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The Psychology of Men's Help-seeking for Common Cancer Symptoms

by

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Thesis Summary

The early diagnosis of cancer is a proven strategy for increasing survival rates for many cancers. Despite this, men appear more likely than women to postpone help-seeking for cancer symptoms. This thesis describes a series of studies that have examined the key psychological processes underlying Australian men's decisions to seek medical advice for cancer symptoms, with the overarching intention of identifying strategies to promote men's timely help-seeking.

The first study was a systematic review of research investigating psychosocial influences on men's help-seeking for cancer symptoms. Forty international studies were included in the review: 25 qualitative studies, 11 quantitative studies, and four mixed-method studies. Although a range of psychosocial factors were found to be associated with men's help-seeking, existing research had several limitations that reduced the strength of evidence. It was concluded that future research should examine variation between men, generate hypotheses from theory, and identify the relative importance of psychosocial influences on help-seeking behaviour.

Findings from the review informed Study 2, an interview study that was conducted to explore variation in Australian men's help-seeking for cancer symptoms between urban and rural areas. Interviews were conducted with men recently diagnosed with cancer (n = 13) and their partners (n = 8). Results indicated that help-seeking behaviour was similar for participants across regions, however, their experiences differed. Men residing in rural areas described greater difficulty with accessing healthcare and more optimism about their symptoms.

Study 3 was a cross-sectional survey that tested the predictive strength of the Theory of Planned Behaviour (Ajzen, 1991; Fishbein & Ajzen, 2010) and the Health Belief Model (Rosenstock, 1974) in order to examine their relative capacity to explain variation in

Australian men's (*n* = 127) intentions to seek help for cancer symptoms. Results indicated that intentions were moderately explained by the two theories in separate (each model explained 20% of variance) and combined (25% of variance explained) regression analyses, and that perceived behavioural control was the only significant predictor variable.

Considering the modest variance explained by the models in Study 3, it was important to test the predictive strength of other psychosocial variables not yet examined. This was done in Study 4, which also examined the extent to which the research-derived model was invariant between genders and countries. The fourth study was a cross-sectional survey including Australian men (*n* = 114) and women (*n* = 111), as well as British men (*n* = 59) and women (*n* = 86). Regression analyses showed that the set of predictors explained a good amount of variance in anticipated time to consultation for both male groups (34 – 40%), but less variance for female groups (14 – 22%). Perceived behavioural control and 'Minimising problem and resignation' were consistently strong predictors of the outcome for the Australian groups and British men.

Collectively, these studies highlighted important cognitive processes underlying Australian men's help-seeking for cancer symptoms. Results showed the combined relevance of perceived behavioural control and symptom appraisal factors. These results have implications for the development of strategies designed to improve help-seeking for cancer symptoms.

Thesis Declaration

I certify that this thesis:

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

Jennifer Ann Fish

Signed: Date: 16/06/2019

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Chapter One: Introduction to the Research Program

Preamble

Early diagnosis of cancer can be important for efficacious treatment, survival, and for reducing global cancer burden (Etzioni et al., 2003). Despite the benefits of early diagnosis, men appear more likely than women to postpone seeking professional medical advice for warning signs of cancer (e.g., Evans, Brotherstone, Miles, & Wardle, 2005; Oberoi, Jiwa, McManus, & Hodder, 2014), resulting in later diagnosis and potentially more advanced stage of disease. This thesis has importantly tested the psychosocial barriers to, and facilitators of, timely help-seeking for common cancer symptoms using a multi-method approach. The focus of this thesis was on Australian men, for whom cancer burden (as indicated by incidence and mortality) may be an especially significant problem (Australian Institute of Health and Welfare [AIHW], 2017a; Bray et al., 2018; Ferlay et al., 2018b). The main intention of this thesis was to identify the key psychosocial correlates of Australian men's help-seeking for common cancer symptoms, with the ultimate aim of informing potential interventions that might improve early diagnosis. Early diagnosis is a proven strategy for reducing the burden of cancer by increasing rates of cancer survival and improving health outcomes (Etzioni et al., 2003; Neal et al., 2015).

This introductory chapter outlines information about worldwide cancer burden, the importance of early diagnosis and treatment of cancer, as well as studies describing gender-related differences in healthcare service utilisation and help-seeking for cancer symptoms. This is followed by a summary of the research program, including: a statement of the problem that this research addresses, the program aims and scope, research setting, conceptualisation of help-seeking behaviour, and the significance of the intended outcomes of the research program. Finally, a brief overview of the thesis is presented, which is predominantly comprised of two published peer-reviewed articles (Studies 1 and 2), and two traditional thesis chapters (Studies 3 and 4).

Context of the Research Program

Global Cancer Burden: Incidence, Mortality, and Prevalence

Cancer is an encompassing medical term that comprises many associated diseases that may be sex- or non-sex specific (Pulverer, Anson, Surridge, & Allen, 2001). It is one of the leading causes of death for men and women worldwide, and is one of the biggest barriers to increasing life expectancy (Bray et al., 2018). Global cancer burden, as indicated by incidence, mortality, and prevalence, is enduring and increasing. The GLOBOCAN database project estimated 18.1 million new cancer cases (including non-melanoma skin cancers) and 9.6 million cancer deaths worldwide in 2018 (Bray et al., 2018), with a 5-year cancer prevalence for men and women of over 43 million (Ferlay et al., 2018b). Cancer incidence has been found to vary according to region, with the highest cancer incidence rates observed in Australia and New Zealand (Bray et al., 2018). The age standardised incidence rate (ASR) for all cancers was 463.1 per 100 000 in Australia and New Zealand, followed by 350.2 per 100 000 in North America. The lowest ASR was 96.3 per 100 000 in South-Central Asia. This higher incidence rate in Australia and New Zealand is likely due, in part, to higher identification rates associated with the use of cancer screening services and the high rates of non-melanoma skin cancers diagnosed in the region.

In addition to disparities across geographic location, gender differences in cancer incidence and outcomes have been observed worldwide. Globally, new cancer cases (1 in 5 men vs 1 in 6 women) and cancer deaths (1 in 8 men vs 1 in 10 women) are estimated to be higher for men compared to women (Bray et al., 2018). Among men, lung (14.5%), prostate (13.5%), and colorectal (10.9%) cancers were the most commonly diagnosed cancers, with lung (22.0%), liver (10.2%), and stomach (9.5%) cancers the leading causes of death. In comparison, breast (24.2%), colorectal (9.5%), and lung (8.4%) cancers were most commonly diagnosed in women, with breast (15%), lung (13.8%), and colorectal (9.5%) cancers the leading causes of death.

A similar pattern has been observed in Australia, with cancer incidence (1 in 3 men vs 1 in 4 women before 75 years of age) and mortality (1 in 10 men vs 1 in 13 women before 75 years of age) also higher among men than women (AIHW, 2017a; Ferlay et al., 2018a). Men are more likely to die from non-sex specific cancers, including: lung, skin, blood, and lymph cancers (Australian Bureau of Statistics [ABS], 2018a). In addition to this, within-gender geographic differences have been observed; cancer incidence has been observed to be greatest for Australian men compared to men from other regions of the world (Ferlay et al., 2018b). For example, among men the ASR for all cancers was 571.2 per 100 000 in Australia and New Zealand, followed by 387.6 per 100 000 in North America. The lowest incidence rate among men was 95.6 per 100 000 in Western Africa. Evidence therefore suggests that cancer burden (as indicated by incidence and mortality) may be an especially significant problem for Australian men, which is likely due to a range of biological, environmental, social, and behavioural factors. This, in part, contributes to the primary focus of this thesis on Australian men.

