- -0.16
Self-reported health status	-0.02	0.86	-1.09-0.91	-0.21	0.19	-1.09-0.22	0.05	0.71	-0.68-1.0	0.35	**0.02**	0.13-1.57
Number of household smoker	0.05	0.7	-0.52-0.77	0.36	**0.01**	0.12-0.88	-0.13	0.29	-1.41-0.42	0.12	0.4	-0.29-0.72
Spouse smoking status	-.004	0.97	-0.42-0.4	0.3	0.02	0.04-0.59	-0.04	0.76	-0.52-0.38	0.08	0.58	-0.22-0.38
Preferred Language							-0.18	0.18	-0.87-0.16	0.08	0.5	-0.3-0.61
English Skill							-0.13	0.29	-0.73-0.22	-0.21	0.14	-0.84-0.12
Start age of smoking				-0.02	0.88	-0.53-0.46				0.06	0.57	-0.39-0.69
Fagestrom Score				0.23	0.22	-0.17-0.7				-0.17	0.35	-0.76-0.28
Stage of Change				-0.15	0.24	-0.93-0.24				-0.19	0.13	-1.1-0.14
Longest time of quitting				0.21	0.13	-0.06-0.5				-0.38	**.006**	-0.66- -0.12

4.3.7.5.1 Predictor variables in regard to ineffective educational beliefs among the ANS group

There was not any variable to predict ineffective educational beliefs among members of the ANS group (Table 30).

4.3.7.5.2 Predictor variables for ineffective educational beliefs among the AS group

Four factors emerged in regard to this variable amongst members of the AS group, and demographic features were identified as predictors of ineffective educational beliefs. The factors were marital status, educational level, employment status, and the number of household smokers. Among these predictors, the educational level and the marital status of the ASs were highlighted as the strongest and weakest predictors of ASs' ineffective educational beliefs respectively. The odds of having a higher score of an ineffective educational belief were .34 times lower for ASs who were married as compared with ASs who were single ($p<.001$, 95% CI -.54 to -.1). The odds of having a higher score for ineffective educational beliefs were 0.67 times higher for ASs who had higher levels of education as compared with ASs with lower educational levels ($p<.001$, 95% CI .66 to 1.71). Moreover, the odds of having a higher score in regard to ineffective educational beliefs were 0.4 times lower for ASs who did not work full-time as compared with ASs who worked full-time ($p<.001$, 95% CI -.67 to -.14). Finally the result revealed that the odds of having a higher score in regard to ineffective educational beliefs were .36 times higher for ASs who had more smokers in their household as compared with ASs without a smoker in the household ($p<.05$, 95% CI .12 to .88). This was evidence enough to accept Hypothesis 5 (Table 30).

4.3.7.5.3 Predictor variables of ineffective educational beliefs among GNSs

There was not any variable to predict ineffective educational beliefs among the GNS group (Table 30).

4.3.7.5.4 Predictor variables of ineffective educational beliefs among the GS group

Three factors were identified as predictors of ineffective educational beliefs among the GS group. They were salary, number of household smokers, and the longest duration of previous attempts to quit. The longest duration of previous attempts to quit was the

strongest predictor of GSs beliefs about ineffective education. The odds of having a higher score in regard to ineffective educational beliefs were .36 times lower for GSs who had a higher salary compared with GSs with a lower salary (p<.001, 95% CI -.84 to -.16). Furthermore, the odds of having a higher score in regard to ineffective educational beliefs were 0.35 times higher for GSs who had poor health-status as compared with GSs with good health-status (p<.001, 95% CI .13 to 1.57). The odds of having a higher score in regard to ineffective educational beliefs were .38 times lower for GSs who had the longest duration of non-smoking during a quit attempt as compared with GSs who had experienced short periods of non-smoking during quit attempts (p<.001, 95% CI -.66 to -.12). This provided enough evidence to accept Hypothesis 5 (Table 30).

4.3.7.6 Predictor variables for smoking behaviour

The results of the two smoking sub-groups predictors of smoking behaviour are shown in Table 31.

Table 31: Multiple regression analysis examining the relationships between predictor variables and smoking behaviour

Variables	*Anglo*			*Greek*		
	β	*P*	95% CI	*β*	*P*	95% CI
Gender	-0.09	0.27	-4.64-1.32	0.04	0.57	-1.85-3.32
Age	0.04	0.66	-3.45-5.41	-0.01	0.94	-4.04-3.74
Marital Status	-0.12	0.13	-1.79-0.24	-0.06	0.49	-2.01-0.99
Education Status	0.03	0.79	-2.12-2.75	0.08	0.31	-0.91-2.83
Employment Status	-0.14	0.12	-2.18-0.27	-0.05	0.6	-1.82-1.07
Annual Salary	-0.08	0.34	-1.1-0.70	-0.06	0.4	-2.03-0.82
Self-reported health status	-0.06	0.59	-3.89-2.22	0.28	**0.005**	1.42-7.43
Num. of household smoker	-0.09	0.35	-2.62-0.94	0.24	**0.009**	0.75-4.94
Spouse smoking status	0.15	0.08	-0.16-2.39	0.07	0.43	-0.75-1.75
Preferred Language				0.07	0.37	-1.04-2.75
English Skill				-0.09	0.31	-3.03-0.98
Start age of smoking	0.003	0.97	-2.26-2.35	0.07	0.32	-1.12-3.39
Fagerstrom Score	0.39	**0.003**	1.10-5.12	0.38	**0.001**	1.43-5.77
Stage of Change	-0.12	0.17	-4.59-0.85	-0.03	0.68	-3.13-2.07
Longest time of quitting	0.09	0.31	-0.64-1.96	-0.1	0.21	-1.85-0.42

4.3.7.6.1 Predictor variables for smoking behaviour in the AS group

The result of this study showed that the FTND score for the AS group was the only predictor of their smoking behaviour. The odds of having smoked in the previous 24

hours were .39 times higher for ASs who had a high dependence on nicotine as compared with ASs with low dependence (p=.003, 95% CI 1.10 to 5.12). This was enough evidence to accept Hypothesis 5 (Table 31).

4.3.7.6.2 Predictor variables for smoking behaviour among the GS group

Three factors were identified as predictors of smoking behaviour among the GS group. The factors were self-reported health-status, the number of household smokers, and the FTND score. Of these the FTND score was the strongest predictor of smoking behaviour while the number of household smokers was the weakest predictor of GS's smoking behaviour. Results of the analysis showed that the odds of having smoked within the previous 24 hours were .28 times higher for GSs who had poor health as compared with GSs with good health (p<.005, 95% CI 1.42 to 7.43). Moreover, the odds of having smoked within the previous 24 hours were .24 times higher for GSs who had more smokers in their household as compared with GSs without a smoker in their household (p<.009, 95% CI .75 to 4.94).

The results of the study into the degree of dependence on nicotine (based on the FTND scores as a strongest predictor) showed that the odds of having smoked in the previous 24 hours were .38 times higher for GSs who had high dependence on nicotine as compared with GSs with low dependence (p=.001, 95% CI 1.43 to 5.77), and this provides sufficient evidence to accept Hypothesis 5 (Table 31).

4.3.7.7 Predictor variables for self-efficacy for quitting

The results of two smoking sub-groups predictors of self-efficacy for quitting are shown in Table 32.

Table 32: Multiple regression analysis examining the relationships between predictor variables and self-efficacy

Variables	*Anglo Smoker*			*Greek Smoker*		
	β	***P***	**95% CI**	***β***	***P***	**95% CI**
Gender	0.13	0.27	-1.48-5.162	0.11	0.36	-1.71-4.62
Age	0.01	0.95	-4.78-5.1	0.08	0.61	-3.54-6.01
Marital Status	-0.02	0.86	-1.24-1.03	-0.08	0.62	-2.31-1.38
Education Status	-0.01	0.94	-2.81-2.62	0.04	0.74	-1.91-2.66
Employment Status	0.15	0.25	-0.58-2.15	0.09	0.61	-1.31-2.23
Annual Salary	-0.2	0.11	-2.72-0.29	-0.17	0.24	-2.79-0.71
Self-reported health status	-0.08	0.63	-4.22-2.59	-0.11	0.52	-4.88-2.49
Num. of household smoker	0.09	0.51	-1.33-2.64	-0.12	0.45	-3.55-1.59
Spouse smoking status	0.02	0.89	-1.32-1.52	-0.001	0.99	-1.54-1.53
Preferred Language				-0.05	0.74	-2.71-1.94
English Skill				-0.02	0.88	-2.64-2.27
Start age of smoking	0.16	0.16	-0.73-4.41	-0.15	0.23	-4.45-1.09
Fagerstrom Score	-0.24	0.18	-3.76-0.72	-0.48	**0.02**	-5.77- -0.45
Stage of Change	0.25	**0.04**	-0.01-6.06	-0.01	0.96	-3.26-3.12
Longest time of quitting	0.24	0.08	-0.16-2.73	0.13	0.39	-0.79-1.99

4.3.7.7.1 Predictor variables for the AS group

Only one predictor was identified as being a significant predictor for the AS group: self-efficacy to quit smoking. This refers to the readiness of ASs smokers to quit based on the stages-of-change model. The results show that the odds of having higher self-efficacy were .25 times higher for ASs who had more readiness to quit smoking as compared with ASs without readiness to quit ($p<.05$, 95% CI -.01 to 6.06). This result provides enough evidence to accept Hypothesis 5 (Table 32).

4.3.7.7.2 Predictor variables for the GS group

For the GS group, self-efficacy to quit was also a predictor, this being based on the score of the FTND. The analysis showed that the odds of having higher self-efficacy were .48 times lower for GSs who had high dependence on nicotine as compared with GSs with lower dependence ($p<.05$, 95% CI -5.77 to -.45), and this provided enough evidence to accept Hypothesis 5 (Table 32).

4.3.7.8 The predictor variables of intention-to-quit in the for the coming three months

The results of the two smoking sub-groups predictors of intention-to-quit during the forthcoming three months are shown in Table 33.

Table 33: Multiple regression analysis examining the relationships between predictor variables and intention-to-quit

Variables	*Anglo Smoker*			*Greek Smoker*		
	β	*P*	95% CI	*β*	*P*	95% CI
Gender	-1.3	0.12	0.057-1.40	0.65	0.39	0.44-8.38
Age	1.12	0.28	0.39-23.58	0.28	0.81	0.12-14.2
Marital Status	-0.5	0.12	0.33-1.14	-0.83	0.16	0.137-1.39
Education Status	0.9	0.18	0.65-10.15	0.89	0.21	0.61-9.88
Employment Status	0.7	0.06	0.97-3.85	0.91	0.15	0.71-8.66
Annual Salary	-0.16	0.65	0.41-1.74	-1.79	0.08	0.02-1.25
Self-reported health status	-0.15	0.83	0.21-3.46	-2.24	0.06	0.01-1.12
Num. of household smoker	-1.2	0.13	0.06-1.44	0.87	0.11	0.81-6.95
Spouse smoking status	-1.01	**0.01**	0.17-0.78	0.42	0.19	0.81-2.86
Preferred Language				-0.78	0.18	0.14-1.45
English Skill				0.51	0.45	0.44-6.26
Start age of smoking	0.005	0.99	0.27-3.68	-2.55	**0.04**	0.01-0.91
Fagerstrom Score	-0.83	0.08	0.17-1.12	-0.98	0.17	0.09-1.52
Longest time of quitting	-0.8	**0.04**	0.19-0.96	0.89	**0.03**	1.08-5.58

4.3.7.8.1 Predictor variables of intention-to-quit smoking in the coming three months among the AS group

Two factors emerged as being statistically significant predictors amongst the AS group of intention to quit smoking in the following three months. They were: their spouse's smoking status, and longest duration of quitting in previous attempts to quit.

The results of the study showed that the odds of having a higher intention-to-quit were 1.01 times lower for ASs who had a spouse/partner who smoked as compared with ASs without a spouse/partner who smoked ($p<.05$, 95% CI .17 to .78). Moreover, the odds of having a higher intention-to-quit were 0.8 times lower for ASs who had longer periods of non-smoking during past attempts to quit as compared with ASs who had achieved only short periods of non-smoking during previous attempts to quit ($p<.05$, 95% CI 0.19 to .96), so this was enough evidence to accept Hypothesis 5 (Table 33).

4.3.7.8.2 Predictor variables of intention-to-quit smoking in the forthcoming three months among the GS group

Two factors emerged as being significant predictors of intention-to-quit among the GS group. They were the age at which the individual commenced smoking, and the longest duration of quitting. The odds of having a higher knowledge were 2.55 times lower for GSs who had commenced smoking at an older age as compared with GSs who started smoking at a younger age ($p<.05$, 95% CI .01 to .91). The odds of having a higher score for ineffective educational beliefs were 0.89 times higher for GSs who had longer period of non-smoking during previous attempts to quit as compared with to GSs who had achieved only short periods of non-smoking during previous attempts to quit ($p<.05$, 95% CI 1.08 to 5.58). This yielded sufficient evidence to accept Hypothesis 5 (Table 33).

4.4 Discussion

This chapter has presented a study of two ethnic groups, comparing them in terms of smoking-related knowledge, attitude towards smoking, intention to quit and self-efficacy to quit smoking. Overall, there were 387 participants classified in four subgroups. They included older Greek-Australian smokers (GSs), Greek-Australian non-smokers (GNSs), Anglo-Australian smokers (ASs), and Anglo-Australian non-smokers (ANSs).

The objectives of this quantitative study were to explore differences of knowledge, attitude, smoking behaviour and intention to quit, and to examine predictors of these factors among a convenience sample of smokers and non-smokers. Here we discuss the results of our study, against the background of the hypotheses which emerged from our qualitative study of these smokers' behaviours and attitudes. We will consider the predictors of the dependent variables set for this study and also the part played by social capital in forming participants' responses. Finally a conclusion will be presented.

4.4.1 Participants' knowledge regarding health risks of smoking and cessation benefits

Study results demonstrated that smoking related knowledge was lower in smokers than non-smokers in both groups; ANSs had more knowledge than the other three groups and GSs had less knowledge than the other three groups, so these results support Hypothesis 1. Although there was no interaction in smoking-related knowledge between ethnicity and smoking status, the results showed that there was a significant influence of ethnicity in terms of smoking-related knowledge, $F(1,383)=12.10$, $p<.001$ and also a significant link between smoking status and smoking-related knowledge, $F(1,383)=64.90$, $p<.001$. Previous studies have shown that smoking knowledge is associated with smoking behaviour (Ashley et al., 2000, Ma et al., 2003b, Ma et al., 2005b, Yu et al., 2002a, Nobile et al., 2000). The results of our study are in agreement with other previous studies (Perusco et al., 2007, Bjurlin et al., 2012, Yang et al., 2010). Our result is also in agreement with the results of Bansal et al 2004, which showed that non-Caucasian smokers were less knowledgeable than Caucasians about the benefits of quitting smoking and the benefits of using NRT (Bansal et al., 2004). A lack of knowledge about different types of smoking-related disease, like cancer or heart disease, has been found previously (Margolis et al., 2003). Previous studies also showed that the differences between different ethnic groups in terms of their knowledge about smoking cessation could be due to the influence of media coverage and advertising; this mostly focuses on the needs of the mainstream population rather than minority ethnic groups or migrants (Omonuwa, 2001). Migrant and ethnic groups often have low English skills and this is a barrier to their understanding of information or advertising about the harmfulness of smoking or the benefits of smoking cessation (Fu et al., 2007a).

Smoking-related knowledge can help smokers to understand smoking-related diseases and risks. People with greater smoking-related knowledge also have a higher perception of risks. This point is an important issue which all educators need to consider (Oncken et al., 2005). It implies that if older smokers are aware of the benefits of smoking cessation and if they receive counselling or advice from health care providers, they are more likely to achieve readiness to quit smoking (Haas et al., 2005).

Multivariate regression analysis in data from GSs showed that the English literacy skills of GSs was a predictor of smoking-related knowledge, and smokers who were more literate in English had greater knowledge than those who were less literate (OR=, 36, p<. 001, 95% CI -1.92 to -.31). These results confirm that after a long period in the adopted country a migrant will have a higher level of acculturation (Vollebergh et al., 2001) and their English skills will increase commensurately. Most participants mentioned that they speak English very well. On the other hand, Greek non-smokers (42.7%) preferred to speak Greek in everyday life, while Greek smokers preferred to speak either English or English and Greek. This result perhaps reflects that most of the Greek smokers were born in Australia. According to the 1991 census, about 25% of the total population in Sydney speak a language other than English at home and according to the Australian Bureau of Statistics, of the 66 language groups, 11.2% of those who speak a language other than English at home speak Greek (Tang et al., 1998).

The language which is used at home is possibly the most frequently used measure of non-English-speaking ethnicity (Dusenbery et al., 1994) and the main indicator of acculturation to the dominant English-speaking culture (Rissel, 1997). The preferred language therefore provides valuable information about the degree of acculturation of migrants in a new country. Previous studies found a direct relationship between the preferred language and the risk of disease. For example, a study among Asian-American adolescents found that adolescents who spoke another language or who were bilingual are likely to experience more health risks than those who spoke only English at home (Yu et al., 2002b). A similar trend can be observed with smoking behaviour. For example, in one study, older immigrant males who speak a language other than English at home were significantly more likely to be smokers (37.7%) than males who spoke English at home (23.2%) (Tang et al., 1998).

Migrants are less likely to have effective communication with health care personnel due to the language barrier. They are less able to request information or access information distributed in English (Jirojwong and MacLennan, 2003). This fact should help us in planning a program to promote smoking cessation and support smokers trying to quit. Clearly, language-specific interventions or services are important and educational programs need to be delivered to Greek older smokers in Greek; younger smokers, however, have less need of language-specific intervention.

4.4.2 Positive attitudes towards smoking consumption

The results of our quantitative study showed that a positive attitude towards smoking was higher in smokers than in non-smokers and Greek smokers scored highest for a positive attitude, while Greek non-smokers had the lowest score ($F=188.3$, $P<.001$). This result supports Hypothesis 1. In terms of a positive attitude towards smoking, there was a significant correlation between ethnicity, $F(1,383) =22.44$, $p<.001$, and also a significant correlation with smoking status, $F(1,383)=522.17$, $p<.001$. Our results demonstrate a correlation between smoking status, ethnicity and attitude towards smoking, $F(1,383)=6.36$, $p<.05$.

Our results are therefore in agreement with previous studies which found that smokers have a more positive attitude towards smoking than non-smokers and often believe that smoking confers them with benefits (Ma et al., 2003a, Ma et al., 2005a, Ma et al., 2005b). Previous studies of migrant groups also agreed with our results that a positive attitude towards smoking consumption is higher among smokers than non-smokers (Shankar et al., 2000, Ma et al., 2003a).

Clearly, in developing an intervention to support GSs to quit smoking, differences of culture and ethnicity must be considered. We need to accommodate a range of subjective norms, attitudes, and cultural expectation (Nevid, 1996). Marin et al (1990) showed that there was a distinct difference between non-Hispanic white and black smokers. Hispanics tended to smoke in response to social cues, like smoking with their friends, while black and non-Hispanic smokers responded to situational cues, like smoking as they were drinking. Detailed knowledge such as this about smoking attitudes and preferences can help educators to support smokers who intend to quit (Marin et al., 1990).

The results of the study also highlighted that for GSs, three factors were associated with their attitude towards smoking. A positive attitude towards smoking was higher among GSs who had a higher education level, compared with those who had lower education levels ($OR=.29$, $p<.05$, 95% CI .3 to 3.24). There was a statistically significant difference between the two ethnic groups in terms of education level achieved. More Greek participants were educated only to primary level than Anglo participants. However, the overall results showed that Greek smokers had a higher incidence of education to high school level. As most smoking starts at the high school stage, we can

assume that peer group pressure may be an influential factor. Most smokers in both groups started smoking at less than 19 years, during the period when they were studying in high school. Often the participants mentioned friend(s) as a main trigger for their smoking habit. Our results similar to those of a previous study among Vietnamese-American smokers (Kim et al., 2012). Another study among migrant groups in Australia also demonstrated that migrants had higher levels of education compared with Australian-born participants (Weber et al., 2011).

Educational status in many studies is regarded as a socioeconomic index. Like other socioeconomic variables, such as income or occupational class, the relationship between education level and smoking consumption has been clearly observed (Jarvis and Wardle, 2005). For instance, in a study in the US, the smoking rate was more than three times higher in people who were educated to high school level or less, and for those with a diploma degree the rate of smoking was almost eight times higher than for those with a college degree (Barbeau et al., 2004). It is interesting to note that, although some participants may have had a fairly high level of education, they still chose to smoke. We can perhaps surmise that the educational curriculum in both Greece and Australia might not include anti-smoking programs and this suggests a need to add appropriate education programs into schools' curricula. Currently, smokers who achieved higher levels of education are not necessarily more aware about the harms of smoking or the benefits of quitting.

We also found that a positive attitude towards smoking was lower among GSs who did not work full-time compared to GSs who did work full-time (OR=.38, $p<.05$, 95% CI -2.52 to -.24). Our results showed an interesting relationship between smoking status and income. Although smokers in both groups were more likely to be employed in full-time jobs, 40.2% of ASs and 45.8% of GSs reported a low annual household income (less than AUD$40,000), indicating that smokers from both ethnic groups were from a lower socioeconomic category. The prevalence of smoking has been repeatedly demonstrated to be substantially higher among the unemployed (Grayson, 1993, Lee et al., 1991, Bungum, 2011) and previous studies have also reported that smoking contributes significantly to differences in mortality based on socioeconomic status (Siahpush et al., 2006a, Hiscock et al., 2012).

The effects of socioeconomic status on smoking status and prevalence have been shown in previous studies. For instance, smoking rates in Canada were twice as high among

workers in blue collar occupations (36%) than among workers in administrative sectors (18%) (Health Canada, 2003), and the prevalence of smoking among people with a lower family income was about twice that of those with an higher income (37% vs. 20% in males and 30% vs.16% in females) (CCHS, 2005). Similar trends were observed in Australia, where the smoking rate among lower-level blue collar workers was 36%, compared to 16% for upper-level white collar workers (White et al., 2003).

An inverse relationship between income and being a smoker can be attributed to several reasons. Smokers from the lower socioeconomic levels have more family members who smoke and also they might have a low level of knowledge about smoking risks. They also spend a large proportion of their income on cigarettes — most of the smokers in our study considered smoking to be an economic burden.

Greek smokers who were in the pre-contemplation stage of quitting showed higher readiness to quit compared with those in the preparation stage (OR=. 29, $p<.05$, 95% CI -4.38 to -28). This may suggest why GSs had more quit episodes than ASs. However, although they had more attempts they were unable to quit completely and so eventually, due to their high level of nicotine dependence (craving symptoms) and also due to the influence of socio-environmental subjective norms, they relapsed and started smoking again.

An interesting result of one study was that the majority of those who were in the contemplation stage said they might seek help later (Beletsioti-Stika and Scriven, 2006). Many were older smokers who, because they perceive themselves more susceptible to disease, might be more likely to want to quit smoking (Frid et al., 1991). However, this group is often resistant to changing behaviour and most of them reported no immediate plans to stop smoking (Parkes et al., 2008).

Smoking cessation programs should focus on motivating the majority of smokers, for example, those smokers who are in the pre-contemplation or contemplation stages to try to quit smoking. The high numbers of smokers in these two stages also highlights that reasoning, which has also emerged in previous studies (Fava et al., 1995, Kaplan et al., 1993, Velicer and DiClement, 1993). According to Sohn et al (2007), since enhanced motivation can increase the effectiveness of smoking cessation intervention, the value of such planned intervention would be increased by concentrating on those smokers who

have already expressed an intention to quit, as they are most likely to benefit (Taylor et al., 1990).

4.4.3 Factors relating to positive attitudes towards smoking

Factor analysis of our study results shows statistically significant differences between the study groups in terms of three factors: F=67. 15, P<0.001 for anti-smoking sentiment; F=124.08, P<0.001 for perceived difficulty in quitting; and F=18.07, P<0.001 for lack of confidence in educational programs. Ethnicity was a significant influence on all factors, and there was a significant correlation between smoking status and anti-smoking sentiment. Ethnicity and smoking status also influenced anti smoking sentiment. There was no influence of ethnicity and smoking status on perceived difficulty in quitting; but there was a significant correlation of ethnicity and perceived difficulty of quitting. The results also showed that smoking status was linked only with lack of belief in the efficacy of education programs.

The result of factor analysis showed that GSs had more anti-smoking sentiment than other three groups. In factor analysis, most of the questions (which made anti-smoking sentiment) were related to the action against smoking like banning smoking in the restaurant and workplace, or the cost of smoking.

Although GSs expressed more anti-smoking sentiment than the other three groups, in practice they also strongly believed they would not be able to quit smoking and also doubted that behavioural education methods could support them effectively to quit smoking. Greek smokers had made more quit attempts than Anglo-Australian smokers; most of them mentioned that they wanted to quit smoking due to their health (83.3%) followed by those who wanted to save money (50%). However, due to nicotine dependence and habit formation they found smoking cessation extremely difficult. High dependence on nicotine and habitual smoking were reported very frequently by smokers in both groups as the main barriers for successful cessation.

Nicotine craving followed as the next main barrier to continuing cessation (58.5% of ASs and 50% of GSs). Gaining weight was the third main barrier for continuing cessation in ASs (34.1%), while ‘influence of colleagues or smoker friends’ was the third main barrier for GSs (26%) (t=1.08, P=0.28). The results of one study (Duncan et

al., 1992) are typical of many other studies. This reported addiction as the most important barrier to quitting, while in another study the most frequently reported reason for smokers to relapse was being around other smokers. This confirms that social influences on smokers' quit attempts can be negative (Jingyu, 2009).

Our factor analysis showed that GSs had highest score for lack of confidence in smoking cessation education programs. When asked about visiting their GP for advice, most of them denied receiving helpful advice from their doctor. This underlines the necessity of involving GPs and other health care providers in the process of educating ethnic smoker groups. GPs have been recognized as a main cause of external cues to action because they can provide advice that is appropriate for each individual smoker. They are even able to increase cessation rates when they offer brief advice in a consultation setting (Stead et al., 2008a, Gorin and Heck, 2004, Elisapeta Karalus et al., 2010). Through their training, GPs are usually able to provide sound social, psychological and physical support to help smokers to quit and also to maintain cessation (Elisapeta Karalus et al., 2010).

According to "Australian statistics, GPs only advise patients regarding smoking at a rate of 0.6 per 100 contacts" (Britt et al., 2009). In agreement with the result of this study Ossip-Klein et al, (2000) found that more than half of midlife smokers reported "their decision to quit smoking was influenced 'extremely' or 'quite a lot' by GP advice", and around a third of respondents reported that receiving advice from a GP increased their confidence and ability to maintain cessation (Ossip-Klein et al., 2000). Such findings indicate GPs might be especially influential in decreasing midlife smoking. Advice from a GP can be more effective than from other care providers (Morgan et al., 1996). Smokers visit their doctor due to their smoking-related health issues, so that provides a natural window of opportunity for a GP to offer advice. One study of Chinese patients found that only 33% of all patients and 57% of those who smoked had been asked a question about their smoking status during a doctor's consultation (Ashley et al., 2000). However, in another study in the US, 44% to 49% of smokers reported that they had been advised to quit by their doctor (Rockhill and Fortmann, 1991, Kin-keung, 2004).

It appears that there are some disparities in the quality of anti-smoking advice provided by doctors and this could be a negative issue for certain racial/ethnic groups (Houston et al., 2005b, Lopez-Quintero et al., 2006). Frequency of relapse during quit attempts and evident lack of motivation on the part of some GPs shows that the doctor–patient

relationship needs to be assessed and made more supportive in the future. Doctors need to develop their skills and knowledge about appropriate education for older smokers. For example, with the relationship between a doctor and an older smoker, even a simple verbal communication from a doctor can be a powerful cue to action (Severino et al., 2009). Institutional support can also help and motivate doctors and other health care providers to support smokers. Watt et al (2004) found that lack of institutional support and lack of interest in quitting by older smokers were key barriers to the provision of anti-smoking advice by nurses (Watt et al., 2004).

Older smokers often do not accept that a doctor's advice will change their smoking behaviour so they reject or ignore it (Butler et al., 1998). They are reluctant to receive lifestyle advice because they are emotionally attached to their current lifestyle (Stott and Pill, 1990). From a psychological aspect, older smokers usually blame themselves for their smoking and so making contact with a doctor may increase their feelings of guilt and hence motivate them to follow smoking advices (Butler et al., 1998). To make the most of opportunities for smoking intervention that arise in the context of the health care system, it is important to understand patients' perceptions of interventions offered to them and how acceptable or not they may be. Acknowledging the onset of actual smoking-related disease may, however, be a trigger to changing behaviour and may help those who are receptive to quit (Schofield et al., 2007). When GSs were compared with ASs, we saw that they scored relatively low in accessing and using different types of information about the benefits of quitting smoking.

4.4.4 Intention to quit smoking in the next three months

Our study results show that there was a statistically significant difference between the mean of intention to quit smoking in the next three months between the two smoking groups (2.5 SD=1.01 in GSs vs. 2.9, SD=1.15 in ASs; t=2.5, P = 0.01); this supports Hypothesis 4.

The concept of intention has been used here according to the theory of planned behaviour (TPB) (Ajzen, 1991) which states that the main factor that shapes a behaviour is related to intention and that subjective norms, which differ in different cultures, influence smokers' quitting intentions (Ajzen, 1991).

The characteristics of a migrant's society and environment will therefore affect their intention. Smokers' intention to quit in predominantly individualistic cultures is less

likely to be changed through anti-smoking norms than through their own personal attitudes towards smoking. In a culture which is more collective it is more likely that a smoker's intention to change will be shaped by anti-smoking norms (Hosking et al., 2009). Because Greek-Australians have a more collective culture than Anglo-Australians, who are more individualistic (Rosenthal and Bornholt, 1988), GSs weak intention to quit smoking could be interpreted in the light of their culture, which has traditionally accepted smoking and has few cultural prejudices against smoking (as was suggested in our qualitative study). According to Ajzen (1991) there is a relation between intention, attitude and subjective norms (Ajzen, 1991). A previous study showed that if a smoker has a higher positive attitude towards smoking cessation and has a high perception of the social desirability of quitting, this will strengthen their intention to stop smoking significantly (Droomers et al., 2004).

Our results showed a positive subjective norm among Greek smokers towards smoking. The incidence of GSs (27.1%) who reported that their closest family members allowed them to smoke was higher than for ASs (14.6%). This shows the importance of the role of people seen as important by smokers themselves in confirming the social acceptability of smoking. This acceptance of smoking was high among GSs, where smoking is not seen as a stigma and indeed is a part of Greek culture. According to this culture, self-perceptions may differ among different smokers and so most Greek smokers are not concerned about revealing their smoking status to others (Sutton, 1998).

The effect of subjective norms and the influence of close family/friends on smoking behaviours has been shown in many studies, especially in the context of adult smokers worrying about the effects of their smoking on their children. This effect takes different forms in different ethnic groups (Gritz et al., 2003, Unger et al., 2003). We know that social networks, including peers and family members, can either facilitate or restrict smoking behaviour. When the number of significant others who also smoke increases, a smoker is more likely to continue smoking (Rinaldi, L 997). The effect of subjective norms on smoking behaviour can vary according to age group or gender, or even religion. For example, in a study in the UK among some cultural groups a positive attitude towards smoking was very common in middle-aged men but the attitude was more negative and even tended towards shame in women (Bush et al., 2003).

Our results show that two factors are significant predictors of GSs' intention to quit: these are starting age of smoking and length of the longest quit episode. GSs who had started smoking at an older age had a lower intention to quit smoking than GSs who started smoking at a younger age (OR=2.55, p<.05, 95% CI .01 to .91). A starting age of less than 19 is common. For example, in a General Household Survey (GHS), two-thirds of current and ex-smokers started smoking before the age of 18 (Robinson and Harris, 2011). Other studies have shown that the age of starting smoking, and the number of years of smoking, are negatively related to successful quitting (Sheahan et al., 2003, Hymowitz et al., 1997).

The longest quit episodes have been recognized as another predictor of intention to quit smoking among GSs. Greek smokers who had managed longer quit episodes had a higher level of intention to quit then GSs with short quit episodes (OR=.89, p<.05, 95% CI 1.08 to 5.58). Our results show that changing a health risk behaviour, like smoking, for long-time Greek smokers is difficult and their ability to adapt to change and critical life events, such losing a spouse or a child, is very low. However, living in a traditional family and having close family members concerned about health risks could be considered as factors leading to successful long-term smoking cessation.

Any previous lengthy quit episode can motivate a smoker to eventually succeed in a future attempt. One study showed that the longest previous quit attempt was positively related to success over a one-year period (Yili, 2010). One study found that smokers who had had previously quit for over 90 days had more chance to eventually quit altogether (Hill et al., 1994). However, according to other results, smokers were more likely to stop smoking if their longest previous cessation was <1 or ~30 days than if it was between 1 and 30 days (Ferguson et al., 2003). According to that study, there is a positive association between the number of previous smoking cessation attempts (more than one) and smoking cessation success (Ferguson et al., 2003). Thus GPs should reinforce any effort to quit, and treat failed attempts as practice for the next attempt (Murray et al., 2000, Garvey et al., 1992). If reasons are sought and analysed for any previous relapses, it is possible to construct a framework for strategies to prevent future relapse (Yili, 2010).

4.4.5 Self-efficacy to quit smoking

Self-efficacy is related to a person's belief in his/her capability to carry out the desired behaviour, such as smoking cessation (Nierkens et al., 2005). Our study results revealed that self-efficacy to quit smoking was higher in ASs than GSs (20.75, SD=7. 02 in GSs vs. 18.7, SD=6. 7 in ASs; t=2. 02, P = 0.04), which supports our Hypothesis 4 in comparing the self-efficacy to quit smoking between the two smoking groups.

This result is in line with those of other studies among older smokers which showed that older smokers have a lower self-efficacy to quit smoking (Yong et al., 2005, Ma et al., 2006). There are some reasons why this should be true of older smokers, and especially older migrants. They have usually smoked for a long time and they are more dependent on nicotine. Therefore they believe that they would have more difficulty with smoking cessation. Other studies also show that among minority groups and migrant groups, older smokers have a lower level of acculturation. Acculturation has been recognised as a predictor of smoking among Korean-Americans (Hofstetter et al., 2004, Juon et al., 2003). Older smokers who had higher levels of acculturation had a higher chance of quitting successfully, while older smokers with lower acculturation had a higher probability to be current smokers (Hofstetter et al., 2004).

The results of our multivariate regression analysis show that a predictor of self-efficacy to quit smoking among GSs was the score of FTND. Greek smokers with high dependency on nicotine had lower self-efficacy compared with GSs with lower dependency (OR=.48, p<.05, 95% CI -5.77 to -.45). Smoking consumption over a long period of time creates a high level of dependence on nicotine. That is the main issue which makes quitting smoking so difficult for older people. These results are in parallel with those of other studies. For example, in a randomized controlled trial, which was conducted among 118 adult male smokers, low consumption of cigarettes per day made smokers less nicotine-dependent so that factor became a predictor of successful smoking cessation at three-, six-, and 12-month follow-ups (Myung et al., 2007). Among people with a lower socioeconomic status, increasing dependence on nicotine reduces the likelihood of smoking cessation so this gives them a lower ratio of successful cessation. Smokers from this group may try higher nicotine doses because of psychosocial factors (Pizacani et al., 2004).

According to many studies, nicotine dependence is the most powerful negative predictor of quitting smoking (Godtfredsen et al., 2001, Osler et al., 1999, Hymowitz et al., 1997, Breslau and Johnson, 2000). Measures of nicotine dependence most frequently used in past studies include the number of cigarettes smoked daily, whether smoking is practised daily, and time until the first cigarette of the day. Low degree of nicotine dependence is related to lower cigarette consumption, a longer time until the first cigarette in the morning, and occasional smoking (not daily) — all of these are predictors that a smoker will be able to quit.

The majority of smokers in both AS (29.3%) and GS (36.5%) groups reported that they start smoking about 6 to 30 minutes after waking up in the morning. The frequency of smokers who identified as 'light smokers' was higher in ASs (29.3%) than GSs (21.9%), while the frequency of 'heavy smokers' was higher in GSs (38.5%) than in ASs (31.7%).

These results parallel those of another study of older smokers which classified smokers as highly nicotine-dependent according to the number of cigarettes smoked daily and length of smoking history. All current smokers smoked every day, and about a third were heavy smokers, a result which tallies with the incidence of heavy smokers our Greek smokers (Madruga et al., 2010).

Smoking for a long period of time creates more dependence on nicotine and makes it difficult for smokers to quit. In a study among male smokers aged 50 to 69 years, the most frequent predictors that would be likely to lead older smokers to relapse in a quit attempt were emotional distress, high levels of nicotine dependence, drinking more alcohol and the discovery of further medical problems (Augustson et al., 2008).

Health educators should consider these points in any preventative program. Smokers who have smoked for a long time need to receive more intensive and lengthy behavioural interventions. Older people may have many psychological problems and this gives them low self-confidence in any quit attempts (Martinez et al., 2010). Craving symptoms during quit attempts will be more severe in older smokers and may well lead them to start smoking again, as many participants recounted in our qualitative study.

4.4.6 Social capital and smoking status

Social capital is often considered as a contextual characteristic of society (Putnam et al., 1994, Woolcock, 2001). Defined as "social networks and norms of reciprocity", (Putnam, 2001a), social capital uses measures such as the degree of trust and the quality of participation in social networks (Berkman and Kawachi, 2000). The influence of social capital on health issues has been widely discussed over the past decade (Pearce and Davey Smith, 2003, Giordano and Lindstrom, 2010). Social participation and trust are two aspects of social capital that are measurable and interlinked (Putnam, 2001a). "Social participation is central to the definition of social capital" (Putnam et al., 1994, Putnam, 2001b, Woolcock, 1998) and trust is seen as an outcome of social capital (Putnam et al., 1994). Social participation can be measured through two variables: first, the density of organizations in a specific region, that is the number of organizations and the number of people who are members of these organizations in relation to the population size of that region; the second is to take a measure of people's involvement in formal and informal social activities (Lindström et al., 2003, Putnam et al., 1994).

These two aspects of social capital are very relevant to health-related issues of policy, such as smoking cessation. They may also enable rapid transmission of health information, foster desired adaptations of the norms of health behaviour, and exert social control over health-related behaviours (Putnam et al., 1994). Poortinga (2006) has asserted that social capital independently affects individual health outcomes through modifying smoking behaviour. In that study three social variables included marriage and employment status. "Social capital measurements of 'social participation' and 'interpersonal trust' were associated with changes in smoking behaviour" (Poortinga, 2006).

Another study posed three questions to measure social participation; they asked about the extent of participants' direct contact with other people, extent of engagement with different activities, and membership of social groups. Trust was measured by asking participants to gauge their level of trust in a variety of people and places (Lindström, 2003).

The results of our study showed that non-smokers in both ethnic groups had more direct contact with GPs, friends, and neighbours while smokers in both ethnic groups had

more direct contact with colleagues. Greek smokers had the lowest direct contact with friends and the lowest level of trust in them. Greek participants had more direct contact with family members than Anglo participants. However, Anglo participants had higher trust in family members than Greek participants.

These results are confirmed by another study among Greek smokers in Australia. Asked who they would prefer to support them to quit, participants nominated their partner followed by their mother (Trotter, 1997). In another study, Greek migrants acknowledged a higher level of instrumental support (like services, financial assistance, and other specific aid or goods) from their families and the study noted that regard for family is a central concept within Greek culture (Drew et al., 2002). Older people are more dependent on family, especially to translate written and verbal information, and their children typically navigate society on their behalf (Panagiotopoulos et al., 2013).
These results suggest that Greek older people are limited in their social contacts and they prefer low direct contact with other people. A combination of reasons, such as their non-English-speaking background, low educational level and socio-economic status, and identification with their culturally, linguistically, and religiously distinct ethnicity (Panagiotopoulos et al., 2013) could explain this limited social participation and a degree of exclusion from mainstream society. "It is strongly accepted that cultural isolation and linguistic difficulties often make Greek migrants quite dependent on their children and family members" (Rosenthal and Bornholt, 1988).

The workplace has a potential capacity to educate smokers because of the direct contact with colleagues that it facilitates. However, the workplace environment allows smokers to be engaged with other smokers and so this can also encourage smokers to continue smoking (Amos et al., 2006).
Greek smokers have less direct contact with friends than other groups, and, as shown in the qualitative study this tends to suggest that conducting a peer-led intervention study is not an appropriate strategy for Greek smokers. However, the study also found that this group had more direct contact with family members or relatives in a kind of internal community network. Therefore, for this group of smokers the family itself could act as a potential source of support. Health educators could support smokers by becoming getting to know their family networks and using them as resources in developing behavioural interventions.

Our results showed that non-smokers in both groups had a higher level of engagement with a range of activities — such as watching television programs or DVDs, going to the theatre or concerts, watching live sports, visiting museums and cinemas — than smokers. Greek smokers had less engagement in all of the above-mentioned activities. Lower participation in these kinds of social activities may indicate that older smokers are liable to suffer from depression or other psychological illness (Stewart et al., 2000) or it may indicate a lack of disposable income to participate in social activities. Greek smokers may have a limited range of social activities based on their own language or culture (Amos et al., 2006). Or they might prefer to spend their income on cigarettes rather than on going out to socialize.