Early Diagnosis and Treatment of Cancer

The impact of cancer on individuals, their loved ones, communities, as well as the healthcare system, is considerable worldwide (Etzioni et al., 2003). Individuals directly (i.e., diagnosed with cancer) and indirectly (i.e., family and friends of individual diagnosed with cancer) affected by cancer face many physical, functional, emotional, social, and practical costs associated with cancer. Communities and healthcare systems also face tremendous costs associated with treatment, morbidities, and mortality, with the annual financial cost of cancer globally estimated at US$1.16 trillion in 2010 (Stewart & Wild, 2014). For these reasons, various cancer prevention strategies have been proposed to reduce the burden of cancer. Facilitating early diagnosis of cancer is one strategy that has been associated with improved survival rates and better health outcomes (Etzioni et al., 2003; Neal et al., 2015).

The early diagnosis and treatment of cancer is of paramount importance in the survival of many cancers. Ideally, cancer is detected by a healthcare professional early, when it is in situ or localised and has not metastasised (i.e., spread in the body; Etzioni et al., 2003). Later diagnosis of cancer, leading to potentially more advanced disease, has been associated with poorer health and worse survival outcomes (Etzioni et al., 2003; Neal et al., 2015; Richards, 2009). Curative therapeutic treatments for cancer are less likely to be effective for advanced stages of disease, and are more likely to be successful if cancer is detected early. The importance of early diagnosis and treatment of cancer is highlighted by a systematic review of over 200 studies (Neal et al., 2015). This indicated that timely diagnosis was associated with improved survival and health outcomes for certain cancers, including breast and colorectal cancers, melanoma, head and neck cancers, and testicular cancer.

Early detection may occur through cancer screening (asymptomatic detection) or through prompt medical help-seeking with a healthcare professional for a cancer symptom. Certain cancers (e.g., colorectal, melanoma, head and neck) present with early cancer warning signs, which may appear as trivial or major bodily changes. Warning signs are dependent on the type of cancer, location in the body, and whether it has metastasised (American Cancer Society, 2019). Common warning signs or symptoms may include: persistent unexplained fatigue, unexplained lump or swelling, persistent unexplained pain, unexplained bleeding, a persistent unexplained cough or hoarseness, persistent change in bowel habits, persistent change in bladder habits, persistent difficulty swallowing, change in the appearance of a mole, a sore that does not heal, and unexplained weight loss (Cancer Council SA, 2015; Power & Wardle, 2015).

There are currently no internationally standardised clinical guidelines for when an individual should seek medical advice from a healthcare professional when a common cancer symptom is noticed (Pedersen et al., 2018). Most cancer organisations provide generic advice that people seek medical advice with a healthcare professional "promptly" (e.g., Cancer Council Australia, 2017; Cancer Research UK, 2017). However, some guidelines have been suggested for certain symptoms such as seeking help within 1 week when blood is detected in stools or urine, there is a change in the appearance of a mole, or an unexplained lump or swelling is detected, and seeking advice within 4 weeks for an unexplained cough or hoarseness, when having difficulty swallowing, or when a sore does not heal (e.g., de Nooijer, Lechner, & de Vries, 2002; Pedersen et al., 2018). More evidence is required to determine suitable time thresholds for medical help-seeking for common cancer symptoms and to inform clinical guidelines.

Considering cancer warning signs can vary in severity and specificity (i.e., symptoms may be general in nature and associated with multiple health issues), symptom attribution is sometimes difficult for individuals. Determining the appropriate response may also be challenging for healthcare professionals. This has resulted in the practice of diagnostic *safety-netting*, which is an important strategy aimed at reducing the incidence of missed diagnoses by managing diagnostic uncertainty (Almond, Mant, & Thompson, 2009). Safety-netting includes healthcare professionals communicating uncertainty with patients or carers, as well as advising them when to consult again, what complications to monitor for, how to seek further help, and how long to monitor symptoms (if this time period is known). This strategy is particularly important for differential diagnoses (i.e., distinguishing between multiple clinical conditions that present with similar symptoms) that include serious illnesses like cancer (Morgan, Chan, & Starling, 2014), and may lead to earlier diagnosis.

The Gendered Context of Help-Seeking for Cancer Symptoms

As described above, internationally the cancer mortality burden is higher for men than women. It has been proposed that this may be due, in part, to a later stage of diagnosis of cancer for men (Evans et al., 2005). Consequently, men's patterns of medical help-seeking behaviour and healthcare service utilisation have been increasingly discussed in popular media and investigated in research. Internationally, a significant proportion of men have been found to postpone help-seeking for male-specific cancers. For instance, in two British studies 41 to 48% of men postponed seeking medical advice for prostate cancer symptoms for more than 2 weeks (Forbes, Warburton, Richards, & Ramirez, 2014; Keeble et al., 2014). In addition to this, 65% of men did not seek help for penile cancer symptoms for more than 6 months (Skeppner, Andersson, Johansson, & Windahl, 2012), and 16% of men postponed seeking medical advice for testicular cancer symptoms for more than 2 months (Vasudev, Joffe, Cooke, Richards, & Jones, 2004). Although evidence for gender differences in help-seeking has been mixed, men have also been found in some studies to postpone help-seeking for non-gender specific cancers (e.g., colorectal cancers) more than women (Evans et al., 2005; Oberoi et al., 2014; Porta, Gallen, Belloc, & Malats, 1996; Young, Sweeney, & Hunter, 2000). It should be noted, however, that the challenge for reviewing the literature in this research area is the various cut-off points and definitions used for "timely" and "delayed" help-seeking for cancer symptoms, making inferences regarding men's help-seeking behaviour difficult.

Within Australia, men are less likely to seek medical advice from a general practitioner (GP) and are less likely to claim Medicare services compared to women in general (ABS, 2018b; AIHW, 2017b; Bayram, Valenti, & Britt, 2016). Although this pattern may be partially explained by women's greater service use for reproductive reasons during childbearing years (Hunt, Adamson, & Galdas, 2012), this pattern of results has been observed across all age groups, suggesting a larger pattern of Australian men's reduced medical help-seeking behaviour regardless of disease and life stage considerations (ABS, 2012; Bayram et al., 2016). Evidence regarding Australian men's medical help-seeking behaviour for cancer symptoms, specifically, is limited, mixed in findings, and outdated (i.e., the majority of evidence was collected over twenty years ago). One retrospective investigation of help-seeking among 100 patients diagnosed with colorectal cancer found that male patients were significantly more likely than female patients to postpone visiting a doctor (31% vs 10% patient delay respectively; $p = .01$) for a potential cancer symptom (Young et al., 2000). Other relevant studies have found a non-significant relationship between patient gender and time to consultation for colorectal cancer symptoms (Cockburn, Paul, Tzelepis, McElduff, & Byles, 2003; Dent et al., 1990; McDermott, Hughes, Pihl, Milne, & Price, 1981). Current evidence for Australian men's help-seeking for cancer symptoms is required.

Moreover, further within-gender comparative research is required to investigate differences in help-seeking among Australian men. Australian men's medical help-seeking experiences are not invariant and are likely to differ according to a variety of socio-demographic characteristics and psychosocial influences. The Australian Patient Experience Survey (ABS, 2018b) highlights differences in men's medical help-seeking behaviour for all health concerns related to socio-demographic characteristics. In 2017-2018, 23.7% of Australian males reported delaying medical help-seeking or not visiting a doctor for a health concern. Younger Australian males (under 65 years) were more likely to indicate they had delayed seeing or not visited a doctor compared to older Australian males (over 65 years), with the highest proportion of delayed help-seeking (30.1%) reported for the 35-44 year age group. Of all Australian males who had reported delaying help-seeking, only approximately 3% reported this delay was due to the cost of seeing a GP. Furthermore, younger males aged between 15 to 64 years were the most likely to believe that the wait to get an appointment with a GP was longer than acceptable, compared to older age groups (over 65 years)[1]. Although informative, this research identified barriers to Australian men's medical help-seeking broadly, and it remains unclear how these factors might influence help-seeking for cancer symptoms specifically.