The quantitative study found that non-smokers in both Greek-Australian and Anglo-Australian groups had a higher rate of membership in organizations such as churches, sport centres, or arts centres compared with smokers and they exhibited higher trust towards organizations outside the family than smokers. Belonging to a church or religious group can create certain social norms and that constrain smoking behaviour (Tamvakas and Amos, 2010, Bazargan et al., 2004) if followers are advised to avoid harmful substances like tobacco (Unger et al., 2003, Elisapeta Karalus et al., 2010).
Our results reflect those of another study which showed that low levels of social participation resulted in weak social networks and weak social activities and this in turn led smokers to continue daily smoking behaviours (Lindström et al., 2003) Overall, we found that the low social capital of Greek smokers leads to lower social participation and trust than for non-smokers, while Anglo-Australian smokers showed higher levels of social participation and trust. According to Putnam (1993) "the social capital combination of low social participation and low trust seems to increase the odds of being a heavy smoker even further" (Putnam et al., 1994). The results of our study reflect those of other studies conducted among smokers, which "consistently show that smoking cessation is significantly associated with high levels of social participation" (Lindström et al., 2003).
Among older people in mainstream society the combination of low social participations/ high trust is common. Older people may have health problems or disabilities that prevent engagement in social activities; however, they still exhibit high trust. On the other hand, this may indicate a "more traditionalist perception of high trust in both public institutions (institutional trust) and other people (generalized trust)" (Lindström

et al., 2003). Migrant older people might suffer from low social participation, as we have seen, but we see this in combination with low trust, due to differences in culture or values.

One explanation of how higher levels of social participation might influence "smoking prevalence may be provided by the 'diffusion of innovations' theory" (Rogers, 2010). According to this theory, "when new community norms develop, (for example, smoking in restaurants becomes unacceptable), people who interact within the community the most will be more likely to accept and follow the new norms" (Giordano and Lindström, 2011).

4.4.7 Smoking characteristics of the respondents

The two smoking groups in our study (GNs and ANSs) showed no significant differences in starting age of smoking, number of cigarettes smoked daily, smoking consumption time and the Fagerström Test for Nicotine Dependence (FTND). So there were not enough results to support Hypothesis 3 in the smoker groups. The only significant differences between the two smoker groups was in the total years of smoking. When respondents reported the number of years they had smoked, results were (GSs (38.9, SD=8.85) and ASs (36.2, SD=9.5) which was a statistically significant difference between the two groups. These results contrast with the results of another study conducted among migrants in New South Wales. In that study the number of years of smoking and the number of cigarettes smoked per day were lower for migrants than for Australian-born participants (Weber et al., 2011). In another study smoking participants had smoked for more than 40 years on average, which was higher than the average reported in this study (Madruga et al., 2010). In another study among women older smokers, participants reported that they smoked an average of 12 cigarettes a day with a preference for so-called 'light' cigarettes, a finding similar to our own results for women (Donzé et al., 2007).

Our results showed that there was no significant difference in the methods of quit attempts, reasons for quit attempts or types of barriers for quitting between two smoking groups. So there was not enough evidence to support Hypothesis 3. On the other hand, the results of the study showed that there were significant differences between the four sub-groups in other respects; for example, the smoking status of partner; partner's opinions about their smoking; having other smokers in the household, and ability to access information. All those factors may support Hypothesis 3.

With regard to non-smoker groups, the frequency of having non-smoking partners (49.1% for ANSs and 38.8% for GNSs) was higher than for smokers in both ethnic groups while the frequency of 'some' or 'most' important people in their life being smokers was higher in both smoker groups. On the other hand, the frequency of GSs (27.1%) who reported that 'most' of their close family/friends condoned their smoking was higher than for ASs (14.6%). This shows the important role that smokers' close family members can play in terms of condoning the habit or making it socially acceptable. This social acceptance was more marked among GSs, confirming that smoking for Greeks is not regarded as a stigma and is rather an integral part of Greek culture. Self-perceptions may vary according to cultural background which is perhaps why one study found that most Greek smokers did not feel reluctant or guilty about revealing their smoking status to others (Sutton, 1998). The effect of subjective norms and attitudes of close family members on smoking behaviour has been shown in many studies, especially as smokers consider the effect of their smoking on their children's smoking status. This effect may vary in different ethnic groups (Gritz et al., 2003, Unger et al., 2003).

Social networks, including peers and family members, can facilitate or restrict smoking behaviour. As the number of family members who also smoke increases, a smoker is more likely to continue smoking (Rinaldi, L 997). The effect of subjective norms on smoking behaviour can also vary based on age group or gender or even on religion. For example, in a study in the UK, among some cultural groups a positive attitude towards smoking was very common in middle-aged men but it was rare among women who often expressed something like shame about their smoking (Bush et al., 2003).

In our results the incidence of having another smoker in the household was higher in smoker groups (31.7% of ASs and 35.4% of GSs) than in non-smoker groups (6.6% of ANSs and 17.5% of GNSs). For instance, 12.2% of ASs reported two additional smokers and 6.2% of GSs reported three additional smokers in the household. In one current study GSs were twice as likely to have a partner who smoked in their household than ASs (30.5% of GSs and 16.2% of ASs). This result also suggests a reason why some older smokers start smoking again after a previous attempt to quit. Older smokers, as we have seen, are more dependent on and have higher trust in their closest family members.

Other studies have shown similar results. For example, in a randomized clinical trial study (Kahler et al., 2007, Whittaker et al., 2009) of heavy social drinkers who were looking for a smoking cessation aid, there was a significant association between the extent of participation in a social network with other smokers and smoking cessation outcomes. The association was negative if smokers were socializing with other smokers (Yili, 2010). In another study, the most frequent factor triggering smokers to relapse after a quit attempt was being in a social situation that involved being around other smokers (Liu, 2005). Among Chinese smokers the role of the social situation, the effect of other smokers, and peer influence all formed important barriers to successful cessation (Yang et al., 2006).

Other studies have found that the smoking status of one partner can affect the smoking status of another. Having a non-smoking partner has been known as a cessation success predictor, while having a smoking partner predicts inability to quit (Osler and Prescott, 1998, O'Loughlin et al., 1997). Partner smoking status is well known as a predictor of relapse (Ginsberg et al., 1991).

Our own results indicate that smokers from both groups (GSs and Ass) were more likely to have family members who also smoked and smoking was more likely to be acceptable within the family. Various strategies are required to reduce the effect of social situation on tobacco use among older smokers (Ceraso et al., 2009). For example, education to change older smoker behaviour needs to focus on the whole family not just on the individual. Public education on the health risks of both smoking and second-hand smoke could also reach out to non-smokers, who may play an important role in the social environment of smokers. It has been found, for example, that smoking cessation programs are more effective when they tap into social support from family members or close friends (Bialous et al., 2004). For older smokers, training in refusal-skills could also be incorporated into cessation programs to counteract the unhelpful role that cigarettes can play as relationship builders (Ma et al., 2007).

Finally, our study considered the types of information sources about smoking that participants accessed. Radio and television reports were the most frequent source of information in all groups (86.8% for ANSs, 90.2% for ASs, 84.5% for GNSs, and 78.1% for GSs). This was followed by friends and physicians for ASs and by friends and family members for GSs. Internet and books scored very low as a source of information for all groups. Other studies have also compared the use of health-related

information sources. In a comparative study between two ethnic groups, Chinese and Greek smokers reported that they had telephoned Quitline for information (Liu, 2005). The extent of health information accessed might vary based on the kind of disease/problem. For example, in a study among Vietnamese women about cervical screening, the family doctor was the most important source of information about Pap smears, followed by friends or family (Cheek et al., 1999). In another study in Sydney and Brisbane, the same three sources of information were reported by Adamson and Taylor in a population of Vietnamese-born women in Sydney and also by Prasad and Shinwari in Brisbane (Prasad and Shinwari, 1993, Cheek et al., 1999). In another study, local general practitioners were the major source of advice and information (Bertram et al., 1996).

These results indicate that television and radio are important sources of health information; health educators need to consider that and to provide more anti-smoking programs though those media channels. However, according to our qualitative study results most GSs believed that accessing information was not in itself helpful with smoking cessation. In this regard, culturally-tailored programs delivered through ethnic media channels could be more effective with Greek smokers (Anidi et al., 2002)
Older people stay at home more and television and radio are more accessible media for them than other mass media communication channels. For example, older people have little interest in learning to use new communication tools, such as email or Facebook via the internet. In our study we saw that both smoker groups nominated their friends as a secondary source of information. We should view this with caution as it is not clear how accurate information received from friends may be. Culturally inappropriate health advisory services can also be a barrier for NESB smokers in accessing accurate and timely information (Plunkett and Quine, 1996, Severino et al., 2009).

4.5 Conclusion

Our quantitative study showed that, in terms of need, older GSs are a priority group to improve smoking-related knowledge, attitudes, intention to quit and self-efficacy. In all of these areas our study can suggest valuable opportunities for behavioural intervention in the shape of smoking cessation programs that are culturally-tailored for this particular

target group (Bashshur and Quick, 1991). To change smoking behaviour we need to develop behavioural change models that focus on increasing knowledge about the health risks of smoking and benefits of cessation. Programs that aim to increase self-efficacy, identify subjective norms and cues to action will be most effective (Roberts et al., 2013).

If anti-smoking advice is targeted, and delivered through an appropriate educator like a doctor, it is more likely to be favourably received (Ossip-Klein et al., 2000). Such intervention will increase smokers' knowledge about the harmfulness of smoking (Orleans et al., 1994) and also will strengthen their intention to quit (Carosella et al., 2002).

Chapter Five: Discussion, implications, recommendations, and conclusion

The previous three chapters included the systematic literature review and presented qualitative and quantitative studies with their results. This discussion chapter will now summarize the results of similar previous studies and will also synthesize these with our own results, comparing and contrasting the relevant findings. Gaining an understanding of smoking knowledge, attitudes, behaviours and beliefs within the context of different ethnic groups is a critically important consideration for developing smoking cessation interventions and models. The present thesis includes the development of an integrated model that illustrates the relationship of the research variables and smoking cessation patterns among older Greek-Australian smokers. The proposed integrated model (I-Model) is underpinned by four main theories: theory of reasoned action (TRA), health belief model (HBM), transtheoretical model (TTM), and socio-cognitive theory (SCT). The critical points gleaned from our qualitative and quantitative studies, both of which underpin the integrated model, are presented below. The limitations of this thesis are pointed out, and we also briefly refer to implications for action based on our findings. Some recommendations for future study are made. Finally, the chapter concludes with a summary of the discussion.

5.1 Summary of previous chapters

Overall, this thesis has highlighted the perceptions and practices of older Greek-Australian smokers related to smoking. The thesis results have increased the body of knowledge concerning factors that either encourage older Greek-Australian smokers to smoke or form barriers to their smoking cessation.

Chapter two made a broad, systematic review of relevant published articles; these were either randomized controlled trials (RCTs) or quasi randomized controlled trials (QRCTs) and all were high quality studies. From the review we identified factors influencing successful interventions for tobacco use in adults, non-English Speaking background (NESB) smokers, and older smokers, with an aim to identify any knowledge gap in our understanding of behavioural intervention methods. Overall, 117 relevant articles which met inclusion and exclusion criteria were found and they were evaluated for their effectiveness in terms of behavioural intervention. Evaluation

included identification of method characteristics, educators, and location of the program implementation. The behavioural interventions were also assessed within two major age categories — under 50 years old and 50 and over (or older smokers), especially as they applied to non-English-speaking background (NESB) groups.

The systematic review highlighted three main findings. Most of the extracted articles showed that using a behavioural intervention method to support smokers to quit smoking was effective. Significant differences in smoking cessation success between the intervention group and the control group were shown in 85 studies, while 32 articles had statistically insignificant results.

Types of behavioural interventions included 'light' methods (such as brief counselling or use of self-help materials) and intensive methods (such as motivational interviewing, stage-based intervention, and group or telephone counselling). All the intervention methods were effective with both the major age groups; however, intensive types of behavioural intervention methods were more effective for both the under 50 and over 50 groups.

Furthermore, the systematic literature review revealed that behavioural intervention methods used with various NESB communities were effective both in reducing the number of cigarettes smoked or in motivating smoking cessation. Both the light and the intensive intervention methods increased smoking cessation rates among NESB adults significantly (87.5%). Moreover, effective behavioural intervention increased cessation rates by 6% to 72% compared with no intervention or when different types of intervention methods were compared. It was found that tailored materials and group interventions increased smoking cessation rates the most, (72% and 53%, respectively). In sum, most of the studies (72%) stressed that culturally targeted intervention could be an effective method for promoting smoking cessation among NESB communities.

Analysing the results of published articles concerning older smokers, it is clear that nearly half of the behavioural intervention methods were effective with older people (aged 50 and over). Intensive types of behavioural intervention methods were more effective in older smokers whereas interventions based on mobile texting or web-based media were less effective. If we compare behavioural intervention methods used with young or adult smokers, two main findings are highlighted in this study of older smokers. There is a general paucity of research on behavioural smoking intervention

with this age group, which perhaps shows a lack of interest in using behavioural intervention methods with older smokers or that older people are thought to be not able to quit smoking by these methods. Another main finding is that there has been no previous study based on peer-led support. Some psychological factors were identified as important in behavioural studies implemented with older smokers: these included improving knowledge, assessing intention, self-efficacy and readiness.

These findings helped us to identify a knowledge gap that could inform our next study — that intensive behavioural intervention could be effective in promoting smoking cessation in older smokers (especially NESB individuals), especially when the psychological factors established above (smoking-related knowledge, attitudes towards smoking, intention to quit, and self-efficacy) are factored in.

We already know that there is a higher prevalence of smoking among older Greek-Australians than other older Australian groups and also that Greeks form one of biggest ethnic communities in Australia and so this group stood out as a relevant study sample. The study cohort consisted of 20 Greek-Australian older smokers selected from the GOCSA. We first designed a qualitative study to better understand their perspectives about implementing behavioural intervention and also test the feasibility of peer-led intervention; we also wanted to assess smoking-related knowledge, attitudes towards smoking, intention to quit, and self-efficacy. We developed an in-depth interview to explore their opinions on smoking and smoking cessation and also the attitudinal factors affecting their smoking status.

Overall, the results showed that smoking was culturally accepted among Greek-Australian older smokers. Four themes emerged from a content analysis of respondents' answers, based on three types of factors which are recognized to be important in changing smoking behaviour: these are personal factors, cultural factors and socio-environmental factors.

The first theme was about respondents' knowledge or perceptions of smoking and its effects on health. Our results showed that knowledge about the harms of smoking and the benefits of smoking cessation was low. Indeed, respondents showed a positive attitude to smoking consumption. Furthermore, perceptions about barriers and difficulties of attempting to quit were high, while the perceived benefits of quitting and

perceived risks of smoking were relatively low. These particular factors can be regarded as personal factors in terms of smoking cessation behaviour (Kerr et al., 2011).

The second theme comes under the heading of 'reasons for smoking'. The majority of participants mentioned that their smoking is habitual; most also believed that smoking helps them to be relaxed. They believe that smoking is a part of their 'smokers' heritage' and is acceptable within their culture (the effect of cultural perception). It has been pointed out that every smoker's behaviour can be investigated in the light of cultural belief and thus to change the behaviour a consideration of culture is an important factor (Hooper et al., 2012).

We can label the third theme as 'barriers to cessation'; here results indicate that most barriers were related to smokers' beliefs and attitudes. They tended to have a positive attitude towards smoking and to believe that smoking is their 'best friend'. They say that smoking helps them to relax. Many had tried to stop smoking, but had found it very difficult. Most of this older group believed that it is too late to quit smoking at their age; some believed that the 'damage has been done'. Moreover, most professed to have a low confidence in their ability to stop smoking (personal factor). Sometimes the role of family members was not supportive when quit attempts failed. All participants had made a quit attempt earlier, but they had been influenced by friends or family members to start again. Some had made efforts to cut their consumption of cigarettes over many years. These examples show the role of socio-environmental factors on smoking behaviour.

Finally, the fourth theme covers 'guidelines/potential facilitators for cessation'. Greek community members, friends, family members, and doctors are identified as potential facilitators to help smokers to quit. In this area participants suggested they would trust their family more than doctors or friends as potential supporters. They considered there was a low chance of success via interventions using peer group support. They also did not believe that behavioural support alone could help them to quit and they were not interested in the wider use of educational supports. A typical belief was that if your brain is not ready, you cannot quit smoking. On the whole they displayed a low level of readiness to quit.

The results of the qualitative study, raise some hypotheses that need to be tested in a larger sample of Greek-Australians. To do that, we decided to compare older Greek-

Australian smokers (GSs) with Greek non-smokers (GNSs) and also with Anglo-Australian smokers (ASs) and non-smokers (ANSs) to evaluate the effects of ethnicity and smoking status as independent variables in a quantitative study. Overall, 387 participants from the four subgroups participated in this study (106 ANSs, 82 ASs, 103 GNSs, and 96 GSs).

The principal aim of this study was to investigate psychological factors that may contribute to smoking consumption among Greek-Australian smokers and compare results with the other three subgroups. The investigation focused on the participants' knowledge about the benefits of smoking cessation or harmfulness of smoking, and their attitudes towards smoking consumption, intention and readiness to quit and their degree of self-efficacy. One of the important issues that older GSs in the qualitative study raised relates to the influence of groups and individuals on their smoking behaviour and also the timing and robustness of their decision to quit smoking. To explore the importance of the social network in regard to smoking behaviour, and to compare this factor with groups of different ethnicity and smoking status, the social capital of the participants was assessed. Finally, we could express our results as a measure of predictors of smoking-related behaviours.

The main findings of this study were that older GSs had the lowest significant mean of knowledge about the harms of smoking and benefits of smoking cessation (7.9, SD=2.67, $p<.001$), and the highest significant positive mean of attitude towards smoking consumption (45.73, SD=5.20, $p<.001$) compared with the other three subgroups. The results also showed that there was no interaction effect in smoking-related knowledge between different sub-groups based on smoking status and ethnicity $F(1.383)=.001$, $p<.974$, while there was an interaction effect in attitudes towards smoking between the subgroups $F(1,383)=636$, $p<.05$. GSs also had the lowest significant mean of intention to quit (2.5, SD=1.01, $p=.01$), and the lowest significant mean of self-efficacy to quit smoking (18.7, SD=6.7, $p<.04$) compared with the AS group. Overall, GSs had low social capital in terms of direct contact with different types of people (17.15, SD=3.48), trust in different types of people (15.08, SD=2.78), engagement in activities (12.89, SD=2.27), membership of social groups (20, SD=20.8), and trust in social groups (8.1, SD=2.8), a result which indicated low social participation and low trust. We demonstrated that the predictors of smoking knowledge,

attitude, intention, self-efficacy, and behaviour differed according to the ethnicity and smoking status of the participants.

5.2 An integrated model of smoking cessation in Greek-Australian smokers (GSs)

We proposed an integrated model based on the results of the qualitative and quantitative studies and also based on four behavioural change models and theories that have been used frequently in other smoking cessation studies. Behavioural change theories and models offer a framework that can both recognize potential predictors of certain behaviours and also advise interventions that could influence those behaviours (Fishbein and Cappella, 2006, Glanz et al., 2008, Leventhal et al., 2007, Slater, 1999).
Overall, we can recognize three factors as the main drivers of the smoking status of GSs. These are: personal factors, socio-environmental factors and cultural factors. According to the results of both our qualitative and quantitative studies, the personal factors for our group of GSs include: low level of knowledge about the risks of smoking and the benefits of smoking cessation, and a positive attitude towards smoking, low self-efficacy and weak intention to quit smoking.

The qualitative study results also highlighted other personal factors which are important in governing smoking behaviour. These were: a low perception of smoking harm; low perception of quitting benefits; high perception of quitting barriers. The results also showed the importance of socio-environmental factors, like accessibility and price of cigarettes, and peer pressure to quit smoking, all of which have been highlighted as positive drivers of decisions to reduce or quit smoking. The GSs' low social capital, as illustrated in the quantitative study, can also be considered as a socio-environmental factor as can the role of cultural context as shown in the qualitative study. Previous studies conducted among ethnic groups (Fiore, 2008) encourage culturally appropriate models of cessation counselling and sensitivity to individual differences and beliefs. Exploration of smoking behaviours and beliefs in particular ethnic groups is an important precursor to tailoring cessation interventions according to cultural considerations. It is important to understand factors related to smoking behaviour in special populations with high prevalence of smoking in order to diminish rates of disease and morbidity (Baker, 2008).

An integrated model (I-Model) was proposed based on the results of recent studies and using some elements of other prominent theories of health-related behaviour change (Paek et al., 2011) which have been frequently used to promote smoking cessation. These are: the health belief model (HBM) (Carpenter, 2010, Kim and Bae, 2011), the theory of reasoned action (TRA) (Armitage and Conner, 2001, Guo et al., 2007), the transtheoretical model (TTM) (Robinson and Vail, 2012, Aveyard et al., 2009) and social cognitive theory (SCT) (Zheng et al., 2007, Shadel and Cervone, 2006).

5.2.1 The application of behavioural models and theories to the I-Model

Although there are differences among these four theories, they are able to complement one another because they can consider various aspects of desired behavioural changes, depending on whether those changes are cognitive or behavioural in nature (Slater, 1999). For instance, the TTM and SCT mostly focus on both cognitive and behavioural levels of intervention strategies, whereas HBM and TRC have a more consistent focus on cognitive strategies (Paek et al., 2011).

In developing an I-Model we needed to consider that improving knowledge is a first step to changing behaviour. Most theories which are related to behavioural change consider that knowledge about an action is the first factor that influences that behaviour (Fisher et al., 2009, Davis and Galbraith, 2009, Fishbein et al., 2001).

Smoking-related knowledge and attitudes towards smoking have been identified as factors which affect GSs' behaviour. The HBM model, which we decided to incorporate into our I-Model, allows many determinants of smoking-related knowledge to be specified and says that you can influence a smoker's behaviour by tapping into their existing knowledge and building on that (Nuzzo et al., 2013) and the more you involve a person with relevant knowledge, the higher the chance of modifying attitude and behaviour (Prochaska, 2013). The HBM focuses on the individual's attitudes and beliefs in order to recognize predictors of healthy behaviours. Based on this model, five determinants are found to be most effective in facilitating healthy behaviours. These are: perceived benefits (explain that pursuing healthy behaviour has a psychological benefit for him/her); perceived barriers (acknowledging that healthy behaviour may incur problems in terms of cost, time, or inconvenience); perceived susceptibility (explain the likelihood of contracting a smoking-related disease); perceived severity (explain the severity of smoking's health risk and its possible serious consequences,

such as disability or mortality); and cues to action (signals to activate readiness) (Rimer and Glanz, 2005, Janz and Becker, 1984, Rosenstock et al., 1994).

As shown in our thesis, the level of self-efficacy to change smoking behaviour was very low in our cohort of GSs; they believed that they were not able to totally quit smoking and even reducing consumption was very hard for them. Self-efficacy as a personal factor is highlighted in the SCT model. The main principle of SCT is that "people learn not only from their own experiences but also from observing how others behave and what results their behaviour produces" (Bandura, 2001). This theory introduces interaction between three factors: internal factors, external factors, and behaviour. Internal factors are related to motivational forces and individual characteristics; self-efficacy is an important internal factor which reflects a person's internal belief that he or she is able to establish and perform the courses of action necessary for obtaining an anticipated outcome (Bandura, 1997).

Another psychological factor which affected GSs' smoking behaviour related to the intention to quit smoking. Study results showed that they had a low level of intention to quit. The TRA model clarifies the relationship between behaviour as an outcome and beliefs, attitudes, and intentions as facilitators and predictors. In other words, "behaviours are dependent on the individual's intentions, which are determined by their attitudes (i.e. beliefs and values about the outcome of a behaviour) and subjective norms (i.e. beliefs about how significant others perceive one's own behaviour)" (Madden et al., 1992, Montano and Kasprzyk, 2008). We therefore decided to incorporate the TRA within the I-Model developed for this thesis.

Our thesis found that GSs were mostly in the pre-contemplation and contemplation stage of smoking cessation behaviour. This indicates they were not ready to quit smoking in the near future. The Transtheretical Model (TTM) considers a person's motivation at different stages as they prepare to make a behavioural change. This model offers a variety of physiological constructs which are important determinants of change in behaviour. They include: stage of change, the behavioural process of change, benefits and harms of decision balance, and self-efficacy. In this I-Model two constructs of the TTM have been used: stage of change and self-efficacy (Huang et al., 2013, Glanz et al., 2008).

TTM considers a behavioural change as a progressive process that takes place in five stages: pre-contemplation (unaware of the problem, not thinking about change); contemplation (only thinking about change); preparation (intending to change); action (initiate change); and maintenance (protect the new behaviour) (Glanz et al., 2008, Rosen, 2000). Use of the TTM model to change smoking behaviour has been reported positively in many studies (Velicer et al., 1998, Slade et al., 2006, Armitage and Arden, 2008). For instance, Huang et al. (2013) conducted a study of pregnant women and mothers in Taiwan. They found that, using TTM to change participants' awareness of passive smoking, knowledge and self-efficacy were the two main determinants of changes to smoking behaviour (Huang et al., 2013).We therefore decided to incorporate the TTM in our thesis's I-Model.

5.2.2 Smoking-related knowledge and I-Model for GSs

According to the I-Model we developed, perceived benefits of smoking cessation, perceived barriers of quitting, the perceived risks of smoking consumption, and cues to action are all related to the smoking knowledge of older GSs. The qualitative study results indicated that older Greek-Australian smokers had very low perceived benefits of quitting smoking and low perception of smoking health risks. They reported a high perception of barriers to quitting and most of these barriers were related to nicotine addiction. The HBM factor of perceived susceptibility also influences the practice of healthy behaviours. It has been shown that when respondents who value health highly feel their health is at risk, they will practise healthy behaviours (Chew et al., 2002). We found that most of the older Greek-Australian smokers had made at least one previous attempt to quit smoking, but because of their strong nicotine dependence they could not maintain cessation and would start smoking again. According to the HBM model, smokers need to be fully aware of the smoking-related health risks that threaten them as they are supported to quit. They need to be educated in the potential benefits of quitting smoking as well as the potential barriers of quitting smoking.

According to the HBM model, two different types of cues to action can lead smokers to change their behaviour: these are classified as internal and external cues. Internal cues are related to the symptoms of disease such as coughing or respiratory problems. External cues to action are more triggered by reports in the mass media or information

from their GP or from reading books or newspapers. These cues can help smokers to be ready to act (Baban and Craciun, 2007). Those study results showed that Greek smokers had a low rate of annual physician visiting and also they reported some barriers to accessing information from television that related to their cultural beliefs and language. The results of multivariate analysis showed that to increase smokers' knowledge it is important to consider their English skills as an important predictor and hence to develop their literacy in English (Figure 14). GSs who had a higher level of English and who spoke English very well had better knowledge than GSs who had weaker English verbal and writing skills. Due to the language barrier, migrants are usually unlikely to have effective communication with health care personnel. They are probably not able to access information or discuss it properly if it is distributed only in English (Jirojwong and MacLennan, 2003). Therefore, any intervention to increase smokers' knowledge needs to be tailored to their primary language. That study found that it is helpful to create services especially for particular ethnic groups, such as linking them with doctors from the same language and cultural background. This was also advised in another study of immigrant patients, where researchers suggested that Vietnamese-speaking family doctors and the Vietnamese community media had an important role to play in education and supporting patients in relation to HIV and STI prevention (O'Connor et al., 2009). Another study found that those who spoke a language other than English at home had a significantly lower knowledge score compared to English speakers (Grulich et al., 2003).

People who migrate to another country try to acculturate with the culture of their new country. Acculturation can help smokers to align with the smoking patterns of the dominant country population. A US study of Vietnamese women suggests that acculturation is associated with increased health awareness and knowledge (Jenny, 1998) while research has also demonstrated that participants with lower levels of acculturation are less likely to access appropriate health services (Stein et al., 1991, Meana et al., 2001, Graves et al., 2008).

It has been well documented in a study based on the HBM that an individual's perceived risk of a disease motivates behavioural change (Becker, 1974). As the results of our qualitative study showed, the perceived risks of smoking consumption was very low among GSs; hence, before they take action to reduce their health risk, they first need to notice and recognize the health risks associated with their behaviour. Increasing

their knowledge about the risks of smoking consumption can help them to change their perception about smoking risks. According to the HBM, smoking risk perception is a significant predictor of smoking-related behaviours. The effect of perceived risk on the smoking cessation behaviour of US smokers has been the subject of a longitudinal national study. The results of the study demonstrated that smokers who perceived smoking as a risk of severe disease were most likely to reduce the number of cigarettes smoked and to increase their number of quit attempts (Romer and Jamieson, 2001).

It is well documented that there is a difference between a majority population of a host country and minority groups in terms of health risks and health behaviours (Razum et al., 2004). Influential factors include living conditions, dietary habits, exercise, risk behaviour, as well as socioeconomic factors such as housing and employment status and hereditary characteristics; finally, the process of migration itself can induce considerable psychological stress (Anna et al., 2009). However, migrant and minority groups tend over time to adopt the behaviour of their own socioeconomic group in the host country (Anna et al.).

In our qualitative study heavy smoking in older GSs was associated with low perceived advantages of smoking cessation, high perceived barriers to quitting and low perceived disadvantages of smoking consumption. This group also encountered high social pressure to smoke (by being offered cigarettes by another smoker, family members and significant others), and exhibited low self-efficacy in their beliefs about their ability to quit. In one quantitative study, confirmed by others, nearly all the individual factors which affect smoking behaviour differ between Greek-Australian smokers and other groups (Nierkens et al., 2005). Lyna et al (2002) found that older smokers had low perception of smoking risks for lung cancer (Lyna et al., 2002). Keating et al., (2011), in a systematic review, found that COPD patients had little knowledge, a lack of social support, and low perceived benefit (Keating et al., 2011). However, another study found that older smokers had a higher intention to quit smoking than younger smokers (Clark et al., 1999) and Schofield et al, (2006) found that most older smokers did perceive smoking as a threat to health (Schofield et al., 2007).

The results of our qualitative study showed that all GSs had a favourable lifestyle in terms of taking exercise and eating healthy food. They denied experiencing any serious

symptoms of smoking-related disease so that could indicate that they have a low perception of health risk from smoking. One study reported that older adults in general and older smokers in particular are likely to experience more smoking-related symptoms than younger adults because "they have more health problems in general and multiple co-morbidities are associated with increasing age" (Clark et al., 1999). Compared with younger smokers, "older people are more likely to perceive the seriousness of the consequences of medical conditions" because these are likely to limit their activity and compromise their quality of life (Haber, 2013). They realize that if they contract a disease, their ageing "bodies will require a longer recovery period. In addition, older people are more susceptible to contracting a chronic disease simply by virtue of their longevity" (Chew et al., 2002). For example, In a national study among older adults, a higher percentage of smokers than former or non-smokers have reported the presence of smoking-related symptoms like frequent coughing, tiredness, or respiratory difficulties (Rimer et al., 1990). In contrast, another study in China found that only 36% of respondents believed "smoking can cause lung cancer and only 4% associated cigarettes with heart disease" (Averbach et al., 2002). Multiple perceived health-related symptoms should induce smokers to be in higher stages of readiness to quit than those experiencing fewer symptoms (Clark et al., 1999). However the results of this study showed an inverse result.

Another indicator that Greek-Australian smokers had lower perception of risks was that only 19.8% of them reported that they had made a GP visit in a 'less than one year' period. People who regard their disease as low-risk are less likely to visit their GP and the rate of physician adherence is also low (Sabatâe, 2003). The results of other studies among older people have shown that "older smokers who believe their symptoms are serious, or who express uncertainty regarding the potential seriousness of their symptoms, are more likely to engage in self-care responses or to seek out health services than are individuals who deny their symptoms are serious" (Leventhal et al., 1993, Stoller, 1993). Older smokers who suffer from health symptoms due to smoking try to deny or suppress awareness of their symptoms and consequently have a low perception of risk — this even applies to older smokers who have survived smoking-related diseases (Orleans et al., 1991, Rimer et al., 1990).

5.2.3 Attitude towards smoking and I-Model for GSs

Attitudes are evidently linked with an individual's knowledge (Straus et al., 2009, Francke et al., 2008, Michie et al., 2005) and it is well understand that a strong knowledge base will promote good attitudes and behaviours (Marsh-Tootle et al., 2010, Davis et al., 1999, Ilic and Rowe, 2013). Thus, if an intervention program encourages smokers to expand their knowledge, we can hope that their attitude towards smoking cessation will change and they will become motivated to quit smoking. Changing the attitudes of older Greek smokers in applying the I-Model depends on certain factors. First, beliefs about behaviour must be addressed and evaluated in order to change smokers' attitudes, according to the TRA (Bamberg et al., 2003, Montano and Kasprzyk, 2008). If smokers feel that changing their smoking habit has benefits for them and if they can develop a positive attitude towards quitting smoking, they will have a better chance to successfully quit. However, according to our multivariate regression analysis, three factors predicted older Greek smokers' attitudes towards smoking consumption. These were education, employment status, and readiness to quit. Older GA smokers who had higher levels of education in fact had more positive attitudes towards smoking consumption. This suggests that despite a higher education level, there is no guarantee that that education will relate to increased uptake of smoking-related health information. In fact, to change a behaviour, knowledge improvement alone is often insufficient, (Straus et al., 2009, Francke et al., 2008, Michie et al., 2005) Training programs thus need to focus on health information, information about the benefits of quitting and heightened risk of contracting diseases, even for more highly educated smokers. Older GA smokers were also found to have more positive attitudes to smoking consumption if they worked full-time. Older smokers who were still working, as opposed to those who had retired, had more trust and direct daily contact with colleagues, so possibly they might be influenced to continue smoking by peer smokers in the workplace. On the other hand, most of the older GSs thought smoking was a financial burden. Certainly, for those smokers in full-time employment cigarettes are relatively affordable but for those who have retired and are living on a more restricted income the financial burden of smoking is significant. The third attitudinal predictor is a measure of readiness to quit smoking, based on the 'stage of change' of the TTM model. Older GSs who were more prepared to quit smoking and who were in a higher stage of readiness to quit scored lower on positive

attitude towards smoking than those who were in the pre-contemplation or contemplation stages. Therefore older GSs need to be encouraged to shift to a high level of readiness to quit in order to move towards more negative attitudes towards smoking consumption (Landow, 2008).

Analysis of attitudes towards smoking, facilitated by our I-Model, revealed three elements; these were: anti-smoking sentiment, difficulty of quitting, and ineffective education (Figure 14). GSs displayed the highest anti-smoking sentiment, while in practice they believe that quitting smoking is extremely difficult and they also believe that behavioural education promote cessation is ineffective.

5.2.4 Intention to quit smoking and I-Model for GSs

Most older GSs were in the pre-contemplation or contemplation stages of readiness to quit smoking. This means that they were not even considering quitting in the next six months. According to the I-Model, to increase a smoker's intention to quit there needs to need be a change is some areas that influence intention. The TRA model highlights the importance of subjective norms and the role of significant others in the forming of intention. Our interview results indicated that older GSs, in particular, had a strong belief that their smoking is culturally accepted and that significant people in their lives condoned, if not encouraged, their smoking status. Changing this perception could therefore be an important factor to build into support for older smokers to quit. "Ethnic differences and similarities in terms of attitudes and beliefs about smoking need to be considered in the development of cessation and prevention programs" (Pérez-Stable et al., 1993).

Interestingly, our multivariate analysis indicates two factors that could be predictors of robust intention to quit smoking in Greek participants. These are: the longest episode of quitting in a previous attempt and the starting age of smoking (Figure 14). Regression analysis showed that older Greek-Australian smokers who had longer quit episodes in previous attempts were more likely to intend to quit in the future than those whose quitting episodes were shorter. Moreover, those who started smoking at an older age had stronger intention to quit than those who had started smoking at a younger age (less than 19). Of course, psychological issues or the effect of socio-environmental factors may have played a part in determining the age smokers began to smoke and the length

of time they have continued to smoke. Many of the older GSs had been born in Australia and started smoking in Australia, and so they might be more liable to follow the patterns of other Australian smokers. On the other hand, those who started smoking younger would be more addicted to nicotine; and so, because it is more difficult for them to quit, their intention to quit will be correspondingly weak. However, some older GSs started smoking in Greece and many are now suffering from some smoking-related disease; they may therefore be able to perceive the risks of smoking more clearly than younger smokers, leading them towards a higher intention to quit.

According to the I-Model, the probability of smoking cessation can be increased if participants strengthen their intention to quit. This point is underlined by the TRA. Ajzen (1985) noted that an individual's intention to perform a behaviour is determined by their attitude toward the behaviour, the subjective norm and perceived behaviour control (Ajzen, 1985). Our qualitative study has shown that for GSs perceiving the harms of smoking is strongly associated with intention to quit. However, in practice they did not score high on the perceived benefits of quitting or perceived risks of smoking. Therefore, while "smoking cessation interventions should reinforce both the immediate and long-term health dangers of smoking among smokers of all ages", older smokers need to receive a stronger message about the consequences of smoking and the benefits of quitting (Clark et al., 1999). Because smoking has such negative health effects in later life, health care professionals need to deliver support programs which are tailored for older smokers to empower and support them as they learn about how to protect their health in their later years. Such programs can enhance the motivation to quit and result in successful cessation (Doolan and Froelicher, 2008, Sachs-Ericsson et al., 2009).

5.2.5 Self-efficacy to quit smoking and I-Model for GSs

Another enabling factor that is critical to help smokers to quit smoking is self-efficacy, according to the TTM and SCT models. The results of both our qualitative and quantitative studies showed that most Greek smokers were not able or they didn't think that they were able to quit smoking; many of them mentioned that their own attitudes towards smoking hinder them from successfully quitting. The multivariate regression analysis also showed that for GSs their level of nicotine dependence is a predictor for increased self-efficacy (Figure 14). The odds of having low self-efficacy is higher

among GSs who had a higher nicotine dependence and it is therefore clear that they need to be supported to decrease their dependence on nicotine. Low self-efficacy was associated with length of time as a smoker; number of unsuccessful quit attempts and high dependence on nicotine. Any strategies that increase the confidence of older GSs to undertake preventive health behaviour or to increase self-efficacy are likely to be a positive influence on smoking cessation behaviour. Skills programs could also be provided to older smokers with low self-efficacy, designed to help them recognize and deal with the internal and external motivations that underlie their smoking behaviour (Jingyu, 2009). In this regard, the systematic review has highlighted that it is more effective to use a variety of intervention methods that consider many factors, including the level of nicotine dependence.

5.2.6 Smoking behaviour and I-Model for GSs

Our multiple regression analysis showed that the health status of older Greek smokers needs to be considered in any attempt to change behaviour. GSs who reported a poor health status had better odds to quit smoking than those who self-reported a good health status. Those who have already encountered health problems may have a higher perception of risks and vulnerability. So for this subgroup intervention should leverage their heightened perception of risks and their susceptibility to smoking-related disease. Greek smokers in general were not aware of the risks of smoking but if they experienced any symptom that could be related to smoking they became more likely to visit doctors to seek treatment.

The number of smokers in households has also been recognized as a predictor of smoking behaviour in Greek smokers. Thus, older GSs who had more smokers in their family were more likely to continue smoking. This shows that smoking cessation strategy should not just focus on individual smokers but should also consider the smoking status of other family members. The level of nicotine dependence was another predictor of smoking behaviour in Greek smokers. Smokers with high levels of nicotine dependence were more likely to continue smoking than those with lower levels of dependence.

Overall, our I-Model results suggest that intervention programs to change older GSs behaviours needs to focus on four factors: smoking-related knowledge, attitudes towards smoking consumption, intention and self-efficacy. Over and above these factors

is a consideration of the role of cultural beliefs. An intervention must be culturally appropriate to be effective.