There is also some indication that Australian men's help-seeking for cancer symptoms differs according to other demographic and socio-cultural factors. Men residing in rural areas of Australia are less likely than men living in urban areas to seek medical help, report less utilisation of diagnostic and therapeutic services, and are more likely to have poorer cancer outcomes (AIHW, 2012; Baade, Youlden, Coory, Gardiner, & Chambers, 2011; Schlichthorst, Sanci, Pirkis, Spittal, & Hocking, 2016). Consistent with this, research has shown that increases in remoteness have been associated with increased mortality from a range of cancers (ABS, 2012). Moreover, while data on the medical help-seeking behaviour of Aboriginal and/or Torres Strait Islander men is very scarce, it has been proposed that they are the group least likely to access primary healthcare services and most likely to postpone medical help-seeking in Australia (Briscoe, 2000; Canuto, Wittert, Harfield, & Brown, 2018). For rural dwelling Aboriginal and Torres Strait Islander men, this may be due, in part, to living greater distances from healthcare services and difficulties with accessing care (Shahid et al., 2016).

In addition to socio-demographic characteristics, a small number of research studies have explored and highlighted potentially important psychosocial variables associated with Australian men's help-seeking for cancer symptoms. Studies have been heterogeneous, either focusing on a specific cancer site, such as testicular (Carbone, Walker, Burney, & Newton, 2009), colorectal (Oberoi, Jiwa, McManus, Hodder, & de Nooijer, 2016), or skin cancer

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[1] Total proportion of males who endorsed the barrier: 16.7% of 15 to 24 year olds; 18.7% of 25 to 34 year olds; 22.0% of 35 to 44 year olds; 19.9% of 45 to 54 year olds; 17.7% of 55 to 64 year olds, 13.5% of 65 to 74 year olds; 8.8% of 75 to 84 year olds; and 7.9% for those aged 85 years and over (ABS, 2018b).

(Fennell et al., 2017), or have been conducted within specific socio-cultural contexts, such as help-seeking in rural Australia (Emery et al., 2013), or among Aboriginal people (Shahid et al., 2016). Although individual psychosocial factors associated with men's help-seeking for cancer symptoms varied considerably across the studies, there was some commonality in findings. For instance, potentially important barriers to men's timely help-seeking were symptom experience and appraisal factors (e.g., symptom misattribution, mildness; Carbone et al., 2009; Emery et al., 2013; Oberoi et al., 2016; Young et al., 2000), health beliefs (e.g., symptom will go away on its own; Carbone et al., 2009; Emery et al., 2013; Oberoi et al., 2016; Young et al., 2000), gendered stereotypes and social norms (Adams, Collins, Dunne, de Kretser, & Holden, 2013; Emery et al., 2013; Fennell et al., 2017; Shahid et al., 2016), and emotional responses (e.g., embarrassment or shame; Adams et al., 2013; Carbone et al., 2009; Emery et al., 2013; Oberoi et al., 2016; Shahid et al., 2016; Young et al., 2000). The severity of symptoms (Adams et al., 2013; Carbone et al., 2009; Emery et al., 2013; Oberoi et al., 2016), and the better availability of social support (Carbone et al., 2009; Emery et al., 2013; Oberoi et al., 2016) appeared to be the most common facilitators of men's timely help-seeking for cancer symptoms.

Although useful findings have emerged from a small number of Australian research studies into men's help-seeking for cancer symptoms, limitations associated with the research designs employed have reduced the strength of evidence and the conclusions that can be drawn. Research has predominantly used descriptive methods, been atheoretical, and was relatively narrow in scope. It has not been determined whether experiences of, and responses to, common cancer symptoms are different or similar between groups of men, or between Australian men and women. Moreover, the hierarchy of influence is unclear; this is vital for the identification of strategies likely to improve help-seeking behaviour, as well as the design of effective interventions.

Despite all that is known about Australian men's help-seeking, this group continues to experience poorer health outcomes relative to Australian women. Current evidence indicates Australian men, on average, have a shorter life expectancy (Department of Health, 2019), experience more burden of disease (AIHW, 2019a), and as previously outlined, continue to experience greater cancer mortality compared to women (AIHW, 2017a; Ferlay et al., 2018a). As a consequence, there is enduring concern about Australian men's minimising of medical symptoms and postponement of medical help-seeking with healthcare professionals (Australian Medical Association, 2018; Department of Health, 2019), and further research is needed. Consequently, the primary focus of the present thesis is to extend previous research by investigating Australian men's previous and anticipated medical help-seeking for common cancer symptoms, and to identify the main psychosocial correlates of men's help-seeking for cancer symptoms.

Outline of the Research Included in the Thesis

Problem Statement

To date, there is inadequate understanding of Australian men's actual and anticipated help-seeking for common cancer symptoms, as well as the psychosocial influences on their help-seeking behaviour. Although data relating to Australian men's utilisation of GP services are available as previously outlined, evidence of influences on men's help-seeking for cancer symptoms is minimal. This reflects the fact that there has been little research investigating the socio-demographic and psychosocial factors implicated in Australian men's help-seeking for cancer symptoms. As a result, these factors are currently not well understood. This gap in knowledge has resulted in difficulty in improving men's help-seeking behaviour to ultimately improve cancer outcomes. Understanding the psychology of Australian men's help-seeking for cancer symptoms is crucial for the design of broadly effective cancer prevention and health promotion interventions, thus potentially reducing the cancer burden on Australian men.

Research Program Aims and Scope

The principal aim of this research was to determine the main psychosocial correlates of Australian men's help-seeking for common cancer symptoms, with the overarching intention of identifying strategies to facilitate timely help-seeking for cancer symptoms. As outlined in detail in the remainder of this thesis, psychosocial factors associated with help-seeking for cancer symptoms may be comparable for men across international locations, as well as between men and women. Empirical comparisons are required to investigate potential similarities and differences. Thus, although the focus of this thesis was on Australian men, other groups were also sampled (i.e., Australian women, as well as British men and women) to allow for an investigation of generalisability. Additionally, the research program focussed on cancer broadly, investigating common cancer symptoms, rather than specific forms of cancer and the associated symptoms. This approach was taken to increase the breadth, relevance, and generalisability of the research program.

Two research designs were included in this thesis: cross-sectional retrospective and hypothetical help-seeking designs. Retrospective designs are useful for investigating actual help-seeking behaviour among people who have been diagnosed with cancer. Hypothetical research designs can be useful for determining relationships between variables at one point in time. Both research designs have important limitations, however, such as recall errors or difficulty anticipating help-seeking for hypothetical symptoms (Scott & Walter, 2010). Despite these limitations, prospective designs were considered beyond the resources of this thesis, and raised ethical concerns. For example, it is unethical to observe help-seeking behaviour in individuals who may experience a cancer warning sign and not intervene to suggest seeking professional medical advice (Scott & Walter, 2010). The research included in this thesis therefore examined previous and anticipated help-seeking behaviour, and was considered an important first step in theory building.

The research questions addressed in this thesis were:

i. What are the psychosocial factors that influence men's help-seeking for cancer symptoms internationally?
ii. What are the main psychosocial barriers to, and facilitators of, Australian men's timely help-seeking for common cancer symptoms, as identified cross-sectionally?
iii. Do men's responses to cancer symptoms vary between different socio-demographic groups?
iv. Are psychosocial correlates of timely help-seeking for common cancer symptoms generalisable between men and women?

Research Settings

Healthcare systems have a large influence on both help-seeking behaviour and research regarding pathways to cancer treatment (Weller et al., 2012). In this present thesis, research was undertaken within two distinct, and yet comparable, healthcare systems: the mixed welfare-market system within Australia, and the welfare system within the United Kingdom (UK). These two healthcare systems have similarities and differences that are outlined below.

The welfare state model of healthcare, otherwise known as public healthcare, is grounded in the belief that health is a social right, and should be accessible to all people (Willis & Parry, 2012). In contrast, the market model of healthcare, otherwise known as private healthcare, is based on the idea that individuals should pay for their healthcare without government intervention. The healthcare system within Australia is a mixed system, including public and private components, providing a *safety-net* that addresses a variety of healthcare services, including preventative, therapeutic, and palliative services (AIHW, 2017b). Australian and New Zealand citizens or visa holders can enrol for Medicare Australia, which is a compulsory health insurance scheme primarily funded by taxes that provides funds to pay for a variety of healthcare services (Willis & Parry, 2012). However, many GPs will charge a "gap" fee for their service (a gap fee refers to the difference between the charge to the patient and the amount provided by the government to cover this charge). Patients can also seek insurance privately, which provides faster access to some services and some level of individual choice over service providers.

When an individual experiences a health issue, the first point of contact with the healthcare system is usually a healthcare professional in primary healthcare, for instance a GP, dentist, or pharmacist (AIHW, 2017b). Medicare Australia provides a reimbursement of up to 85% of the fee for an appointment with a GP, or with a specialist when there is a GP referral (Willis & Parry, 2012). The patient pays the remaining gap fee to the healthcare professional. Alternatively, some medical practitioners charge only the scheduled fee (i.e., they participate in *bulk-billing*), and the patient is not required to pay for the consultation. Private health insurance is also available to Australians to help cover hospital costs and allied health services (AIHW, 2017b; Willis & Parry, 2012). Within Australia, just over half of the Australian population aged 15 years and over had private health insurance (57%) in 2017-2018 (ABS, 2018b).

Individuals seeking medical advice for a cancer symptom are likely to visit a GP within the public component of the Australian healthcare system, and therefore cost is not expected to be a substantial concern. The Australian Bureau of Statistics (2018b) have reported that approximately 3% of Australian men have postponed help-seeking due to costs. However, the employment conditions of the patient (e.g., casual employment contract without personal leave entitlements) may influence decisions to seek help if they need to take a leave of absence from work to consult with a healthcare professional. Moreover, any subsequent hospital treatment, or visits to specialist consultants, are also likely to attract a gap fee if they occur outside the public hospital system. Consequently, the circumstances of the patient with respect to private health insurance may influence decisions to seek help due to potential access and treatment concerns.

In contrast, the UK predominantly has a welfare state model of healthcare, with free universal healthcare provided to citizens through the National Health Service (NHS; Lewis & Yates, 2012). The NHS was founded on the idea that health is a right for everyone irrespective of social background and was funded by public funds. Despite public perceptions of an overstretched and strained system (Llanwarne, Newbould, Burt, Campbell, & Roland, 2017; MacLean, Hunt, Smith, & Wyke, 2017), and various reforms that have taken place over the years since its inception, the central principle that the system is funded by taxation and free for patients who access service remains important within the UK (Grosios, Gahan, & Burbidge, 2010; Lewis & Yates, 2012). Within this system and in Australia, GPs perform a gatekeeping role, referring patients who require further investigation into symptoms and health issues (Llanwarne et al., 2017).

Despite similarities between the two healthcare systems, epidemiological data indicate differences in cancer survival. Data from population-based cancer registries indicate that 1-year cancer survival rates in adults were consistently lower in the UK than Australia (New South Wales and Victoria only) for four cancers (i.e., breast, colorectal, lung, and ovarian cancers) in 1995-2007 (Coleman et al., 2011). For instance, 1-year cancer survival was 74.7% in the UK compared to 84.7% in Australia for colorectal cancer, and 29.7% in the UK compared to 42.8% in Australia for lung cancer in 2005-2007. Differences in survival may be due to distinctions between healthcare systems, and variations in health behaviours (e.g., help-seeking) leading to leading to greater diagnostic delay in the UK (Forbes et al., 2013).

Empirical comparisons are required to investigate potential similarities and differences between these two jurisdictions.

Medical Help-Seeking Behaviour: Conceptualisation and Theoretical Frameworks

A challenge for research in the area of help-seeking for cancer symptoms is the historical lack of methodological consistency, with varied conceptualisations, terminology, measurement of medical help-seeking behaviour, and theoretical grounding across the literature. Although attempts have been made to reach agreement on the design of research studies focused on early diagnosis (Weller et al., 2012), help-seeking behaviour is highly complex, and important methodological issues remain unresolved (Scott & Walter, 2010).

Conceptualisation of help-seeking. The conceptualisation of help-seeking behaviour has varied across the health literature. For instance, researchers have variously used the term to describe one-step service utilisation, *health*-seeking behaviour, and multi-staged decision-making processes (Cornally & McCarthy, 2011). Following a concept analysis, Cornally and McCarthy (2011) proposed that at the core of help-seeking behaviour is identification of a problem that requires assistance. Other important aspects of help-seeking include intentional action (as opposed to help-*receiving*), and interpersonal interaction with a source of help. Interpersonal interaction may be with a formal (i.e., healthcare professional) or informal (i.e., family and friends) source, but must include communicating the problem to someone who can provide assistance. This conceptualisation of help-seeking behaviour differentiates it from *health*-seeking behaviour, which can arguably occur with or without a problem focus and without interpersonal interaction (Cornally & McCarthy, 2011). For instance, asymptomatic screening tests (e.g., screening for cancer), and any changes to behaviours for health promotion reasons (e.g., increasing physical activity).

Antecedents to help-seeking behaviour are proposed to include problem recognition, a decision to act, and source selection (Cornally & McCarthy, 2011). In order for a behaviour to be problem-focused, an individual must first detect and define a problem as such. Once a problem has been recognised, a rational decision-making process about whether to take action occurs; this decision is influenced by a range of psychosocial variables (e.g., self-efficacy, traditional gender norms). Finally, an individual must select a source of help. This conceptualisation of antecedents of help-seeking aligns with theoretical, multi-stage, process models of help-seeking that elaborate on these processes (these are outlined in detail below under theoretical frameworks of help-seeking). Accordingly, the research in the present thesis utilises a conceptualisation of help-seeking as problem focused, involving intention to act, and including interpersonal interaction. Formal help-seeking was the predominant focus of the research, however, help-seeking from informal sources was considered when possible.

Consistency in help-seeking terminology. Historically, there has been a lack of consistency and agreement in the terminology used to describe help-seeking for cancer symptoms specifically, as well as to define the key time points on the pathway to cancer treatment (Scott & Walter, 2010; Weller et al., 2012). For instance, terminology has included words such as, patient delay, presentation delay, time to diagnosis, and help-seeking interval. Using the word “delay” to describe help-seeking behaviour has been particularly scrutinised because of the potential for conveying blame (Scott & Walter, 2010; Walter, Webster, Scott, & Emery, 2012). A group of international researchers in the field published the consensus Aarhus statement to encourage greater consistency in the design and reporting of research interested in mapping influences on early diagnosis of cancer (Weller et al., 2012). The Aarhus statement recommends that the term *patient delay* not be used, and be replaced with *appraisal interval* and *help-seeking interval*. This terminology comes from the Model of Pathways to Treatment (Scott, Walter, Webster, Sutton, & Emery, 2013). Where possible, the terminology used within this thesis is in line with the Aarhus statement.

Theoretical frameworks for describing help-seeking. Since the 1970s, a number of multi-stage process models of help-seeking have been proposed for application across different health contexts (Cornally & McCarthy, 2011). Several models have been highly influential when describing the pathway to primary care and treatment for cancer symptoms, including two versions of the General Model of Total Patient Delay (Andersen, Cacioppo, & Roberts, 1995; Safer, Tharps, Jackson, & Levknthal, 1979), and the Model of Pathways to Treatment (Scott et al., 2013).

The General Model of Total Patient Delay originated in the work of Safer et al. (1979). The aim of the authors was to correct limitations associated with research that operationalised *total delay* only. Total delay is the time period from when an individual notices a symptom until their first consultation in a medical clinic. The General Model of Total Patient Delay moved away from the one-step conceptualisation of help-seeking delay, which was argued as confounding the effects of psychosocial influences on problem recognition, decision to act on the problem, and actual medical help-seeking. Consequently, the general model included three sequential stages, all of which could impact delay. The first stage of delay, *appraisal delay*, describes the number of days an individual takes to interpret whether a symptom is a sign of illness. The second stage, *illness delay*, describes the time period from inferring potential illness until the day an individual decides to seek professional medical advice. The third and final stage, *utilisation delay*, describes the time period from when an individual decides to seek help and the consultation with a healthcare professional in a clinic. Each of these stages were found to be influenced by different psychosocial factors that impact timely or delayed help-seeking (Safer et al., 1979).