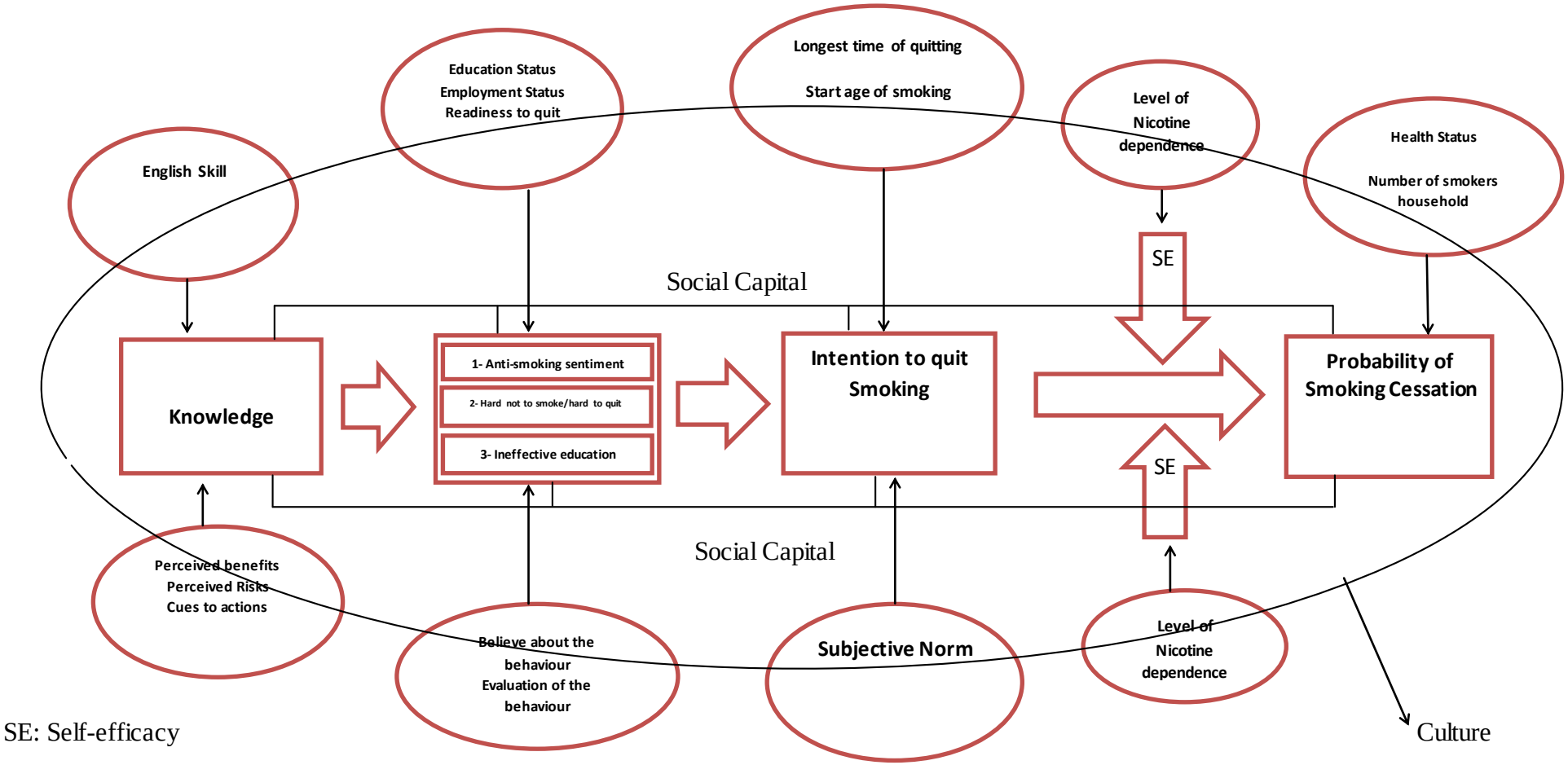

Figure 14: An Integrated Model of smoking cessation proposed for the study of Greek smokers

5.2.7 Social capital and I-Model for GSs

Social capital is produced as a measure of social participation. High social capital indicates a high level of trust in other people, in the institutions of society, in the collective value of networks and generalized reciprocity (Putnam et al., 1994, Putnam, 2001b). In relation to smoking behaviour, social capital has been identified as one of the psychosocial determinants (Helliwell and Putnam, 2004, Lindström, 2003). Studies have shown that the level of social capital in a group of people affects the likelihood of smoking consumption and smoking cessation (Kouvonen et al., 2008, Lindström et al., 2003). The level of social capital can be more important among minority group smokers and ethnic group smokers. In their new country they may change their level of social participation and trust and thus their social capital. The I-Model design for this thesis introduces the factor of social capital as a predictor of smoking-related behaviour of the participants. Social participation as a specific term in social science is related to the norms, rules, values and control of society (Baum et al., 2000). Our qualitative study measured social capital by documenting participants' engagement with people and organizations and also the extent of their trust in other people and institutions. Results showed that a combination of low social participation and low trust resulted in low social capital scores. An important point to note is that GSs displayed high social participation and trust towards their work colleagues and family members. On the other hand, their social capital expressed through engagement with people outside those narrow groups was limited. This finding is in contrast with the study by Lindstrom (2003) which found that "the social capital combination of low social participation with high trust is much more prevalent in older people". There are two reasons for this surprising result. First, some older people have lower social participation due to diseases or disabilities — issues that do not affect their level of trust. Second, it points to a more traditionalist, perhaps generational attitude of high trust towards both public institutions (institutional trust) and other people (generalized trust) (Lindström, 2003). The combination of low social participation with high trust is more evident in the Anglo-Australian population of older people but finding it with older Greek smokers could be due to a dearth of appropriate organizations or activities and also language barriers.

As our I-Model analysis has shown, level of social capital can affect GSs' smoking-related knowledge, attitudes towards smoking, intention to quit, and self-efficacy. Their low social capital can affect the quality of information they receive by engaging in wider society and sharing their knowledge with other people (Lindström et al., 2003, Inkpen and Tsang, 2005). When they have poor opportunities to engage with other people, they also have fewer chances to experience new attitudes towards their behaviours (Shaqrah et al., 2013, Kelly et al., 2010). Increasing social participation can give people a chance to increase their self-efficacy (Koçak et al., 2013, Raza et al., 2011). Older GSs are likely to be experiencing loneliness and also some psychological, age-related problems; these can reduce self-efficacy and thus the ability to quit smoking. High social capital can translate to a supportive environment that improves the wellbeing of individuals (Molcho et al., 2010).

5.2.8 Culture and I-Model for GSs

Culture is defined as 'the values, norms, beliefs, and practices that pertain to a society' (Lorenzo-Blanco and Cortina, 2012). An individual's culture is regarded as one of the most important elements in risk perception, and culturally-based information sources can assist learning about smoking and its health consequences (Kahan et al., 2007). One of way of learning about the negative consequences of smoking is through the sharing of direct or indirect personal experiences (Helweg-Larsen and Nielsen, 2009). Smokers' experiences can be interpreted differently in different cultures, so it is necessary to consider perceptions of smokers within their particular cultural context. Previous studies have shown that culture relates closely to perceptions of risk so providing health services within a cultural context may increase their effectiveness (Resnicow et al., 2000, Kreuter and McClure, 2004). One study of Bosnian migrants found that smokers who had migrated believed that, compared with other smokers, they were at low risk of contracting smoking-related diseases such as lung cancer or heart attack; they also believed that they had the same level of risk as non-smokers in terms of contracting lung cancer (Helweg-Larsen and Stancioff, 2008). Low perception of perceived risks can be due to lack of knowledge and it is therefore necessary to increase all smokers' knowledge about diseases (Oncken et al., 2005). According to models of health behaviour, changing a person's knowledge base will affect their motivation (Janz & Becker, 1984; Rogers & Mewborn, 1976). Thus, interventions that are based on a

person's risk perception, can engender positive motivation and finally increase the likelihood of remedial action (Rosenstock, 1974).

"An individual's level of formal education is likely to influence culturally-driven beliefs and attitudes, and more importantly, affect knowledge and access to information regarding the effects of smoking and reasons to quit" (Pérez-Stable et al., 1998). Our qualitative study revealed a statistically significant difference between the study groups in terms of education status. Twenty percent of GNSs, and six percent of the GSs had primary education compared with Anglo participants who had no primary education.
Greek smokers in Australia, as an ethnic group, also exhibit some behaviours which are affected by their culture in terms of smoking consumption and quit attempts. Two familial characteristics, in particular, emerged in this study; these are marital status and the desire to protect wider family and relatives from disease (for example, through the effects of passive smoking). The stabilizing effect of marriage and the quality of family relationships has been well documented in reference to the smoking status of men and women (Cho et al., 2008). Studies have also shown that becoming divorced or widowed is associated with increased risk of starting smoking or relapsing in women (Lee et al., 2005b). On the other hand, healthier people have a better chance of marrying and staying married, while less healthy people either do not marry or are more likely to become divorced or widowed (Cho et al., 2008). Our study results show that Greek smokers had a higher percentage of divorcés than the other three groups. Interpersonal conflict is an important driver for an individual to start or continue smoking. Peoples' motivation to get married, ability to maintain relationships over time, and how they try to solve conflict are all psychological factors that can be influenced by culture (Kwan et al., 2013, Ghaffarzadeh and Nazari, 2012, Markus, 2004). The role of interpersonal family conflict on smoking cessation has been shown in one study that contrasts with the present study. That study showed that in Latino culture, minimal interpersonal conflict was associated with the ability of Latinos to quit smoking (Triandis et al., 1984).

The second relevant cultural aspect in our study is related to the responsibility felt by participants to protect their family members' health status from the effects of passive (second-hand) smoking. Our results showed that the majority of GSs (31.2%) reported

that they made attempts to quit because of their concerns for family health. Smoking's harmful effects on children and other family members create a certain arousal of guilt in smokers. It has been suggested that the role of guilt may vary depending on culturally-determined conceptions of the self and also that guilt arousal has a strong and direct impact on behavioural intention (Kim and Shanahan, 2003). The nature of guilt feelings may differ according to cultural values (Markus and Kitayama, 1991), so we can expect that culture will be a moderator in relation to types of norms, guilt, and behavioural intention. Providing a culturally-modified norm message may stimulate guilt that then impacts on behavioural intention (Kim and Shanahan, 2003).

Lee and Peak (2014) studied 310 American and Korean smokers to evaluate their second-hand smoke (SHS) guilt arousal. The results of the study showed that guilt arousal had a strong and direct impact on participants' behavioural intention with regard to smoking. The results also showed that the level of guilt arousal and its impact on behavioural intention were significantly based on the culture; Korean smokers had a higher level of guilt arousal than US smokers (Lee and Paek, 2013).

The message from this is that public health media programs to promote smoking cessation should emphasize quitting for the sake of the family's health rather than just an individual's personal health. For example, an anti-smoking program focusing on family members' health has been implemented in San Francisco and there has also been a Californian media campaign against tobacco use directed towards Latino smokers who are sensitive about their relatives' health (Marín et al., 1990, Marín et al., 1994).

A discussion of cigarette smoking behaviour and beliefs in high risk ethnic groups is a critical step in the process of bringing cultural and ethnic considerations into tobacco cessation interventions (Baker, 2008). According to our I-Model we can assume that the possibility of adopting a healthy behaviour will be affected by cultural beliefs and perceptions. If we want to change smoking behaviour, we need to consider cultural beliefs and knowledge and to deliver culturally-based, tailored programs. A previous study also advocated culturally accepted programs. Webb et al (2010) in a study of African-American adults found that culturally-specific smoking messages produced higher levels of risk perception, more robust intentions to quit, and improved smoking-related knowledge (Webb et al., 2010). Similar results were noted in our systematic review, where a study showed that culturally tailored intervention was more effective in

achieving smoking behavioural change among NESB participants. Results also suggest that to increase program acceptance and to deliver clear and understandable content, a program needs to make cultural values evident in the outward appearance of the program and materials (Heo and Braun, 2013). The program needs to be delivered within a culturally relevant setting, using educators who are culturally sensitive and who can deliver an authentic message with credibility (Kreuter et al., 2003).

5.3 Implications of the study

The findings of this thesis have implications for smoking prevention. Our strong focus on the key psychosocial factors driving smoking behaviours among older Greek-Australian smokers provide some valuable insights for the design of more effective smoking cessation programs for this ethnic group and others.

Tailoring smoking prevention programs to minority groups is both an international and local challenge. Although some smoking control measures, like taxation or smoking legislation, can influence smoking cessation for all populations (Dinno and Glantz, 2009), other measures relating to the smoking status of migrant groups are likely to be of limited benefit if their messages are not based on ethnic culture and language (Elder et al., 2002, Glynn et al., 1990, Weber et al., 2011). Differences in the effectiveness of measures on smoking cessation can be interpreted according to the theory of segmented assimilation (Bosdriesz et al., 2013); this asserts that not all migrants' behaviours will be adapted to the host country standards — some of them will still be governed by the social mores of their country of origin (Arends-Tóth and van de Vijver, 2004).

This thesis has made a number of significant and original contributions to our knowledge of older people's smoking status. Our thesis provides a theoretical framework for designing and implementing an intervention study among older Greek smokers which incorporates many influential factors specific to this cohort. We know that they need to be made aware of the serious health consequences of smoking. We know that health promotion activities need to address certain aspects of behavioural change which have emerged from this thesis, including intention to quit, self-efficacy and the effect of social capital.

Current research has provided further insights into those age-related aspects most commonly reported in the literature as significant predictors of intention in relation to

health behaviours. Findings have also confirmed that older smokers' intentions regarding certain health behaviours are significant predictors of the health behaviours they actually practise.

Differences in knowledge and attitudes to cigarette smoking between Greeks and Anglo-Australians are independent of some factors which were clear from multiple regression analysis. We recommend that these ethnic differences be incorporated into smoking cessation interventions for older GAs. We recommend not only that effective anti-smoking training should be delivered in Greek but that it should go beyond that — it should utilize a wide selection of sources in Greek, such as newspapers, and reflect cultural attitudes, and aim to build the knowledge base of the target audience with regard to the health risks of smoking (Averbach et al., 2002).

We know from previous studies that "daily smoking is negatively associated with both social participation and trust". If smokers are involved with non-smoker groups, they are more likely to reduce smoking or quit altogether. One previous study used the influence of social networks and smoking cessation groups to decrease the high prevalence of daily smoking among smokers with low incomes and low education levels (Lindström, 2003). According to the results of our social capital analysis, increasing social participation through informal social activities, like a large family gathering, as well as more formal activities, such as attending church or Greek community groups, could work positively to promote smoking cessation among older Greek smokers. Health providers and policy makers could also use the findings of this thesis to design culturally appropriate interventions and support for older Greek smokers. This thesis also provides a base for studies of other minority groups.

Public health leaders, and health educators may benefit from the thesis findings, particularly the findings related to health promotion. Public health professionals could use the findings about attitudes, knowledge and beliefs to inform their interventions in areas with high proportions of these ethnic groups; for example churches, workplaces, Greek communities and so on (Anthony et al., 2012).

An Australian government report on tobacco control has found very few smoking prevention strategies targeted to culturally and linguistically diverse communities and that NESB people have very limited access to information and support, particularly in their local areas (Weber et al., 2011).

5.4 Strengths and limitations of the thesis

This thesis has significant strengths. To our knowledge, it is the first study conducted among older smokers and it targeted one of the biggest ethnic communities in Australia. It also provided a comparison of two ethnic groups to better understand the psychological factors that influence smoking consumption. The thesis also included within it three different types of research (a systematic review, a qualitative study and a quantitative study) and the data for each study provide robust internal confirmation of the overall study results (Cohen et al., 2011). For example, the broad systematic review of the literature helped to identify a knowledge gap; the in-depth interviews tested the feasibility of conducting peer-led intervention and found that it would be ineffective. Moreover, although our primary objective was to examine patterns and experiences of smoking among older Greek-Australian smokers, because we had three comparison groups (Greek-Australian non-smokers, Anglo smokers and Anglo non-smokers) we obtained a bank of valid and comparable data. The thesis had a large enough sample size in both its qualitative and quantitative phases (Bryman, 2012). The researcher used a bilingual translator at each stage as required. The participants' communication barrier was also considered and accommodated. For example, the researcher provided two versions of the questionnaire in English and Greek so that participants could choose one based on their preferred language. Our important findings were that smoking among older Greek-Australians is affected by multiple factors which are personal, socio-environmental, and cultural in nature, and all of which call for intensive support (Phillips, 2012). Finally, this thesis developed an integrated model which incorporated all known factors which are effective in smoking cessation and which might be useful in modifying older Greek-Australians' smoker behaviour. The model included elements of some prominent theories of health-related behavioural change.

This thesis had several limitations that should be pointed out. In the qualitative study, the data analysed by a single researcher. This issue can affect the confidence in validity of resulting coding, such as independent coders, consensus on codes, respondent verification. The quantitative study also had some limitations. First, causality cannot be inferred from this kind of cross-sectional study design (Houston et al., 2005b, Passey et al., 2012). "A longitudinal cohort study design may provide additional information regarding characteristic trends of smoking patterns and long-term changes in factors

affecting tobacco use" (Fletcher et al., 2012). Second, this research was based on a convenience sample, and so we were unable to assess the characteristics of non-respondents (Nagy et al., 2010, Meghea et al., 2012). On the other hand, the response rates were very low especially in Greek-Australian smoker group. These might affect the generalizability of our findings (Reed et al., 2010, Lechuga et al., 2011). Another limitation is that smoking status was measured by self-reporting and this fact may influence the reliability of this thesis (Bush et al., 2012). Social desirability response bias and memory dependence are known limitations of self-reported data (Pearson et al., 2013, Peretti-Watel et al., 2013). Some caution is therefore required in the interpretation of the data from this thesis. Finally, selection bias or response bias cannot entirely be ruled out (Vercambre and Gilbert, 2012). For example, some potential participants may be self-excluded because of language problems and hence we should hesitate to extend our results to the whole population of Greek migrants in Australia. The questionnaire was, however, available in Greek as well as English, so even Greek migrants with little knowledge of the English language could respond.

5.5 Recommendations for future research

Further improvement of the research measures relating to knowledge, attitude, intention, self-efficacy and behaviour toward smoking is needed to refine the quality of the questionnaire. Although the researcher conducted a pilot study to increase the validity of the questionnaire, we would recommend the use of a more culturally valid and reliable questionnaire in any future research. The results of the current thesis point to the need for expanded research on the characteristics of this ethnic group. Additional studies could further investigate the effectiveness of smoking cessation intervention and counselling among older Greek smokers.

A more rigorous study design could help to explore the effectiveness of smoking cessation training and a randomized controlled trial could be planned to achieve that. To increase the effectiveness of the RCT model, incorporating the results of the systematic review presented in this thesis should be helpful.

More creative awareness and education strategies need to be explored and tried. These include: using pharmacotherapy methods; providing behavioural supports; encouraging doctors to be proactive in the dissemination of educational messages relating to

smoking and cessation; finding ways to work with people who have low social capital; and including appropriate cultural beliefs in smoking cessation messages. Because older Greek-Australian smokers have limited exposure to public sources of information on health services related to smoking cessation, using more tailored methods, like television advertising, to target Greek people in their own language would be useful.

These findings are important to health care professionals at all levels. It is important for both practitioners and policy makers to understand that smoking behaviour in older Greek-Australians is affected by many factors as outlined in the discussion chapter. Smoking cessation strategies for this ethnic group should consider changing their perceptions of what is socially acceptable behaviour.

We also recommend conducting another study based on the integrated model that was developed for this thesis to further test the feasibility and effectiveness of the model with the same target group of older Greek-Australian smokers. In particular, an analysis of social capital and how it could be increased through family support or work-based intervention might be an effective use of the model with older GSs; for Anglo-Australian smokers, a peer-led intervention would perhaps be a suitable study and could also be based on the model.

Finally, conducting a further cross-sectional study to explore other factors which potentially might help Greek smokers might be helpful. Variables could include GP views about older smokers or smokers' opinions regarding pharmacotherapy methods of smoking cessation.

5.6 Conclusions

This investigation explored the perceptions and practices of smoking among a group of 20 Greek-Australian older smokers. We identified and examined factors that may influence their smoking-related behaviour, such as knowledge, attitude, intention, and self-efficacy. This thesis provided a unique window into the challenge of smoking control for older Greek-Australian smokers. It combined three different types of study: a systematic review, a qualitative study and a quantitative study. The systematic review retrieved all relevant published articles which were designed as RCTs, were quasi experimental, and which met the inclusion and exclusion criteria. Altogether, 117

articles (88 RCTs and 29 QRCTs) were analysed and the effectiveness of different behavioural intervention methods on smoking cessation in three groups was assessed. The three groups included all participants, people aged 50 and over, and people of non-English speaking backgrounds (NESB). Significant differences in smoking cessation were indicated in 85 of the articles while 32 articles had statistically insignificant results. Most of the articles confirmed that using a behavioural intervention method to support smokers to quit smoking was effective and that implementing different intervention methods with different age groups also gave positive results.

Behavioural intervention methods trialed with various NESB groups have been effective in reducing cigarette consumption or motivating cessation of smoking. Most of the studies (87.5%) improved rates of smoking cessation among NESB adults significantly. (Effective behavioural interventions were defined as those that increase cessation rates by 6% to 72% compared with no intervention.) Tailored materials and group interventions were found to improve smoking cessation rates the most, 72% and 53%, respectively. Most studies (72%) stressed that culturally targeted intervention could be the most effective method to promote smoking cessation among NESB groups. Nearly half of the behavioural intervention methods were effective in inducing smoking cessation with older people. Intensive types of behavioural intervention methods were more effective in smokers aged 50 and over. Studies also highlighted a paucity of research on behavioural smoking intervention methods among older smokers and suggested for this subgroup implementing behavioural intervention only would be relatively ineffective. Factors which were effective and which predicted smoking cessation among older Greek-Australian smokers became clear in our analysis of the systematic review. Among these factors, improved knowledge, intention, self-efficacy, and readiness were the most significant.

The systematic review exposed a knowledge gap that led to our decision to explore the feasibility of a peer-led intervention among older smokers. To do this we designed a qualitative study using an in-depth interview tool with a target group of 20 Greek-Australian older smokers. The smoking experiences these respondents shared led to the emergence of four themes. These included: knowledge or perception of smoking and its effects on health; reasons for smoking; barriers to cessation; and identifying potential

facilitators for cessation support. The commonest response related to the participants' knowledge or perceptions was that for most of them smoking is habitual. Most also believed and asserted that smoking helped them to relax. Smoking was also seen as related to heritage (the effect of cultural perception). We identified both barriers and motivating factors influencing successful cessation. Most of the barriers were conceptual or attitudinal. Many respondents had tried to stop smoking but had found it very difficult. Most believed that it was too late for them to quit smoking at their age and they reported a low confidence in their ability to stop smoking. The role played by family members in causing them to relapse after smoking cessation was highlighted (the socio-environmental effect). The most frequent responses concerning guidelines/potential facilitators for cessation suggested that Greek community members, friends, family members and doctors are all potential facilitators that could support smokers to quit smoking. In contrast to younger smokers, older GAs expressed a tendency to trust their family more than doctors or friends as supporters in attempts to quit.

Our thesis results led us to conclude that conducting a peer-led interventional study is not the best approach for Greek older smokers. On the whole, they did not believe that only behavioural support could help them to quit smoking. We also established that most participants were in the 'precontemplation' or 'contemplation' stages of readiness to quit smoking so this comparatively low level of readiness needs to be addressed as part of any intervention.

To establish the predictors of participants' knowledge, attitude, intention, self-efficacy, and behaviour we performed multivariate analysis in a quantitative study. We found different predictors for each independent variable. These predictors helped us to design an Integrated Model to apply to our Greek smoker participants. The quantitative study examined all the hypotheses which were raised in the qualitative study by comparing the four subgroups: Greek-Australian smokers (GSs), Greek-Australian non-smokers (GNSs), Anglo-Australian smokers (ASs), and Anglo-Australian non-smokers (ANSs). The main objective of this particular study was to compare the four subgroups in terms of smoking-related knowledge and attitudes and also to identify any difference between the two groups of smokers regarding intention to quit and self-efficacy to quit smoking. Results showed that GSs had significantly less knowledge about the health risks of

smoking and the benefits of smoking cessation; their attitude towards smoking was also more positive compared with the other three subgroups. Older GSs also had the lowest intention to quit smoking, the lowest self-efficacy to quit smoking and the highest positive attitude towards smoking consumption.

Factor analysis of attitude demonstrated three significant themes: anti-smoking sentiment, perceived difficulty of quitting, and belief that education programs would be ineffective. Although GSs had the highest score for anti-smoking sentiment, in practice they believe that it is extremely difficult for them to quit smoking and, compared with the other three sub-groups, they remain unconvinced about the effectiveness of education programs.

The quantitative study results highlight the importance of social capital as a key influence on smoking. Ethnicity and social capital are known to be interrelated predictors in studies of smoking behaviours. For example, older GSs had low levels of social participation and trust, which in turn reduced their score for social capital. On the other hand, Greek participants reported higher trust and more contact with family members than Anglo participants. They had more direct contact and trust with colleagues. These findings have direct implications for smoking prevention strategies (Putnam et al., 1994, Lindström, 2003).

Many studies have suggested the use of both pharmacotherapeutic and behavioural interventions to achieve better results and our results have confirmed the value of that approach for older Greek-Australian smokers. An intensive anti-smoking intervention is needed which considers all the potential factors which are related to this particular ethnic group and which integrates educational programs, pharmacotherapy and behavioural support to increase the motivation and ability of the individual to maintain smoking cessation. Such intervention should recognize Greek smokers' subjective norms and the critical support role that can be played by family members.. At the community level, a multi-level, comprehensive, culturally sensitive education campaign might be effective. This could include tailored educational materials and be a harmonious expression of cultural identity (Mukherjea et al., 2012).

In general, this study showed that the psychosocial determinants of smoking may vary substantially between ethnic groups and for different age groups; it also found that a

wide variety of smoking cessation intervention approaches and policies must be tried if we are to have a positive impact on smoking cessation rates.

Appendices

Appendix A: Check list for review of articles

Item	Summary
Article General Information	
Author	
Title	
Year	
Kind of Study	
Country	
Participant's characteristics	
Number of participants	Intervention group: Control group:
Target group	
Mean of age	
Location of the study	
Intervention Evaluation	
Type of intervention	Intervention group: Control group:
Follow up	
Cessation verification	
Nicotine dependence test	
Educator	
Statistical test	
Results	
Effectiveness	After the intervention: Other follow up:
Overview/Comments	
Limitation of the study	
Comments	

Appendix B: Data Extract Sheet

1.1.5 B1: Participants less than 50 years old

Num.	Study Information	Participants' characteristic	Intervention	Results
1	The effectsof a multiple treatment…(Powell and McCann, 1981) **Year:**1981 **Kind of study:** RCT **Country:** USA	**Number of participants:** **Support group (*IG1):** 17 smokers **Telephone contact group (IG2):** 17 smokers **No contact group (*CG):** 17 smokers **Participants:** Volunteer smokers **Mean age:**36 years **Setting:** Community survey	**IG1:** 4 week support group which was meeting in order to discussing and thought. **IG2:** 4 weeks telephone contact system for groups to call one another. **CG:** Without intervention In phase one an intensive program was provided for the participants and also they received an introductory booklet and incentive. **Follow up:** end of the intervention, 2, 4, 6, and 12 months **Cessation verification method:** Self-report smoking cessation **Nicotine dependence test:** Not mentioned **Educator:** Trained counsellor **Statistical analysis:** Logistic regression analysis	All subjects were abstinence at the end of treatment. After 2 months 88% (IG1), 76% (IG2) and 88% (CG). Were abstinent. After 6 months 76%, 65% AND 88% respectively were abstinent. At 12 months after the treatment 56%, 59% and 65% were abstinent respectively. There were no significant differences between three groups in smoking cessation. **Comments:** Maybe the intervention in phase one leaded these results.
2	The impact of routine advice on smoking…(Stewart and Rosser, 1982) **Year:** 1982 **Study design:** RCT **Country:** Canada	**Number of participants:** **Intervention group 1:** 345 smokers **Intervention group 2:**159 smokers **Control group:**187 smokers **Participants:** Adult smokers **Mean age:** Not mentioned **Setting:** Hospital	**IG1 (Questionnaire and advice group):** This group received a questionnaire and advice in one time. **IG2 (Questionnaire, advice and pamphlet group):** They received only questionnaire, advice in every visit and a pamphlet. CG (Only questionnaire group): received only questionnaire without any advice. **Follow up:** 5 and 12 months **Cessation verification:** Self-reported cessation **Nicotine dependence**: Not mentioned **Educator:** Physician and Nurse **Statistical analysis:** Multivariate analysis	Among three groups, there was not a significant differences ($P<0.05$) in the outcomes. The results of both IG who attempted to stop smoking and successfully stopped were not significantly different from CG. The proportion of quitter at the end of 5 and the 12 months follow-up period was nearly similar for all the groups. Only 3% to 4% of the participants had stopped smoking at the end of both follow-up periods, considerably less than the 10% to 15% who had stopped at only one of those times. **Comments:** Brief intervention by physician can help smokers to quit smoking.
3	Self-change and therapy change of…(DiCLEMENTE and PROCHASKA, 1982) **Year:** 1982 **Study design:** Quasi RCT **Country**: USA	**Number of participants:** **Intervention group 1:**18 smokers **Intervention group 2:**16 smokers **Control group:**29 smokers **Participants:** volunteers smokers **Mean age:** 35 years **Setting:** Community survey	**IG1 (Aversion group)**: One-hour individual sessions were implemented. Follow-up session covered smoking and other topics. **IG2 (Behavior management group):** This program was implemented based on educational and behavioral techniques. **CG (Self- quitter group):** They had not attended in a smoking-cessation program. **Follow up:** 5 months after their quitting **Cessation verification:** Self-reported cessation **Nicotine dependence:** Not mentioned	At 5 months two-thirds of all smokers remained abstainers. The proportion of successes and recidivists significant in all groups. **Comments:** More intensive intervention is more effective in quitting smoking.

			Educator: Psychologist **Statistical analysis**: Multivariate analysis	
4	Spouse training in a multi-component smoking… **(McIntyre-Kingsolver et al., 1986)** **Year:**1986 **Kind of study:** RCT **Country:** USA	**Number of participants:** **Intervention group:** 33 smokers **Control group:** 31 smokers **Participants:** Adult smokers (Partner smoker) **Mean age:**49 years **Setting:** Community survey	**IG:** Spouse training: small group for 6 weeks, each week two hour sessions based on cognitive behavioural principles. **CG:** Only standard group: small group without spouse intervention **Follow up:** end of experiment and 1, 2, 3, 6 and 12 months **Cessation verification method:** Self-reported smoking cessation and Exhaled CO level. **Nicotine dependence test:** Not mentioned **Educator:** Trained spouse **Statistical analysis:** Multivariate analysis	At the end of the intervention the cessation rate was 72.7% in IG and 48.4% in CG. At 3 months after the intervention 42.4%and 35.5% respectively. At 6 months 27.3% and 19.4%. Overall 23.4% at 6 months and 34.4 at one year. There was not any significant difference in smoking cessation between two groups because of the spouse training effect. **Comments:** The spouse training was not more effective in the smoking cessation.
5	Evaluation of a Minimal-Contact Smoking…(Janz et al., 1987) **Year:** 1987 **Study design:** Quasi RCT **Country:** USA	**Number of participants:** **Intervention group 1:**69 smokers **Intervention group 2:** 75 smokers **Control group:** 106 smokers **Participants:** Patient smokers **Mean age:** 47 years **Setting:** Hospital	**IG1 (Health care provider intervention):they** received an anti smoking message from the physician followed by a brief consultation from a nurse **IG2 (health care provider intervention plus self help manual group):** like IG1 along with a self help booklet about quit smoking **CG:** received only usual care **Follow up:** 1 and 6 months **Cessation verification:** Self reported cessation **Nicotine dependence:** Not mentioned **Educator:** physicians and nurse **Statistical analysis:** Multivariate analysis and logistic regression model	In 1 month follow up quit attempts were higher in both IG than in CG. In 6 months also more IG than CG made a cessation attempt. There was a 3 per cent in quit attempts achieved by IG2 over the IG1. Smokers in IG2 were more likely to have quit smoking than IG1 and CG. **Comments:** More intensive smoking cessation intervention is more effective.
6	District program to reduce smoking …(Russell et al., 1987) **Year:** 1987 **Study design**: RCT **Country:** UK	**Number of participants:** **Intervention group 1:**396 smokers **Intervention group 2:**729 smokers **Control group:**3320 smokers **Participants:** Adult smokers **Mean age:** 41 years **Setting:** Health practices	**IG1 (Brief intervention with clinic support group):**They received anti-smoking advice, a leaflet about smoking cessation, nicotine chewing gum and clinic physicians' support. **IG2 (Brief intervention without clinic support):**They received all supports for group 2 without clinic supports **CG (Usual care group):**They received active advice and help to stop smoking **Follow up:** 12 months **Cessation verification:** Self-reported cessation and Saliva cotinine analysis **Nicotine dependence:** Not mentioned **Statistical analysis:** logistic linear model	After one year, the numbers of smoking abstinent were 9% in IG1, 8% in IG2 and 13% in CG, respectively ($p<0.005$). After an adjustment was made for smokers who not validated by Saliva test cessation rates were, 5%, and 5% and 8% respectively. **Comments:** Brief intervention by more support can be high effective than without support.
7	A Randomized Trial of a Family Physician…(Wilson et al., 1988) **Year:** 1988 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group 1:** 726 smokers **Intervention group 2:**605 smokers **Control group:**601 smokers **Participants:** Patient smokers **Mean age:** 45 years **Setting:** General practice	**IG1 (The gum only group):** Smokers were offered nicotine gum as an aid to quitting. **Intervention group 2 (The gum plus and group):** Smokers received anti-smoking advice, the offer of nicotine gum and four follow up visits. At follow up, smokers received group intervention which consisted of challenging smokers to quit, negotiation about agreement of having a quit date, prescribing nicotine gum appropriately, and offering supportive follow-up visits. **CG:** smoking patients received usual care. **Follow up:** 12 months	At one-year follow up, 8.8% of the patients in IG2 had stopped smoking for at least three months compared with 4.4% and 6.1% of the patients in IG1 and CG, respectively. **Comments:** More intensive intervention is effective to quit smoking in patient smokers.

			Cessation verification: Self report and Salivary cotinine test **Nicotine dependence:** Not mentioned **Statistical analysis:** Multivariate analysis	
8	Randomized controlled trial of anti-smoking …(Sanders et al., 1989) **Year:** 1989 **Study design:** RCT **Country:** UK	**Number of participants:** **Intervention group**: A:751, and B: 367 smokers **Control group:**642 smokers **Participants:** Patient smoker **Mean age:** 36 years **Setting:** General practices	**IG:** Trained nurse arranged an appointment with smokers. A: 375 patients received only advice and 376 persons received advice plus exhaled CO test. B: 367 : non-attenders All participants in IG received anti smoking advice and discussion, written advice (booklet), and offer for follow up appointment. **CG:** They received some advice by physician in the routine consultation. **Follow up:** 1 month and 12 months **Cessation verification:** Self-reported cessation, Exhaled CO level, and Saliva cotinine concentration **Nicotine dependence:** Not mentioned **Educator:** Trained nurse **Statistical analysis:** Multivariate analysis	The cessation rate was not significant between IG and CG at one month and 12 months At one month there was a significant difference in self-reported smoking cessation between IGA and IGB ($P<0.05$), but it was not significant at one year. Self-reported cessation rate was higher in all groups at one year than at one month. At both follow up times the number of smokers reporting nonsmoking, and the number of smokers who stayed sustained cessation for one year, IG performed significantly better than CG ($P<0.01$). Sustained cessation rate in IGB (3.3%) was intermediate to the rate in CG (0.9%) and IGA (4.7%) ($P<0.001$). **Comments:** Nurse delivered intervention is effective to quit smoking.
9	A Randomized Evaluation of Smoking Cessation …(Mayer et al., 1990) **Year:** 1995 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group 1:**72 smokers **Intervention group 2:**70 smokers **Control group:** 77 smokers **Participants:** Pregnant women **Mean age:** 23 years **Setting:** Health clinic	**IG1 (Multiple component group):** They received an individual counseling cessation, self-help manual, and self-monitoring chart. **IG2 (Risk information group):** They received a 10 minutes direct session, a "flip chart" as the IG1, and provided the factual brochures. **CG (Usual care group):** They received printed anti-smoking information. **Follow up:** last month of pregnancy and postpartum **Cessation verification:** Self-reported cessation and Saliva Cotinine sample **Nicotine dependence:** Not mentioned **Educator**: Trained educator **Statistical analysis:** multivariate analysis	At last month of pregnancy follow up, smokers in IG1 reported a larger quit rate than CG (11% vs 3 %) and postpartum (7% vs 0%). **Comments:** Brief smoking cessation for pregnant smokers is effective in quit smoking.
10	Pregnancy and Medical Cost Outcomes of a Self-Help …(Ershoff et al., 1990) **Year:** 1990 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group:** 165 smokers **Control group:** 158 smokers **Participants:** Pregnant smokers **Mean age:** 27 years **Setting:** Health centers	**IG:** They received an anti-smoking pamphlet and direct advice by health educator. They were involved in a series of cessation program adopted for pregnant smokers. They also received a booklet. **CG:** received an anti-smoking pamphlet. **Follow up:** during prenatal period **Cessation verification:** Not mentioned **Nicotine dependence:** Not mentioned **Educator:** Trained health educator **Statistical analysis:** Multivariate analysis	Cessation rate was significantly higher in IG than CG (22.2% and 8.6% respectively). **Comments:** Self-help smoking cessation intervention is effective to quit smoking in pregnant smokers
11	The effectiveness of two smoking cessation …(Slama et al., 1990) **Year:** 1990 **Study design:** RCT **Country:** Australia	**Number of participants:** **Intervention group 1:**104 smokers **Intervention group:** 101 smokers **Control group:**106 smokers **Participants:** Patient smokers **Mean age:** Not mentioned **Setting:** General practice	**IG1 (Simple advice group):**They received a brief advice and three anti-smoking pamphlets. **IG2 (Structured behavioral group):** They received strategies Which were included smoking related attitude and behavioural programs and techniques to aid compliance **CG:** Without intervention **Follow up:** 1, 6 and 12 months	At one month follow up 57% of IG2 mentioned that they had tried to stop smoking. A significant difference in self-reported cessation rates was found between the three groups at the one month but not at subsequent follow ups. There was a significant biochemically validated smoking cessation rate difference at one month between CG and IG2 but not between CG and IG1.

			Cessation verification: self-reported cessation and Salivary cotinine concentrations. **Nicotine dependence:** Not mentioned **Educator:** Trained general practitioner **Statistical analysis:** Multivariate analysis	Differences between consecutively abstinent smokers' cessation rate in CG and IG1 for both the self-reported and validated measures did not reach significance. **Comments:** More intensive intervention is more effective in smoking cessation.
12	Nurse-Assisted Smoking Counseling in …(Hollis et al., 1991) **Year:** 1991 **Study design:** RCT **Country:** Oregon	**Number of participants:** **Advice only group:** 710 smokers **Self quit group:** 679 smokers **Group recruitment group:** 677 smokers **Combination group:** 641 smokers **Participants:** Patient smokers **Mean age:** 40 years **Setting:** Primary care	**Advice only group:** They received physician' advice message and a brief pamphlet. **Self quit subjects:** Their informed about CO level by nurse. They watch a video program then received a stop-smoking kit, a stop-smoking telephone hotline, and a 90-min anti smoking session were provided for them. **Group-recruitment subjects**: they received nurse' advice, the CO assessment, and a video. They also received an intensive two months group stop-smoking program, a brochure, a schedule of group sessions, and a time-limited coupon to waive the program fee. **Combination subjects:** They also received nurse' advice, the CO assessment, and a video program. Tip sheets and the bimonthly newsletters were mailed to all combination subjects. **Follow up:** 2 and 3 months after their initial visit **Cessation verification:** Not mentioned **Nicotine dependence:** Not mentioned **Educator:** trained nurse **Statistical analysis:** Logistic regression model	After 3 months, a serious quit attempt was happened among subjects in the three nurse-assisted conditions (50% vs 39%, $P < 0.001$) than physician-advice-only subjects. Abstinence rates were also higher ($P < 0.001$) at three months in the nurse-assisted self-quit (12.9%) recruitment (14.1%), and combination (13.0%) conditions, compared with those for brief physician advice only (7.6%). Smokers with high intention to quit prior to intervention were almost three times as likely as precontemplators to be abstinent 3 months later. **Comments:** Nurse assisted counseling can increase smoking cessation in medical care delivering setting.
13	Smoking Cessation in Women Concerned …(Pirie et al., 1992) **Year:** 1992 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group 1:**103 smokers **Intervention group 2:**108 smokers **Intervention group 3:**108 smokers **Intervention group 4:** 98 smokers **Target group:** Women smokers **Mean age:** 43 years **Setting:** Health clinic	**IG1 (Freedom From Smoking (FFS) clinic program group)**: 8 They received 8 weeks advice about cognitive behavioral. **IG2(FFS plus the behavioral weight control program group)**: They received like FFS and also recommendation include decreasing caloric intake and gradually increasing exercise. **IG3 (FFS plus nicotine gum group)**: They received nicotine chewing gum. **IG4 (FFS plus both the behavioral weight control program and nicotine gum group):** They received all of intervention mentioned above together. **Follow up:** 6 and 12 months **Cessation verification:** Self-reported cessation, Exhaled CO level, and Saliva cotinine test **Nicotine dependence:** Not mentioned **Cessation verification:** by carbon monoxide and Saliva for measuring thiocyanate and cotinine **Statistical analysis**: Multivariate analysis	There was a significant difference between groups in abstinence rate at each follow-up point. IG3 showed the highest point prevalence and continuous cessation rates at each follow-up point, while IG1 reported the lowest smoking cessation rate at each follow-up point. Among smokers who quit successfully, smoking relapse by the 6-month follow-up was 51.2% if they gained more than 5 lb, while it was 39.9% if they gained 5 lb or less at the same time. The results in 12-month follow-up were 19.4% and 13.2% respectively. **Comments:** Smoking cessation by advising smokers to control weight is not effective.
14	Brief supportive telephone outreach as a…(Lando et al., 1992) **Year:**1992 **Kind of study:** RCT **Country:** USA	**Number of participants:** **Intervention group:** 4655 smokers **Control group:** 2122 markers **Participants:** Volunteer smokers **Mean age:**47 years **Setting:** Community survey	**IG:** Brief supportive telephone and self-help materials **CG:** Without intervention **Follow up:**6 and 18 months **Cessation verification method:** Self-report smoking **cessation** and Salivary Cotinine concentration **Nicotine dependence test:** Not mentioned	At 6 months a significant overall effect was found between two groups ($p<0.05$). At 6 months a verified smoking cessation rate was 4.5% in IG and .1% in CG ($p<0.01$). While at the same time a self-reported smoking cessation rate was 8.5 vs 5% respectively. No cessation rate difference was found after 18 months between

			Educator: Trained researchers **Statistical analysis:** Multivariate analysis	two groups. **Comments:** Brief telephone support can be encouraged to support smokers to quit smoking.
15	Health Education for Pregnant Smokers …(Windsor et al., 1993) **Year:** 1993 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group:**400 smokers **Control group:**414 smokers **Participants:** Pregnant smokers **Mean age:** 25 years **Setting:** Health clinics	**IG:** they received 3 components: first of all, during the first visit, they received a 15 minutes skills and risks cessation counseling. Second of all, a medical chart reminder within 7 days. Finally they received a social support methods (in the form of a buddy letter, a buddy contract, and a buddy tip Sheet). **CG:** They received only 2 pamphlets about general anti-smoking information. **Follow up:** 4-8 weeks after the first visit and 32nd week of gestation **Cessation verification:** self-reported cessation and Saliva cotinine test **Educator:** Trained female health counselor **Statistical analysis:** Multivariate analysis	Smoking cessation rates was 14.3% in IG and 8.5% in CG. **Comments:** Health education for pregnant smokers is effective to quit smoking.
16	A Randomized Trial of Self-Help Materials…(Curry, 1995) **Year:** 1995 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group 1:** 330 smokers **Intervention group 2:** 329 smokers **Intervention group 3:**150 smokers **Control group:**328 smokers **Participants:** Non volunteer smokers **Mean age:** 42 years **Setting:** Community based survey	**IG1 (Self help booklet alone):** received a self help booklet only **IG2 (Self help booklet with personalized feedback):** received the self help booklet along with computer generated personalized feedback. **IG3 (Self help booklet and personalized feedback plus telephone counseling):** received the self help manual, personalized feedback and up to three counselor initiated telephone calls. **CG:** received no intervention materials **Follow up:** 3, 12 and 21 months **Cessation verification:** Self reported cessation and Silvia sample **Nicotine dependence:** Fagerstrom test **Educator:** Trained counseling **Statistical analysis:** Logistic regression analysis	At 3 months, a significantly higher cessation rate in IG3 was reported for at least 7 days. Over time prevalent abstinence rates increased about 50% between 3 and 12 months and it was 33% increase between 12 and 21 months. At 3,12, and 21 months smokers at more advanced stages were more likely to be abstinent. The highest success rates were reported in smokers who were in the preparation stage of IG3. At 3-month follow-up abstinence rates was higher (9%) among smokers in IG3who were precontemplators at baseline (2% to 3% in the other groups). **Comments:** More intensive smoking cessation intervention is more effective.
17	Social support for smoking cessation…(Murray et al., 1995) **Year:**1995 **Kind of study:** RCT **Country:** USA	**Number of participants:** **Intervention and control group:** overall 3923 smokers **Participants:** Male and female smokers with COPD. **Mean age:**38.5 years **Setting:**10 health clinic centres	**Intervention group (Biobehavioural intervention group or social support group):** They received a self-management program and 12 session with a support person. The program combined general behavioural and social learning principles. There was an individual counselling. **Control group:** with no smoking supporter. **Follow up:** at the end of the study, after four months and one year. **Cessation verification method:** Self report smoking cessation and Exhaled CO level. **Nicotine dependence test:** Not mentioned **Educator: Trained physician** **Statistical analysis:** Multivariate analysis	At four months there was a significant relation between the presence of a support person at the cessation program and smoking status for male (64.4% with support and 58.8% without support, $p<0.05$) but not for female (53.4% vs 42.8%, $p>0.05$). Participants in IG were very likely to be not a smoker after one year (men 74.7% and women 72.4%, $p<0.05$). **Comments:** Support involvement is more useful for male than female to quit smoking.
18	Telephone Counseling for Smoking Cessation:…(Zhu et al., 1996) **Year:** 1996	**Number of participants:** **Intervention group 1:** 841 smokers **Intervention group 2:** 1143 smokers **Intervention group 3:** 1046 smokers	**IG 1 (self help group):** received a self help quit kit on how to quit smoking **IG 2 (the single counseling group):** received the same self help material plus a 50 min pre quit session of counseling	Quit rate for at least 12 months were 5.4% in IG1, 7.5% in IG2, and 9.9% in IG3. Participants in IG2 and IG3 showed a higher abstinence rates than IG1. Participants in IG3 achieved greater abstinence rates than IG2. Participants in IG2 and IG3 made a quit

	Study design: RCT **Country:** USA	**Participants:** volunteer smokers **Mean age:** 36 years **Setting:** The university of California	**IG 3 (the multiple counseling group):** received the same self help material plus the pre quit counseling session and five follow up sessions. **Follow up:** 12 months but evaluation interview at 1 week, 1, 3, 6and 12 months. **Cessation verification:** Saliva cotinine level **Nicotine dependence:** Not mentioned **Educator:** trained psychologist **Statistical analysis:** Multivariate analysis	attempt higher than CG within the first 3 months. Participants in IG2 and IG3 had lower relapse after their most recent quit attempts in the first 3 months. Adjusted 12-month abstinence rates was higher in IG2 and IG3 than IG1. **Comments:** More intensive intervention is more effective in smoking cessation.
19	Effectiveness of a consultation intervention to …(Lichtenstein et al., 1996c) **Year:** 1996 **Study design:** Quasi RCT **Country:** India	**Number of participants:** **Intervention group:** 1525 from 20 tribes **Participants:** Smokers in similar tribes **Mean age:** Not mentioned **Setting:** Community survey **Mean age:** Not mentioned	**IG:** They received tobacco use policy. The intervention included a direct visit to tribe, and telephone call. The intervention also comprised distribution of tobacco policy workbooks and phone call consultation. The policies in three tribes were assessed at baseline: Time 1: 1991, Time 2: 1993 and Time 3 1994 and statistically analysis concentrated on changes from Time 2 to Time 3 to show the impact of the intervention conducted during that interval. **Follow up:** 2 years **Cessation verification:** Self-reported cessation **Nicotine dependence:** Not mentioned **Educator:** Trained health educator **Statistical analysis:** Multivariate analysis	There were significant before and after intervention changes in the primary outcome measure, a composite summary score of tobacco policy stringency. There was a change in enacted policies. **Comments:** The results of the intervention showed that it was succeed intervention in specific population in India.
20	A randomized controlled trial of a… (West et al., 1998) **Year:**1998 **Kind of study:** RCT **Country:** UK	**Number of participants:** **Intervention and control group:** in overall 172 smokers **Participants:** Adult smokers **Mean age:**44 years **Setting:** General practice clinic in London	**Intervention group (social support group or buddy group):** paired with another smoker as a mutual support and 10 minutes speaking and 4 counselling with a nurse. **Control group:** without any social support or paired person **Follow up:** one months after the quit date **Cessation verification method:** Self report smoking cessation and Exhaled CO level. **Nicotine dependence test:** Fagerstrom test **Educator:** trained nurse **Statistical analysis:** Multivariate analysis	At the end of treatment there was a significant difference in quit rates between two groups (27% in IG vs 12% in CG, $p<0.01$). OR after one month was 2.5 times in IG than CG $p<0.05$). **Comments:** A buddy support can be helpful as a cheap meth support smokers to quit smoking.
21	Evaluation of a Motivational Smoking Cessation ….(Manfredi et al., 1999) **Year:** 1999 **Study design:** Quasi RCT **Country:** USA	**Number of participants:** **Baseline panel time 1:** 6 clinics (338) and 6 clinics (298) **Intervention time 2:** 6 clinics (548 control) and 6 clinics (516 intervention) **Participants: Women smokers** **Mean age:** 29 years **Setting:** Public health clinics	**Baseline panel time 1:** Before the intervention all clinics provided video segment and posters, advice to quit and a motivational self help booklet for smokers. It also included15 min call based on motivational interviewing approach. **Intervention time 2:** A sixth stage of readiness, action, was added to specify smokers who had quit by the time of the Time 2 interview. **Follow up:** before intervention and 5 to 8 weeks later **Cessation verification:** Self reported cessation **Nicotine dependence:** Not mentioned **Educator:** Trained nurse and physicians **Statistical analysis:** Multivariate analysis	In the time 2, there was a strong differences smoking outcomes between CG and IG in the experimental panel than in the baseline panel. In the experiment, outcomes improved in the intervention but not in the control clinics. Quit smoking was higher in IG Compared to controls, (14.5 versus 7.7%) or take actions toward cessation and had higher mean action, stage of readiness, and motivation to quit scores. **Comments:** Intervention to quit smoking is effective by clinics.
22	Evaluating the effectiveness of a	**Number of participants:** **Intervention group:** 29 qualified nurse plus	**IG:** They received an intervention based on the individual needs of the nurse field notes. Their health belief and motivation to quit were	At 6 and 12 months after intervention, 24% of smokers in IGs stopped smoking compared with 7% in CG. The results fo both of

	smoking…(Rowe and Macleod Clark, 1999) **Year:** 1999 **Study design:** Quasi RCT **Country:** Norther Ireland	32 students **Control group**:23 qualified nurse plus 33 students **Participants:** Nurse and nurse student **Mean age:**24 years **Setting: college nurse and hospital**	assessed, and they received an intensive advice on the need for them to identify strategy plus 6 weeks after intervention support interview. **CG**: without intervention **Follow up:** 6 and 12 months **Cessation verification:** Self-reported cessation, expired CO level, and air Saliva cotinine concentration **Nicotine dependence:** Not mentioned **Statistical analysis:** Logistic regression	these differences are statistically significant (p=<0.05). **Comments:** Individual approach to quit smoking is effective.
23	A Randomized Controlled Trial of a Smoking…(Panjari et al., 1999) **Year:** 1999 **Study design:** RCT **Country:** Australia	**Number of participants:** **Intervention group:**339 smokers **Control group:**393 smokers **Participants:** Pregnant smokers **Mean age:** 26 years **Setting:** Hospital	**IG:** They received usual antenatal care along with the intervention. Intervention included multi-counseling. It included cognitive therapy, quit literature viewing a video. Counselor implemented a discussion about the contents and verbal anti-smoking message in pregnancy and advice to quit. Different follow up session were offered in different times of gestation. **CG:** They received standard antenatal care, a quit Victoria pamphlet. **Follow up:** 6 weeks and 6 months post delivering. **Cessation verification:** self-reported cessation and Saliva cotinine level **Nicotine dependence:** Not mentioned **Educator:** Trained midwives **Statistical analysis:** Multivariate analysis	There was no significant difference in quit rate between IG and women in CG (11.9% versus 9.8%). The average number of cigarettes in IG in late pregnancy was significantly lower than the average number of cigarettes in CG. By 6 weeks postpartum, 14% of women reported that they were quitter, with no significant difference between women in IG (16%) and CG (12%). Similarly result was reported at 6 months postpartum. **Comments:** Antenatal care intervention to quit smoking in pregnant women was not effective.
24	Targeting Smokers with Low Readiness to …(Dijkstra et al., 1999) **Year:** 1999 **Study design:** RCT **Country:** Netherlands	**Number of participants:** **Three (Multiple) consecutive tailored letters (MT condition) group:** N= 214 smokers **2- A single tailored letter (ST condition) group:** 206 smokers **3- A standardized self-help guide (SHG):** 215 smokers **4- Non-self-help materials (CO condition):** 208 smokers **Target group:** Low intended smokers **Mean age:** 42 years **Setting:** Community survey	**IG1,2 (The tailored intervention):**They received the tailored letters which were produced by computerized systems. **IG3 (The self-help guide):** A self-help manual was developed for using a community smoking cessation project. **Follow up:** 6 months **Cessation verification:** Not used **Nicotine dependence:** Not used **Educator:** Trained researcher **Statistical analysis**: logistic regression analysis	Among not intended smoker to quit smoke within the next 5 years, the multiple-tailored intervention was more effective than the single-tailored intervention. It was supported by the cognitive changes caused by the interventions. Among smokers who were planning to quit within more than 5 years, none of the self-help materials had any effect. **Comments:** Self-help smoking cessation is not effective to quit smoking among smokers with low readiness.
25	Quantitative and qualitative evaluations of …(Richmond et al., 1999) **Year:** 1999 **Study design:** Quasi RCT **Country:** Australia	**Number of participants:** **Intervention group:** 763 smokers **Control group:** 661 smokers **Participants:** Smoker police **Mean age:** 34 years **Setting:** Station of police	**IG:** They received an intervention based on motivational interviewing principles and self-help materials. **CG**: Without intervention. **Follow up:** 6 months **Cessation verification:** Self-reported cessation **Nicotine dependence**: Not mentioned **Educator:** Trained health educator **Statistical analysis**: Multivariate analysis	Quit smoking was from 26.2% to 21% in IG (baseline and follow up) and from 30.5% to 26.8% in CG. Declining smoking was significant in both groups but was higher in IG. **Comments** Brief intervention is not effective to quit smoking.
26	Evaluation of the amount of therapist contact…(García and Becoña Iglesias, 2000)	**Number of participants:** **Intervention group 1:**25 smokers **Intervention group 2:** 31 smokers **Intervention group 3:** 25 smokers	**IG1:** received a 10 session multi component package (2 per week for 5 weeks) **IG2:** received a 5-session multi component plus package (one per week for 5 weeks)	At the end of the intervention the cessation rates were as follow 68%, in IG1, 58% IG2, 60% in IG3 and 36.3% in IG4. The rates at 6 months follow up were, 24%, 38.7%, 44% and 15% respectively. Cessation rate in CG was 0% at 12 months and 2% at

	Year: 2000 **Study design:** RCT **Country**: Spain	**Intervention group 4:** 33 smokers **Control group:** 48 smokers **Participants:** Volunteer smokers **Mean age:** 32 years **Setting:** Community survey	**IG3:** received a 5-session multi component plus a self help manual **IG4:** Only one orientation and a self help manual. **CG:** no intervention **Follow up:** 1, 2, 3, 6, and 12 months **Cessation verification:** Exhaled CO level **Nicotine dependence:** Fagerstrom test **Educators:** Trained psychologist **Statistical analysis:** logistic regression model	6 months and 12 months. There was a significant difference at 12 months for four IG. At 6 months there was a significant difference between IG3 and IG2 with IG1 showing the lower abstinence rate in both cases. At 12 months there was a significant difference between the same group and also IG1 showed a significantly lower abstinence rate than IG3. There was a significant difference between IG and CG at the 6 and 12 months. **Comments:** More intensive smoking cessation intervention is more effective.
27	Minimal Smoking Cessation Interventions …(Manfredi et al., 2000) **Year:** 2000 **Study design:** Quasi experimental **Country:** USA	**Number of participants:** **Intervention group: 1021 smokers** **Prenatal center:** 203 smokers **Family planning:** 296 smokers **Well child:** 549 smokers **Participants:** Women smokers **Mean age:**29 years **Setting:** Public health center	**Intervention :** Smokers were provided poster, booklet video about quitting smoking. They received advices about quitting. **Phase 2:** 5-8 weeks later they were to assessed about exposure to intervention and smoking outcome based on Stage of change. **Follow up:** 5-8 weeks later **Cessation verification:** Self reported cessation **Nicotine dependence:** Not mentioned **Educator:** Nurse and physician **Statistical analysis:** Multivariate analysis	Smokers in prenatal services were involved more in different types of smoking cessation advices and hey reported exposure to more interventions (mean: 1.87). In overall, 16% to 63% of women reported That they received an intervention component during their visit. **Comment:** More engagement of smokers in interventional program leaded them to quit smoking.
28	A comparative randomized study between…(Bakkevig et al., 2000) **Year:** 2000 **Study design:** RCT **Country:** Norway	**Number of participants:** **Intervention group 1:** 69 smokers **Intervention group 2:**70 smokers **Participants:** Invited smokers **Mean age:** 45 years **Setting:** Community survey	**IG1 (SmokEnders group):** They were encouraged to attend in seven weekly sessions and one follow up meeting a month later. Smokers tried to quit smoking based on learning from themselves and the theory that smoking cessation is a learning process during one month learn to stop via using different approaches. **IG2(General practitioner group):** Participants in IG2 were asked to contact their GP and get smoking cessation supports by them. Before that physicians who participated in this study were informed about the details and they were requested to follow their usual practice to along with trying to get an agreement from the patients a stop smoking date. **Follow up:** 2 months and one year and 2 weeks **Cessation verification:** Self-reported cessation and Saliva Cotinine test **Nicotine dependence:** Not mentioned **Educator:** GP and trained previous smokers **Statistical analysis:** Multivariate analysis	Two weeks after the agreed cessation date, smokers in IG1 reported higher smoking cessation rates (67% vs 14%). Nearly the same results reported after 2 months (54% vs 13%). After one year with reduction in smoking cessation rates, smokers in IG1, 30% and IG2 7 % were non-smokers. **Comments:** Smoking cessation intervention by getting support from previous smokers is effective to quit smoking.
29	A Brief Smoking Cessation Intervention …(Glasgow et al., 2000) **Year:** 2000 **Study design**: RCT **Country:** Portland, Ore	**Number of participants:** **Intervention group 1:** 576 smokers **Intervention group 2**: 578 smokers **Participants:** Women smoker **Mean age:** 24 years **Setting:** Parenthood clinics	**IG1 (Advice only group):** They received a generic smoking brochure and an anti smoking advice message. **IG2 (Brief intervention group):**They received a multinational intervention and barrier-based counseling, video program, and discuss about the video program. They received tailored materials based on their stage of change and were offered supporter telephone calls. **Follow up:** 6 weeks and 6 months **Cessation verification**: Self-reported cessation and Saliva cotinine test	Smokers in IG2 reported higher and significant cessation rates than IG1 at 6 weeks (10.2% vs 6.9%). The difference in 7-day cessation rate was significant at 6 months (18.3% vs 14.9%, $P<0.05$). At 6 months, a self reported 30-day cessation rate was 10.2% in IG2 AND 7.8% in IG1 ($p<0.05$).Verified cessation rate was (6.4% in IG2 vs 3.8% in IG1;$P=0.25$). Among continued smokers, IG2 reported higher reductions than IG1 at both the 6- week (3 vs 2 cigarettes per day, $P<0.01$) and 6-month (4 vs 3 cigarettes per day, $P<0.05$) follow-ups. **Comments:**

			Nicotine dependence: Fagerstrom test **Educator:** Trained counselor **Statistical analysis:** Multiple logistic regression	Implementing a traditional and tailored based brief intervention is effective to quit smoking.
30	Tobacco Cessation Intervention …(Reeve et al., 2000) **Year:** 2000 **Study design**: quasi RCT **Country:** USA	**Number of participants:** **Intervention group:**34 smokers **Control group:**41 smokers **Participants:** Health care students and clients **Mean age:** 44 years **Setting:** Ambulatory care clinics	**IG (A stepped care approach group)**: They received: **A:** Assessment of participants stage of change for quitting smoking **B**: Delivering brief advice about cessation. **C:**encourage smokers to motivate to quit, and set a quit date **D**: Free, individualized smoking cessation counseling service that were available for smokers were explained. They were informed about self-help materials cessation, brief advice and booklet about smoking cessation. **CG (Routine care approach group)**: They received a routine care services containing information about smoking health risks, counseling and usual advice about smoking cessation. **Follow up:** 3 months **Cessation verification:** Self-reported cessation **Nicotine dependence:** Not mentioned Educator: Trained nurse **Statistical analysis:** Multivariate analysis	Based on stage of change, a clinically significant positive shift was reported between the time at baseline and at follow-up. 15% of participant quit smoking; 9% from IG and 12% from CG. **Comments:** Nurse delivered anti-smoking intervention is effective in quit smoking in clinic centers.
31	An evidence-based program for smoking …(Grandes et al., 2000) Year: 2000 **Study design:** Quasi RCT **Country:** Spain	**Number of participants:** **Intervention group:** 1203 smokers **Control group:**565 smokers **Participants:** Smokers who ready to quit **Mean age:** 37 years **Setting:** General practices	IG: They received consultation, telephone calls and a printed material for smoking cessation. CG: Without intervention **Follow up:** 6 and 12 months **Cessation verification:** Self-reported cessation and expired CO level **Nicotine dependence**: Fagerstrom test **Educator:** Trained family physicians **Statistical analysis:** Multiple logistic regression	The intervention had an increase of 5% points in the validated and sustained one-year cessation probability, with 7.1% for all of IG. **Comments:** Anti-smoking advice along with other supports is effective in smoking cessation in intended smokers.
32	Eight-year follow-up of a community…(Carlson et al., 2000) **Year:**2000 **Study design:** Quasi RCT **Country:** Canada	**Number of participants:** **Intervention Group:** 971 smokers **Target Group:** Patient smoker **Mean age:** 40 years **Setting:** Cancer clinic	**IG:** They received multiple sessions over 4 months that made them able to receive education, self-monitoring, a group quit date and behavioral modification techniques. **Follow up**:3, 6 and 12 months post quit date and 8 years follow-up **Cessation verification:** Self-reported cessation **Nicotine dependency:** Not mentioned **Educator**: Trained clinical psychologist and clinical social worker **Statistical analysis**: Multivariate analysis	At 3 months follow-up, 39.3% of participants reported that they quitted smoking, decreasing to 32.1% at 6 months and 26.0% ($p<0.01$) at 12 months. At the 8-year follow-up, 47.7% of contacted smokers reported that they were currently quitted. **Comments:** Intensive intervention is effective in smoking cessation.
33	The Effect of a Structured Smoking Cessation Program,…(Manfredi et al., 2000) **Year:** 2000 **Study design:** Quasi RCT **Country:** USA	**Number of participants:** **Intervention group:**454 smokers **Control group:** 1042 smokers **Participants:** Women smokers **Mean age:** 29 years **Setting:** Health clinic	**IG:** They received a structured intervention which included an advice to quit and a self-help booklet. **CG:** Without intervention **Follow up**: 5 to 8 week after intervention **Cessation verification:** Self-reported cessation **Nicotine dependence:** Not mentioned **Educator:** Health care providers (Nurse and physician) **Statistical analysis:** Hierarchical logistic regression	Level of exposure to intervention components increased smoking outcomes except cessation and increased all actions towards cessation. However intervention couldn't influence smoking cutting down or attempts to quit or cessation for 24 hours, but the likelihood of cessation increased. **Comments:** Intensive and structured intervention is more effective than minimal smoking cessation intervention.
34	Proactive telephone peer	**Number of participants:**	**Intervention group:** Proactive telephone peer support which	**Among all participants**, there was not a significant difference

	support …(Solomon et al., 2000) **Year:**2000 **Kind of study:** RCT **Country:** USA	**Intervention group:** 77 smokers **Control group:** 74 smokers **Participants:** Pregnant smokers **Mean age:**24 years **Setting:** A big obstetric practice in Vermont	included brief advice, materials and peer support telephone. **Control group:** Only brief advice and materials **Follow up:** End of the study and 28-34 weeks prenatal visits **Cessation verification method:** Self-reported and Salivary Cotinine concentrate **Nicotine dependence test:** Not mentioned **Educator:** Obstetrician/Midwives and in Intervention group a trained women ex-smoker as a peer supporter. **Statistical analysis:** Multivariate analysis	between intervention and control group in the quitting rate at he end of the program (18.2% in IG and 14.9% in CG, p>0.05). **Among the women who reached to the end of the pregnancy** quit rate was 19% in IG, and 17% in CG. 42% in IG and 44% in CG showed a reduction in smoking (p>0.05) and 31% of IG and 21% of CG (p>0.05) showed an advancement in stage of change (p>0.1). **Comments:** No significant association between conditions and quit rate after the end of pregnancy.
35	The impact of behavioral counseling on stage …(Steptoe et al., 2001) **Year:** 2001 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group:** 316 smokers **Control group:** 567 smokers **Participants:** Patient smokers **Mean age:** 48 years **Setting:** General practices	**IG:** Patients in IG were invited for counseling sessions based on the risk factors. **CG:** They received advices about benefits of lifestyle change. **Follow up:** 4 and 12 months **Cessation verification:** Cotinine verification at 4 and 12 months **Nicotine dependence:** Not mentioned **Educator:** Trained nurse **Statistical analysis:** logistic regression model	The odds of moving to action or maintenance for IG versus CG at 4 months was 1.77 for smoking cessation. The stage of patient's readiness affected likelihood and achieving action /maintenance for smoking cessation. **Comments:** Behavioural counseling is effective to quit smoking in patients.
36	Self help smoking cessation in pregnancy…**(Moore et al., 2002)** **Year:** 2002 **Study design:** Cluster RCT **Country:** UK	**Number of participants:** **Intervention group:** 724 smokers **Control group:** 803 smokers **Participants:** Pregnant women **Mean age:** 27 years **Setting:** Hospital	**Intervention group:** Self help booklets to increase smokers motivation for quitting smoking. **Control group:** Not intervention. Only received usual care **Follow up:** At 26 weeks' gestation **Cessation verification method:** Self-reported cessation and Saliva cotinine test Nicotine dependence test: Not mentioned **Educators**: Trained midwives **Statistical analysis:** Regression model	While quit rate based on self-reported cessation was high, validated quit rates were 18.8% in IG and 20.7% in CG. 7 days quit smoking In IG was 25.6% women, compared with 29.1% in CG. **Comments:** Self- help intervention was not effective among pregnant women.
37	Effect of feedback regarding urinary…(Wakefield et al., 2002) **Year:** 2002 **Study design:** RCT **Country:** Australia	**Number of participants:** **Intervention group:** 143 smokers **Control group:** 149 smokers **Participants:** Parents smoking **Mean age:** 35 years **Setting:** Hospital	**Intervention group:** self-help materials and brief advice by booklet and telephone in different times. **Control group:** only received usual advice about smoking. **Follow up:** 6 months **Cessation verification method:** Urine samples **Nicotine dependence test:** Not mentioned **Educator:** Doctors or nurse **Statistical analysis:** Conditional logistic regression.	At 6months, 49.2% of IG2.5 times more encountered with a ban smoking compared with CGthat was 1.5 times more. Daily consumption or consumption in front of the child was not significant differences between groups. With no any significant difference, the total daily consumption declined but the level of decline was modest and similar in both groups. **Comments:** Parents ban in not effective way to lead them to quit smoking.
38	The addition of social support to a community-based large-group ….(Carlson et al., 2002) **Year:** 2002 **Study design:** Quasi RCT **Country:** Canada	**Number of participants:** **Intervention group:** 600 smokers **Participants:** Volunteer Smokers **Mean age:** Not mentioned **Setting:** Cancer Centre and hospital	**IG:** they received pamphlets and posters in groups of 10-12 participants. Smokers brought 156 support session people with them to the group. Supporters were variety of people likes spouses, children, parents, and/or friends. CG: Only received pamphlets and posters in the 10-12 groups participants. **Follow up:** 3, 6 and 12 months **Cessation verification:** self reported cessation **Nicotine dependence:** Not mentioned **Educator:** trained educator	Smokers in IG had higher cessation rates at 3, 6, and 12months (56%, 46%, and 43%) than CG (36%, 35%, 32%) respectively. Smoking cessation rate was strong for men at 3, 6, and 12-month for IG(58%, 54%, and 56%) than women in CG (52%, 41%, and 36%). Although support was initially effective for women, it had no effect on sustained abstinence. **Comments:** Using support group in smoking cessation program is effective in both men and women.

			Statistical analysis: Univariate analysis	
39	A controlled trial of an expert system and self-help …(Aveyard et al., 2003) **Year:** 2002 **Study design**: RCT **Country:** UK	**Number of participants:** **Intervention group 1**: 683 smokers **Intervention group 2:** 685 smokers **Intervention group 3:**413 smokers **Control group:** 700 smokers **Participants:** Patient smokers **Mean age:** 41 years **Setting:** General practices	**IG1 (Manual intervention group):** Participants received the pre-change system a self help workbook and three questionnaire at 3 month interval which generated individual tailored feedback **IG2 (Phone intervention group):** Participants received the manual intervention plus three phone calls **IG3 (Nurse intervention group):** Participants received the manual intervention plus three visit to the practice nurse. Intervention was based on TTM model and stage of change. **CG:** Only received self help literature **Follow up:** 6 and 12 months **Cessation verification:** Self reported cessation and Salivary cotinine level **Nicotine dependence:** Fagerstrom test **Educator:** trained nurse **Statistical analysis:** logistic regression model	The odds ratio for all three IG versus the CG were 1.50 (0.85–2.67) and 1.53 (0.76–3.10), for point prevalence and 6- month abstinence, respectively. This constitutes 2.1% of IG3 versus 1.4% of CG achieving confirmed 6-month sustained abstinence. **Comments:** No significant results to quit smoking based on the three interventions
40	Effectiveness of telephone contact as an …(Míguez, 2002) **Year:** 2002 **Study design:** RCT **Country:** Spain	**Number of participants:** **Intervention group 1:** 100 smokers **Intervention group 2:**100 smokers **Participants:** Adult smokers **Mean age:** 36 years **Setting: Community survey**	**IG1 (Standard self-help group):** They received only self-help manuals and weekly personalized letters. They also received seven self-monitoring forms along with self-evaluated adherence form ever week. **IG2 (Self-help group plus telephone counseling group):**They received the same above group and also multi-contact telephone counseling for six weeks **Follow up:** 3, 6 and 12 months **Cessation verification**: Self reported cessation and exhaled CO level **Nicotine dependence:** Fagerstrom test **Educator:** Trained interviewer **Statistical analysis:** logistic regression	1- There was a significant difference in the continues cessation rates in IG1 at the 3 month(21%), 6 months (18%) at the 6 months, and (14%) at the 12 month follow up. IG2 reported a cessation rate at the 3 month follow up (48%) , (40%) at the 6 month, and (27%) at the 12 month follow up. **Comments**: Telephone counseling is high effective in smoking cessation than self-help aids.
41	The SUCCESS Project: The Effect …(Hennrikus et al., 2002) **Year:** 2002 **Study design:** RCT **Country:** USA	**Number of participants:** **1-Group program with intervention group:**380 smokers **2- Group program without intervention group:**415 smokers **3- Phone group with intervention group:**481 smokers **4- Phone group without intervention group:**305 smokers **5- Choice group with intervention group:**483 smokers **6- Choice group without intervention group:**418 smokers **Participants:** Worker smokers **Mean age:** 40 years **Setting:** Worksite	**1-Group program**: They received 13 group sessions over a period of 2 months. **2-Phone group**: They received mailed print materials and 3 to 6 telephone counseling sessions. **3-Choice group**: Smokers were offered a choice either the group or the telephone program. **Follow up:** 12 and 24 months later **Cessation verification**: Self-reported cessation and Saliva cotinine test **Nicotine dependence:** Fagerstrom test **Educator:** Trained educator **Statistical analysis**: Multiple logistic regression	At 12- and 24-month surveys, 15.4% and 19.4% of smokers reported that they had not smoked in the previous 7 days. Smokers who received incentive were registered almost double than of no-incentive (22.4% vs 11.9%), but increased registration didn't show a significantly greater cessation rates. Type of program did not affect cessation rates. **Comments:** In worksite phone counseling can be effective in smoking cessation.
42	A cluster randomised controlled trial of	**Number of participants:** **Intervention group 1:** 305 smokers	**IG1 (Manual arm):** They received a six stage of based self help manuals	At 30 weeks of pregnancy, for both the point prevalence confirmed and sustained smoking cessation was higher in IG2 (5.7%)

	smoking…(Lawrence et al., 2003) **Year:** 2003 **Study design**: RCT **Country:** UK	**Intervention group 2:** 324 smokers **Control group:** 289 smokers **Particiapnst:** Pregnant smokers **Mean age:** 27 years **Setting:** Antenatal clinics	**IG2 (Computer arm):** They received the self help manual, a computer program and also audio feedback. **CG:**They received a standard smoking cessation advice plus a booklet. **Follow up:** 30 weeks of pregnancy and at 10 days postnatal **Cessation verification:** Saliva Cotinine test **Nicotine dependence:** Fagerstrom test **Educator:** Trained midwives **Statistical analysis:** logistic regression	comparing with other groups. At 10 days postnatal, both the point prevalence confirmed and sustained smoking cessation was higher in IG2 compared with other groups. **Comments:** However there was not very strong significant difference between the different interventional methods and CG, more intensive intervention is more effective to quit smoking.
43	The Effects of Peer Counseling on Smoking..(Malchodi et al., 2003) **Year:** 2003 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group:**67 smokers **Control group:** 75 smokers **Participants:** Pregnant women **Mean age:** 25 years **Setting:** Health care centers	**IG:** Smokers received anti-smoking peer counseling from the clinic staff, and lay community health outreach workers. **CG:** They received usual care contains brief anti-smoking advice and counseling **Follow up:** 36 weeks gestation **Cessation verification:** Self-reported cessation, Saliva cotinine level and exhaled CO level. **Nicotine dependence:** Fagerstrom test **Educator:** Trained clinic staff **Statistical analysis:** Multivariate analysis	There was a significant smoking reduction between two groups in smoked cigarettes per day (-9.1 in IG vs -4.5 cigarettes daily, P<0.03). There was not smoking cessation rate difference between IG and CN (24% versus 21% respectively) at 36 follow up. **Comments:** Peer support intervention can support pregnant smokers to reduce the number of cigarettes but is not effective in cessation rate.
44	The effectiveness of personalized…((Borland et al., 2003) **Year:**2003 **Kind of study:** RCT **Country:** Australia	**Computer-generated tailored advice only (IG1):** 523 smokers **Computer-generated tailored advice and call back telephone counselling (IG2):** 528 smokers **Control group:** 527 **Participants(CG):**Adult smokers who called Victoria Quit line **Mean age:**33 years **Setting:** Community survey (Victoria quit line)	**IG1:** Only computer-generated advice to quit smoking based on transtheoretical Model. **IG2:** Computer-generated tailored advice and call back telephone counselling based on Transtheoretical Model **CG:** Untailored self-help materials **Follow up:**3, 6 and 12 months. **Cessation verification method:** Only self-report smoking cessation **Nicotine dependence test:** Not mentioned **Educator: Trained telephone interviewers** **Statistical analysis:** Univariate analysis	**At three months** follow up smoking cessation rate was 21% in IG2 comparing 12% in IG1 and 12% in CG(p<0.001). **At 12 months** follow up quit rate was 26% in IG2, 23% in IG1 and 22% in CG. **At 12 months** smokers in IG2 the smokers who received call back were more likely to have sustained abstinence than who didn't received (p<0.05). **At three months:** A significant effect on cessation by telephone counselling were obtained but not by computer generated tailored advice. **Comments:** Computer generated tailored advice was not effective on cessation.
45	An academic detailing intervention to disseminate …(Goldstein et al., 2003) **Year**: 2003 **Study design:** Quasi RCT **Country:** USA	**Number of participants:** **Intervention group 1 (Kent county):** 661 smokers **Intervention group 2 (Newport Washington counties):** 708 smokers **Control group (Providence Bristal counties):** 1253 smokers **Target group:** 259 primary care physicians and 4295 adult smokers. **Mean age:** 42 years **Setting:** Community-based survey	**Intervention group 1 :** They divided to two kinds of interventions: A: Delayed PCS intervention (control) B: Intervention only **Intervention group 2 :**They received two types of interventions: A: PCS intervention only: This intervention provided an approach to deliver a patient smoking cessation strategy based on the NCI' 4As. B: PCS plus home intervention: In home based intervention a computer-based system provided a stage tailored information for smokers. **Control group:** No intervention **Follow up:** 12, 18 and 24 months **Cessation verification:** Self-reported cessation **Nicotine dependence:** Not mentioned Educator: Trained physician	There was a significant difference in quit rate between IG and CG (p<0.01). Quit rate in IG was 17%, 25.2% and 33.3% and in CG 16.4%, 20% and 22.6% in 12, 18 and 24 months respectively (p<0.05). **Comments:** Implementing an intervention in Physician to support smokers is effective strategy to quit smoking in a community based practices.