Andersen et al. (1995) later expanded the General Model of Total Patient Delay to include five sequential stages: appraisal delay, illness delay, behavioural delay, scheduling delay, and treatment delay[2] (see Figure 1.1). The first two stages of delay were comparable with the early General Model of Total Patient Delay. The third stage, *behavioural delay*, describes the time period from the day an individual decides to seek professional medical advice until the action of making an appointment to see a healthcare professional. The fourth stage, *scheduling delay*, describes the time from when an individual takes action to make an appointment until the date of consultation to discuss symptoms. Each stage of delay was described as being directed by decisional and appraisal processes.

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[2] The final stage was not considered relevant to the present thesis and will not be explored further.

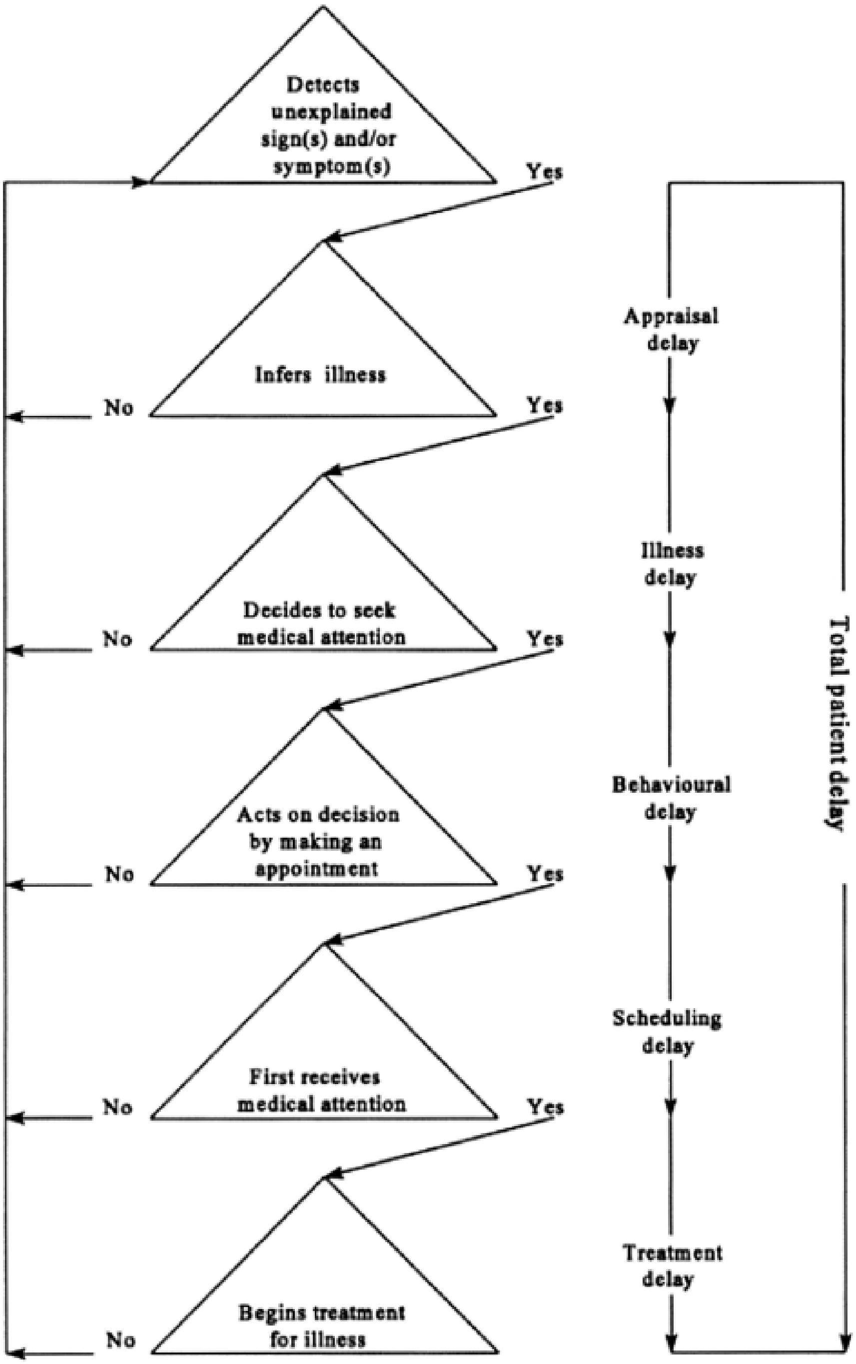

Figure 1.1. The General Model of Total Patient Delay. Reproduced from "Delay in seeking a cancer diagnosis: Delay stages and psychophysiological comparison processes," by B. L. Andersen, J. T., Cacioppo, and D. C. Roberts, *British Journal of Social Psychology*, 34, 33-52, © Jun 6, 2011 by John Wiley and Sons. Reproduced with the kind permission of John Wiley and Sons.

A systematic review of the validity of Andersen's General Model of Total Patient Delay within the context of cancer was conducted utilising data from eight studies (Walter et al., 2012). Studies were heterogeneous, using various research designs, and studying varied cancer sites. Nevertheless, there was support for the utility of a staged process model of help-seeking, strong evidence for the importance of appraisal delay, and mixed evidence for the importance of scheduling delay in the pathway to primary care and treatment. There was limited evidence, however, for illness delay and behavioural delay, with the authors describing difficulty differentiating between appraisal delay and illness delay, and uncertainty regarding the presence of behavioural delay. It was consequently proposed that the appraisal and illness delay stages be combined into an *appraisal interval*, and that behavioural and scheduling delay stages be merged into a *help-seeking interval*.

Other critiques of Andersen's General Model of Total Patient Delay (Andersen et al., 1995) have included: the starting point of the model (i.e., 'detection of unexplained sign(s) and/ symptom(s)'), ease of operationalisation of stages (i.e., definitions and measurement details are lacking), the sequencing of stages, the lack of consideration of the role of emotion in help-seeking, as well as the reliance on inference of illness (Scott & Walter, 2010). For instance, the model assumes that illness is inferred for help-seeking to occur, however, some individuals seek help for symptoms without inferring illness. For example, some individuals may seek medical advice for symptom relief, to reduce uncertainty, or to rule out illness. Moreover, the model presents the pathway to treatment as linear; individuals progress through invariant stages in the same order and only once. However, the help-seeking process is often complex and cyclical in nature, with individuals potentially experiencing stages multiple times, and with stages operating bi-directionally.

To address the limitations of these previous theoretical frameworks, the Model of Pathways to Treatment (Scott et al., 2013) was proposed, revising and extending the General

Model of Total Patient Delay. The new model proposed that the pathway to primary care and treatment includes various *Events*, *Processes*, and *Intervals,* as depicted in Figure 1.2. Moreover, specific *Contributing Factors* are likely to influence how long individuals take to travel through each interval. Each of these aspects of the model will be outlined in turn.