			Statistical analysis: Multivariate analysis	
46	Beliefs and behavior of deceivers in…(Jackson et al., 2004) **Year:** 2004 **Study design:** RCT **Country:** Malaysia	**Number of participants:** **Intervention group:** 193 smokers **Control group:**194 smokers **Participants:** Male patients smokers **Mean age:** 33 years **Setting:** outpatients clinic **Mean age:** 33 years	**IG:** they received four extra questions, brief advice, and a leaflet which was designed by the Department of Community Medicine under the supervision of ASG. **CG:** Without any intervention. **Follow up:** 6 and 12 months **Cessation verification:** Exhaled CO was measured by a Bedfont Smokerlyzer. **Nicotine dependence test:** Not mentioned **Educator:** trained researcher **Statistical analysis:** Multivariate analysis	Self-reported cessation has been examined among 27 who claimed to have quit, 6 (22%) were deceivers and 21 were confirmed quitters. Cessation did not differ between IG and CG. Overall confirmed cessation at six months was 4.1%. Smokers who quitted completely were significantly lighter smokers than deceivers and still smokers. **Comments:** Brief advice can make a significant abstinence rate among IG and CG.
47	The effectiveness of personally tailored …(Borland et al., 2004) **Year:** 2004 **Study design:** RCT **Country:** Australia	**Number of participants:** **Intervention group:** 521 smokers **Control group:** 537 smokers **Participants:** Adult smokers **Mean age:** 33 year **Setting:** community based study	**IG (computer tailored advice):** received self help materials plus 30 page full color 5A booklet, leaflet, group based anti smoking courses. **CG (computer-generated ID number) :** Only received self help materials that generated by computer. **Follow up:** 3 and 6 and 12 months **Cessation verification:** only self reported cessation **Nicotine dependence:** Not mentioned **Educator:** a trained telephone interviewer **Statistical analysis:** Univariate analysis	At 12-month follow-up a 6-month sustained abstinence rate was reported higher in IG (20%) than CG (12%) at 12-month follow-up. Group differences in point prevalence abstinence were not significant. Participants in IG with high received advice letter, showed higher 6-month sustained abstinence. Among smoking quitter at baseline, 6-month sustained abstinence at 12 months was higher(42%) in IG then CG (29%) (P= 0.04). **Comments:** Computer tailored advice resulted in increase of smoking cessation.
48	Telephone Counseling Increases Cessation Rates…(Rabius et al., 2004) **Year:** 2004 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group:** 1700 smokers **Control group:** 1700 smokers **Participants:** Young smokers **Mean age:** not reported **Setting:** American cancer society	**IG:** received aself helpbooklets that provide standard advice. they also received a 5 series of telephone counseling based on motivational interviewing principles. **CG:**they only received a booklets that provide standard advice. **Follow up:** 3 and 6 months **Cessation verification:**self reported cessation **Nicotine dependence:** Not mentioned **Educator:** Trained interviewer **Statistical analysis:** Univariate and logistic regression analysis	Among younger smoker only 52% were successfully followed for 3 months to ascertain cessation status. Among older smokers, 66% were followed accordingly (p <0.001). Abstinence rate at 3-month follow-up was higher among IG than CG, and this difference was significant among both younger smokers and older group. Abstinence rate at both 3 and 6 month follow-up were also significantly different in IG in both younger and older age groups. **Comments:** Telephone counseling is useful to quit smoking among young smokers.
49	Randomised control trial of a smoking cessation…(Stanton et al., 2004) **Year:** 2004 **Study design:** RCT **Country:** Australia	**Number of participants:** **Intervention group:** 291 smokers **Control group:** 270 smokers **Participants:** Men whose partners are pregnant **Mean age:** 38 years **Setting:** Smoking clinics	**IG:** They received video program at baseline, anti smoking information pack and booklet, and as series support materials. **CG:** They received only a brochure of smoking cessation options. **Follow up:** 6 months **Cessation verification:** Exhaled CO level **Nicotine dependence:** Fagerstrom test **Educator:** general practitioner **Statistical analysis:** Multivariate logistic regression analysis	At 6-month follow-up 16.5% in IG and 9.3% in CG reported they had stopped smoking (P = 0.011) **Comments:** Anti smoking intervention is effective for partners of antenatal patients.
50	Experimenter-defined quit dates for smoking …(Borrelli et al., 2004) **Year**: 2004	**Number of participants:** **Intervention group:** 989 smokers **Participants:** Adult smokers **Mean age:** 42 years	**1- Intervention group:** At visit 1: They received an individual cognitive behavioral treatment. At visit 2 to visit 9: Smokers received either study medication or	Low nicotine dependence and active drug treatment were the important predictors of quit date adherence in smokers. The relapse among women smokers who mot jointed to the quit date were more than 2.5 times as likely as men to relapse; among

	Study design: Quasi RCT **Country:** USA	**Setting:** Health clinic	relapse. Participants at visit 2 were asked to set a quit date. **Follow up:** 10 weeks **Cessation verification:** Self-reported cessation and expired CO level **Nicotine dependence:** Fagerstrom test **Educator:** Trained psychologist **Statistical analysis:** Logistic regression	adherers to the quit date, the relapse among women were only 1.3 times as likely as men. **Comments:** Women are more committed to the quit date than men.
51	A randomized trial assessing.. (Romand et al., 2005) **Year:** 2005 **Study design:** RCT **Country:** France	**Number of participants:** **In overall:** 228 smokers **Intervention group**: 119 smokers **Control group**: 109 smokers **Participants:** motivated male and female smokers **Mean age :** IG:40 year and CG:43 years **Setting**: Six different French towns **Note:** The study was not blind	**Intervention Group:** FDP (Five day Plan) included an information session followed by five consecutive behavioral therapy and cognitive therapy. Then everybody was followed 1 or 2 weeks by supplementary sessions. **Control Group:** a single session (1 hour) general education on health problem related to smoking. **Follow up:** 3,6 and 12 months **Cessation verification methods:** At the end of intervention, 3 and 6 months after that only self-reported smoking cessation. At 12 months by Carbon monoxide concentration test (+ <10ppm). **Nicotine dependence test**: Fagerstrom test **Educators:** Two professionals, Psychologist and qualified health adviser. **Statistical analysis**: Multivariate analysis	**Intervention Group:** At the end of the intervention the cessation rate was 56%.The quit rate was 25% at 3 months and 16% at 12 months. **Control Group:** The quit rate was 13% and 11% at 3 and 12 months, respectively. After one year the results showed a significant difference between two groups (13 % in IG and 3% in CG) (0.004). The most effective support was leader support (77%) and group therapy (73%). **Comments:** The five-day plan in helping smokers may be considered as a good model to support motivated smokers to quit.
52	Randomized controlled trial of home based motivational …(Tappin et al., 2005) **Year:** 2005 **Study design:** RCT **Country:** Scotland	**Number of participants:** **Intervention group:** 351 smokers **Control group:**411 smokers **Participants:** Pregnant smokers **Mean age:** 27 years **Setting:** Hospital	**IG:** They received one or two 30 minutes home visit, telephone calls plus sending letter. They also received motivational interviewing during 3 months. **CG:** received only a standard health promotion information. **Follow up:** 12 month **Cessation verification:** Self reported cessation and Saliva cotinine concentration. **Nicotine dependence:** Not mentioned **Educator:** Midwives **Statistical analysis:** Multiple logistic regression	4.8% of smokers in IG stop smoking compared with 4.6% in CG. 4.2% of smokers in IG cut down compared with 6.3% in CG. **Comments:** Motivational interviewing didn't significant increase cessation rate in pregnant women.
53	Do u smoke after txt? Results of a randomized …(Bramley et al., 2005) **Year:** 2005 **Study design:** RCT **Country:** New Zealand	**Number of participants:** **Intervention group:** 852 smokers **Control group:**853 smokers **Participants:** Young smokers **Mean age:** 22 years **Setting:** Community survey	**IG:** They received personalized mobile phone text message regularly that included smoking cessation advice plus support and distraction. These text messages were delivered to the smokers in different numbers in different times. **CG:** They only received some text messages which were not spesificly about advising them for cessation. **Follow up:** 6 weeks and 6 months **Cessation verification:** Self reported cessation and Salivary cotinine test **Nicotine dependence:** Not mentioned **Educator:** Multi disciplinary team **Statistical analysis:** logistic regression analysis	At 6 weeks smoking cessation rate was higher in IG compared to CG (28% v 13% respectively, p <0.0001). Self reported cessation rates remained high at six months, but because there was not completed follow up by some participants, there was some uncertainty about between group differences **Comments:** Mobile phone text intervention is effective to quit smoking among young smokers.
54	Effectiveness of a brief counseling and behavioral…(Ferreira-Borges, 2005)	**Number of participants:** **Intervention group:** 33 smokers **Control group:**24 smokers **Particiapnts:** Pregnant smokers	**IG:** They received brief anti smoking advice, booklet on smoking and pregnancy. The also received some behavioural intervention like motivational interview and coping strategy plus involvement of significant others together skill development.	Smoking abstinence was reported by 33.3% in IG compared to 8.3% in CG (P = 0.02). At follow-up, the number of cigarettes reduction was from 7.15 to 3.7 cigarettes in IG

	Year: 2005 **Study design:** Quasi RCT **Country:** Portugal	**Mean age:**30 years **Setting: Public health center**	CG**:** They received only usual care. **Follow up:** 2 months **Cessation verification:** Self reported cessation and Exhaled CO level **Nicotine dependence:** Fagerstrom test **Educator:** Trained nurse and clinician **Statistical analysis:** Logistic regression model	and in CG from 8.35 to 6.74(P = 0.063) Smokers in IG reduced cigarette by 51% of the number of smoked cigarettes at baseline while CG reduced 19.7% (P = 0.024). **Comments:** Brief behavioural intervention can help women smokers to quit smoking.
55	Smoking cessation intervention in …(Abdullah et al., 2005) **Year:** 2005 **Study design:** RCT **Country:** China	**Number of participants:** **Intervention group:** 467 smokers **Control group:** 485 smokers **Participants:** Smoker mothers and fathers **Mean age:**45 years **Setting:** Health care centers	**IG:**They received printed self-help materials and multi telephone-based smoking cessation counseling. **CG:** they received printed self-help materials. **Follow up:** 1, 3 and 6 month **Cessation verification:** Self-reported cessation and expired CO level **Nicotine dependence:** Fagerstrom test **Educator:** Trained counselor **Statistical analysis:** Bi-variate analysis	At six months, 7 day point prevalence quit rate was significantly greater in IG (15.3%) than CG (7.4%) (*P*=0.001). The crude odds ratio of quitting was 2.3. **Comments:** Proactive telephone is effective in smoking cessation among parents of young children.
56	A randomized controlled trial of motivational…(Soria et al., 2006) **Year:** 2006 **Study design:** RCT **Country:** Spain	**Number of participants:** **In overall:** 200smokers **Intervention group**: 114 smokers **Control group**: 86 smokers **Participants:** Active patient smokers **Mean age:** 38 year **Setting**: Primary health care	**Intervention Group:** three 20 minutes motivational interviews were conducted in the physician office. **Control group** (anti smoking advice): anti smoking advice by their physician lasting approximately 3 minutes. **Follow up**: 6 and 12 months post intervention **Cessation verification test:** Exhaled CO level **Nicotine dependence test**: Fargerstrom test **Educators**: trained GP to do motivational interviewing techniques. **Statistical analysis:** Multivariate analysis, Logistic regression	At both 6 and 12 months post intervention, abstinence rate was 5.28 times more sin IG than CG (p<0.001). There was a significant difference between two groups regarding the degree of motivation according to the classification of stage of change. IG showed higher degree than CG. After 6 months in IG the probability of given up the habit was 7.6 and after 12 months 6.9 times greater than CG. **Comments:** Intensive intervention is more effective to quit smoking.
57	A randomised controlled trial of motivational …(Soria et al., 2006) **Year:** 2006 **Study design:** RCT **Country:** Spain	**Number of participants:** **Intervention group:** 114 smokers **Control group:** 86 smokers **Participants:** Patient smokers **Mean age:** 39 years **Setting:** Primary care center	**IG(Motivational interviewing):**They receiving anti-smoking motivational interviewing and a short time anti-smoking advice. **CG:**They received only a short-time anti-smoking advice. **Follow up:** 6 and 12 months **Cessation verification:** Self-reported cessation expired CO level. **Nicotine dependence:** Fagerstrom test **Educator:** Family physicians **Statistical analysis:** Multivariate analysis	At both 6 and 12 months follow-up, smoking cessation rates in IG was 5.2 times higher than CG (18.4 % and 3.4% respectively). **Comments:** More intensive intervention is more effective in smoking cessation.
58	Evaluating the effectiveness of proactive telephone …(Gilbert and Sutton, 2006) **Year:** 2006 **Study design:**RCT **Country:** UK	**Number of participants:** **Intervention group:** 753 smokers **Control group:** 704 smokers **Target group**: smoker callers to the quit-line **Setting:** Community survey **Mean age:** 39 years	**IG (Repeated Contact group):**They received five proactive calls in addition to usual care. **CG:** Without intervention **Follow up**: 6 and 12 months **Cessation verification**: Self-reported cessation **Nicotine dependence:** Not mentioned **Educator:** Health researcher **Statistical analysis:** Multivariate analysis	At 12 months follow-up, 9.5% of the CG were abstinent for longer than 6 months, compared with 9.3% of IG; At 6 months follow-up, 18.9% of CG and 20.2% of IG, respectively, were point-prevalent cessation. In the first 6 months following recruitment, significantly more non-quitters in the CG made a quit attempt than in IG (P<0.05). **Comments:** Proactive telephone counseling and insufficient pre and post motivational counseling was not effective in smoking cessation.
59	Evaluation of a Community Health Promotion…(Flocke et al., 2006) **Year:** 2006	**Number of participants:** **Intervention group:** 368 smokers **Control group:** 421 smokers **Participants:** Patients smokers **Mean age:** 43 years	**IG (Web-based group):** They received a comprehensive website's patient education materials. **CG (Health behavior prescription pad).**This Pad support clinician–patient to make a discussion about health behavior topics. **Follow up:** 8 weeks post-visit	No difference in change in patient's smoking at before and after intervention was observed (12.45 and 14% respectively) (p=0.25). **Comments:** Community health promotion program is not effective in smoking cessation.

	Study design: Quasi RCT **Country:** USA	**Setting:** Primary care practices	**Cessation verification**: Self-reported cessation **Nicotine dependence:** no mentioned **Educator:** Trained health educator **Statistical analysis:** Multilevel generalized linear model	
60	Web-based support as an adjunct to group…(Mermelstein and Turner, 2006) **Year:** 2006 **Study design:** RCT **Country:** USA	**Number of participants:** Twenty-nine high schools and a sample of 351 smokers **Target Group:** Student smoker **Mean age:** 17 years **Setting:** School	**IG (Group based + web based support):** They received proactive telephone call and 4 booster calls after treatments. They also access to web site contains motivational message. **CG (Group based):** 10-session group based program **Follow up:** end of study and 3 months **Cessation verification:** Self-reported cessation and exhaled CO level **Nicotine dependence**: Not mentioned **Educator:** trained facilitators and teachers **Statistical analysis:** Multivariate analysis and hierarchical linear modeling	Overall quit rate of 8.5%, that from them 4.7% for CG, and 12.2% for IG. At three months follow up quit rate was 10.6% in CG and 20.4% in IG ($p<0.05$) **Comments:** Group and Web-based support is effective in smoking cessation in adolescents.
61	The results of a worksite health promotion…(Moy et al., 2006) **Year:** 2006 **Study design:** Quasi experimental **Country:** Malaysia	**Number of participants:** **Intervention group:**102 smokers **Control group:** 84 smokers **Target group:** Malay-Muslim male **Mean age:** 47 years **Setting:** Community survey	**IG:**They received an intensive individual and group counseling. **CG:** They received a minimal education via mail and group counseling. **Follow up**: 2 years **Cessation verification:** Self-reported cessation **Nicotine dependence:** Not mentioned **Education:** Trained health educator **Statistical analysis**: Multivariate analysis	A reduction in the amount of cigarettes reported by IG. Comments:
62	Proactive interventions for smoking cessation in…(Meyer et al., 2008) **Year:** 2007 **Study design:** Quasi RCT **Country:** Germany	**Number of participants:** **Intervention group 1:** 488 smokers **Intervention group 2:**402 smokers **Control group:** 609 smokers **Participants:** patient smoker **Mean age: 34 year** **Setting:** General practice	**IG1:** Tailored letter (self-help manuals)based on the Transtheoretical Model (TTM). **IG2:**Brief advice included a 2-hour onsite training session. The intervention was designed to last 10 minutes with the same self-help manuals. **CG:** Without any intervention. **Follow up**: 6, 12, 18 and 24 months **Cessation abstinence:** self-repot cessation together Carbon monoxide concentration in exhaled air **Nicotine dependence:** Fagerstöm Test **Educator**: Practitioners who were trained in opportunistic counseling techniques. **Statistical analysis:** Logistic regression analysis	6-month abstinence rate was 18.3% in IG1, 14.8% in IG2 and 10.5% in CG. There was a statistically significant in smoking cessation in both intervention groups comparing CG. The tailored intervention was significantly more effective than brief advice for 24-hour but not for 7-day abstinence for prolonged abstinence, or for alternative assumptions about participants lost to follow-up. **Comments:** Long term smoking cessation can be made by generated tailored letter.
63	The 5A's vs 3A's plus proactive quitline referral …(Gordon et al., 2007) **Year:** 2007 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group 1 :** 585 smokers **Intervention group 2:**628 smokers **Control group:** 431 smokers **Participants:** Patient smokers **Mean age:** not mentioned **Setting:** Dental practices	**IG1:** Dental practitioner advice smokers to quit and provided proactive telephone counseling based on (3A's) **IG2:** Dental practitioner delivered intervention based on 5A's **CG:** they received only usual care **Follow up:** 3 months **Cessation verification:** Self reported cessation **Nicotine dependence:** Not mentioned **Educator:** Dental practitioner **Statistical analysis:** Multivariate analysis	Participants in two IG quit at a higher rate than those in CG ($p<0.05$). However more smoker in IG2 quuit smoking than IG1, the difference in cessation rate between two groups was not significant. **Comments:** Dental provider can support smokers to quit smoking.
64	Brief smoking cessation	**Number of participants:**	**IG:**Only one time brief anti-smoking advice to smokers. The	Smokers in IG had higher intentions to stop smoking at 2-weeks

	advice from practice nurses …(Hall et al., 2007) **Year:** 2007 **Study design:** RCT **Country:** UK	**Intervention group:** 121 smokers **Control group:** 121 smokers **Participants:** Women smokers **Mean age:** 39 years **Setting:** General practices	intervention was designed based the advice on the '5 As'. Smokers in IG received a developed leaflet, a self-help booklet, another developed anti-smoking booklet, and a card listing local and national smoking cessation services. **CG:** They didn't receive any intervention **Follow up:** 2 weeks and 10 weeks after the consultation **Cessation verification:** Self-reported cessation **Nicotine dependence:** Not mentioned **Educator:** Trained nurses **Statistical analysis:** Multivariate model	compared with CG (P=0.06) and 10-weeks (P=0.03). Both groups had high intentions to attend for future screening test. **Comments:** Brief anti-smoking advice by nurse is acceptable and effective for smokers.
65	Effectiveness of individually tailored smoking cessation …(Sutton and Gilbert, 2007) **Year:** 2007 **Study design:** RCT **Country:** UK	**Number of participants:** **Intervention group:** 765 smokers **Control group:** 743 smokers **Participants:** smokers calls to quit-line **Mean age:** 39 years **Setting:** Community survey	**IG:** They received brief telephone counseling, standard information pack and tailored letter. **CG:** They received brief telephone counseling and Standard information pack. **Follow up:** 6 months **Cessation point prevalence:** Self-reported cessation **Nicotine dependence:** Fagerstrom test **Educator:** General practitioner **Statistical analysis:** Logistic regression	In all smokers, quit rates was not significantly different between IG and CG. However, among smokers at baseline, abstinence rates were consistently higher in IG for 3 months, 1 month, 7-day and 24-hour point-prevalence abstinence compared with CG. **Comments:** Tailored behavioral intervention is effective in smoking cessation.
66	The effectiveness of nationally…(Kjaer et al., 2007) **Year:** 2007 **Study design:** RCT **Country:** Denmark	**Number of participants:** **Intervention group 1:** 2751 smokers **Intervention group 2:**765 smokers **Participants:** Adult smokers **Mean age**: 49 years **Setting:** Hospital and national based	**IG1(Group Intervention group):**They received a five sessions group based intervention by the counselor for two hours each during a month. These sessions were conducted to prepare smokers for smoking cessation, to shared experiences with coping strategies and with relapse prevention techniques. **IG2(Individual intervention group):**They received a standard five individual sessions. These sessions' structure was the same as in the group format, but it was more flexible according to the participants' readiness to stop. **Follow up:** 6 and 12 months after the quitting date **Cessation verification:** Self-reported cessation and exhaled CO concentration **Nicotine dependence:** Fagerstrom test **Educator:** trained nurses and midwives and pharmacies **Statistical analysis:** logistic regression analysis	At 6 and 12 months follow up, the rates of continued abstinence were estimated as 18% and 16%, respectively. Among participants, who accomplished at least 75% of the intervention, smoking cessation rate after six and twelve months follow-up were 23% and 19%, respectively. **Comments:** National level smoking cessation intervention is effective in quit smoking.
67	Telephone booster sessions for optimizing smoking …(Metz et al., 2007) **Year:** 2007 **Study design:** Quasi RCT **Country:** Germany	**Number of participants:** **Intervention group:** 116 smokers **Control group:**191 smokers **Participants:** Patient smokers **Mean age:** 41 years **Setting:** Rehabilitation centers	**IG:**They received multiple telephone counseling interventions which were standardized by a guideline based on TTM in different times. **CG:** Without telephone **Follow up:**3, 6 and 12 months **Cessation verification:** Self-reported cessation **Nicotine dependence**: Fagerstrom test **Educator:** Trained therapeutic staff. **Statistical analysis:** Logistic regression analysis	After 6 and 12 months IG reported abstinence rates twice as high as those of CG. Telephone booster sessions were more useful for men than women. **Comments:** **T**elephone booster sessions were significantly effective after an intensive group program in hospital.
68	Effectiveness of individually tailored smoking…(Sutton and Gilbert, 2007)	**Number of participants:** **Intervention group:** 765 smokers **Control group:** 743 smokers **Target group:** Adult smokers	**IG:** They received a computer-generated individually tailored advice letter. It included relevant smoking cessation theories. **CG:** They received usual care. **Follow up:** 6-month	Cessation rates did not differ significantly between two groups. However, majority of smokers in the start of study, quit rates were higher in IG. Prolonged abstinence for 3 months, 12.2% in IG and 9.0% in CG

	Year: 2007 **Study design:** RCT **Country:** UK	**Mean age:** 38 years **Setting:** Community survey	**Cessation verification:** Self-reported cessation **Nicotine dependence**: Not mentioned **Educator:** Trained health counselor Statistical analysis: Logistic regression analysis	(*P* = 0.080); the cessation rate for one month 16.4% in IG and 11.3% in CG (*P* = 0.013); 7-day point-prevalence cessation, 18.9% in IG and 12.7% in CG (*P* = 0.004); 24-hour point-prevalence cessation, 20.9% in IG and 15.4% in CG (*P* = 0.015). **Comments:** Tailored smoking cessation is effective to quit smoking.
69	Effect of an Inpatient Nurse-Directed Smoking …(Gies et al., 2008) **Year:** 2008 **Kind of study:** Quasi RCT **Country:** USA	**Number of participants:** **Intervention Group:** 38 smokers **Control group:** 30 smokers **Participants:** Patient smokers **Mean age:** 46 years **Mean age:** Hospital	**IG:** Brief advice and face to face intervention plus telephone calls. Then they divided to two subgroups: A: received follow up telephone call after hospital discharge B: received four follow up telephone calls after hospital discharge. **CG:** Only standard care **Follow up:** 3 months after hospital discharge **Cessation verification:** Self-report and exhaled carbon monoxide level **Nicotine dependence test: Fagerstrom test** **Educator:** Trained Nurse **Statistical analysis:** Multivariate analysis	At three months, IG was significantly more likely to be quitter (55%) than smokers in CG (21%). At three months, smoking cessation was not significantly different between two subgroups in IG. **Comments:** Telephone calls plus face to face intervention maybe effective to quit smoking in patients.
70	In-practice management versus quitline referral for …(Borland et al., 2008) **Year:** 2008 **Study design:** RCT **Country:** Australia	**Number of participants:** **Intervention group:**728 smokers **Control group:**311 smokers **Participants:** Patient smokers **Mean age:** 41 years **Setting:** General practice	**IG(Referred to a quit-line service group)**: After assessment of their readiness to quit, interest smokers referred in Victorian Quit-line. They informed with a brochure about quit-line services. After 2 or 3 days they received an introductory call from the quit-line. **CG(Standard in-practice GP management group)**: After recognition of smokers who were willing to quit, they received information and help to quit smoking by themselves or through other practice care provider. **Follow up:** 3 and 12 months **Cessation verification**: Self-reported cessation Nicotine dependence: Index of nicotine dependence Educator: GP and trained counselor Statistical analysis: logistic regression analysis	At 3-month follow-up, smokers in IG were twice as likely to be sustained abstinence than those in CG (12.3% vs 6.9%, respectively) At 12-month follow-up, smokers in IG had nearly three times the odds of sustained abstinence (6.5% vs 2.6%, respectively) **Comments:** Referring smokers to an evidence based quit-line service is effective to quit smoking.
71	Evaluation of the *ASCENT* Smoking ….(Hoffman et al., 2008) **Year:** 2008 **Study design:** RCT **Country**: USA	**Number of participants:** **Intervention group:**61 smokers **Control group:**44 smokers **Participants:** Adolescent smokers **Mean age:** 16 years **Setting:** High schools	**IG:** They received six group sessions, variety activities such as group discussion and interactive games and role playing and program workbook. **CG:** Without intervention **Follow up:** 30 day post treatment and 12 months post treatment. **Cessation verification:** Self-reported cessation and Saliva cotinine test **Nicotine dependence:** Fagerstrom test **Educator:** Trained researcher Statistical analysis: Multivariate analysis	At 12 months follow up, 67% of IG did not smoke daily compared to 42% of CG ($p<0.05$). Smokers in IG reduced their smoking from an average of 8 cigarettes a day to 6 cigarettes a day ($p<0.05$). Although not statistically significant, the overall one year cessation in IG and CG was higher than the average rate for cessation programs in youth (12%). Comments: Group intervention in effective to quit smoking in youth.
72	Effectiveness of a brief intervention …(Puschel et al., 2008) **Year:** 2008 **Study design:** quasi RCT **Country**: Chile	**Number of participants:** **Intervention group:** 258 smokers **Control group 1:** 259 smokers **Control group 2:** 256 smokers **Participants:** Women smokers **Mean age:** 34 years	**IG:** The received smoking cessation intervention based in the '5 A' model. **CG:**They received usual care. In CG1 no smoking cessation programs were available. While in CG2, a new cardiovascular program was conducted. A brief advice was delivered to patients to quit smoking.	At the end of intervention, 15.2% of participants reported smoking cessation at least for 1 month in IG versus 7.8% in CG1 (p , 0.05) and 14.6% in CG2 (p =NS). **Comments:** Smoking cessation based on 5A model is effective in quitting among women smokers.

		Setting: Public primary care clinics	**Follow up:** 3 months **Cessation verification:** Self-reported cessation **Nicotine dependence:** Fagerstrom test **Educator**: Trained Physician and nurse and Midwife **Statistical analysis**: linear regression model	
73	Evaluation of an Evidence-Based Tobacco…(Prochaska et al., 2008) **Year:** 2008 **Study design:** Quasi RCT **Country:** USA	**Number of participants:** **Intervention group:**55 smokers **Participants:** Residents smoker **Mean age:** Not mentioned **Setting:** Psychiatry residency	**IG:** An evidence-based intervention was a patient-oriented cessation intervention which was relevant for all smokers, including those not yet ready to quit. **Follow up:** 3 months **Cessation verification:** Self-reported cessation **Nicotine dependence:** Not mentioned **Educator**: Psychologist **Statistical analysis**: Linear regression model	At three month follow-up, the intervention increased the participants' knowledge, attitudes, confidence, and counseling behaviors about smoking among their patients, with initial changes from pre- to post training. 39% and 41 of patients were looked forward in smoking. **Comments:** Evidence based curriculum is effective to quit smoking.
74	A cluster randomized trial in general practice …(Pisinger et al., 2010) **Year:** 2009 **Study design**: RCT **Country:** Denmark	**Number of participants:** **Intervention group 1:**600 smokers **Intervention group 2:** 476 smokers **Control group:** 442 smokers **Participants:** Patient smokers **Mean age:** 49 years **Setting:** General practice	**IG1(Referral to group-based Smoking Cessation):**All motivated smokers in this group were referred to a group-based smoking cessation counseling by their general practitioner. GP should inform them about smoking effects, ask about their motivation to quit, encourage them to try to quit and give them a card with name and phone number of the smoking cessation counselor. **IG2(Referral to internet-based SC program)**:General practitioner referred all motivated smokers to an internet-based smoking cessation program. **CG:**They did not have any special program. **Follow up:** 12 months Cessation verification: Self-reported cessation and Saliva cotinine test **Nicotine dependence**: Fagerstrom Test **Educator:** General practitioner **Statistical analysis**: Multivariate analysis	Self-reported cessation rate was 6.7%, 5.9% and 5.7% in IG1, IG2 and CG, respectively. **Comments:** Group based intervention and internet based smoking cessation program are effective in smoking cessation.
75	Need for Cognition as a Predictor and a ….(Haug et al., 2010a) **Year:** 2010 **Study design:** Quasi RCT **Country:** Germany	**Number of participants:** **Overall:**1097 smokers **Intervention group:** 488 smokers **Control group:** 609 smokers **Participants:** patient smokers **Mean age:** 34 year **Setting:** general practice **Mean age:** 34 year	**IG (tailored letters group):** The computer tailored letters that were accompanied from a series of self-help manuals were based on the TTM (stage of change). Positive feedback by letter which were delivered a 3-month and 6-month letters. **CG (assessment only group):** They received the same self-help manuals which were delivered to IG along with an Onsite training session. It was followed a basic information about smoking related issues to smokers. **Follow up: 6, 12, 18 and 24 months** **Cessation verification:** self-repot cessation and exhaled CO concentration. **Nicotine dependence test:** Fagerstöm Test **Educator:** trained practitioners **Statistical analysis:** Multivariate logistic regression	In comparison with CG, need for cognition (NFC) did not moderate the effect of IG on smoking abstinence ($p > 0.05$) but on smoking cessation self-efficacy ($p = 0.05$). Higher smoking cessation self-efficacy happened only for persons with higher NFC by tailored letters. **Comments:** Need for cognitive of smokers may increase the effectiveness of tailored written intervention on smokers' self-efficacy.
76	Predictors and moderators of outcome in different brief ….(Haug et al.,	**Number of participants:** **Intervention group 1:** 488 smokers **Intervention group 2:** 402 smokers	**IG1 (tailored letters group):** The computer tailored letters that were accompanied from a series of self-help manuals were based on the TTM (stage of change). Positive feedback by letter which were	Comparing with CG, physician brief advice was less effective for smokers without an intention to quit smoking and for unemployed. Smoking cessation had a positive association with female gender,

	2010b) **Year:** 2010 **Study design:** Quasi RCT **Country:** Germany	**Control group(C):** 609 smokers **Participants:** Patient smokers **Mean age:** 34 year **Setting:** General practice	delivered a 3-month and 6-month letters. **IG2 (Brief advice intervention):** They received the same self-help manuals which was delivered to IG along with an Onsite training session. It was followed a basic information about smoking related issues to smokers. **CG:** Without any intervention. **Follow up:** 6, 12, 18 and 24 months **Cessation verification:** self-repot cessation and exhaled CO concentration. **Nicotine dependence test:** Fagerstöm Test **Educator:** trained practitioners **Statistical analysis:** Multivariate logistic regression.	higher level of education, intention to quit smoking, and smoking cessation self-efficacy. While nicotine dependence, and the presence of a smoking partnerwere negative associated.
77	A randomised controlled trial of proactive …(Tzelepis et al., 2011) **Year:** 2010 **Study design:** RCT **Country:** Australia	**Number of participants:** **Intervention group:**769 smokers **Control group:** 793 smokers **Participants:** Volunteer smokers **Mean age:** 45 years **Setting:** Community based study	**IG (proactive telephone counseling)**: Participants received telephone counseling based on motivational interviewing principles that focused on encouraging participants to move towards setting a quit date. Telephone call were organized according to smokers readiness to set a quit attempts. To make changes in readiness to cessation overall 12 Telephone counselling were offered regardless of quitting intention. **CG (mailed self help):** Based on their baseline interview, the participants were mailed a non-tailored quit kit. Smokers also received a letter outlining the contents and the quitline phone number, a Quitline brochure. **Follow up:** 3, 6 and 12 months **Cessation verification:** Self reported cessation **Nicotine dependence:** Not mentioned **Educator:** trained researcher **Statistical analysis:** Logistic regression analysis	Smokers in IG were significantly more likely than CG to have 7-day point prevalence abstinence at 4 months (13.8% vs 9.6%), and 7 months post recruitment (14.3% vs 11.0%). It was not significant at the 13-month (15.2% vs 14.4%, p=0.4). Smokers in IG were significantly more likely than CG to have 3-month prolonged cessation at 4 months post recruitment (3.4% vs 1.8%) and 6-month prolonged cessation during the 7-month interview (2.2% vs 0.9%). At4-month IG (48.6%) was significantly more likely than CG (42.9%) to have made a quit attempt since baseline (p=0.01). **Comments:** Proactive telephone counseling is effective to support smokers to quit smoking.
78	Randomized Controlled Trial of an Interactive Internet …(Seidman et al., 2010) **Year:** 2010 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group:** 1106 smokers **Control group:** 1042 smokers **Participants:** English speaking daily smokers **mean age**: 41 years **Setting**: Community survey	**IG:** They received 10 cessions interactive internet advices plus and behavioural intervention based on cognitive behavioral therapy. **CG:** They received a self help booklet. **Follow up:** 13 months **Cessation verification:** Self reported cessation **Nicotine dependence:** Fagerstrom test **Educator:** Trained researcher **Statistical analysis:** Multivariate model	At 13 months, participants in IG were more abstinent than CG (12.9% vs. 10.1%, p<.05). This effect was higher among smokers who not reported depressed affect (15.0% vs. 10.1%, p<.01). Among depressed smokers, there was no difference in abstinence between IG and CG. **Comments:** Smoking cessation intervention based on interactive internet among elder people is effective.
79	Telephone-delivered Acceptance and …(Bricker et al., 2010a) **Year:** 2010 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group:** 14 smokers **Target group:** Adult smokers **Mean age:** Not mentioned **Setting:** Community survey	**IG:** They received a telephone-based smoking cessation intervention for adult smokers. They included five counselling sessions about smoking. **Follow up**: 20 day and 12 months post-treatment **Cessation verification**: Self-reported cessation **Nicotine dependence**: Not mentioned **Education**: Trained psychologist **Statistical analysis**: Logistic regression analysis	43% of smokers quit smoking at the day of study at 20 day follow-up, while 29% had not smoked in past 7 days. At 12-month follow up,29% quit smoking at all in past 12 months. These cessation rates were over double the 12% cessation rates of current standard telephone counselling. **Comments:** Telephone delivered smoking cessation intervention is effective in quitting smoking.

***IG:** intervention Group
***CG:** Control Group

1.1.6 B2: Participants with non-English-speaking background (NESB)

Num.	Study Information	Participants' characteristic	Intervention	Results
1	Physician-and nurse-assisted …(Royce et al., 1995) **Year:** 1995 **Kind of study:** Quasi RCT **Country:** USA	**Number of participants:** **Pre-test:** 153 smokers **Post-test:** 117 smokers **Participants:** African American smokers **Mean age:** 39 years **Setting:** Health care centers	**IG:** They received self-help smoking cessation video, companion manual, newsletter and monthly item mailed in the 6 months interim. **Follow up:** 7 months **Cessation verification:** Self-reported cessation **Nicotine dependence:** Fagerstrom test **Educator:** Trained clinician and nurse **Statistical analysis:** Multivariate analysis	Smokers in IG reported a 21% abstinence rate at follow up. They reported an additional 27% decreased cigarette intake by at least 50%. Physician advice had a significant impact both on smokers' reduction of cigarettes at least 50%. **Comments:** Anti-smoking advices by trained clinicians is effective to quit smoking.
2	Heart, Body, and soul: impact of…(VOORHEES et al., 1996) **Year:** 1996 **Kind of study:** RCT **Country:** USA	**Number of participants:** **Intervention group:** 199 **Control group:** 93 **Participants:** African American smokers **Mean age:** 47 years **Location:** Church, a community based intervention.	**Intervention information:** A church based interventions included: A culturally intensive intervention and minimal self-help intervention by using pamphlets and booklets. Organizational level " environmental intervention. **Follow up:** 12 months **Cessation verification method:** Self report, Saliva Cotinine and exhaled CO **Nicotine dependence test:** Not mentioned **Educator:** volunteers as lay smoking cessation counsellor and support groups. Church advocates. **Statistical analysis:** Multiple logistic regression	No significant differences in quit rates in both intensive and minimal interventions. The intensive intervention group had a positive progress along the stage of change comparing minimal or self help intervention group. **Comments:** More intensive ad culturally tailored intervention were positively effective to influence smoking behaviour
3	The effectiveness of a media-led intervention… (Jenkins et al., 1997) **Year:** 1997 **Kind of study:** Quasi RCT **Country:** USA	**Number of participants:** **Pre test group:** 1581 in Houston and 1133 in San Fransisco **Post test group:** 1209 in Houston and 1202 in San Fransisco **Participants:** Vietnamese American smokers **Mean age:** 39 years **Setting:** Community survey	**1- Intervention group:** They received a tailored intervention which was included: a Vietnamese-language videotape, several Vietnamese- language materials about health education, and a quit kit. They received an anti-tobacco Vietnamese-language counter advertising Campaign, newspaper advertisements, and paid television advertisements. **Follow up:** 2 years **Cessation verification:** Self reported cessation **Nicotine dependence:** Not mentioned **Educator:** Trained health researcher **Statistical analysis:** logistic regression analysis	At pre-test, the smoking prevalence rate was 36.1% in San Francisco which was lower than in Houston (39.6%). A reduction in smoking was happening between pretest and posttest, smoking declined in San Francisco, while the rate in Houston increased, resulting in a net change of -3.5 percentage points. The post-test smoking rate in San Francisco was significantly lower than in Houston (P=0.004). During of a period of two years the rate of quitting rose in both populations, rose more steeply in San Francisco, resulting in a net change of 1.4% points. At post-test, the quitting rate was higher San Francisco than in Houston (P=0.0 17). **Comments:** More intensive and tailored intervention is effective in quitting smoking.
4	A self-help intervention for …(Orleans et al., 1998)	**Number of participants:** **Intervention group:** 733 smokers	**Intervention information:** control group received only a standard guide and intervention group received a Tailored guide-based cancer information services (CIS) intervention that was culturally appropriated for African	**Six months:** Six month abstinence rate was 14.4% in the control group while it was 16.2% in the intervention group (no significant difference).

	Year: 1998 **Kind of study:** RCT **Country:** USA	**Control group**: 689 smokers **Participants:** African American smokers **Age:** Most (62%) was in 20-39 years age group. **Location:** Comprehensive cancer centre	American smokers. It was a 36-page guide. **Follow up:** six and 12 months. **Cessation verification method:** Self-report **Nicotine dependence test:** Fagerstrom test **Educator:** Tailored counselor **Statistical analysis:** Multiple logistic regression	**Twelve months:** Twelve month abstinence rate was 8.8% in the control group while in the intervention group was 15% (statistically significant). **Comments:** Tailored approaches to support smokers to quit smoking are more successful.
5	Using tailored intervention to enhance…(Lipkus et al., 1999) **Year:** 1999 **Kind of study:** RCT **Country:** USA	**Number of participants:** **Intervention group 1:** 53 smokers **Intervention group 2:** 55 smokers **Intervention group 3:** 52 smokers **Participants:** African American smokers **Mean age:** 52 years **Setting**: Health center	**IG1 (Provider promoting intervention group):** They received a tailored, computerized prompting system along with a staged based behavioral message was delivered to smokers by providers. **IG2 (Tailored print communication group (TPCc):** They received a tailored print communication in the time of their birthdays. **IG3 (Tailored telephone counseling group):** The man participants received only one call per year while women smokers could receive two calls if they were due for breast or cervical cancer screening. Trained female counselor attempted to motivate smokers towards a stage-based smoking cessation and also to identify and overcome quitting barriers and finally reinforce reasons for quitting. **Follow up:** 16 months **Cessation verification:** Self reported cessation and Saliva cotinine test **Nicotine dependence:** Not mentioned **Educator:** Trained counselors **Statistical analysis**: logistic regression	In the final, 21.8% had quit smoking at follow-up. Smokers in IG2 were more likely to be quitter than smokers in IG1 (32.7% vs. 13.2%, $p<0.05$). Smokers who received all three interventions were not more likely to report quitting at follow-up than in IG1 (19.2% vs. 13.2%). **Comments:** Tailored intervention is effective to quit smoking among minority group.
6	Effectiveness of a computer-tailored…(Etter and Perneger, 2001) **Year:** 2001 **Kind of study:** RCT **Country:** Switzerland	**Number of participants:** **Intervention group:** 1467 smokers **Control group:** 1467 smokers **Participants:** French speaking smokers **Mean age:** 36 years **Setting**: Community survey	**Intervention information:** **Intervention group:** They received a personal counselling letter by mail, a stage matched booklet and a questionnaire. The intervention was based on stage of change and the theory of planned behavior. **Control group:** They only received a questionnaire without any intervention. **Follow up:** 6 months **Cessation verification method:** Self-reported cessation **Nicotine dependence test:** Not mentioned **Educator:** trained researcher **Statistical analysis:** Multivariate analysis	Cessation rate was 2.6 times more in IG than CG (5.8%in IG and 2.2% in CG). 7-day abstinence was 8% in IG and 3.3% in CG ($p<0.01$). **Comments:** A tailored intervention program which is delivered by computer is effective in smoking cessation.
7	Evaluation of a culturally appropriate…(Woodruff et al., 2002) **Year:** 2002 **Kind of study:** RCT **Country:** USA	**Number of participants:** **Intervention group**: 132 smokers **Control group:** 150 smokers **Participants:** Spanish speaking latino smokers **Mean age:** 43 years **Setting**: Community survey	**IG:** The intervention was based on social cognitive constructs. It was based on the fact that formal and informal social networks can create a supportive environment. The Spanish language appropriate intervention was consisted home visits and telephone calls from the advisor. **CG:** They were referred to an innovated Helpline in Spanish. **Follow up:** One week after intervention **Cessation verification:** Self-reported cessation and expired CO level **Nicotine dependence:** Not mentioned **Education:** Trained health advisor or promoters **Statistical analysis:** Multivariate analysis	At one week after intervention, validated smoking cessation rates were more than twice as high in IG (20.5%) than in CG (8.7%) ($p<0.005$). The pattern of cessation rate was similar for self-reported cessation, and after recoding dropouts to non-abstinence. **Comments:** Culturally appropriate intervention is effective in smoking cessation.

8	Tobacco and alcohol use-prevention program.. (Elder et al., 2002) **Year: 2002** **Kind of study: RCT** **Country: USA**	**Number of participants:** **In overall:** 660 adolescents **Participants:** Hispanic migrant **Mean age:** 18 years **Setting:** School	**Intervention information:** **IG:** They received Parental support to make a healthy decision, behavioural methods like role playing and behaviour rehearsal. Students attend in eight weekly sessions and parents attended in three sessions together their adolescents. They received group leader-led discussions, video education and skill practice. They also receive three booster telephone calls after the intervention and three newsletters. **Control group:** Just as an attention control group **Follow up:** One year and two years. **Cessation verification method:** Self-reported cessation **Nicotine dependence test:** Not mentioned **Educator:** Trained assistants **Statistical analysis:** Multivariate regression analysis	Group prevalence of 30 day smoking cessation rate in IG was 2.5% at the end of intervention, 3.3% after one year and 2.9% after 2 years follow up while in CG it was 4.6%, 4.7% and 3.5% respectively. Susceptible smokers dropped smoking about 40% in CG and 50% in IG. **Comments:** Group based intervention program was not effective in smoking cessation in long time.
9	Smoking cessation using mobile… (Bramley et al., 2005) **Year:** 2005 **Kind of study:** RCT **Country:** New Zealand	**Number of Participants:** **Maori Control group:** 179 smokers **Maori Intervention group:** 176 smokers **Non-Maori control group:** 674 smokers **Non-Maori Intervention group:** 676 smokers **Participants:** Maori and non-Maori smokers **Median of age:** 22 years **Location:** different Communities	**Intervention information:** Tailored mobile phone text message (includes 140 regular texts were developed for one month) Maori text related to Maori language and supporting message in both Maori and English language and information on Maori traditions. **Follow up:** One, three and, six months. **Cessation verification method:** Self-report and Salivary cotinine level (random samples) **Nicotine dependence test:** Fagerstrom Test **Educator:** Maori researcher **Statistical analysis:** Logistic regression test	**One month:** Maori Intervention group 26.1% (compared to 11.2%), Non –Maori intervention group 28.6% (compared to 13.2%) ($p<0.0001$). **Three months:** Maori Intervention group 26.7% (compare 19.6%), Non –Maori intervention group 29.6% (compared 18.5%) ($p<0.0001$). **Six months:** Maori Intervention group 21.6% (compare 18.4%), Non –Maori intervention group 26.3% (compared 25.1%) ($p=0.6$) **Comments:** A mobile phone-based cessation intervention was successful among young Maori.
10	A brief smoking intervention for Chiness… (Fang et al., 2006) **Year:** 2006 **Kind of study:** RCT **Country:** USA	**Number of participants:** **Intervention group:** 34 smokers **Control group:** 32 smokers **Participants:** Chinese or Korean ethnicity smokers **Mean age:** 46 years **Setting:** Community survey	**IG:** The intervention was based on one-person session and cognitive reactions theory of smoking and cessation. Participants were encouraged to explore their smoking experiences. **CG:** They received a general counseling. Sessions were designed according the participants native language (Korean, Cantonese, or Mandarin). Both groups received NRT. **Follow up:** One-week, one and three-month **Cessation verification:** Self-reported cessation **Nicotine dependence:** Fagerstrom test **Educator:** Trained health educator **Statistical analysis:** Multivariate logistic regression	At three months, cessation rate in overall was 38%. IG had higher cessation rates (52.6% in Chinese, 60.0% in Korean) in compared to CG (23.5% in Chinese, 40.0% in Korean) at one month, but not at 3-month. **Comments:** Brief smoking cessation is effective to quit smoking among Asian American smokers.
11	Focus groups as an intervention for …(Webb, 2008) **Year:** 2007 **Kind of study:** Quasi experimental **Country:** USA	**Number of participants:** 100 smokers in 10 focus groups **Participants:** African American smokers **Mean age:** 41 years **Location:** Health care centre	**Intervention information:** Focus group discussion about prevalence of smoking among African American and its health disparities. The received corrective education about different topics which have been discussed during the focus discussion. **Follow up:** Post group assessment after the session. **Cessation verification method:** Self-reported **Nicotine dependence test:** Fagerstrom test **Educator:** race matched moderator (Psychologist)	1.33 points increase in readiness to quit smoking (5.36 at baseline and 6.69 in post focus group), significant on stage of change, ad significant change in plan to quit date ($p<001$). **Comments:** A session focus group discussion was effective to improve smokers cognitive change and readiness to quit smoking.