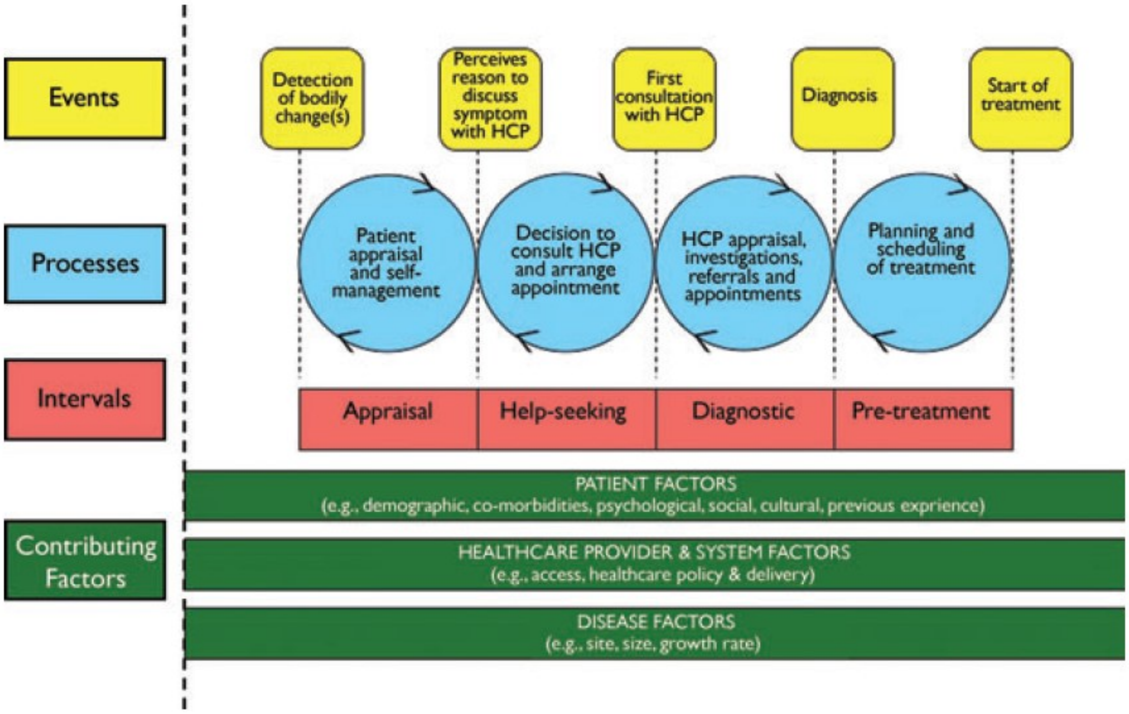

Figure 1.2. The Model of Pathways to Treatment. Reproduced from “The model of pathways to treatment: Conceptualization and integration with existing theory,” by S. Scott, F. Walter, A. Webster, S. Sutton, and J. Emery, *British Journal of Health Psychology,* 18, 45-65, © Apr 27, 2012 by John Wiley and Sons. Reproduced with the kind permission of John Wiley and Sons.

Although individuals will experience many Events on the pathway to treatment, the Model of Pathways to Treatment (Scott et al., 2013) defines five key Events that individuals are likely to experience on the pathway to primary care and treatment. Relevant to the research presented in this thesis are the following three: ‘detection of bodily change(s)’, ‘perceives reason to discuss symptom with healthcare professional (HCP)’, and ‘first consultation with HCP’. Changes detected in the body might be sensations, such as a fatigue or pain, or visible changes, such as blood in urine or stools. The model refers to bodily changes at this stage of the pathway to treatment, as opposed to symptoms, because the bodily changes are yet to be appraised as either normal or abnormal.

The next Event is perceiving a reason to seek advice from a healthcare professional. At this point, the bodily change is perceived as abnormal and becomes known as a symptom within the model. Perceiving a reason to seek medical advice may occur due to an individual’s assessment of a bodily change during the appraisal interval (as outlined below), but may also occur because of situational or social circumstances. For instance, the individual may already have an appointment booked for another health issue, or significant others may notice the symptom and encourage help-seeking. Finally, the first consultation with a healthcare professional is when an individual has contact with a provider to discuss their symptom(s).

The Model of Pathways to Treatment (Scott et al., 2013) describes the time periods between these Events as Intervals. Relevant to the present thesis are the appraisal and help-seeking intervals. The appraisal interval is the time between detection of a bodily change and the individual recognising that there is a reason to seek medical advice. The help-seeking interval is the period between this recognition and the actual consultation with a healthcare professional. Within the context of help-seeking for cancer symptoms, it appears that the appraisal interval accounts for the greatest amount of time prior to contact with a healthcare professional (Scott & Walter, 2010). For example, one study of 69 men and women symptomatic of rectal cancer found that, on average, the appraisal interval accounted for 70% of the time until consultation with a doctor (Ristvedt & Trinkaus, 2005).

Both intervals include cognitive, affective, behavioural, and structural Processes that influence the time taken to travel through intervals. During the appraisal interval, bodily changes are interpreted and self-managed (e.g., symptoms are monitored for chronicity, or non-prescribed medication or other strategy for amelioration is trialled), with inaccurate interpretation of bodily changes proposed to be one of the key factors that elongates the duration of this interval (Scott et al., 2013). Social influence can also be very important within this interval, with significant others noticing outward bodily changes and providing advice, or helping individuals to monitor and manage internal symptom feedback. During the help-seeking interval, other Processes may influence whether an individual who perceives a reason to seek medical advice will take action to visit a healthcare professional. For example, conflicting responsibilities (e.g., work, family), as well as expectations about help-seeking and access to care, may elongate the duration of this interval.

Finally, the Model of Pathways to Treatment (Scott et al., 2013) proposes various Contributing Factors that are likely to influence processes, and in turn, how long individuals take to travel through each interval. The model outlines three main types of contributing factors: patient factors (e.g., socio-demographic characteristics, psychosocial factors), healthcare provider and system factors (e.g., access, policies), as well as disease factors (e.g., type, site, growth rate). Certain factors may be more likely to influence certain processes, however, it proposed that there will be some commonality or overlap.

Position of the thesis author. In line with the Model of Pathways to Treatment (Scott et al., 2013), the position taken in this thesis is that help-seeking for cancer symptoms is a cyclical staged process, including key events, intervals, and processes. With the aim of greater consistency throughout the research literature, the present thesis uses the terminology proposed by the Aarhus statement (Weller et al., 2012) and the Model of Pathways to Treatment (Scott et al., 2013) where possible. The research included in this thesis refers to the appraisal interval, which is the time from when a bodily change is detected until the time at which point an individual believes there is a reason to seek medical advice from a doctor. The help-seeking interval occurs from when an individual perceives a reason to seek medical advice for a symptom until the first consultation with a healthcare professional. While these two intervals are distinct, the help-seeking interval can subsume the appraisal interval. When there was difficulty differentiating between the appraisal and help-seeking intervals within the research in the present thesis, the term *patient interval* was used. The patient interval describes the time from when a bodily change is noticed until the date of consultation with a healthcare professional.

Intended Outcome of the Research Program

The first intended outcome of the present research program was to create new knowledge and identify the main psychosocial influences on Australian men's help-seeking for common cancer symptoms. The included studies were designed to extend existing knowledge about influences on men's help-seeking by utilising more inclusive eligibility criteria to investigate the influence of different cancer types, symptoms, and socio-cultural contexts. From this, a theoretical basis for Australian men's help-seeking could be put forward.

A second intended outcome of the research program was to provide suggestions for the design of men's health interventions aimed at improving early diagnosis and help-seeking behaviours. This research program will assist with the theory building phase of intervention design (Campbell et al., 2000), providing empirical evidence of the relative effect size of psychosocial influences on Australian men's help-seeking for cancer symptoms, as well as evidence of the generalisability of psychosocial influences between genders and Western countries. This evidence will highlight whether a broad international and/or gender neutral approach to improving help-seeking could be useful, or whether more targeted methods are required.

Overview of the Thesis

The remainder of this thesis includes five chapters, comprising four studies and a discussion chapter. Chapter 2 presents Study 1 (Fish, Prichard, Ettridge, Grunfeld, & Wilson, 2015), which is a comprehensive and systematic review of international research studies that have investigated psychosocial influences on men's help-seeking for cancer symptoms. The aim of the review was to compile and synthesise mixed-method research evidence of the psychosocial barriers to, and facilitators of, men's help-seeking for cancer symptoms internationally, providing a higher level of evidence than that provided by singular research studies. It was intended that the review would advance knowledge in the research area, contribute to the design of future interventions, and highlight the gaps in knowledge and limitations of the research already conducted in the area. As a result, the systematic literature review informed the research methods of this thesis. In the conclusion of this review, it was recommended that future research investigate variation between different groups of men and the generalisability of help-seeking influences, examine the usefulness of relevant theoretical models to identify a pathway of influence, and test the predictive strength and relative importance of emerging psychosocial influences. Subsequently, a multi-method approach was recommended and used within this thesis.