			Statistical analysis: logistic regression test	
12	Effectiveness of tobacco control among … (Shelley et al., 2008) **Year:** 2008 **Kind of study:** Quasi RCT **Country:** USA	**Number of participants:** **Baseline interviews group:** 2537 smokers **Follow up interviews group:** 1384 smokers **Participants:** Chinese population **Mean age:** 48 years **Setting:** Community survey	**IG:** They received a social marketing campaign which included posters and tailored language educational materials **CG:** Without intervention **Follow up:** 5 years **Cessation verification:** Not mentioned **Nicotine dependence:** Not mentioned **Educator:** Trained health educator **Statistical analysis:** Logistic regression analysis	In overall there was a reduction from 17.7% to 13.6%, a relative 23% decrease in smoking. The prevalence of smoking absolute decrease was3.3% attributed to policy changes with an additional absolute decline in prevalence of 2.8% in the IG compared to CG. **Comments:** Community based tailored smoking intervention is effective in quitting smoking.
13	Development of a culturally targeted…(Matthews et al., 2009) **Year:** 2009 **Kind of study:** RCT **Country:** USA	**Number of participants:** **IG:** 8 smokers **CG**: 50 smokers **Participants:** Low-to-middle income African American **Mean age:** 46 years **Setting:** Clinical Addiction research Laboratory	**Intervention information:** **IG:** They received targeted smoking cessation counselling which was culturally specific program. They received a complete targeted intervention in terms of Peripherally, evidently, linguistically, socio-culturally and constituent involving targeting program. Eligible smokers received a nicotine patch. **CG:** They only received a standard treatment. **Follow up:** 3 and 6 months **Cessation verification method:** Self-reported cessation and exhaled CO level **Nicotine dependence test:** Fagerstrom test **Educator:** Trained educators **Statistical analysis:** Multivariate regression analysis	Verified smoking cessation rates was 63% in IG and 36% in CG after the intervention. The rate was 50% in IG and 26% in CG after 3 months and 25% in IG and 24% in CG after 6 months follow up. **Comments:** Culturally targeted smoking cessation intervention is effective and among African American smokers.
14	Asian smoke free communities: evaluation of …(Wong et al., 2010) **Year:** 2010 **Kind of study:** Quasi RCT **Country:** NewZealand	**Number of participants:** 104 smokers **Participants:** Asian communities(Chinese and Korean) **Mean age:** 48 years	**Intervention information:** They received a culturally appropriate service included Eight Cs. It covered smokers supporting to quit smoking using advice, education and counselling and subsidised NRT. They received them via Asian language radio, TV and print news. They receive health professional feedback. **Follow up:** One month, 3 and 6 months. **Cessation verification method:** Self-reported cessation **Nicotine dependence test:** Not mentioned **Educator:** Trained Korean-and Chinese coordinator **Statistical analysis:** Intention to treat analysis	At one month the cessation rate was 72%, at 3 months 53.8% and at 6 months 40.9%. 7-day point prevalence was 52% at 6 months. **Comments:** The smoke free services for Asian smokers in developed countries are effective to quit smoking.
15	Developing a smoking cessation program… (Schnoz et al., 2011) **Year:** 2011 **Kind of study:** Quasi RCT **Country:** Switzerland	**Number of participants:** **In overall:** 63 smokers **Participants:** Turkish-speaking migrant in Switzerland **Mean age:** 40 years **Setting:** Community survey	**Intervention information:** They received tailored smoking cessation program included: eight week group counselling, four single counselling, based on behavioural theory model like problem solving or skills training, social support. **Follow up:** 3 and 12 months **Cessation verification method:** Exhaled CO level by PiCO smokerlyzer **Nicotine dependence test:** Not mentioned **Educator:** Trained researcher and trained Turkish-speaking migrant **Statistical analysis:** Cox regression analysis	Smoking cessation rate at the end of intervention was 55.7%, at 3 months follow up was 47.5% and after 12 months follow up was 37.7%. **Comments:** Tailored smoking cessation is effective in immigrant smokers.
16	Promoting smoking cessation in Pakistani…(Begh et al., 2011)	**Number of participants:** **IG:** 341 smokers **CG:** 163 smokers **Participants:** Pakistani and	**Intervention information:** **IG:** two weeks behavioural support, come skills about health communication and culturally tailored smoking cessation advises. **CG**: Normal advices which were provided in health care centres	In IG than CG after one month there was a small increase in the number of abstinent smokers (RR 1.30, 95%CI: 0.82-2.06). At three and six months the OR of self-reported cessation rate in IG than CG were 1.04 (95%CI 0.40, 2.66) and 1.61 (95%CI 0.50, 5.17)

	Year: 2011 **Kind of study:** RCT **Country:** UK	Bangladeshi men **Mean of age:** 35 years **Setting:** Primary Care Centres	**Follow up:** 3 and 6 months **Cessation verification method:** Self-reported and Exhaled Carbon monoxide **Nicotine dependence test:** FTND **Educator:** Smoking service providers **Statistical analysis:** Univariate test	respectively. **Comments:** Culturally tailored smoking cessation intervention is effective in smoking cessation rate and it is cost-effective.
17	An internet-based smoking cessation…(McDonnell et al., 2011) **Year:** 2011 **Kind of study:** RCT **Country:** US	**Number of participants:** **IG:** 562 smokers **CG:** 550 smokers **Participants:** Korean-American smokers **Mean of age:** 35 years **Setting:** Community based study	**Intervention information:** **IG:** Self-help tailored anti smoking program by internet (Quitting is Winning). **CG:** Self-help tailored anti smoking program with booklet. **Follow up**: one year (50 weeks) **Cessation verification method:** Self-reported cessation **Nicotine dependence test:** No **Educator:** Community advisor **Statistical analysis:** Multiple logistic regression	In follow up there was no significant difference smoking cessation rate between IG (11%) and CG (13%) groups. However there was a higher smoking cessation rate after post-hoc analysis in IG who completed the intervention, 26% quit compared with 10% who did not complete it (ITT difference = 16%, 95% *CI* = 3%–29%). **Comments:** Internet smoking cessation program is effective in smoking cessation in Korean-Americans.
18	Feasibility, acceptability and impact of a …(Girgis et al., 2011) **Year:** 2011 **Kind of study:** RCT **Country:** Australia	**Number of participants:** **IG:** 101 smokers **CG:** 194 smokers **Participants:** Arabic language smokers **Mean of age:** 36-39 years **Setting:** Primary medical care and community-based study	**Intervention information:** **IG:** Telephone support based on 5 A's approach. **CG:** Usual are **Follow up**: 6 and 12 months **Cessation verification method:** self-reported smoking cessation **Nicotine dependence test:** Nicotine dependence score (Heatherton). **Educator:** Psychologist **Statistical analysis:** Univariate test	Beween IG and CG there were no significant differences at 6 or 12 months in smoking cessation rates (11.7% *vs* 12.9%, *P* = 0.83; 8.4% compared with 11.3%, *P* = 0.68) respectively. **Comments:** Telephone culturally tailored smoking intervention is not effective in smoking cessation.

1.1.7 B3: Participants with 50 and over

Num.	Study Information	Participants' characteristic	Intervention	Results
1	Smoking cessation in patients: two ….(Springett et al., 1990) **Year:** 1990 **Study design:** RCT **Country:** UK	**Number of participants:** **Study A:** 1462 smokers **Study B:** 1392 smokers **Participants:** Outpatients smokers **Mean age:** 51 years **Setting:** Hospital	**Study A:** Physician's usual anti smoking advice smokers (CG) was compared with physician's usual advice reinforced by a signed agreement. It included two visits in the first six weeks, and some encouragement letters from the physician. **Study B:** Four methods were compared. They included advice only, advice supplemented by a signed anti smoking agreement, advice supplemented some encouragement letters, and advice supplemented by a signed agreement and a series of letters of encouragement. **Follow up:** 6 and 12 months **Cessation verification:** By carboxy haemoglobin test **Nicotine dependence test:** Not mentioned **Educator:** Physicians **Statistical analysis:** logistic model	Smoking cessation in study A was 9% in IG at six months compared with 7% in CG (p = 0O17). Cessation rate in study B were 5.2%, 4 9%, 8-5%, and 8-8% respectively. Physician's advices has influenced outcome by uding postal encouragement while using signed agreement was not effective. **Comments:** Smoking cessation can increase by smokers' encouragement and also physician's advice can increase smoking cessation
2	Smoking Prevention among People …(Vetter and Ford, 1990) **Year:** 1990 **Study design:** RCT **Country:** UK	**Number of participants:** **Intervention group:** 237 smokers **Control group:** 234 smokers **Participants:** Elderly patients smoker **Age:** >60 years **Setting:** Health center	**IG:** anti smoking brief advices by general practitioners. Discuss about the problems associated with stopping smoking with the practice nurse. **CG:** without intervention. **Follow up:** 6 months **Cessation verification:** self-reported cessation and Exhaled CO level **Nicotine dependence:** Not mentioned **Educator:** Trained nurse **Statistical analysis**: Multivariate model	In overall there was a significant higher proportion stopped smoking in IG when compared with CG, although the stopping rate fell with increasing age from 18% of those aged 60-64 to 7% of those aged 75 and over. Intake cigarettes reduces among IG more than CG (50% vs 38%). Thirty-one per cent of IG and 38% of controls did not change the number of cigarettes they smoked (p.0.05). **Comments:** Anti smoking brief advice can increase smoking cessation among older.
3	The Effects of Counseling on Smoking Cessation Among …(Pederson et al., 1991) **Year:** 1991 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group:** 37 smokers **Control group:** 37 smokers **Participants:** Patient smokers **Mean age:** 54 years **Setting:** Hospital	**IG:** received a self help manual plus 3, 8, 15, to 20 minutes counseling sessions. **CG:** Only one visit and were asked only to fill out the questionnaire **Follow up:** 3 and 6 months **Cessation verification:** Self reported cessation and using COHb analysis from blood samples drawn at 6 months. **Nicotine dependence:** Not mentioned **Educator:** Untrained educators **Statistical analysis:** Logistic regression model	Smoking cessation were small (p>0.05). The number of cigarettes had a reduction about 20 or more cigarettes a day, but with reductions reported by 86.2% of IG and 77.8%of CG (p>0.05). Older smokers had higher success quitting at 6 months (p>0.05). Differences between IG and CG both in rates of cessation at 6 months (33.3% vs 21.4%) and, for patients still smoking, reductions in amount smoked was not significant. **Comments:** Less intensive smoking cessation intervention is less effective.

4	Randomised controlled trial of…(Rose and Colwell, 1992) **Year:** 1992 **Study design**: RCT **Country:** UK	**Number of participants:** **Intervention group**: 714 smokers **Control group:**731 smoker **Participants:** Patient smokers **Mean age:** 53 years **Setting:** Hospital	**IG:** They received a brief individual advice on smoking cessation. **CG:** Without intervention **Follow up:** 12 months and 3 years **Cessation verification:** Self-reported cessation **Nicotine dependence:** Not mentioned **Educator:** Trained health researcher **Statistical analysis**: Not mentioned	In IG, over 10 years mortality from coronary heart disease was 18% lower than CG, and lung cancer was 23% lower. During the next 20 years comparing IG with CG, The total mortality was 7% lower, fatal coronary heart disease was 13% lower, and lung cancer was 11% lower. **Comments:** Smoking cessation through brief advice can reduce smoking related disease.
5	A two-year self help smoking cessation …(Pallonen et al., 1994) **Year:** 1994 **Study design:**Quasi RCT **Country:** Finland	**Number of participants:** **Intervention group:** 149 smokers **Contro group:**116 smokers **Participants:** Older smokers **Mean age:** 52 years **Setting:** Community survey	**IG (Self help manual group):**They received a self help manuals which was based on stage of change (translated to Finnish). **CG (Usual care group):**Without intervention. **Follow up:** **IG:** 6, 12, 18 and 24 months and **CG** 12 and 24 months **Cessation verification:** Self reported cessation **Nicotine dependence:** Not mentioned **Educator:** Trained research staff **Statistical analysis:** Multivariate regression analysis	During two years a significant time × intervention effect ($P<0.05$) and time × baseline stage effect ($P<0.001$) on abstinence rate. **Comments:** Self help smoking cessation intervention is effective in short time not in long time in older.
6	Does tailoring matter? The impact of…(Rimer et al., 1994) **Year:** 1994 **Study design:** RCT **Country:** USA	**Number of participants:** **In overall: 1553**smokers **Intervention group 1:** 511 smokers **Intervention group 2:** 505 smokers **Control group**: N=537 **Participnats:** Older smokers **Mean age:** 60 year **Setting**: Study in 1988 from across the USA	**IG1 (Clear Horizons Guid):** a 24 pages guide specifically tailored to the smokers, habit, quitting needs and lifestyle of the older smokers. Recommendation about exercise and he benefit of quitting. **IG2 (Clear Horizons plus calls):** Two brief (10-15 min) prescheduled phone calls at 4-8 weeks and again at 16-20 weeks after receiving the guide and invited to call the clear horizons quit line for additional help whenever needed. **Control Group (**Clearing the Air): a 24 pages booklet aimed at smokers of all ages. **Follow up**: 3,6,12 and 24 months **Cessation verification:** Self-reported smoking cessation. **Nicotine dependence test:** Fagerstrom test **Educator**: Four BA or MA level trained health educators. **Statistical analysis**: Multivariate analysis	1- At three months there was a significant increase in the self reported quit rate from CG (7%) to IG1(9%) to IG2. The proportion of quit rate increased based on the number of tried strategies. For 4 used strategies it was 11% in CG and 22% and 29% in IG1 and IG2, respectively. The likely to quit in IG2 was 1.5 times as likely to quit as IG1 and 1.7 times as likely to quit CG. IG1 was more likely to have quit at 12 months than IG2 (20 versus 15%). IG2 also was more likely to have quit than CG (19 versus 15%). By 12 months both IG1 and the IG2 had higher quit rates than CG but was not statistical different from one another. **Comments:** More intensive intervention is more effective to quit smoking.
7	The effect among older persons of a General …(Burton et al., 1995) **Year:** 1995 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group:** 1573 smokers **Control group:** 1524 smokers **Participants:** Older patient smokers **Mean age:** 65 years **Setting:** Hospital	**IG:** They received two preventive examinations, a counseling visit at follow up about health behavior within 6 months. **CG:** They only received a pamphlet. **Follow up:** 2 years **Cessation verification:** Self reported cessation **Nicotine dependence**: Not mentioned **Educator:** Physicians **Statistical analysis:** Logistic regression model	A differences were resulted between IG and CG in smoking, but of the differences was not statistically significant. The proportion of stopped smokers was higher in IG than in Cg (24.2 vs 17.9&, P=0.09). **Comments:** Changing smoking in older is not possible by yearly visiting and physician advice.
8	Nurse-conducted smoking cessation with minimal …(Tonnesen et al., 1996) **Year:** 1996	**Number of participants:** **Intervention group:**254 smokers **Control group:** 253 smokers **Participants:** Patient smokers	**IG (Motivational group):** the motivational approach consisted of a nurse-conducted 5 min consultation concerning reasons to quit smoking plus brochures about smoking cessation and advice about how to quit. A letter encouraged them to quit after 4-6 weeks.	At the 1 year, smoking cessation rate for point prevalence was 8.7% in IG and 3.6% in CG(p=0.02). At 12 months sustained cessation rate at all during the year was 3.1% in IG and 1.2%. in CG (p=0/22). The point prevalence for light smokers was 13.9% in IG while it was 6.3% in CG (p=0.12) and for heavy

	Study design: RCT **Country:** Denmark	**Mean age:** 53 year **Setting:** Lung clinic	**CG:** only one call after 1 year. No advice to stop smoking was given. **Follow up:** 12 month **Cessation verification:** Exhaled CO level **Nicotine dependence:** Fagerstrom test **Educator: trained nurse** **Statistical analysis:** Logistic regression analysis	smokers 5.2% in IG and 1.9%in CG (p=0.20). **Comments:** Smoking cessation intervention based on motivational interviewing by nurse is effective.
9	Reaching Midlife and Older Smokers: Tailored…(Morgan et al., 1996) **Year:** 1996 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group:** 279 smokers **Control group:** 380 smokers **Participants:** midlife and older smokers **Mean age:** 60 years **Setting:** Primary medical care	**IG (Immediate intervention group):** The intervention protocol was based on four A steps. Physicians encouraged smokers to have a quit attempt, to deliver personalized feedback to smokers, to discuss the health benefits of quitting for older smokers, and give a clear message to stop smoking. The smokers received a follow-up letter included a self-help smoking program " the *Clear Horizons* guide" which was designed especially for long-term, heavy smokers, age 50 and older. **CG(delayed intervention group)**: They received a usual care by physician over the accrual and follow-up period. **Follow up:** 6 months after enrollment. **Cessation verification:** only self repot **Nicotine dependence test**: Not mentioned **Educator:** Trained Physicians and clinical staff **Statistical analysis:** Logistic regression model	By counting all non respondents as smokers, self-reported quit rates at 6-month follow-up were 15.41% in IG and 8.16% in CG (P< 0.005) and quit rates were doubled for participants in IG. Self-reported quit rates for respondents on the 6-month were 17.8% in IG compared with 9.3% in CG ($P < 0.005$). **Comments:** Brief smoking cessation intervention by trained physicians and staff was effective among old people.
10	Self- help intervention for older…(Ossip-Klein et al., 1997) **Year:** 1997 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group 1:** 92 smokers **Intervention group**: 85 smokers **Participants:** Older smokers **Mean age:** >60 years **Setting:** Community survey	Both groups received a self-help manual and a flyer to encourage smokers to use hotline. **IG1 (Proactive telephone group):**They received two calls from counselors. Counselors informed them about quit attempts, barriers to cessation success and stage of change and provide motivational cessation. **IG2 (Letter group):** They received ailed reminders to encourage them to call the hotline along with brief messages of support from hotline counselors. They also received a "quit tips" card. **Follow up:** 3, 6 and 12 months **Cessation verification:** Self-reported cessation and by significant others. **Nicotine dependence:** Not mentioned **Educator:** Trained researcher **Statistical analysis:** Logistic regression analysis	Men were more likely to be abstinent than women at three six months (17.9% vs 12.8% respectively). A significant gender ✕treatment intervention was found, with abstinence rates higher for men in IG2 (30% vs 7.4%) and women in IG1 (8.1% vs 18.8% for men and women, respectively). **Comments:** Both kinds of intervention were effective but different among gender in older smokers.
11	Evaluation of a nurse-delivered smoking …(Block et al., 1999) **Year:** 1999 **Study design:** quasi experimental **country:** Canada	**Number of participants:** **Overall:** 102 smokers **Intervention group:** 50 smokers **Control group:** 52 smokers **Participants:** Smokers with a cardiac diagnosis **Mean age**: 55 years **Setting:** Hospital	**IG:** They received in-hospital contacts (two times by nurses) and three months telephone support after discharge (6 telephone contacts). " The Smoke-Free Habit" was delivered as a video program . " A Lifetime of Freedom From Smoking" was delivered at the close of the first intervention, and they were asked to review it. **CG:** only received routine booklet **Follow up:** 6 months after initial contact **Cessation verification:** only self-report	46% of IG, compared with 31% of CG were nonsmokers. The result was clinically significant but it was not difference statistically significant (p.0.05). The relapse rate was 3 times more in CG than those who received the intervention. At follow-up the self-efficacy scores were not significant differences between IG and CG. **Comments:** Delivering intervention by trained nurse cam improve smoking cessation among cardiac patients.

			Nicotine dependence: Tolerance Questionnaire (TQ) Educator: Trained nurse **Statistical analysis:** Multivariate analysis	
12	Using tailored interventions to enhance …(Lipkus et al., 1999)* **Year:** 1999 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group 1:**53 smokers **Intervention group 2:**55 smokers **Intervention group 3:**52 smokers **Participants:** 268 African American smokers **Mean age:** 52 years **Setting: Health center**	**IG1 (Provider promoting intervention group)**: They received a tailored, computerized prompting system along with a staged based behavioural message was delivered to smokers by providers. **IG2(Tailored print communication group (TPCc):** They received a tailored print communication in the time of their birthdays. **IG3 (Tailored telephone counseling group):** the man participants received only one call per year while women smokers could receive two calls if they were due for breast or cervical cancer screening. Trained female counselor attempted to motivate smokers towards a stage-based smoking cessation and also to identify and overcome quitting barriers and finally reinforce reasons for quitting. **Follow up:**16 months **Cessation verification:** Self reported cessation and Saliva cotinine test **Nicotine dependence:** Not mentioned **Educator:** Trained counselors **Statistical analysis:** logistic regression	In the final, 21.8% had quit smoking at follow-up. Smokers in IG2 were more likely to be quitter than smokers in IG1 (32.7% vs. 13.2%, $p<0.05$). Smokers who received all three interventions were not more likely to report quitting at follow-up than in IG1 (19.2% vs. 13.2%). **Comments:** Tailored intervention is effective to quit smoking among minority group.
13	A Randomized Controlled Trial of Smoking …(Dornelas et al., 2000) **Year:** 2000 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group:**54 smokers **Control group:** 46 smokers **Participants:** Patients smokers **Mean age:** 55 years **Setting:** Hospital	**IG:** They received counseling based on stage of readiness to change. They received multi brief telephone counseling based on TTM. Cessation counseling included motivational interviewing and relapse prevention techniques. **CG:** They received an on-line patient education video. **Follow up:** 6 and 12 months post discharge **Cessation verification:** Self-reported cessation **Nicotine dependence**: Fagersrom test **Educator:** Trained psychologists **Statistical analysis**: Multiple logistic regression	At follow-up, 43 and 34% of participants in CG and 67 and 55% of participants in IG were abstinent at 6 and 12 months ($P<0.05$). **Comments:** Hospital based intervention included counseling and telephone is effective to quit smoking in older smokers.
14	A minimal-contact intervention for…(Bolman et al., 2002) **Year**: 2002 **Study design**: RCT **Country:** Netherlands	**Number of participants:** **Intervention group:** 388 smokers **Control group**: 401 smokers **Participants:** Cardiac inpatient smokers **Mean age**: 57 year **Setting:** Hospital	**Intervention group:** stop smoking advice, 15-30min standard individual counseling, self help materials including brochure. **Control group:** No intervention **Follow up:** 3 and 12 months after hospitalization. **Cessation verification method:** Self-reported cessation and Saliva test. **Nicotine independence test:** Fagerstrom test **Educators**: Trained nurse and cardiologists **Statistical analysis**: Multivariate analysis, Logistic regression analysis	IG showed higher point prevalence and continues abstinence cessation rates than the control hospitals. Patients lost to follow up were considered as smokers differences of 9 and 11% were found for point prevalence abstinence and continues abstinence, respectively. There was not a significant intervention effects on point prevalence and continues abstinence. **Comments:** For long term a minimal contact is not effective in quit smoking.
15	Brief intervention during hospital admission to help …(Hajek et al., 2002) **Year:** 2002	**Number of participants:** **In overall:** 540 smokers **Intervention group:** 244 smokers	**IG: Brief intervention** included a booklet; a written quiz on the contents of the booklet; and a mutual support by another cardiac patient who recently stopped smoking **Control group:** Only received verbal advice to remain abstinent	After six weeks (59% and 60% in CG and IG respectively, $P=0.84$) and 12 months (41% and 37% in CG and IG respectively, $P=0.40$) there was not any significant difference between two groupsin abstinent rate. Patients with declaration of commitment component were almost twice as

	Study design: RCT **Country:** UK	**Control group:** 266 smokers **Participants:** Patient smokers **Mean age:** 56 years **Setting:** Hospitals	**Follow up:** 12 weeks and 12 months **Cessation verification:** Expired CO and salivary cotinine concentration at 12 months **Nicotine dependence test:** Not mentioned **Educator:** Trained nurse **Statistical analysis:** Logistic regression analysis	likely to remain abstinent than those without it (P < 0.01). **Comments:** Single session intervention can't be effective comparing an intensive intervention to quit smoking.
16	Evaluation of a Nurse-managed minimal-contact …(Bolman et al., 2002) **Year:** 2002 **Study design:** Quasi RCT **Country:** Netherlands	**Number of participants:** **Intervention group:**388 smokers **Control group:** 401 smokers **Participants:** Patient smokers **Mean age:** 57 years **Setting:** Hospitals	**IG:**The main elements of intervention included: stop-smoking advice, a short bedside consultation, delivering self-help materials and aftercare consultation by the cardiologist. **CG:** Without intervention **Follow up**: 3 months **Cessation verification**: self-reported cessation **Nicotine dependence:** Fagerstrom test **Educator:** Trained nurses and cardiologist **Statistical analysis:** Logistic regression analysis	There was a significant intervention effects on point prevalence cessation (OR= 2.11) and continues abstinence (OR= 1.41). There was a significant cessation by Intention-to-treat analysis (OR=1.35). **Comments:** Low intensity smoking cessation is effective in smoking cessation in patient smokers.
17	Efficacy of a smoking cessation intervention …(Kim et al., 2005) **Year:** 2005 **Study design:** RCT **Country:** Korean	**Number of participants:** **Intervention group:**200 smokers **Control group**:201 smokers **Participants: Patient smokers** **Mean age:** 53 years **Setting:** Hospital	**IG:** included two sections: A: 132 willing to quit participants received strong anti-smoking advice followed by 2A. They also received self-help materials along with a tailored with Korean language intervention, and two telephone calls after quit date. B: 68 willing to quit participants were provided an on-site counselors intervention in the form of the 4 Rs, four phone calls for different times. **CG:** They received advice to quit smoking. **Follow up:** 5 months **Cessation verification:** Self-reported cessation and exhaled CO level. **Nicotine dependence:** Farestrom test **Educator:** Trained counselors **Statistical analysis:** Multivariate analysis and logistic regression	1- After 5 months, smokers in IG were no more likely to quit smoking than CG. In IG and among subgroup, age analysis showed that the intervention among younger Smokers (aged 49 or less) was significantly more likely to be effective than older smokers (aged 50 or more). **Comments:** Tailored intervention is effective to quit smoking.
18	Tailored Interventions for Motivating Smoking…(Webb et al., 2005) **Year:** 2005 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group 1:** 96 smokers **Intervention group 2:** 94 smokers **Control group**: 92 smokers **Target group:** adult smokers **Mean age**: 50 years **Setting:** Community survey	**IG1 (Minimally personalized booklet group)**: They received a booklet like a CG. It was designed according to the participant's name. **IG2 (Extensively personalized booklet group):** The content of the booklet for this group was modified based on the smoker information. The booklet was made to create the appearance of a tailored intervention. **CG(Standard booklet group):**They received a booklet which was based on contemporary cognitive– behavioral models to inform smokers about smoking cessation. **Follow up**: 10 days following the mailing of the booklets. **Cessation verification:** Not mentioned **Nicotine dependence**: Fagerstrom Test **Educator**: trained Operators **Statistical analysis**: Multivariate analysis	There was a relation between the degree to personalized booklet and smoking cessation behavior. More personalized interventions leaded to produce an increased readiness to change and perceived cessation self-efficacy. **Comments**: More intensive and tailored intervention is more effective in quit smoking.
19	Randomized trial of a	**Number of participants:**	IG: they received a strong quit smoking message, self-help	Although the smoking cessation rates at 12-month follow-up were high, there

	smoking cessation …(Lacasse et al., 2008) **Year:** 2008 **Study design:** RCT **Country:** Canada	**Intervention group:** 99 smokers **Control group:**97 smokers **Participants:** Patient smokers **Mean age:** 52 years **Setting: Hospital**	materials, brief cessation counseling, the use of pharmacological adjuncts when indicated, and follow-up support. Such intervention was based on 5 A's. **CG:** Without intervention **Follow up:** baseline and 6 and 12 months **Cessation verification:** Self reported cessation and Saliva cotinine test **Nicotine dependence:** Fagerstrom test **Educator:** Trained physicians **Statistical analysis:** logistic regression analysis	was no significant difference between the study groups (IG, 30.3% and CG 27.8%). After verifies cessation test the results were obtained in patients was similar. **Comments:** Delivering brief or moderate cessation intervention among older patients is not effective.
20	Impact of brief motivational smoking cessation …(McClure et al., 2009) **Year:** 2009 **Study design:** RCT **Country:** USA	**Number of participants:** **Intervention group:** 276 smokers **Control group:** 269 smokers **Participants:** Volunteer smokers **Mean age:**51 years **Setting:** Community survey	**IG:** They received brief and tailored counseling about smoking cessation. They also received motivational interviewing plus free phone counseling program. **CG:** They received information about smoking risks and personalized counseling about lifestyle. **Follow up:** 6 and 12 months **Cessation verification:** Self-reported cessation and exhaled CO level **Nicotine dependence:** Fagerstrom test **Educator:** Trained health educators **Statistical analysis:** Multivariate analysis	Smokers in IG not reported great motivation to quit, use of treatment service or abstinence compared to CG at follow up. At 12 months, CG reported greater motivation to quit, use of pharmacotherapy at 6 months and 30 day point prevalence abstinence (P=0.04). **Comments:** Brief motivational intervention is not effective to quit smoking without more intention to quit.
21	Effects of Feedback on Spirometry in Primary …(Walters et al., 2009) **Year:** 2009 **Study design:** RCT **Country:** Australia	**Number of participants:** **Obstructive lung function (OLF) group:** 135 smokers **Normal lung function (NLF) group:**193 smokers **Participants:** Patients smokers **Mean age:** 50 years **Setting:** General practice	All smokers received a standard anti-smoking message and were received printed smoking cessation information. **IG:** they received feedback of their lung function damage results immediately after spirometry by nurse. **CG:** They received a message that showed them that there is not any evidence of lung damage. **Follow up**: 3 months **Cessation verification:** Self-reported cessation **Nicotine dependence**: Heaviness of smoking index. **Educator:** Trained nurses **Statistical analysis:** Logistic regression analysis	In overall, at 3 months, 30.2% smokers reported making an attempt to quit. Of 297 (80.5%) successfully followed up, 81 (27.3%) smokers reported a forward shift based on stage of change and 35 (11.8%) smokers mentioned a backward shift. **Comments:** Providing a lung damage feedback for smokers in not effective in quitting smoking.

***Note:** This study was common between NESB and older smokers' studies (repeated)

Appendix C: Permission Letters

GREEK ORTHODOX COMMUNITY OF SA INC.

COMMUNITY CARE SERVICES

89 Hawker Street, Ridleyton SA 5008
T: (08) 8245 5561 F: (08) 8245 5586
www.gocsa.org.au ABN: 919 2754 9135

Social and Behavioural Research
Ethics Committee,
Flinders University of South Australia

To Whom it May Concern,

Re: Participation in the Smoking Project for seniors in the Greek Community

Further to our meeting on Friday 16th September 2011 between you, Dr. George Tsourtos, Senior Lecturer Discipline of Public Health Flinders University, myself and other Community Care staff, I hereby reiterate the following;

1) The Greek Orthodox Community Care Services would like to assist Mr. Masoud Mohammadnezhad with his 'smoking project' as part of his PhD studies.
2) GOCSA staff also undertakes to assist Masoud in the recruitment phase by introducing him to potential participants (staff and clients who smoke) and
3) Assist in formulating the peer education program by providing suitable candidates, translating, other support & training if and when necessary.

GOCSA looks forward to a successful and collaborative partnership and awaits the evaluation report with this project.

Any queries you may have should be directed to me as per the details below.

Yours Sincerely

Luisa Stenta
Manager,
Community Care Services
Greek Orthodox Community of SA Inc.
Tel 08 8245 5561
Email: luisa@rgha.com.au

From: Vlahos, George (DFEEST) [George.Vlahos@sa.gov.au]
Sent: Monday, October 15, 2012 7:00 PM
To: George Tsourtos
Subject: RE: PhD student administering questionnaire

Good morning George,

I can confirm that permission is granted for the PhD students to administer the questionnaire survey at the Glendi Festival on both 27th & 28Th October 2012.
I will forward you complimentary entry tickets for the weekend.
If you have any further queries, please do not hesitate to contact me.

George Vlahos
Catering Convenor
Glendi Greek Festival

Somerton Bowling Club Inc.
King George Avenue, Somerton Park SA 5044
Telephone 8296 8849 Facsimile 8296 4234 Email somertonseagull@australiaonline.net.au

To: Behavioural Ethics Committee
Flinders University

Mr MASOUD MOHAMMADNEZHAD, a Phd student in Public Health, is authorised to conduct a Health Survey, focusing on smoking, at the Somerton Bowling Club.

Yours sincerely,

Ray Whichelo
Secretary
8th November 2012

Dist 9500

ROTARY CLUB OF ADELAIDE WEST (INC)
ABN 74 629 480 393

PRESIDENT TEL 0447 598 451

Dear Dr Tsourtos

Mr. Masoud Mohammadnezhad has contacted me for permission to approach the Rotary Club of Adelaide West for research purposes.

I hereby give that permission and ask that Mr Mohammadnezhad re-contact me to arrange an appropriate process for this to happen.

Yours sincerely

Sioux Christiansen
President
Rotary Club of Adelaide West
0447 598 451

HOLDFAST BAY BOWLS AND CROQUET CLUB

THE HOLDFAST BAY BOWLS AND CROQUET CLUB INC.

ABN 39 193 714 648
583 Anzac Highway, Glenelg North, SA 5045
Ph: 08 8295 1444. Fax: 08 8376 0214
Email: secretary@holdfastbaybowls.com
Web: http://www.holdfastbaybowls.com.au

PATRON: K Rollond Mayor
PRESIDENT: Sandy Wallace
SECRETARY: John McDougall OAM
Ph: 8295 2776
Mobile: 0439447314

http://www.holdfastbaycroquet.com.au

7th November 2011

Dear Member,

This is to introduce Mr Masoud Mohammadnezhad who is a PHD student at Flinders University in the School of Medicine, Faculty of Health Sciences. He is undertaking research leading to a production of a thesis. If you are happy to contribute to his research he will provide you with a questionnaire for you to complete.

John McDougall
SECRETARY

ALL CORRESPONDENCE TO BE ADDRESSED TO THE SECRETARY.

We're a Good Sports Club

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MARION SPORTS & COMMUNITY CLUB INC.

Established Since 1908

PO Box 170, Oaklands Park SA 5046
262 Sturt Road, Marion SA 5043
ABN: 22 267 574 276

Telephone: (08)8296 8444
Facsimile: (08)8296 8504
Email: marionclub@bettanet.net.au
Web: clubmarion.org.au

To: Behavioural Ethics Committee of Flinders University

I confirm that Masoud Mohammadnezhad can administrate his questionnaire which is part of his PHD study in this Club.

Best Regards

Terry Zajer
General Manager

RICHMOND LIONS CLUB INC.
P.O. BOX 463, MARLESTON, S.A. 5033. Telephone: (08) 8294 4048 ABN 36 060 123 824

November 6 2012

Behavioural Ethics Committee Flinders University.

Today I had the pleasure of meeting Mr Masoud Mohammadnezhad who requested assistance in the pursuit of his PhD studies and can confirm that this club would be happy to help him in any way we can.

He is very welcome to bring us copies of his questionnaire which I will distributes to those people covered by his requested age demographic.

Denise Keenan
President.

Lockleys Bowling Club Inc.

www.lockleysbowlingclub.org.au

46 Rutland Avenue
LOCKLEYS 5032
SOUTH AUSTRALIA

Phone: (08) 8443 6798
Fax: (08) 8352 4748
E-mail: lbc@chariot.net.au

ABN 69 461 233 672

To: Behavioural Ethics Committee of Flinders University

I confirm that Masoud Mohammadnezhad can administer his questionnaire which is part of his PhD study in this Club.

Best regards

Deirdre Day
Administrative Secretary

Appendix D: Ethical Approval

1.1.8 D1: Ethical approval for the Qualitative study

Flinders University and Southern Adelaide Local Health Network

SOCIAL AND BEHAVIOURAL RESEARCH ETHICS COMMITTEE

Research Services Office, Union Building, Flinders University
GPO Box 2100, ADELAIDE SA 5001
Phone: (08) 8201 3116
Email: human.researchethics @flinders.edu.au

APPROVAL NOTICE

Principal Researcher:	Mr Masoud Mohmmadnezhad
Email:	moha0173@flinders.edu.au
Address:	6/1461 Main South Road Bedford Park SA 5042 5042
Project Title:	Evaluating the effectiveness of a peer-education smoking cessation intervention for elderly Greek-Australians

Project No.:	5421	Approval Date:	10 October 2011	Approval Expiry Date:	30 January 2014

The above proposed project has been **approved** on the basis of the information contained in the application and its attachments with the addition of the following comments:

1. Please confirm that ethics approval is only being sought for Phase 1 of this research. Please note that conditional approval has only been granted for Phase 1 (item C1(a)).
2. Please provide translated copies of all participant documents to the Committee that includes a footnote, signed by the researcher/supervisor that states that an accurate translation has been provided (item D3).
3. The Committee noted that Mr Masoud Mohammadnezhad was listed as 'Ms' in the Letter of Introduction. Please ensure that the Letter of Introduction is corrected prior to distribution to participants (Attachment: Letter of Introduction).
4. Please ensure that the Information Sheet is amended by:
   - explaining to participants that they can listen to the audio recording of their interview if they wish as stated in item F9 of the application; and
   - excluding the student researchers personal mobile number and replacing it with a Flinders University contact number unless sufficient justification can be provided; and
   - deleting the SBREC Executive Officer's name from the Committees contact details (Attachment: Information Sheet).

Please ensure that any permission letters (item D8) that are required by the Committee are forwarded as soon as possible. Additionally, for projects where approval has also been sought from another Human Research Ethics Committee (item G1), please be reminded that a copy of the ethics approval notice will need to be sent to the Committee on receipt.

In accordance with the undertaking you provided in your application for ethics approval for the project, please inform the Social and Behavioural Research Ethics Committee, giving reasons, if the research project is discontinued before the expected date of completion.

You are also required to report anything which might warrant review of ethical approval of the protocol. Such matters include:

- serious or unexpected adverse effects on participants;
- proposed changes in the protocol (modifications);
- any changes to the research team; and
- unforeseen events that might affect continued ethical acceptability of the project.

To modify/amend a previously approved project please either mail or email a completed copy of the Modification Request Form to the Executive Officer, which is available for download from http://www.flinders.edu.au/research/info-for-researchers/ethics/committees/social-and-behavioural-research-ethics-committee/notification-of-committee-decision.cfm. Please ensure that any new or amended participant documents are attached to the modification request.

In order to comply with monitoring requirements of the *National Statement on Ethical Conduct in Human Research (March 2007)* an annual progress and/or final report must be submitted. A copy of the pro forma is available from http://www.flinders.edu.au/research/info-for-researchers/ethics/committees/social-behavioural.cfm. Your first report is due on **10 October 2012** or on completion of the project, whichever is the earliest. *Please retain this notice for reference when completing annual progress or final reports.* If an extension of time is required, please email a request for an extension of time, to a date you specify, to human.researchethics@flinders.edu.au before the expiry date.

Andrea Mather
Executive Officer
Social and Behavioural Research Ethics Committee
18 October 2011

Cc: Prof Paul Ward, paul.ward@flinders.edu.au
Dr George Tsourtos, george.tsourtos@flinders.edu.au
Prof Carlene Wilson, carlene.wilson@flinders.edu.au
A/Prof Julie Ratcliffe, julie.ratcliffe@flinders.edu.au

1.1.9 D2: Ethical approval for the Qualitative study

From: Human Research Ethics
To: "Masoud Mohammadnezhad (moha0173@flinders.edu.au)"; "Paul Ward"; "George Tsourtos (george.tsourtos@flinders.edu.au)"; "carlene.wilson@flinders.edu.au"; Ratcliffe, Julie (Health) (Julie.Ratcliffe@health.sa.gov.au)
Subject: 5827 SBREC - Final approval notice
Date: Tuesday, 23 October 2012 12:26:00 PM
Importance: High

Dear Masoud,

The Deputy Chair of the Social and Behavioural Research Ethics Committee (SBREC) at Flinders University considered your response to conditional approval out of session and your project has now been granted final ethics approval. Your ethics final approval notice can be found below.