Based on the findings of the systematic review, Chapter 3 describes Study 2 (Fish, Prichard, Ettridge, Grunfeld, & Wilson, 2019), a qualitative investigation of variation in men's help-seeking for cancer symptoms. The study aimed to explore the psychosocial influences on men's help-seeking in Australia, and to compare men's experiences of, and responses to, cancer symptoms across urban and rural areas of residence. Semi-structured interviews were conducted with men recently diagnosed with cancer. Interviews were also conducted with their partners when possible to verify participants' accounts of help-seeking. Taking a qualitative descriptive approach (Sandelowski, 2000) allowed for in-depth exploration of differences between groups of men and the influence of context, while still maintaining an overall ontological and epistemological position of scientific realism throughout this thesis.

Study 3, reported in Chapter 4, builds upon the preceding two chapters by empirically testing the predictive power[3] of psychosocial influences associated with men's help-seeking cancer symptoms. The psychosocial aspects identified in Studies 1 (Chapter 2; Fish et al., 2015) and 2 (Chapter 3; Fish et al., 2019) were largely consistent with constructs included in the Theory of Planned Behaviour (Ajzen, 1991; Fishbein & Ajzen, 2010) and the Health Belief Model (Rosenstock, 1974). Study 3 was designed to investigate these specific models for a theory-driven test of predictors of men's intentions to seek help for cancer symptoms. During the development of the study, consideration was given to evidence that prior experience with cancer may impact perceptions of health and the impetus to seek advice from healthcare professionals (e.g., Renzi, Whitaker, & Wardle, 2015; L. K. Smith, Pope, & Botha, 2005; Walter et al., 2014). It was therefore reasoned that Studies 3 and 4 (outlined below) should sample individuals without a cancer history, as opposed to cancer survivors. Separate and combined model testing was undertaken to determine, a) the predictive strength of the two models, b) potential overlap in variance explained, and c) the relative importance of the constructs in predicting men's help-seeking intentions.

Considering the modest variance explained by the theoretical models tested in Study 3 (Chapter 4), it was important to investigate the predictive power of other psychosocial

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[3] Predictive power is one indicator of empirical adequacy (Prochaska et al., 2008). Although it is commonly associated with longitudinal research, it is not limited to these methods. Predicting correlations between variables at one point in time can provide evidence about the usefulness of a theory in a specific context. Consequently, the terminology "predictive power" is used throughout this thesis.

influences on help-seeking that were not included in the models. In addition to this, critical examination of the wider literature highlighted that psychosocial influences on help-seeking for cancer symptoms appear to be comparable for men internationally, as well as between men and women. Empirical comparisons between international jurisdictions and genders were necessary to determine potential similarities and differences. Evidence regarding generalisability is important for the design of evidence-based interventions to improve the help-seeking behaviour of individuals at risk of cancer. In light of this, Study 4 (Chapter 5), aimed to investigate the predictive strength and relative importance of theory-derived constructs in combination with research-derived constructs associated with anticipated help-seeking behaviour. Comparisons were made between four sub-groups varying by country of residence (Australia and the UK) and gender (Male and Female). This study is followed by Chapter 6, the final chapter of this thesis, which offers conclusions regarding the findings of this research program, the implications and practical impact, as well as suggestions for future research.

Chapter Two: Study 1 - Psychosocial Factors that Influence Men's Help-Seeking for Cancer Symptoms: A Systematic Synthesis of Mixed Methods Research

Statement of Authorship

The following chapter presents a review article published in *Psycho-Oncology* in 2015. The authors included PhD candidate, Jennifer Fish, and her supervisory team: Prof Carlene Wilson, Dr Ivanka Prichard, Dr Kerry Ettridge, and Prof Elizabeth Grunfeld. Full citation: Fish, J.A., Prichard, I., Ettridge, K., Grunfeld, E.A., & Wilson, C. (2015). Psychosocial factors that influence men's help-seeking for cancer symptoms: A systematic synthesis of mixed methods research. *Psycho-Oncology*, *24*, 1222-1232.

The article is available at doi:10.1002/pon.3912[4]

Candidate Statement

I confirm I was the primary author of the review article, and that guidance and supervision were provided by the co-authors throughout the manuscript preparation, submission, and revision processes. I was responsible for the development of the review design, search strategy, data extraction, critical appraisal, data synthesis, and writing. I was the corresponding author on the review article and was also responsible for the implementation of revisions and correspondence with the refereed journal. Co-authors provided suggestions regarding the methodology and manuscript presentation, and provided advice on drafts and responding to the journal reviewers. The percentage contribution of each author was as follows:

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[4] The present review article was originally referenced in Vancouver Reference Style, in which references were numbered consecutively. The article has been reformatted in APA (American Psychological Association) Style (6th Edition) in accordance with the disciplinary area (psychology) and the remainder of the thesis.

- Research design: Jennifer Fish (60%), Dr Ivanka Prichard (10%), Dr Kerry Ettridge (10%), Prof Elizabeth Grunfeld (10%), and Prof Carlene Wilson (10%)
- Data collection and analysis: Jennifer Fish (100%)
- Writing and editing: Jennifer Fish (80%), Dr Ivanka Prichard (5%), Dr Kerry Ettridge (5%), Prof Elizabeth Grunfeld (5%), and Prof Carlene Wilson (5%)

Preamble

Despite the significant cancer burden experienced by Australian men, as well as evidence for reduced medical help-seeking behaviour, there is currently an inadequate understanding of their experiences of help-seeking for common cancer symptoms. On the other hand, a growing body of work has explored men's experiences of and/or responses to common cancer symptoms internationally. The present chapter systematically reviews international research to compile and synthesise current knowledge about men's help-seeking for common cancer symptoms broadly. It was expected that a critical review of the literature would advance the research area, and additionally, inform the research studies within this thesis. Importantly, a review of international research studies was expected to highlight the approaches that have been taken to date to understand the issue, gaps in current knowledge, methodological limitations, and areas for future research. The research question was: what are the psychosocial factors that influence medical help-seeking for cancer symptoms in men?

Abstract

Objective: Effectiveness of cancer control partly depends upon early identification and treatment. Men appear to be more likely to delay help-seeking for symptoms, resulting in later diagnosis. This review aims to provide a mixed research synthesis of the psychosocial barriers to and facilitators of help-seeking for cancer symptoms among men. Methods: Systematic methods were followed, including a predefined research question and search strategy. Searches retrieved 7131 international records from online databases: MEDLINE (*n* = 3011), PubMed (*n* = 471), SCOPUS (*n* = 896), Informit (*n* = 131), PsychINFO (*n* = 347), and Web of Science (*n* = 2275). Forty studies were eligible for inclusion in the review (25 qualitative studies, 11 quantitative studies, and four mixed-method studies). Results: There was strong observational evidence for several psychosocial barriers to men's help-seeking behaviour: low cancer knowledge and inaccurate symptom interpretation, embarrassment and fear, and conformity to masculine gender role norms. The strongest facilitating factor associated with men's help-seeking behaviour was encouragement and support of spouses and family members. The majority of research was qualitative and used small samples, making generalisations to the wider population difficult. Conclusions: Men's help-seeking for cancer symptoms is influenced by several psychosocial factors, which in part, may be gender-specific. Health promotion initiatives to improve help-seeking behaviour among men should aim to increase cancer knowledge, reduce embarrassment and fear, address social norms deterring timely help-seeking, and acknowledge informal help-seeking with spouses and family members. Increasing the theoretical grounding of research could aid cohesion across the research area and the design of effective health promotion interventions.