FINAL APPROVAL NOTICE

Project No.:	5827
Project Title:	Evaluating the effectiveness of a peer-mentoring smoking cessation intervention for elderly Greek-Australians
Principal Researcher:	Mr Masoud Mohammadnezhad
Email:	moha0173@flinders.edu.au
Address:	School of Public Health 6/1461 Main South Road Bedford Park SA 5042
Approval Date:	23 October 2012
Ethics Approval Expiry Date:	**30 January 2014**

The above proposed project has been **approved** on the basis of the information contained in the application, its attachments and the information subsequently provided with the addition of the following comment(s):

RESPONSIBILITIES OF RESEARCHERS AND SUPERVISORS

1. **Participant Documentation**
   Please note that it is the responsibility of researchers and supervisors, in the case of student projects, to ensure that:
   - all participant documents are checked for spelling, grammatical, numbering and formatting errors. The Committee does not accept any responsibility for the above mentioned errors.
   - the Flinders University logo is included on all participant documentation (e.g., letters of Introduction, information Sheets, consent forms, debriefing information and questionnaires – with the exception of purchased research tools) and the current Flinders University letterhead is included in the header of all letters of introduction. The

Flinders University international logo/letterhead should be used and documentation should contain international dialling codes for all telephone and fax numbers listed for all research to be conducted overseas.

- the SBREC contact details, listed below, are included in the footer of all letters of introduction and information sheets.

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project Number 'INSERT PROJECT No. here following approval'). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au.

2. **Annual Progress / Final Reports**

In order to comply with the monitoring requirements of the *National Statement on Ethical Conduct in Human Research (March 2007)* an annual progress report must be submitted each year on the **23 October** (approval anniversary date) for the duration of the ethics approval using the annual progress / final report pro forma. *Please retain this notice for reference when completing annual progress or final reports.*

If the project is completed *before* ethics approval has expired please ensure a final report is submitted immediately. If ethics approval for your project expires please submit either (1) a final report; or (2) an extension of time request and an annual report.

Your first report is due on **23 October 2013** or on completion of the project, whichever is the earliest.

3. **Modifications to Project**

Modifications to the project must not proceed until approval has been obtained from the Ethics Committee. Such matters include:

- proposed changes to the research protocol;
- proposed changes to participant recruitment methods;
- amendments to participant documentation and/or research tools;
- extension of ethics approval expiry date; and
- changes to the research team (addition, removals, supervisor changes).

To notify the Committee of any proposed modifications to the project please submit a Modification Request Form to the Executive Officer. Please note that extension of time requests should be submitted prior to the Ethics Approval Expiry Date listed on this notice.

Change of Contact Details

Please ensure that you notify the Committee if either your mailing or email address changes to ensure that correspondence relating to this project can be sent to you. A modification request is not required to change your contact details.

4. **Adverse Events and/or Complaints**

Researchers should advise the Executive Officer of the Ethics Committee on 08 8201-3116 or human.researchethics@flinders.edu.au immediately if:

- any complaints regarding the research are received;
- a serious or unexpected adverse event occurs that effects participants;
- an unforseen event occurs that may affect the ethical acceptability of the project.

Andrea Fiegert
Executive Officer
Social and Behavioural Research Ethics Committee

Appendix E: Information sheet, Letter of introduction, and Consent form for Qualitative study

Masoud Mohammadnezhad, PhD student
Discipline of Public Health
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Information Sheet

Title: 'Evaluating the effectiveness of a peer-education smoking cessation intervention for elderly Greek-Australians '

Description of the study:

This study is part of a project entitled 'Evaluating the effectiveness of a peer-education smoking cessation intervention for elderly Greek-Australians. This project will investigate smoking cessation among Greek-Australians. This project is supported by the Discipline of Public Health at Flinders University. If you choose to participate please tell the community manager so he/she contact the researcher.

Purpose of the study:

This study is designed to further our understanding as to how to best assist smokers, aged over the age of 49, who are interested in quitting. This study will provide the opportunity for you to express your attitudes, beliefs, experiences and concerns towards smoking cessation.

What will I be asked to do?

You are invited to attend a one-on-one interview regarding your views about smoking cessation. You will be interviewed by a Flinders University PhD student, with the assistance of an accredited Greek translator. The interviewer will be audio-recorded and will take about forty five to sixty minutes at a time convenient for you. Once recorded, the interview will be transcribed and stored as a computer file and then destroyed once the results have been finalised.

What benefit will I gain from being involved in this study?

There may be no direct benefit to you associated with this study but the sharing of your experiences will improve the planning and delivery of future smoking cessation programs. You will be compensated with a $30 shopping voucher or cash for your time and any out-of-pocket expenses.

Will I be identifiable by being involved in this study?

We do not need your name and you will be anonymous. Once the interview has been recorded, transcribed and saved as a computer file, the voice file will then be destroyed at the end of the study. All records containing personal information will remain confidential and no information that could lead to your identification will be released. We will treat any information provided in the strictest confidence and no-one will be individually identifiable in publications from this research project. To ensure your confidentiality we will maintain a central database of

participants that is only available to the research team members and we will ask you to choose a pseudonym. The recording and transcript of your interview will be labelled with this pseudonym to protect your identity as we will be making the recording available to authorised secretarial assistants for transcription. If you wish, you can listen your audio record afterward.

How do I agree to participate?

You are under no obligation to be interviewed. Your involvement in this study is entirely voluntary, and your non-participation will be accepted without any reasons and blaming. If you decide to participate you can withdraw from the study at any time freely and without any penalty.

How can I find out more information?

Should you require future details about the project please contact Mr. Masoud Mohammadnezhad on (08) 72218421 or email moha0173@flinders.edu.au.

This study has been reviewed by the Flinders Social and Behavioural Research Ethics Committee. Should you wish to discuss the study with someone not directly involved, in particular with relation to matters concerning policies, information about the conduct of the study or your rights as a participants, or you wish to make a confidential complaint, you may contact with Executive Officer of the Social and Behavioural Research Ethics Committee, on 8201 3116 or email human.researchethics@flinders.edu.au

Thank you for taking the time to read this information sheet and we hope that you will accept our invitation to be involved.

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project number: 5421, 10 October 2011). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au

Masoud Mohammadnezhad, PhD (Φοιτητής Διδακτορικού)
Τομέας Δημόσιας Υγείας(Discipline of Public Health),
Ιατρική Σχολή (School of Medicine),
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Πληροφοριακό Έντυπο

Τίτλος: «Αξιολόγηση της αποτελεσματικότητας της εκπαίδευσης από ομοίους για παρέμβαση στη διακοπή του καπνίσματος σε ηλικιωμένους Ελληνο-Αυστραλούς (Evaluating the effectiveness of a peer-education smoking cessation intervention for elderly Greek-Australians)»

Περιγραφή της μελέτης:

Αυτή η μελέτη είναι μέρος ενός προγράμματος με τον τίτλο «Αξιολόγηση της αποτελεσματικότητας της εκπαίδευσης από ομοίους για παρέμβαση στη διακοπή του καπνίσματος σε ηλικιωμένους Ελληνο-Αυστραλούς». Αυτό το πρόγραμμα θα ερευνήσει τη διακοπή του καπνίσματος στους Ελληνο-Αυστραλούς. Το πρόγραμμα υποστηρίζεται από τον Τομέα Δημόσιας Υγείας (Discipline of Public Health), στο Πανεπιστήμιο Flinders. Αν επιλέξετε να συμμετάσχετε παρακαλείστε να το πείτε στον/ην κοινοτικό διευθυντή/ρια (community manager) για να επικοινωνήσει με τον/την ερευνητή/ρια.

Σκοπός της μελέτης:

Η μελέτη έχει σχεδιαστεί να βελτιώσει την κατανόησή μας ως προς το πώς να βοηθήσουμε καλύτερα τους/τις καπνιστές/ριες, ηλικίας άνω των 49 ετών, που ενδιαφέρονται να διακόψουν το κάπνισμα. Αυτή η μελέτη θα σας δώσει την ευκαιρία να εκφράσετε τις απόψεις σας, τα πιστεύω σας, τις εμπειρίες σας και τις ανησυχίες σας ως προς τη διακοπή του καπνίσματος.

Τι θα μου ζητηθεί να κάνω;

Προσκαλείστε να έρθετε σε μια ένας προς έναν συνέντευξη σχετικά με τις απόψεις σας για τη διακοπή του καπνίσματος. Θα σας πάρει συνέντευξη ένας φοιτητής διδακτορικού του Πανεπιστημίου Flinders, με τη βοήθεια αναγνωρισμένου Έλληνα διερμηνέα. Η συνέντευξη θα ηχογραφηθεί και θα διαρκέσει σαράντα πέντε με εξήντα λεπτά περίπου σε ώρα κατάλληλη για εσάς. Αφού ηχογραφηθεί, η συνέντευξη θα καταγραφεί και θα αποθηκευθεί ως αρχείο σε υπολογιστή και θα καταστραφεί όταν τα αποτελέσματα έχουν ολοκληρωθεί.

Τι όφελος θα έχω από τη συμμετοχή μου σ' αυτή τη μελέτη;

Μπορεί να μην υπάρξει άμεσο όφελος σε σας που να σχετίζεται μ' αυτή τη μελέτη αλλά το να μοιραστείτε τις εμπειρίες σας θα βελτιώσει το σχεδιασμό και την εφαρμογή μελλοντικών προγραμμάτων για τη διακοπή του καπνίσματος. Θα αποζημιωθείτε με μια δωροεπιταγή (shopping voucher) $30 ή μετρητά για το χρόνο σας και για οποιαδήποτε πραγματοποιηθέντα έξοδα.

Μπορεί να αναγνωριστώ με τη συμμετοχή μου σ' αυτή τη μελέτη;

Δε χρειαζόμαστε το όνομά σας και θα είστε ανώνυμος/η. Όταν η συνέντευξη θα έχει ηχογραφηθεί, καταγραφεί και αποθηκευτεί ως αρχείο σε υπολογιστή, το φωνητικό αρχείο θα καταστραφεί στο τέλος της μελέτης. Όλα τα αρχεία που περιέχουν προσωπικές πληροφορίες θα παραμείνουν εμπιστευτικά και δε θα διατεθεί καμιά πληροφορία που θα οδηγούσε στην αναγνώρισή σας. Θα χειριστούμε οποιαδήποτε πληροφορία μας παρέχετε με απόλυτη εχεμύθεια και κανένας/καμιά δε θα αναγνωρίζεται προσωπικά σε δημοσιεύσεις από αυτό το ερευνητικό πρόγραμμα. Για να εξασφαλίσουμε την ανωνυμία σας θα διατηρήσουμε τους συμμετέχοντες/ουσες σε μια κεντρική βάση δεδομένων που θα είναι διαθέσιμη μόνο στα μέλη της ερευνητικής ομάδας και θα σας ζητήσουμε να διαλέξετε ένα ψευδώνυμο. Η ηχογράφηση και η καταγραφή της συνέντευξής σας θα σημανθεί μ' αυτό το ψευδώνυμο για να προστατευτεί η ταυτότητά σας καθώς θα διαθέτουμε την ηχογράφηση σε εξουσιοδοτημένους/ες βοηθούς γραμματείς για καταγραφή. Αν θέλετε, μπορείτε να ακούσετε την ηχογράφησή σας μετά.

Πώς συμφωνώ να συμμετάσχω;

Δεν έχετε καμιά υποχρέωση να δώσετε συνέντευξη. Η συμμετοχή σας σ' αυτή τη μελέτη είναι εντελώς εθελοντική, και η μη συμμετοχή σας θα γίνει δεκτή χωρίς καμιά δικαιολογία ή ενοχοποίηση. Αν αποφασίσετε να συμμετάσχετε μπορείτε να αποσυρθείτε από τη μελέτη οποιαδήποτε στιγμή ελεύθερα και χωρίς καμιά ποινή.

Πώς μπορώ να βρω περισσότερες πληροφορίες;

Αν μετέπειτα χρειάζεστε λεπτομέρειες σχετικά με το πρόγραμμα, παρακαλείστε να επικοινωνήσετε με τον Κ° Masoud Mohammadnezhad στο (08) 72218421 ή email moha0173@flinders.edu.au
Αυτή η μελέτη έχει αναθεωρηθεί από την Επιτροπή Δεοντολογίας στην Κοινωνική Έρευνα και την Έρευνα του Συμπεριφορισμού του Πανεπιστημίου Flinders (Flinders University Social and Behavioural Research Ethics Committee). Αν θέλετε να συζητήσετε τη μελέτη με άτομο που δεν είναι άμεσα εμπλεκόμενο, και ιδιαίτερα σε σχέση με θέματα που αφορούν πολιτικές, πληροφορίες σχετικά με τη διεξαγωγή της μελέτης, ή τα δικαιώματά σας ως συμμετέχων/ουσα, ή αν θέλετε να παραπονεθείτε εμπιστευτικά, μπορείτε να επικοινωνήσετε με το/τη Διευθυντή/ρια (Executive Officer) της Επιτροπής Δεοντολογίας στην Κοινωνική Έρευνα και την Έρευνα του Συμπεριφορισμού του Πανεπιστημίου Flinders (Social and Behavioural Research Ethics Committee), στο 8201 3116 ή στο email human.researchethics@flinders.edu.au

Σας ευχαριστούμε για το χρόνο σας να διαβάσετε αυτό το πληροφοριακό έντυπο και ελπίζουμε να δεχτείτε την πρόσκλησή μας να συμμετάσχετε.

Αυτό το ερευνητικό πρόγραμμα έχει εγκριθεί από την Επιτροπή Δεοντολογίας στην Κοινωνική Έρευνα και την Έρευνα του Συμπεριφορισμού του Πανεπιστημίου Flinders (Flinders University Social and Behavioural Research Ethics Committee) (Αριθμός προγράμματος: 5421, 10 Οκτωβρίου 2011). Για περισσότερες πληροφορίες σχετικά με τη δεοντολογική έγκριση του προγράμματος, μπορείτε να επικοινωνήσετε με το/τη Διευθυντή/ρια (Executive Officer) της Επιτροπής τηλεφωνικώς στο 8201 3116, με φαξ στο 8201 2035 ή στο email human.researchethics@flinders.edu.au

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Fax: +61 7221 8424

LETTER OF INTRODUCTION

Dear.....

This letter is to introduce Mr. Masoud Mohammadnezhad who is a PhD student in the school of Medicine, faculty of health sciences. He will produce his student card, which carries a photograph, as proof of identity.

He is undertaking research leading to the production of a thesis or other publications on the subject of "Evaluating the effectiveness of a peer-education smoking cessation intervention for elderly Greek-Australians."

He would be most grateful if you would volunteer to assist in this project, by granting an interview which covers certain aspects of this topic. No more than one hour would be required.

Be assured that any information provided will be treated in the strictest confidence and none of the participants will be individually identifiable in the resulting thesis, report or other publications. You are, of course, entirely free to discontinue your participation at any time or to decline to answer particular questions.

Since he intends to make a tape recording of the interview, he will seek your consent, on the attached form, to record the interview, to use the recording or a transcription in preparing the thesis, report or other publications, on condition that your name or identity is not revealed, and to make the recording available to other researchers on the same conditions. It may be necessary to make the recording available to secretarial assistants for transcription, in which case you may be assured that such persons will be advised of the requirement that your name or identity not be revealed and that the confidentiality of the material is respected and maintained.

Any enquiries you may have concerning this project should be directed to me at the address given above or by telephone on 72218418, by fax on 72218424 or by email george.tsourtos@flinders.edu.au

Thank you for your participations.

Dr George Tsourtos

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project number: 5421, 10 October 2011:). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au

Δρ Γεώργιος Τσούρτος, Διδάκτωρ (Dr George Tsourtos, PhD)
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ΣΥΣΤΑΤΙΚΗ ΕΠΙΣΤΟΛΗ

Αγαπητέ/ή . . . . . .

Με αυτή την επιστολή σας συστήνω τον Κ° Masoud Mohammadnezhad ο οποίος είναι φοιτητής διδακτορικού στην Ιατρική Σχολή στον κλάδο υγειονομικών επιστημών. Θα σας παρουσιάσει τη φοιτητική του κάρτα, που φέρει φωτογραφία, ως απόδειξη της ταυτότητάς του.

Κάνει έρευνα που αποσκοπεί σε πραγματοποίηση διδακτορικής διατριβής ή άλλων δημοσιεύσεων με θέμα «Αξιολόγηση της αποτελεσματικότητας της εκπαίδευσης από ομοίους για παρέμβαση στη διακοπή του καπνίσματος σε ηλικιωμένους Ελληνο-Αυστραλούς (Evaluating the effectiveness of a peer-education smoking cessation intervention for elderly Greek-Australians)».

Θα το εκτιμούσε ιδιαίτερα αν προσφερθείτε εθελοντικά να βοηθήσετε σ' αυτό το πρόγραμμα, παραχωρώντας μια συνέντευξη που καλύπτει ορισμένες πλευρές σ' αυτό το θέμα. Δε θα διαρκέσει περισσότερο από μια ώρα.

Να είστε βέβαιοι/ες ότι όποιες πληροφορίες δοθούν θα τύχουν απόλυτης εχεμύθειας και κανένας/καμιά από τους/τις συμμετέχοντες/ουσες δε θα αναγνωρίζεται στη διατριβή, αναφορά ή άλλες δημοσιεύσεις. Φυσικά, είστε εντελώς ελεύθεροι/ες να διακόψετε τη συμμετοχή σας οποιαδήποτε στιγμή, ή να αρνηθείτε να απαντήσετε σε συγκεκριμένες ερωτήσεις.

Ενόσω ο ερευνητής σκοπεύει να ηχογραφήσει τη συνέντευξη, θα ζητήσει τη συγκατάθεσή σας στο έντυπο που επισυνάπτεται, για να ηχογραφήσει τη συνέντευξη, να χρησιμοποιήσει την ηχογράφηση ή την καταγραφή της στην προετοιμασία της διατριβής, αναφοράς ή άλλες δημοσιεύσεις, με την προϋπόθεση ότι το όνομά σας ή η ταυτότητά σας δε θα φανερωθούν. Επίσης, θα ζητήσει τη συγκατάθεσή σας να διαθέτει την ηχογράφηση σε άλλους ερευνητές υπό τους ίδιους όρους. Μπορεί να χρειαστεί να διατεθεί η ηχογράφηση σε βοηθούς γραμματείς να την καταγράψουν και σ' αυτήν την περίπτωση να είστε βέβαιοι/ες ότι αυτά τα άτομα θα ειδοποιηθούν για την αναγκαιότητα να μη φανερωθούν το όνομα ή η ταυτότητά σας και ότι πρέπει η εχεμύθεια όσον αφορά το υλικό να είναι σεβαστή και να διατηρηθεί.

Για οποιεσδήποτε απορίες έχετε σχετικά μ' αυτό το πρόγραμμα, απευθυνθείτε σε μένα στην παραπάνω διεύθυνση ή τηλεφωνικά στο 72218418, με φαξ στο 72218424 ή με email: george.tsourtos@flinders.edu.au

Ευχαριστώ για τη συμμετοχή σας

Δρ Γεώργιος Τσούρτος
(Dr George Tsourtos)

Αυτό το ερευνητικό πρόγραμμα έχει εγκριθεί από την Επιτροπή Δεοντολογίας στην Κοινωνική Έρευνα και την Έρευνα του Συμπεριφορισμού του Πανεπιστημίου Flinders (Flinders University Social and Behavioural Research Ethics Committee) (Αριθμός προγράμματος: 5421, 10 Οκτωβρίου 2011). Για περισσότερες πληροφορίες σχετικά με τη δεοντολογική έγκριση του προγράμματος, μπορείτε να επικοινωνήσετε με το/τη Διευθυντή/ρια (Executive Officer) της Επιτροπής τηλεφωνικώς στο 8201 3116, με φαξ στο 8201 2035 ή στο email human.researchethics@flinders.edu.au

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CONSENT FORM FOR PARTICIPATION IN RESEARCH

I .....being over the age of 18 years hereby consent to participate as requested in the letter of introduction and the information sheet for the research project on smoking cessation.

1. I have read the information provided.
2. Details of procedures and any risks have been explained to my satisfaction.
3. I agree to audio recording of my information and participation.
4. I am aware that I should retain a copy of the Information Sheet and Consent Form for future reference.
5. I understand that:
   - I may not directly benefit from taking part in this research.
   - I am free to withdraw from the project at any time and am free to decline to answer particular questions.
   - While the information gained in this study will be published as explained, I will not be identified, and individual information will remain confidential.
   - Whether I participate or not, or withdraw after participating, will have no effect on any treatment or service that is being provided to me.
   - I may ask that the recording/observation be stopped at any time, and that I may withdraw at any time from the session or the research without disadvantage.
6. I agree/do not agree* to the tape/transcript* being made available to other researchers who are not members of this research team, but who are judged by the research team to be doing related research, on condition that my identity is not revealed.

** delete as appropriate*

7. I have had the opportunity to discuss taking part in this research with a family member or friend.

Participant's signature.....**Date**.....

I certify that I have explained the study to the volunteer and consider that she/he understands what is involved and freely consents to participation.

Researcher's name.....

Researcher's signature.....**Date**.....

NB: Two signed copies should be obtained. The copy retained by the researcher may then be used for authorisation of Items 8 and 9, as appropriate.

Masoud Mohammadnezhad, PhD (Φοιτητής Διδακτορικού)
Τομέας Δημόσιας Υγείας(Discipline of Public Health),
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ΈΝΤΥΠΟ ΣΥΓΚΑΤΑΘΕΣΗΣ ΠΑ ΣΥΜΜΕΤΟΧΗ ΣΕ ΕΡΕΥΝΑ

Εγώ ο/η ..... ηλικίας άνω των 18 ετών με το παρόν συμφωνώ να συμμετάσχω όπως μου ζητήθηκε στη συστατική επιστολή και στο πληροφοριακό έντυπο στο ερευνητικό πρόγραμμα για τη διακοπή του καπνίσματος.

1. Έχω διαβάσει τις πληροφορίες που δόθηκαν.

2. Λεπτομέρειες των διαδικασιών και οποιοιδήποτε κίνδυνοι μού έχουν εξηγηθεί ικανοποιητικά.

3. Συμφωνώ στην ηχογράφηση των πληροφοριών μου και της συμμετοχής μου.

4. Αντιλαμβάνομαι ότι θα κρατήσω αντίγραφο του Πληροφοριακού Εντύπου και του Έντυπου Συγκατάθεσης για να τα συμβουλεύομαι στο μέλλον.

5. Κατανοώ ότι:

   - Δεν μπορώ να ωφεληθώ άμεσα από τη συμμετοχή μου σ' αυτό το πρόγραμμα.
   - Είμαι ελεύθερος/η να αποσυρθώ από το πρόγραμμα οποιαδήποτε στιγμή και είμαι ελεύθερος/η να αρνηθώ να απαντήσω σε συγκεκριμένες ερωτήσεις.
   - Αν και οι πληροφορίες που θα συγκεντρωθούν από αυτή τη μελέτη θα δημοσιευτούν όπως έχει εξηγηθεί, δε θα αναγνωριστώ, και ατομικές πληροφορίες θα παραμείνουν εμπιστευτικές.
   - Το αν θα συμμετάσχω ή όχι, ή αποσυρθώ μετά τη συμμετοχή μου, δε θα έχει καμιά συνέπεια σε οποιαδήποτε θεραπεία ή υπηρεσία μού παρέχεται.
   - Μπορώ να ζητήσω η ηχογράφηση/παρατήρηση να σταματήσει οποιαδήποτε στιγμή, και μπορώ να αποσυρθώ οποιαδήποτε στιγμή από τη συνεδρία ή την έρευνα χωρίς ζημία.

6. Συμφωνώ/Δε συμφωνώ* στην ηχογράφηση/καταγραφή ηχογράφησης* να διατεθεί σε άλλους ερευνητές/ριες που δεν είναι μέλη αυτής της ερευνητικής ομάδας, αλλά η ερευνητική ομάδα κρίνει ότι κάνουν σχετική έρευνα, με την προϋπόθεση ότι η ταυτότητά μου δε θα αποκαλυφθεί.

** διαγράψτε αυτό που αρμόζει*

7. Είχα την ευκαιρία να συζητήσω τη συμμετοχή μου σ' αυτήν την έρευνα με μέλος της οικογένειάς μου ή φίλο/η.

Υπογραφή συμμετέχοντος/ουσας ..... **Ημερομηνία** .....

Πιστοποιώ ότι έχω εξηγήσει τη μελέτη στον/ην εθελοντή/ρια και θεωρώ ότι κατανοεί τι συμπεριλαμβάνει και ελεύθερα συγκατατίθεται να συμμετάσχει.

Όνομα ερευνητή/ριας ..... **Ημερομηνία** .....

Υπογραφή ερευνητή/ριας ..... **Ημερομηνία** .....

ΥΓ: Πρέπει να ληφθούν δυο υπογεγραμμένα αντίγραφα. Το αντίγραφο που θα κρατηθεί από τον/την ερευνητή/ρια μπορεί να χρησιμοποιηθεί για εξουσιοδότηση στις παραγράφους 8 και 9, όπως αρμόζει.

Appendix F: Information sheet and Letter of introduction for Quantitative study

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Information Sheet

Title: 'A comparative study of habit and attitude towards smoking between Greek-Australian and people with Anglo background aged 50 and over '

Description of the study:

This study is part of a project entitled 'A comparative study of habits and attitude towards smoking between Greek-Australian and Anglo people aged 50 and over'. This project is supported by the Discipline of Public Health at Flinders University.

Purpose of the study:

This study is designed to further our understanding about your knowledge, attitude, intention and behaviors towards smoking.

What will I be asked to do?

You are invited to participate in my study to fill a questionnaire. You will be received a questionnaire which is about your demographic information and also your knowledge, attitude and behavior about smoking.

What benefit will I gain from being involved in this study?

You may not directly benefit from participating in the research however it may assist health authorities to understand and support those who wish to quit smoking.

Will I be identifiable by being involved in this study?

We do not need your name and you will be anonymous. Once the questionnaires have been collected, analysed and saved as a computer file, the hard copy of the questionnaire will then be destroyed at the end of the study. All information containing personal information will remain confidential and no information that could lead to your identification will be released. We will treat any information provided in the strictest confidence and no-one will be individually identifiable in publications from this research project. To ensure your confidentiality we will maintain a central database of participants that is only available to the research team members and we will ask you to choose a pseudonym.

How do I agree to participate?

You are under no obligation to be participated. Your involvement in this study is entirely voluntary, and your non-participation will be accepted without any reasons and blaming. If you decide to participate you can withdraw from the study at any time freely and without any penalty.

How can I find out more information?

Should you require future details about the project please contact Mr. Masoud Mohammadnezhad on (08) 72218421 or email moha0173@flinders.edu.au.

This study has been reviewed by the Flinders Social and Behavioural Research Ethics Committee. Should you wish to discuss the study with someone not directly involved, in particular with relation to matters concerning policies, information about the conduct of the study or your rights as a participants, or you wish to make a confidential complaint, you may contact with Executive Officer of the Social and Behavioural Research Ethics Committee, on 8201 3116 or email human.researchethics@flinders.edu.au

Thank you for taking the time to read this information sheet and we hope that you will accept our invitation to be involved.

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project number: 5827, 23 October 2012). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au

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Γενικές πληροφορίες για την έρευνα

Τίτλος: «Τι γνωρίζουν οι Ελληνοαυστραλοί και τι οι Αγγλο-αυστραλοί πάνω από 50 χρονών για το κάπνισμα; Μια συγκριτική μελέτη».

Περιγραφή της μελέτης:

Η μελέτη αυτή αποτελεί μέρος ενός έργου με τίτλο «Τι γνωρίζουν οι Ελληνοαυστραλοί και τι οι Αγγλο-αυστραλοί πάνω από 50 χρονών για το κάπνισμα; Μια συγκριτική μελέτη». Η έρευνα υποστηρίζεται από το τμήμα «Discipline of Public Health" του Πανεπιστημίου Flinders.

Σκοπός της μελέτης:

Η μελέτη αυτή έχει ως σκοπό να προωθήσει την κατανόηση μας για το κάπνισμά σας και την καλύτερη γνώση για τη στάση σας και τις προθέσεις σας απέναντι στο κάπνισμα.

Τι θα πρέπει να κάνετε;

Σας παρακαλώ να συμμετάσχετε στη μελέτη μου και να συμπληρώσετε το ερωτηματολόγιο που θα σας δώσω. Θα συμπληρώσετε το ερωτηματολόγιο στο οποίο υπάρχουν ερωτήσεις για τις γνώσεις σας, τη στάση και τη συμπεριφορά σχετικά με το κάπνισμα.

Τι θα κερδίσετε αν πάρετε μέρος στην έρευνα;

Δεν μπορείτε να επωφεληθούν άμεσα από τη συμμετοχή στην έρευνα, ωστόσο αυτό μπορεί να βοηθήσει τις υγειονομικές αρχές να κατανοήσουν και να υποστηρίξουν όσους επιθυμούν να σταματήσουν το κάπνισμα.

Μπορεί να αναγνωριστώ με τη συμμετοχή μου σ' αυτή τη μελέτη;

Δε χρειαζόμαστε το όνομά σας και θα είστε ανώνυμος/η. Όταν η συνέντευξη θα έχει ηχογραφηθεί, καταγραφεί και αποθηκευτεί ως αρχείο σε υπολογιστή, το φωνητικό αρχείο θα καταστραφεί στο τέλος της μελέτης. Όλα τα αρχεία που περιέχουν προσωπικές πληροφορίες θα παραμείνουν εμπιστευτικά και δε θα διατεθεί καμιά πληροφορία που θα οδηγούσε στην αναγνώρισή σας. Θα χειριστούμε οποιαδήποτε πληροφορία μας παρέχετε με απόλυτη εχεμύθεια και κανένας/καμιά δε θα αναγνωρίζεται προσωπικά σε δημοσιεύσεις από αυτό το ερευνητικό πρόγραμμα. Για να εξασφαλίσουμε την ανωνυμία σας θα διατηρήσουμε τους συμμετέχοντες/ουσες σε μια κεντρική βάση δεδομένων που θα είναι διαθέσιμη μόνο στα μέλη της ερευνητικής ομάδας και θα σας ζητήσουμε να διαλέξετε ένα ψευδώνυμο. Η ηχογράφηση και η καταγραφή της συνέντευξής σας θα σημανθεί μ' αυτό το ψευδώνυμο για να προστατευτεί η

ταυτότητά σας καθώς θα διαθέτουμε την ηχογράφηση σε εξουσιοδοτημένους/ες βοηθούς γραμματείς για καταγραφή. Αν θέλετε, μπορείτε να ακούσετε την ηχογράφησή σας μετά.

Πώς συμφωνώ να συμμετάσχω;

Δεν έχετε καμιά υποχρέωση να δώσετε συνέντευξη. Η συμμετοχή σας σ' αυτή τη μελέτη είναι εντελώς εθελοντική, και η μη συμμετοχή σας θα γίνει δεκτή χωρίς καμιά δικαιολογία ή ενοχοποίηση. Αν αποφασίσετε να συμμετάσχετε μπορείτε να αποσυρθείτε από τη μελέτη οποιαδήποτε στιγμή ελεύθερα και χωρίς καμιά ποινή.

Πώς μπορώ να βρω περισσότερες πληροφορίες;

Αν μετέπειτα χρειάζεστε λεπτομέρειες σχετικά με το πρόγραμμα, παρακαλείστε να επικοινωνήσετε με τον Κ° Masoud Mohammadnezhad στο (08) 72218421 ή email moha0173@flinders.edu.au

Αυτή η μελέτη έχει αναθεωρηθεί από την Επιτροπή Δεοντολογίας στην Κοινωνική Έρευνα και την Έρευνα του Συμπεριφορισμού του Πανεπιστημίου Flinders (Flinders University Social and Behavioural Research Ethics Committee). Αν θέλετε να συζητήσετε τη μελέτη με άτομο που δεν είναι άμεσα εμπλεκόμενο, και ιδιαίτερα σε σχέση με θέματα που αφορούν πολιτικές, πληροφορίες σχετικά με τη διεξαγωγή της μελέτης, ή τα δικαιώματά σας ως συμμετέχων/ουσα, ή αν θέλετε να παραπονεθείτε εμπιστευτικά, μπορείτε να επικοινωνήσετε με το/τη Διευθυντή/ρια (Executive Officer) της Επιτροπής Δεοντολογίας στην Κοινωνική Έρευνα και την Έρευνα του Συμπεριφορισμού του Πανεπιστημίου Flinders (Social and Behavioural Research Ethics Committee), στο 8201 3116 ή στο email human.researchethics@flinders.edu.au

Σας ευχαριστούμε για το χρόνο σας να διαβάσετε αυτό το πληροφοριακό έντυπο και ελπίζουμε να δεχτείτε την πρόσκλησή μας να συμμετάσχετε.

Αυτό το ερευνητικό πρόγραμμα έχει εγκριθεί από την Επιτροπή Δεοντολογίας στην Κοινωνική Έρευνα και την Έρευνα του Συμπεριφορισμού του Πανεπιστημίου Flinders (Flinders University Social and Behavioural Research Ethics Committee) (Αριθμός προγράμματος: 5827, 23 October 2012). Για περισσότερες πληροφορίες σχετικά με τη δεοντολογική έγκριση του προγράμματος, μπορείτε να επικοινωνήσετε με το/τη Διευθυντή/ρια (Executive Officer) της Επιτροπής τηλεφωνικώς στο 8201 3116, με φαξ στο 8201 2035 ή στο email human.researchethics@flinders.edu.au

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LETTER OF INTRODUCTION

Dear.....

This letter is to introduce Mr. Masoud Mohammadnezhad who is a PhD student in the school of Medicine, Faculty of Health sciences. He will produce his student card, which carries a photograph, as proof of identity.

He is undertaking research leading to the production of a thesis or other publications on the subject of "A comparative study of habit and attitude towards smoking among Greek-Australians and people with Anglo background aged 50 and over."

He would be most grateful if you would volunteer to assist in this project, by completing a questionnaire which covers certain aspects of this topic. No more than one hour would be required.

Be assured that any information provided will be treated in the strictest confidence and none of the participants will be individually identifiable in the resulting thesis, report or other publications. You are, of course, entirely free to discontinue your participation at any time or to decline to answer particular questions.

Any enquiries you may have concerning this project should be directed to me at the address given above or by telephone on 72218418, by fax on 72218424 or by email george.tsourtos@flinders.edu.au

Thank you for your participations.

Dr George Tsourtos

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project number:). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au

Δρ Γεώργιος Τσούρτος, Διδάκτωρ (Dr George Tsourtos, PhD)
Τομέας Δημόσιας Υγείας(Discipline of Public Health),
Ιατρική Σχολή (School of Medicine),
Κλάδος Υγειονομικών Επιστημών(Faculty of Health Sciences)
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ΣΥΣΤΑΤΙΚΗ ΕΠΙΣΤΟΛΗ

Αγαπητέ/ή . . . . . .

Με αυτή την επιστολή σας συστήνω τον Κ° Masoud Mohammadnezhad ο οποίος είναι φοιτητής διδακτορικού στην Ιατρική Σχολή στον κλάδο υγειονομικών επιστημών. Θα σας παρουσιάσει τη φοιτητική του κάρτα, που φέρει φωτογραφία, ως απόδειξη της ταυτότητάς του.

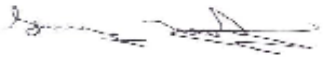
Κάνει έρευνα που αποσκοπεί σε πραγματοποίηση διδακτορικής διατριβής ή άλλων δημοσιεύσεων με θέμα «Τι γνωρίζουν οι Ελληνοαυστραλοί και τι οι Αγγλο-αυστραλοί πάνω από 50 χρονών για το κάπνισμα; Μια συγκριτική μελέτη». (A comparative study of smoking habit and attitude towards smoking among Greek-Australians and Anglo aged 50 and over)».

Θα το εκτιμούσε ιδιαίτερα αν προσφερθείτε εθελοντικά να βοηθήσετε σ' αυτό το πρόγραμμα, συμπληρώνοντας ένα ερωτηματολόγιο.

Να είστε βέβαιοι/ες ότι όποιες πληροφορίες δοθούν θα τύχουν απόλυτης εχεμύθειας και κανένας/καμιά από τους/τις συμμετέχοντες/ουσες δε θα αναγνωρίζεται στη διατριβή, αναφορά ή άλλες δημοσιεύσεις. Φυσικά, είστε εντελώς ελεύθεροι/ες να διακόψετε τη συμμετοχή σας οποιαδήποτε στιγμή, ή να αρνηθείτε να απαντήσετε σε συγκεκριμένες ερωτήσεις.

Για οποιεσδήποτε απορίες έχετε σχετικά μ' αυτό το πρόγραμμα, απευθυνθείτε σε μένα στην παραπάνω διεύθυνση ή τηλεφωνικά στο 72218418, με φαξ στο 72218424 ή με email: george.tsourtos@flinders.edu.au

Ευχαριστώ για τη συμμετοχή σας



Δρ Γεώργιος Τσούρτος
(Dr George Tsourtos)

Αυτό το ερευνητικό πρόγραμμα έχει εγκριθεί από την Επιτροπή Δεοντολογίας στην Κοινωνική Έρευνα και την Έρευνα του Συμπεριφορισμού του Πανεπιστημίου Flinders (Flinders University Social and Behavioural Research Ethics Committee) (Αριθμός προγράμματος:). Για περισσότερες πληροφορίες σχετικά με τη δεοντολογική έγκριση του προγράμματος, μπορείτε να επικοινωνήσετε με το/τη Διευθυντή/ρια (Executive Officer) της Επιτροπής τηλεφωνικώς στο 8201 3116, με φαξ στο 8201 2035 ή στο email human.researchethics@flinders.edu.au

Appendix G: Questionnaire

1.1.10 G1: Questionnaire for Anglo-Australians

Flinders UNIVERSITY

Questionnaire

Code Number:.....

This questionnaire will provide valuable information regarding your smoking habit or smoking around your routine life. All personal information obtained will be kept confidential, and will only be used for the purpose of this study. Please answer each question according to the direction outlined by the question. Once completed, please return to the researcher by the prepaid envelope provided.

SECTION I: Part One

1- **How old** were you when you started smoking tobacco products regularly? (at least one a day) (please record the number in the box provided) ☐☐

2- What is the **total number** of years that you have been smoking? (please record the box provided)
☐☐

3- **Tobacco product?**
Cigarettes ☐ Cigars ☐ Pipe tobacco ☐ Other ☐ (Please specify).....

4- **How many cigarettes/cigars/pipe/other** have you smoked in the last 24 hours? (please record the number in the box provided) ☐☐

5- **When** do you usually smoke? (Tick all boxes that apply)

When relaxing ☐ When feeling anxious ☐
When wanting to increase my concentration ☐ In the absence of my children ☐
After meals ☐ After tea or coffee ☐
When bored or trying to pass time ☐ When drinking alcoholic beverages ☐
When around other smokers ☐ Other ☐ please specify.....

Part Two

1- How soon **after waking** up do you usually smoke your first cigarette? (Please tick one box)

Within 5 minutes ☐ 6-30 minutes ☐
31-60 minutes ☐ After 60 minutes ☐

2- **How many cigarettes** do you usually smoke per day? (Please tick one box)

10 or fewer ☐ 11-20 ☐
21-30 ☐ 31 or ☐

3- Do you **find it difficult** not to smoke in places where you shouldn't, such as in a church, at the library, at a movie and theater, etc.? (Please check one)

Yes ☐ No ☐

1

4- **What time** of day would you dislike most giving up smoking? (Please check one)

First in the morning ☐ All others ☐

5- Do you smoke **more frequently** during the first few hours after waking up than during the rest of the day? (Please check one)

Yes☐ No☐

6- Do you still smoke even if you are **so sick** that you are in bed most of the day, or if you have a cold and have trouble breathing? (Please check one)

Yes☐ No☐

Part Three

1- Which of the following statements best describes your **current situation**? (Please tick one box)

I smoke and I have NO intention to quit smoking in the next 6 months ☐
I smoke, but I seriously consider quitting smoking in the next 6 months ☐
I smoke, but I have decided to quit smoking in the next 30 days ☐
I am an ex-smoker, I quit smoking LESS than 6 months ago ☐
I am an ex-smoker, I quit smoking MORE than 6 months ago ☐

2- How **strongly** do you **agree** with the following statement? (Please tick one box)

"I plan to quit smoking within the next 3 months"

Strongly disagree ☐ Disagree☐ No idea☐ Agree☐ Strongly agree ☐

3- Have you ever **tried to quit** or reduce the number of cigarettes you smoked per day?

Yes ☐ No ☐ (Please go to the question 12)

4- In the last year, how many times have you quit smoking for at **least 24 hours**? (Please record the number in the box provided) ☐☐

5- In **your entire life**, how many times have you quit smoking for at least 24 hours? (Please state the number of times in the box provided) ☐☐

6- **How** have you tried to quit smoking in the past? (Please check all that apply)

On your own ☐
Individual counseling by healthcare professionals ☐
Using self-help Materials (Booklet, brochures) ☐
Nicotine Replace Therapy (Like: Gum, Patch, Spray) ☐
Stop smoking group or class ☐
Acupuncture/Hypnotism ☐
Other ☐ (Please specify)

7- What is the **single longest time** that you have stopped smoking since you started smoking regularly? (Please be specific)

……Years and ……Months (Or) ……..Weeks and …….Days

8- What are **the reasons** for your attempts to quit smoking? (Please check all that apply)

To improve my health ☐
For my appearance ☐
Persuaded by friends ☐
To save money ☐
For my family's health☐
Persuaded by relatives ☐
Advised by healthcare professionals ☐
Others ☐ (please specify)……

9- What are **the barriers** that might prevent you from quitting smoking? Please check all that apply)

Craving ☐ Smoking family member(s) ☐
Habit ☐ Gained weight ☐
Withdrawal symptoms such as headache, dizziness ☐ Smoking friends / colleagues ☐
Others (please specify) ☐

10- What were the **biggest barriers** in your last failed attempt to quit? (Please check all that apply)

Psychological craving ☐ Smoking family member(s) ☐
Habit ☐ Smoking friends / colleagues ☐
Withdrawal symptoms such as headache, dizziness ☐ Gained weight ☐
Others ☐ (please specify).....

11- If you were to plan to quit smoking, from **whom** do you think you would get support? (Please tick all that apply)

Spouse ☐ Friend(s) ☐ Health care worker(s) ☐
Sibling(s) ☐ Your child(ren) ☐ Other ☐ (please specify).....
Other relative(s) ☐ Co-worker(s) ☐ No one ☐

12- How many times in the last year do you recall being advised to quit using tobacco when you visited **the doctor**?

None ☐ Some visits ☐ At each visit ☐

13- If you were advised to quit smoking, **who told** you this?

Doctor ☐ Nurse ☐ Family member ☐ Other ☐ please specify

Part Four

Listed below are situations that lead some people to smoke. We would like to know **HOW TEMPTED** you may be to smoke in each situation. (Please tick one box for each question)

	Not at all tempted	**Not very tempted**	**Moderately tempted**	**Very tempted**	**Extremely tempted**
With friends at a party					
When I first get up in the morning.					
When I am very anxious and stressed.					
Over coffee while talking and relaxing.					
When I feel I need a lift.					
When I am very angry about something or someone.					
With my spouse or close friend who is smoking.					
When I realize I haven't smoked for a while.					
When things are not going my way and I am frustrated.					

SECTION II:

1- How often do you have direct contact with…

	Every day or almost every day	**Once or twice a week**	**Once or twice a month**	**Less often than monthly**	**Don't have any**
Friends					
Colleagues					
Neighbours					
Family					
GP (doctor)					

2- How much do you **trust** various **groups of people**?

	Trust them completely	**Trust them somewhat**	**Do not trust them very much**	**Not relevant**
Friends				
Colleagues				
Neighbours				
Family				
GP (doctor)				

3- How **often** do you engage in each of the following activities in your free times?

	Daily	**Once or twice a week**	**Once or twice a month**	**Several times a year, but less than monthly**	**Never**
Watch TV, DVD, video					
Go to live theater					
Go to music concerts					
Go to live sport					
Go to museums or cultural heritage					
Go to the cinema					

4- For each of the following organizations, please indicate your **membership status (please tick one box for each organization)**.

	Don't belong	**Member**
Church or religious organization		
Sport or recreational organization		
Art, music, educational or cultural organization		
Other community-based organization		

5- How much do you **trust** the following **organisations** or **institutions**?

	Trust them completely	**Trust them somewhat**	**Do not trust them very much**	**Have not thought about it**	**Not relevant**
Church or religious organization					
Sport or recreational organization					
Art, music, educational or cultural organization					
Other community-based organization					

6- How many **important people** in your life are smokers? (Please check only one)
None ☐ Some of them ☐ About half of them ☐ Most of them ☐ All of them ☐

7- How many **important people** in your life won't let you smoke around them? (Please check only one)
None ☐ Some of them ☐ About half of them ☐ Most of them ☐ All of them ☐

8- Are there other smokers living in **your household**?
Yes ☐ No ☐

8A. Not counting yourself, **how many** people living in your household use tobacco? (Please record the number) ☐☐

8B. Is anyone living in your household also **trying to stop** smoking at this time?
Yes☐ No☐

9- Please describe the smoking status of your **spouse or partner**. (Please tick one)
Also smokes and is trying to quit ☐ Also smokers but is not trying to quit ☐
Is an ex-smoker ☐ This question doesn't apply to me ☐
Never smokes ☐

10- Do you know anyone other than yourself whose **health** has been seriously affected by cigarette smoking?
Yes☐ No☐

10A: What is your **relationship** to the person or persons whose health is/was affected by smoking? (Please tick all that apply)
Mother or Father ☐ Husband/Wife/Partner ☐
Son or Daughter ☐ Brother or Sister ☐
Other relative (Grandparent, Aunt, Uncle, etc.) ☐ Friend ☐
Acquaintance ☐ Other ☐ (Please specify).....

11- In what way is their **health** been affected? (Please tick all that apply)
Heat attack ☐ Chronic bronchitis ☐ Stroke ☐
High blood pressure ☐ Osteoporosis ☐ Lung cancer ☐
Diabetes ☐ Asthma ☐ Cataracts ☐
Arthritis ☐ Other disease ☐ None of the above ☐

12- What are your main **sources** of getting information about the adverse effects of smoking?
Radio and TV ☐ Internet ☐ Reading books ☐ Family ☐
Friends ☐ Newspaper ☐ Physician ☐

SECTION III:

Please provide your response to the following questions by ticking one box for each.

	True	False	Don't know
Smoking is not addictive.			
Smoking is harmful to health.			
Smoking will not shorten your life.			
Smoking tobacco increases the risk of Alzheimer's disease.			
Smoking helps to reduce stress.			
Filter cigarettes are harmless.			
Smoking is not associated with heart disease.			
The risk of lung cancer is 10 times higher among smokers than non-smokers.			
If you smoke you are more likely to have a cough.			
Inhaling secondhand smoke also harms my health.			
The health hazards of smoking are roughly similar to the health hazards of air pollution.			
Only heavy smokers (2 packs per day or more) are at serious risk of ill health.			
Smoking only kills people 60 years of age or older.			
If a person is a smoker for a long period (about 10 years) it is too late for him/her to stop smoking.			
Smoking cessation in older adult can improve their current and future health.			

How strongly do you agree or disagree with the following statements? (Please tick one box only for each question)

	Strongly disagree	Disagree	No idea	Agree	Strongly agree
Smoking cigarette is enjoyable					
Smoking makes smoker's feel so bad.					
Smoker can't think and can't stay at home without smoking.					
Cigarette smoking is crazy.					
Smoking is a waste of money.					
I don't believe that smoker will get cancer because of smoking.					
All forms of tobacco promotion should be completely banned.					
Doctors' advice to their patients to stop smoking is totally ineffective.					
Family members' support will help a smoker quit.					
Training programs on TV are not effective in decreasing smoking.					
The smoking behavior of a friend(s) encourages me to smoke.					
Smoking should be banned in all restaurants and catering venues.					
Brief advice (e.g. 3 minutes) to help clients stop smoking is effective.					
Smokers have the right to smoke in their workplaces without hesitation.					

SECTION IV: BACKGROUND INFORMATION

1- Gender (please tick a box)
Female ☐ Male ☐

2- How old are you? (please record the number of years in the box provided) ☐☐

3- Marital status (Please tick one box)
Single (never married) ☐ Married or living with partner ☐
Divorced ☐ Widowed ☐
Separated ☐ Defacto ☐

4- What is your highest level of education achieved? (Please Tick one box)
Primary school ☐ Secondary school ☐
High school ☐ Other ☐ (Please specify) .....

5- Do you identify yourself as a Anglo Saxon heritage?
Yes ☐ No ☐

If yes, in which country were you born?
England ☐ USA ☐ Australia ☐ New Zealand ☐ Canada ☐ another.....

6- When you arrived to Australia? (please record the years in the box provided) ☐☐☐☐

7- How well can you read in English? (Please tick one box)
Very well ☐ Not very well ☐
Quite well ☐ Not at all ☐

8- Current employment status (tick one box)
Work full time ☐ Work part time with pension ☐
Work part time without pension ☐ Retired and pensioner ☐

9- What was the total annual income received by everyone in your household BEFORE TAX in the last financial year? (tick one box)

Per year	
0-$14,999	
$15,000-$29,999	
$30,000-$44,999	
$45,000-$59,999	
$60,000-$74,999	
$75,000-$89,999	
$90,000-$104,999	
$105,000-$119,999	
$120,000-$134,999	
$135,000-$149,999	
$150,000 or more	
Don't know	

10- Including yourself, how many household members currently live in your home? (please record the number in the box provided) ☐☐

11- In general, would you say your health is…

Very good ☐ Good ☐ Fair ☐ Bad ☐ Very Bad ☐

12- Have you been diagnosed with any of the following medical conditions? (please tick a box)

Chronic lung disease (emphysema, chronic bronchitis, asthma) yes ☐ no ☐

Cardio-vascular disease (high blood pressure, heart attack, etc.) yes ☐ no ☐

Diabetes yes ☐ no ☐

Cerebrovascular disease (stroke) yes ☐ no ☐

Cancer yes ☐ no ☐ if yes, what type _____

13- How long have you been visiting your current general practitioner or family physician? (please tick a box)

Less than one year ☐ Over 10 years ☐

1 to 5 years ☐ I do not see a general practitioner ☐

6 to 10 years ☐

Thank you very much for your time and cooperation.

1.1.11 G2: Questionnaire for Greek-Australians

Flinders UNIVERSITY

Ερωτηματολόγιο

Κωδικός αριθμός:.....

Αυτό το ερωτηματολόγιο θα μας δώσει πολύτιμες πληροφορίες σχετικά με τη συνήθεια του καπνίσματος και το κάπνισμα ως μέρος της ζωής σας. Όλες οι προσωπικές πληροφορίες σας θα παραμείνουν εμπιστευτικές και θα χρησιμοποιηθούν μόνο για τους σκοπούς της παρούσας μελέτης. Παρακαλώ απαντήστε σε κάθε ερώτηση, ακολουθώντας τις οδηγίες για κάθε ερώτηση. Μόλις ολοκληρώσετε το ερωτηματολόγιο παρακαλούμε επιστρέψτε το στον ερευνητή με το προπληρωμένο φάκελο που σας έχει δοθεί.

ΤΜΗΜΑ Ι: Μέρος Πρώτο

1. **Πόσο χρονών** ήσασταν όταν αρχίσατε να καπνίζετε τακτικά; (τουλάχιστον ένα τσιγάρο την ημέρα) (παρακαλώ γράψτε τον αριθμό στο αντίστοιχο κουτί) ☐☐

2. Ποιος είναι ο **συνολικός αριθμός** σε χρόνια που καπνίζετε; (παρακαλώ γράψτε τον αριθμό στο αντίστοιχο κουτί) ☐☐

3. **Προϊόν καπνού;**
Τσιγάρα ☐ Καπνός για πίπα ☐ Πούρα ☐ Άλλο ☐ (παρακαλώ διευκρινίστε) .....

4. **Πόσα τσιγάρα / πούρα / πίπες / άλλα** έχετε καπνίσει τις τελευταίες 24 ώρες; (παρακαλώ γράψτε τον αριθμό στο αντίστοιχο κουτί) ☐☐

5. **Πότε** συνήθως καπνίζετε; (Σημειώστε όλα τα κουτάκια που ισχύουν)

Όταν χαλαρώνετε	☐	Όταν έχετε άγχος	☐
Όταν θέλει να συγκεντρωθείτε περισσότερο	☐	Όταν σας λείπουν τα παιδιά σας	☐
Μετά το γεύμα	☐	Μετά το τσάι ή τον καφέ	☐
Όταν έχετε βαρεθεί ή προσπαθείτε να περάσει η ώρα	☐	Όταν πίνετε αλκοόλ	☐
Όταν είστε με άλλους καπνιστές	☐	Άλλα ☐ διευκρινίστε	

Μέρος δεύτερο

1. Πόσο σύντομα **μετά από την ώρα που ξυπνάτε συνήθως** καπνίζετε το πρώτο σας τσιγάρο; (Σημειώστε σε ένα τετραγωνάκι)

Μέσα σε 5 λεπτά	☐	6-30 λεπτά	☐
31-60 λεπτά	☐	Μετά από 60 λεπτά	☐

2. **Πόσα τσιγάρα** καπνίζετε συνήθως την ημέρα; (Σημειώστε σε ένα τετραγωνάκι)

10 ή λιγότερα	☐	11-20	☐
21 - 30	☐	31 +	☐

3. **Το βρίσκετε δύσκολο** να μην καπνίζετε σε χώρους όπου δεν θα έπρεπε, όπως σε μια εκκλησία, στη βιβλιοθήκη, στο σινεμά, στο θέατρο, κλπ.; (Παρακαλώ σημειώστε ένα) Ναι ☐ Όχι ☐

4. **Ποια ώρα** της ημέρας θα προτιμούσατε περισσότερο να καπνίσετε; (Παρακαλώ σημειώστε ένα)
Πρωί πρωί ☐ Όλες οι άλλες ώρες ☐

5. Καπνίζετε **πιο συχνά** τις πρώτες ώρες μετά το ξύπνημα από ό, τι κατά τη διάρκεια της υπόλοιπης ημέρας; (Παρακαλώ σημειώστε ένα)
Ναι ☐ Όχι ☐

6. Καπνίζετε ακόμα και αν είστε **άρρωστος** όλη μέρα στο κρεβάτι, ή αν έχετε αρπάξει κρυολόγημα και έχετε δυσκολία στην αναπνοή; (Παρακαλώ σημειώστε ένα)
Ναι ☐ Όχι ☐

Μέρος Τρίτο

1. Ποια από τις παρακάτω δηλώσεις περιγράφει καλύτερα την **κατάστασή σας**; (Σημειώστε σε ένα τετραγωνάκι)

Καπνίζω και δεν έχω ΚΑΜΙΑ πρόθεση να σταματήσω το κάπνισμα στους επόμενους 6 μήνες ☐
Καπνίζω, αλλά σκέφτομαι σοβαρά τη διακοπή του καπνίσματος τους επόμενους 6 μήνες ☐
Καπνίζω, αλλά έχω αποφασίσει να σταματήσω το κάπνισμα τις επόμενες 30 μέρες ☐
Είμαι πράην καπνιστής και έκοψα το κάπνισμα ΛΙΓΟΤΕΡΟ από πριν 6 μήνες ☐
Είμαι πράην καπνιστής και έχω κόψει το κάπνισμα ΠΕΡΙΣΣΟΤΕΡΟ από 6 μήνες πριν ☐

2. **Συμφωνείτε** με την ακόλουθη δήλωση; (Σημειώστε σε ένα τετραγωνάκι)
«Σκοπεύω να σταματήσω το κάπνισμα μέσα στους επόμενους 3 μήνες»
Διαφωνώ έντονα ☐ Διαφωνώ ☐ Δεν έχω ιδέα ☐ Συμφωνώ ☐ Συμφωνώ απόλυτα ☐

3. Έχετε ποτέ **προσπαθήσει να σταματήσετε** το κάπνισμα ή να μειώσετε τον αριθμό των τσιγάρων που κάπνιζετε την ημέρα;
Ναι ☐ Όχι ☐ (προχωρήστε στην ερώτηση 12)

4. Τον τελευταίο χρόνο, πόσες φορές έχετε σταματήσει το κάπνισμα για **τουλάχιστον 24 ώρες**; (Παρακαλώ γράψτε τον αριθμό στα τετραγωνάκια) ☐☐

5. Σε **ολόκληρη τη ζωή σας**, πόσες φορές έχετε σταματήσει το κάπνισμα για τουλάχιστο 24 ώρες; (Παρακαλώ γράψτε τον αριθμό στα τετραγωνάκια) ☐☐

6. **Πώς** έχετε προσπαθήσει να σταματήσετε το κάπνισμα στο παρελθόν; (Παρακαλώ σημειώστε όλα όσα ισχύουν)

Μόνος /η μου	☐	Συμμετέχοντας σε ομάδα ή σε τάξη αντικαπνίσματος	☐
Μετά από συζήτηση με ειδικό	☐	Βελονισμό / Υπνωτισμό	☐
Διαβάζοντας μόνος μου φυλλάδια ενημερωτικά)	☐	Άλλο (παρακαλώ διευκρινίστε)	☐
Με θεραπεία εναντίον της νικοτίνης (Όπως: Gum, Patch, σπρέι)	☐		

7. Ποιο είναι το **μεγαλύτερο χρονικό διάστημα** που έχετε σταματήσει το κάπνισμα από τότε που αρχίσατε να καπνίζετε; (Παρακαλώ σημειώστε)
..... Χρόνια και ..... Μήνες (ή) ..... Εβδομάδες και ..... Ημέρες

8. Ποιοι είναι **οι λόγοι** για τις προσπάθειές σας να κόψετε το κάπνισμα; (Απαντήστε σε όσα ισχύουν)

Για να βελτιώσω την υγεία μου	☐	Για την υγεία της οικογένειάς μου	☐
Για την εμφάνισή μου	☐	Με πείσανε οι συγγενείς	☐
Με πείσανε οι φίλοι	☐	Γιατί μου το ζήτησαν οι γιατροί	☐
Για να κάνω οικονομία	☐	Άλλο (διευκρινίστε) …… ……	☐

9. Ποια είναι **τα εμπόδια** που σας εμποδίζουν να κόψετε το κάπνισμα; (Απαντήστε σε όσα ισχύουν)

Μεγάλη επιθυμία	☐	Μέλος της οικογένειας	☐
Συνήθεια	☐	Ο φόβος ότι θα βάλω βάρος	☐
Τα συμπτώματα της στέρησης καπνίσματος, όπως πονοκέφαλος, ζάλη	☐	Οι φίλοι μου και συναδέλφοι που καπνίζουν	☐
Άλλο (διευκρινίστε) …… ……	☐		

10. Ποια ήταν τα **μεγαλύτερα εμπόδια** στην τελευταία αποτυχημένη προσπάθεια σας να σταματήσετε το κάπνισμα; (Απαντήστε σε όσα ισχύουν)

Μεγάλη επιθυμία	☐	Μέλος της οικογένειας μου που καπνίζει	☐
Συνήθεια	☐	Φίλοι / συνεργάτες που καπνίζουν	☐
Τα συμπτώματα της στέρησης, όπως πονοκέφαλος, ζάλη	☐	Επειδή έβαλα βάρος	☐
Άλλο (διευκρινίστε) …… ……	☐		

11. Εάν αποφασίσετε να σταματήσετε το κάπνισμα, από ποιά άτομα νομίζετε ότι θα έχετε υποστήριξη; (Συμπληρώστε όσα ισχύουν)

Σύζυγο	☐	Φίλο / φίλους	☐	Ειδικούς σε θέματα υγείας	☐
Αδέλφια	☐	Το παιδί μου	☐	Άλλο (διευκρινίστε)	☐
Συγγενείς	☐	Συνεργάτες	☐	Από κανένα	☐

12. Πόσες φορές τον τελευταίο χρόνο ο **γιατρός** σας συμβούλεψε να σταματήσετε τη χρήση καπνού;

Καμία ☐ Μερικές φορές ☐ Σε κάθε επίσκεψη ☐

13. Αν σας είπαν να σταματήσουν το κάπνισμα, **ποιος σας το είπε αυτό**;

Μέλος της οικογένειας ☐ Γιατρός, Νοσοκόμα ☐ Άλλο, προσδιορίστε ☐

Τέταρτο μέρος

Παρακάτω αναφέρονται οι καταστάσεις που οδηγούν ορισμένα άτομα να καπνίζουν. Ποιος είναι ο μεγαλύτερος ΠΕΙΡΑΣΜΟΣ για να καπνίσετε. (Σημειώστε ένα κουτί για κάθε πρόταση)

	Καθόλου πειρασμό	**Όχι πολύ πειρασμό**	**Μέτριο πειρασμό**	**Πολύ πειρασμό**	**Πολύ μεγάλο πειρασμό**
Με φίλους σε πάρτι					
Όταν σηκωθώ το πρωί.					
Όταν είμαι πολύ ανήσυχος και αγχωμένος..					
Πίνοντας καφέ, ενώ μιλάω και αισθάνομαι χαλάρωση.					
Όταν αισθάνομαι ότι πρέπει να αισθανθώ καλύτερα.					
Όταν είμαι πολύ θυμωμένος για κάτι ή κάποιον.					
Με την σύζυγο μου ή στενό φίλο που καπνίζει.					
Όταν συνειδητοποιώ ότι δεν έχω καπνίσει για λίγο.					
Όταν τα πράγματα δεν πηγαίνουν όπως τα θέλω και είμαι απογοητευμένος.					

ΤΜΗΜΑ Π:

1. Πόσο συχνά έχετε άμεση επαφή με ...

	Κάθε μέρα ή σχεδόν κάθε μέρα	**Μία ή δύο φορές την εβδομάδα**	**Μία ή δύο φορές το μήνα**	**Λιγότερο συχνά από μήνα**	**Δεν έχω καμία**
Φίλοους					
Συναδέλφους					
Γείτονες					
Οικογένεια					
Τον γιατρό					

2. Πόσο **εμπιστεύεστε** διάφορες **ομάδες ανθρώπων**;

	Τους εμπιστεύομε εντελώς	**Κάπως τους εμπιστεύομε**	**Δεν τους εμπιστεύομαι πολύ**	**Ασχετο για μένα**
Φίλους				
Συναδέλφους				
Γείτονες				
Οικογένεια				
Τον γιατρό				

3. Πόσο **συχνά** συμμετέχετε στις ακόλουθες δραστηριότητες στις ελεύθερες ώρες σας;

	Καθημερινά	**Μία ή δύο φορές την εβδομάδα**	**Μία ή δύο φορές το μήνα**	**Αρκετές φορές το χρόνο, αλλά λιγότερο από κάθε μήνα**	**Ποτέ**
Τηλεόραση, DVD, βίντεο					
Θέατρο					
Μουσικές συναυλίες					
Αθλητισμό					
Επίσκεψη σε μουσεία ή πολιτιστικά φεστιβάλ					
Κινηματογράφο					

4. Είστε μέλος σε κάποιο από τα ακόλουθα;

	Δεν είναι μέλος	**Μέλος**
Εκκλησία ή θρησκευτική οργάνωση		
Οργάνωση για αθλητισμό ή αναψυχή		
Τέχνη, μουσική, εκπαιδευτικό ή πολιτιστικό οργανισμό		
Άλλοι οργάνισμοί στην κοινωνία σας.		

5. Πόσο **εμπιστεύεστε** τις ακόλουθες οργανώσεις ή ιδρύματα;

	Τους εμπιστεύομε εντελώς	**Τους εμπιστεύομε κάπως**	**Δεν τους εμπιστεύομε πολύ**	**Δεν έχω σκεφτεί**	**Δεν έχει σχέση με μένα**
Εκκλησία ή θρησκευτική οργάνωση					
Οργάνωση για αθλητισμό ή αναψυχή					
Τέχνη, μουσική, εκπαιδευτικό ή πολιτιστικό οργανισμό					
Άλλοι οργάνισμοι στην κοινωνία σας					

6. Πόσοι **σημαντικοί άνθρωποι** στη ζωή σας είναι καπνιστές; (Επιλέξτε μόνο ένα)
Κανένας☐ Μερικοί☐ Περίπου οι μισοί☐ οι περισσότεροι ☐ όλοι☐

7. Πόσοι **σημαντικοί άνθρωποι** στη ζωή σας **δεν** θα σας αφήνουν να καπνίζετε γύρω τους; (Επιλέξτε μόνο ένα)
Κανένας☐ Μερικοί☐ Περίπου οι μισοί☐ οι περισσότεροι ☐ όλοι☐

8. Υπάρχουν άλλοι καπνιστές που ζουν στο **νοικοκυριό σας**;
Ναι ☐ Όχι ☐

8Α. Εκτός από σας, **πόσοι άνθρωποι** ζουν μαζί σας και καπνίζουν; (Παρακαλώ σημειώστε τον αριθμό)
☐☐

8Β. Είναι κάποιος που ζει στο σπίτι σας που **προσπαθεί να σταματήσει** το κάπνισμα αυτή τη στιγμή;
Ναι☐ Όχι☐

9. Παρακαλείσθε να περιγράψετε την κατάσταση της **συζύγου ή του συντρόφου σας**. (Παρακαλώ σημειώστε ένα)

Καπνίζει και προσπαθεί να το κόψει	☐	Καπνίζει, αλλά δεν προσπαθεί να σταματήσει το κάπνισμα	☐
Είναι πρώην καπνιστής	☐	Αυτή η ερώτηση δεν ισχύει για μένα	☐
Ποτέ δεν κάπνισε	☐		

10. Ξέρετε κανέναν άλλο εκτός από τον εαυτό σας που η **υγεία** του έχει επειρεαστεί σοβαρά από το κάπνισμα;
Ναι ☐ Όχι ☐

10Α: Ποια είναι η **σχέση** σας με το πρόσωπο ή τα πρόσωπα των οποίων η υγεία επηρεάστηκε από το κάπνισμα; (Παρακαλώ σημειώστε όλα όσα ισχύουν)

Μητέρα ή πατέρας	☐	Σύζυγος / σύντροφος	☐
Γυιος ή κόρη	☐	αδελφός ή αδελφή	☐
Άλλος (Παππούς και γιαγιά, θεία, θείος, κλπ.)	☐	φίλος	☐
Γνωριμία	☐	Άλλο (παρακαλώ διευκρινίστε)	☐

11. Πώς επηρεάστηκε η **υγεία** τους (Παρακαλώ σημειώστε όλα όσα ισχύουν)

Καρδιακή προσβολή	☐	Χρόνια βρογχίτιδα	☐	Εγκεφαλικό	☐
Υψηλή πίεση	☐	Οστεοπόρωση	☐	Καρκίνος του πνεύμονα	☐
Διαβήτης	☐	Άσθμα	☐	Καταρράκτης	☐
Αρθρίτιδα	☐	Άλλες ασθένειες	☐	Κανένα από αυτά	☐

12. Από πού πήρατε πληροφορίες για το πόσο κακό είναι το κάπνισμα;

Ραδιόφωνο και τηλεόραση	☐	Διαδίκτυο	☐	Ανάγνωση βιβλίων	☐	Οικογένεια	☐
Φίλοι	☐	Εφημερίδες	☐	Γατρός	☐		

ΤΜΗΜΑ ΙΙΙ:

1. Παρακαλώ δώστε την απάντησή σας στις ακόλουθες ερωτήσεις σημειώνοντας ένα κουτί για το καθένα.

	Σωστό	Λάθος	Δεν ξέρω
Το κάπνισμα δεν είναι εθιστικό			
Το κάπνισμα είναι επιβλαβές για την υγεία.			
Το κάπνισμα δεν θα μειώσει τη ζωή σας.			
Το κάπνισμα αυξάνει τον κίνδυνο της νόσου του Αλτσχάιμερ.			
Το κάπνισμα βοηθά στη μείωση του αγχους.			
Τα τσιγάρα με φίλτρο είναι αβλαβή.			
Το κάπνισμα δεν σχετίζεται με καρδιακή νόσο.			
Ο κίνδυνος του καρκίνου του πνεύμονα είναι 10 φορές υψηλότερος για όσους καπνίζουν.			
Εάν καπνίζετε είναι πιο πιθανό να έχετε βήχα.			
Η εισπνοή παθητικού καπνίσματος βλάπτει την υγεία μου.			
Οι κίνδυνοι για την υγεία από το κάπνισμα είναι περίπου οι ίδιοι με τους κινδύνους της ατμοσφαιρικής μόλυνσης.			
Μόνο οι βαρείς καπνιστές (2 πακέτα την ημέρα ή περισσότερο) βρίσκονται σε σοβαρό κίνδυνο.			
Το κάπνισμα σκοτώνει μόνο τα άτομα ηλικίας 60 ετών ή μεγαλύτερα.			
Εάν ένα άτομο είναι καπνιστής για μεγάλο χρονικό διάστημα (περίπου 10 χρόνια) είναι πολύ αργά γι 'αυτόν / αυτήν να σταματήσει το κάπνισμα.			
Το σταμάτημα καπνίσματος σε ενήλικες μεγαλύτερης ηλικίας μπορεί να βελτιώσει την υγεία τους τώρα και στο μέλλον.			

2. Πόσο έντονα συμφωνείτε ή διαφωνείτε με τις ακόλουθες δηλώσεις; (Παρακαλούμε σημειώστε μόνο ένα κουτί για κάθε ερώτηση)

	Διαφωνώ έντονα	Διαφωνώ	Δεν έχω ιδέα	Συμφωνώ	Συμφωνώ απόλυτα
Μου αρέσει το κάπνισμα τσιγάρων					
Το κάπνισμα με κάνει να νιώθω τόσο άσχημα.					
Δεν μπορώ να σκεφτώ και δεν μπορώ να μείνω στο σπίτι χωρίς το κάπνισμα.					
Το κάπνισμα είναι τρέλα.					
Το κάπνισμα είναι σπατάλη χρημάτων.					
Δεν πιστεύω ότι θα πάρω καρκίνο εξαιτίας του καπνίσματος.					
Όλες οι μορφές προώθησης προϊόντων καπνού θα πρέπει να απαγορευθεί εντελώς.					
Οι συμβουλές των γιατρών για τους ασθενείς τους να σταματήσουν το κάπνισμα είναι εντελώς αναποτελεσματικές.					
Η υποστήριξη των μελών της οικογένειας βοηθά τον καπνιστή να κόψει το τσιγάρο.					
Τα εκπαιδευτικά προγράμματα στην τηλεόραση δεν είναι αποτελεσματικά για τη μείωση του καπνίσματος.					
Η καπνιστική συμπεριφορά του φίλου μου ενθαρρύνει την καπνιστική μου συμπεριφορά μου.					
Το κάπνισμα πρέπει να απαγορευθεί σε όλα τα εστιατόρια και χώρους φαγητού.					
Σύντομες συμβουλές (π.χ. 3 λεπτά) μπορούν να βοηθήσουν κάποιο να σταματήσει το κάπνισμα αποτελεσματικά.					
Οι καπνιστές πρέπει να έχουν το δικαίωμα να καπνίζουν στους χώρους εργασίας τους χωρίς περιορισμό					

ΤΜΗΜΑ IV: ΙΣΤΟΡΙΚΕΣ ΠΛΗΡΟΦΟΡΙΕΣ

1. Φύλο (σημειώστε ένα κουτί)
Γυναίκα ☐ Άνδρας ☐

2. Πόσο χρονών είστε; (παρακαλώ σημειώστε τον αριθμό των ετών στο κουτί) ☐☐

3. Οικογενειακή κατάσταση (σημειώστε μόνο ένα κουτί)

Δεν παντρεύτηκα ποτέ	☐	Παντρεμένος ή ζω με το σύντροφό	☐
Διαζευγμένη/ος	☐	Χήρα/ος	☐
Χωρισμένη/ος	☐	Defacto Συζούμε	☐

4. Τι είναι το υψηλότερο επίπεδο εκπαίδευσής σας; (ένα κουτί)

Δημοτικό σχολείο	☐	Γυμνάσιο	☐
Λύκειο	☐	Άλλο (παρακαλώ διευκρινίστε)	☐
		.....	

5. Σε ποια γλώσσα προτιμάτε να μιλήσετε:

Αγγλικά ☐ Ελληνικά ☐ Και τα δύο ☐

6. Ποιο χρόνο φτάσατε στην Αυστραλία; (παρακαλώ γράψτε το έτος) ☐☐☐☐

7. Πόσο καλά μπορείτε να διαβάσετε στα Αγγλικά; (Σημειώστε σε ένα τετραγωνάκι)

Πολύ καλά	☐	Όχι πολύ καλά	☐
Αρκετά καλά	☐	Καθόλου	☐

8. Απασχόληση (ένα τετραγωνάκι)

Εργάζομαι με πλήρη απασχόληση	☐	Εργάζομαι μερικές ώρες, με σύνταξη	☐
Εργάζομαι μερικής ώρες χωρίς σύνταξη	☐	Συνταξιούχα/ος με σύνταξη	☐

9. Ποιο ήταν το συνολικό ετήσιο εισόδημα που έχει ο καθένας στο νοικοκυριό σας ΠΡΙΝ ΤΗ ΦΟΡΟΛΟΓΙΑ κατά το τελευταίο οικονομικό έτος; (σημειώστε ένα κουτάκι)

Το χρόνο	
0-$14,999	
$15,000-$29,999	
$30,000-$44,999	
$45,000-$59,999	
$60,000-$74,999	
$75,000-$89,999	
$90,000-$104,999	
$105,000-$119,999	
$120,000-$134,999	
$135,000-$149,999	
$150,000 ή περισσότερο	
Δεν ξέρω	

10. Μαζί με σας, πόσα μέλη της οικογένειας ζουν σήμερα στο σπίτι σας; (παρακαλώ γράψτε τον αριθμό στο αντίστοιχο κουτί) ☐☐

11. Σε γενικές γραμμές, θα λέγατε ότι η υγεία σας είναι ...
Πολύ καλή ☐ Καλή ☐ Μέτρια ☐ Κακή ☐ Πολύ κακή ☐

12. Έχετε διαγνωστεί με κάποια από τις ακόλουθες παθήσεις; (σημειώστε ένα κουτί)

Χρόνια πνευμονική νόσο (εμφύσημα, χρόνια βρογχίτιδα, άσθμα) ναι ☐ όχι ☐

Καρδιο-αγγειακή νόσο (υψηλή αρτηριακή πίεση, καρδιακή προσβολή, κλπ.) ναι ☐ όχι ☐

Ο διαβήτης ναι ☐ όχι ☐

Εγκεφαλοαγγειακή νόσο (εγκεφαλικό επεισόδιο) ναι ☐ όχι ☐

Καρκίνος ναι ☐ όχι ☐ Αν ναι, τι είδους _____

13. Πόσο καιρό έχετε να επισκεφθείτε τον γενικό γιατρό σας ή τον οικογενειακό γιατρό; (σημειώστε ένα κουτί)

Λιγότερο από ένα χρόνο ☐
1 έως 5 χρόνια ☐
6 έως 10 χρόνια ☐
Πάνω από 10 χρόνια ☐
δεν βλέπω ένα γενικό γιατρό ☐

Σας ευχαριστούμε πολύ για το χρόνο και τη συνεργασία σας.

Appendix H: Questionnaire data management

All questions and the participants' answers were entered into SPSS software and coded based on the procedures outlined below.

Coding of smoking characteristics (Section I)

Part one

Question 1: start age of smoking

Responses were divided into three categories: 1=less than 19 years; 2=20 to 24, and 3=25 and over.

Responses to the question about the total number of years of smoking and the number of cigarettes smoked in the last 24 hours was measured as a continuous variable.

Question 3: tobacco product

The smoker's responses were divided into four categories: 1=cigarettes, 2=cigars, 3=pipe tobacco, and 4=other.

Question 5: preferred time of smoking

Response options included ten different times over a 24-hour period. The times were then rated for frequency of choice.

Questions 2 and 4: These two questions were measured as continues variables.

Part two

This part included six questions which measured smokers' nicotine dependence based on FTND (Heatherton et al., 1991)

Question 1:

This asked about the timing of the first cigarette of the day. Answers were rated as follows: 0=more than one hour, 1=31 to 60 minutes, 2=6 to 30 minutes, 3= 5 minutes or less.

Question 2:

The number of cigarettes smoke per day was divided into four categories: 1=10 or fewer, 2=11-20, 3=21-30, and 4=31 or more

Questions 3, 5, and 6:

0= no and 1=yes

Question 4:

0=Any other and 1=First one in the morning.

In rating levels of nicotine dependence, any smoker who scored 0 to 2 was classified as 'low'; 3 to 4 as 'medium'; 5 to 6 as 'high'; and 7 to 10 as 'very high' (Fagerstrom and Schneider, 1989).

Based on answers to question 2, which was about the number of cigarette smoked per day, smokers were categorized into three levels: less than 10 cigarettes per day as 'light', 11 to 20 cigarettes per day as 'moderate', and more than 20 cigarettes per day as a 'heavy' smoker (Farrell et al., 2001).

Part three

Question 1: stage of change and readiness to quit smoking

Any smoker who selected the first item was classified as 'pre-contemplation stage', the second item as 'contemplation stage', and the third item as 'preparation stage'.

Question 2: intention to quit

This question asked about smokers' intention to quit in the last three months. Response options included '5= strongly agree', '4= agree', '2= disagree', '1= strongly disagree', and '3= no idea'.

Question 3:

1= yes and 2=no

Questions 4 and 5 related to the total number of quitting smoking in the last 24 hours and entire life respectively were measured as a continuous variable.

Question 6

This question included seven types of quit attempt methods. Each method was rated for frequency of choice.

Question 7

This question asked about participants' longest quit attempt. Responses were divided into five categories: 1=one week and less, 2=one week to one month; 3=one month to six months; 4= six months to one year; and 5=more than one year (Dale et al., 1997).

Question 8, 9, and 10

These questions assessed smokers' reasons for attempting to quit, barriers that prevented quitting, and their preferred support person when attempting to quit with multiple choice answers, which were rated for frequency of choice.

Question 11

The probability of being advised to quit smoking when visiting the doctor was measured thus: 1=none, 2= some visits, and 3= every visit.

Question 12

This question asked about which person had advised the smoker to quit: 1=doctor, 2=nurse, 3=family member, and 4=other.

Part four

This section included nine items to measure smokers' self-efficacy. Each item was measured with a 5-level Likert scale: 5 indicated highest and 1 indicated lowest self-efficacy.

Response options included '5= extremely tempted', '4= very tempted', '3= moderately tempted', '2= not very tempted', and '1= not at all tempted'.

The highest self-efficacy score for any smoker was 45 and the lowest score was 9.

Coding for social capital (Section II)

Table 1:

This table measured the participants' direct contact with various persons or groups. The answers were scaled from 1 to 5: 5=every day or almost every day; 4=once or twice a week; 3=once or twice a month; 2=less than monthly; and 1=don't have any contact.

Table 2:

This table illustrated participants' level of trust towards various persons or groups. Answers were scaled from 1 to 4: 4=trust them completely; 3=trust them somewhat; 2=do not trust them very much; and 1=not relevant.

Table 3:

This table illustrated level of engagement in various activities. Participants' answers were scaled from 1 to 5: 5=daily, 4=once or twice a week; 3=once or twice a month; 2=several times a year, but less than monthly, and 1=never.

Table 4:

This table showed participants' membership in various organizations. Answers were categorized as follows: 1=don't belong, 2=member.

Table 5:

This table illustrated the level of trust in various organizations. Participants' answers were scaled from 1 to 4: 4=trust them completely; 3=trust them somewhat; 3=do not trust them very much; 4=haven't thought about it or not relevant.

Question 6:

The number of important people in the participants' lives who smoke:

1=none, 2=some of them, 3=about half of them, 4=most of them, and 5=all of them.

Question 7:

The number of important people who discourage or disallow smokers from smoking around them, measured on a scale of 1 to 5:

1= none, 2=some of them, 3=about half of them, 4=most of them, and 5=all of them.

Question 8:

Participants were asked about the number of smokers living in their household and their quit attempts.

Question 9:

Smoking status of spouse or partner. Six statuses were coded by numbers and the frequency of each selection was recorded.

Question 10:

Participants were asked whether any relatives had their health affected by smoking.

Question 11:

Prevalence of smoking-related diseases amongst participants. Each disease was coded by a number.

Question 12:

Sources of participants' information about the effects of smoking. Each answer was coded by a number and the frequency of the choices made was recorded.

Coding of knowledge and attitudes (Section III)

This section included 15 items to measure participants' knowledge and 14 items to measure their attitudes towards smoking.

The knowledge questions had three answer choices, coded as 1=true, 0=false or don't know. The maximum score for knowledge was 15 and the lowest score was 0.

Attitude towards smoking cessation was measured by responses to 14 Likert-scale items; five-level responses ranged from 'strongly agree' to 'strongly disagree'. Responses to the various items were quantified and were summed across statements to give a total score for the individual on the scale. For example, for some of the items the response score was 1–5 and for another statement it was 5–1. The maximum score for attitude was 70 and the lowest score was 14.

Coding of participants' background information

This section included 13 questions.

Question one was coded as 1=female and 2=male.

Question two related to age of participants; it was categorized as 1=50–64 and 2=64 and over.

Question three was about marriage status: Each answer was coded by a number and frequency of each code number was recorded.

Question four queried the participants' education level: each answer was coded by a number and frequency of each code number was recorded.

Question five related to ethnicity and country of birth. This question had four answers which were coded by a number.

Question six asked about the Greek participants' preferred language. It was coded 1= Greek, 2=English and 3=Both Greek and English.

Question seven asked about Greek participants' understanding of English: 1=Very well, 2=not very well, 3= quite well, and 4=not at all.

Question eight asked about employment status: 1=work full-time, 2=work part-time with pension, 3=work part-time without pension, and 4=retired/pensioner.

Question nine about annual income, classified as: 1=less than $45,000; 2=$45,000–173,000, 3=more than $173,000; 4=don't know (Daymark Community Monitor, 2006).

Question ten was about other household members.

Question eleven asked participants to self-report health status. Responses were coded as 1=good, 2=fair and 3=bad.

Question thirteen asked about frequency of GP visits. It had five answers, coded from 1 to 5.

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