Introduction

Cancer is one of the leading causes of death, with over 8 million cancer deaths recorded in 2012 (Globocan, 2012). The impact of cancer is significant, affecting individuals and families, as well as the broader community and healthcare system. Prevention strategies may reduce the burden of cancer, including early detection and treatment (Jemal et al., 2011), which have been associated with improved prognosis (Etzioni et al., 2003). Early detection may be achieved through asymptomatic cancer screening or early diagnosis following timely medical help-seeking for symptoms.

There has been increasing concern regarding late diagnosis of cancer in men. Research has shown that a considerable proportion of men delay help-seeking for male-specific cancers, including prostate (Forbes et al., 2014; Keeble et al., 2014), testicular (Connolly et al., 2011; Vasudev et al., 2004), and penile (Skeppner et al., 2012) cancers. Although evidence has been mixed, some studies have also found men to delay medical help-seeking significantly more than women for non-gender specific cancers (Evans et al., 2005; Porta et al., 1996; van Osch, Lechner, Reubsaet, de Nooijer, & de Vries, 2007; Young et al., 2000). Consequently, there has been increased research interest in the medical help-seeking behaviour of men, as well as the psychosocial predictors of their help-seeking for cancer symptoms.

Medical help-seeking behaviour has been conceptualised in a variety of ways (Cornally & McCarthy, 2011; Scott & Walter, 2010). Stage process models of help-seeking theorise that help-seeking behaviour involves problem perception, problem appraisal, decision-making, and intentional action (Scott & Walter, 2010). It has also been proposed that help-seeking must include interpersonal communication, which may be with a formal (i.e., healthcare professional) or informal (e.g., family or friends) source (Cornally & McCarthy, 2011). Theoretically, each stage of the help-seeking process is influenced by a variety of psychosocial factors that vary according to stage of process (Scott & Walter, 2010). Psychosocial factors may be risk factors for delayed help-seeking (i.e., barriers) or protective factors for timely help-seeking behaviour (i.e., facilitators; Scott & Walter, 2010).

This paper conceptualises help-seeking according to the Aarhus statement (Weller et al., 2012), which was developed to guide the design and interpretation of research concerned with early diagnosis of cancer. The Aarhus statement defines the *patient interval* as the time from when bodily changes/symptoms are noticed by an individual until the date of first presentation to a clinician. This time period is divided into an *appraisal interval* and a *help-seeking interval*. The help-seeking interval occurs from the moment a bodily change/symptom is interpreted as requiring medical advice until the act of seeking medical help with a healthcare professional. The help-seeking interval is therefore differentiated from the appraisal interval (i.e., individual detects and interprets bodily changes) but also subsumes it. This review considers psychosocial factors that impact on both appraisal and help-seeking intervals, but not the appraisal interval solely.

Over the past decade a number of reviews have been published in this area. Although informative, previous reviews have predominantly been either too broad or narrow in scope. For example, Galdas, Cheater, and Marshall (2005) reviewed factors that influence men’s health-related help-seeking behaviour. They found evidence from male-specific literature supporting traditional masculinity as a key factor influencing help-seeking behaviour. Yousaf, Grunfeld, and Hunter’s (2015) systematic review of barriers associated with men’s medical and psychological help-seeking found restricted emotional expression, embarrassment, anxiety, and fear to be the strongest barriers to help-seeking. Both reviews impart insights into men’s health-related help-seeking behaviour broadly, but neither provides a comprehensive review of male help-seeking specifically for cancer symptoms. Arguably, help-seeking for cancer symptoms may be distinctive due to perceptions about disease severity and the ambiguity of some warning signs (e.g., fatigue and unusual weight loss).

Other reviews have explored the factors influencing help-seeking for cancer symptoms, but have been narrow in focus. For instance, reviews have explored psychosocial factors associated with help-seeking without a gender analysis (Almuammar, Dryden, & Burr, 2010; Macleod, Mitchell, Burgess, Macdonald, & Ramirez, 2009), have examined male-specific help-seeking for specific forms of cancer (Braybrook, Witty, & Robertson, 2011; Mason & Strauss, 2004a), examined only qualitative evidence (L. K. Smith et al., 2005), or selectively examined the research literature (i.e. review was not systematic; Evans et al., 2005). In order to advance research, inform cancer prevention initiatives, and facilitate early diagnosis of cancer in men, a comprehensive systematic review is needed. Accordingly, the aim of this review was to present a mixed research synthesis of the psychosocial barriers to, and facilitators of, help-seeking for cancer symptoms among men. The primary research question was: what are the psychosocial factors that influence medical help-seeking for cancer symptoms in men?

Methods

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement was followed in reporting for this review (Moher, Liberati, Tetzlaff, & Altman, 2009). The research question, concepts, search strategy, and selection criteria were predefined, and methods for data analysis, critical appraisal, and synthesis were outlined following confirmation of the types of research included in the review.

Search Strategy

Research concepts were defined to examine the psychosocial factors that influence medical help-seeking for cancer symptoms in men, and included “cancer”, “help-seeking”, and “males”. A search strategy was developed in consultation with a medical research librarian to increase search sensitivity. The following search string was adapted for six core databases: (cancer* OR oncolog* OR tumour* OR tumor* OR carcinoma* OR malignan* OR neoplas* OR melanoma* OR sarcoma* OR leukemia* OR leukaemia*) AND (helpseeking OR help-seeking OR self-refer* OR patient delay OR patient lag OR delayed diagnosis OR awareness OR ((healthcare* OR care* OR help* OR service*) adj3 (seek* OR participat* OR acceptance OR uptake OR utilisation))) AND (men OR male OR males OR gender* OR manhood OR masculin*) AND LANGUAGE (English)[5]. Databases included MEDLINE (from 1946-), PubMed (excluding MEDLINE; from 1946-), SCOPUS (Social Sciences and Humanities subject areas; from 1823-), PsychINFO (from 1806-), Informit (temporal coverage unknown), and Web of Science (SCI-EXP and SSCI; from 1900-). The search was performed on 12th March 2014.

Selection Criteria

Studies were included if they examined real or anticipated help-seeking behaviour in the context of cancer symptoms, and investigated psychosocial factors associated with help-seeking behaviour in men. Both gender comparative studies and studies sampling males exclusively were eligible for inclusion in the review, as well as studies using mixed-samples (e.g., prostate disease including prostate cancer) or sampling the general population. All methodologies and methods were included.

For all searches, an automatic exclusion restricted papers to English language. Manual exclusion criteria included female-only studies, studies in which male specific results could not be extracted, studies with a majority of participants under the age of 18 years, case studies, reviews, commentaries, and conference abstracts. Studies that examined the pathway

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[5] The search strategy was designed to exhaustively identify and retrieve research across all cancer sites and included the MeSH (Medical Subject Heading) Term ‘Neoplasm’ when possible. This MeSH Term was “exploded” and incorporated ‘Urogenital Neoplasms’ in the MeSH hierarchy, which included cancers of the male genital organs (i.e., penile neoplasms, prostatic neoplasms, and testicular neoplasms). Consequently, male-specific cancer sites were not specifically included in the search strategy.

to treatment broadly were included; as well as studies that examined appraisal and help-seeking intervals concurrently. Studies that examined the appraisal interval solely were excluded. In addition, studies that examined cancer prevention broadly or cancer screening solely were excluded.

Study Selection

In total, 7131 records were retrieved from searches on MEDLINE (*n* = 3011), PubMed (*n* = 471), SCOPUS (*n* = 896), Informit (*n* = 131), PsychINFO (*n* = 347) and Web of Science (*n* = 2275; see Figure 2.1 for PRIMSA diagram). The number of records totalled 5873 following removal of duplicates. All titles and abstracts were screened for relevance according to the inclusion and exclusion criteria, resulting in 5686 being excluded. Of the 188 full-text articles assessed for potential eligibility, 152 were excluded with reasons recorded and 36 were included in this review.

A forwards and backwards reference search was carried out on all included studies on MEDLINE, SCOPUS, and Web of Science, as well as searching of digital theses, reference lists of relevant reviews, and an author search. All titles and abstracts were screened for relevance according to the inclusion and exclusion criteria. An additional four articles were identified for this review through further searching.

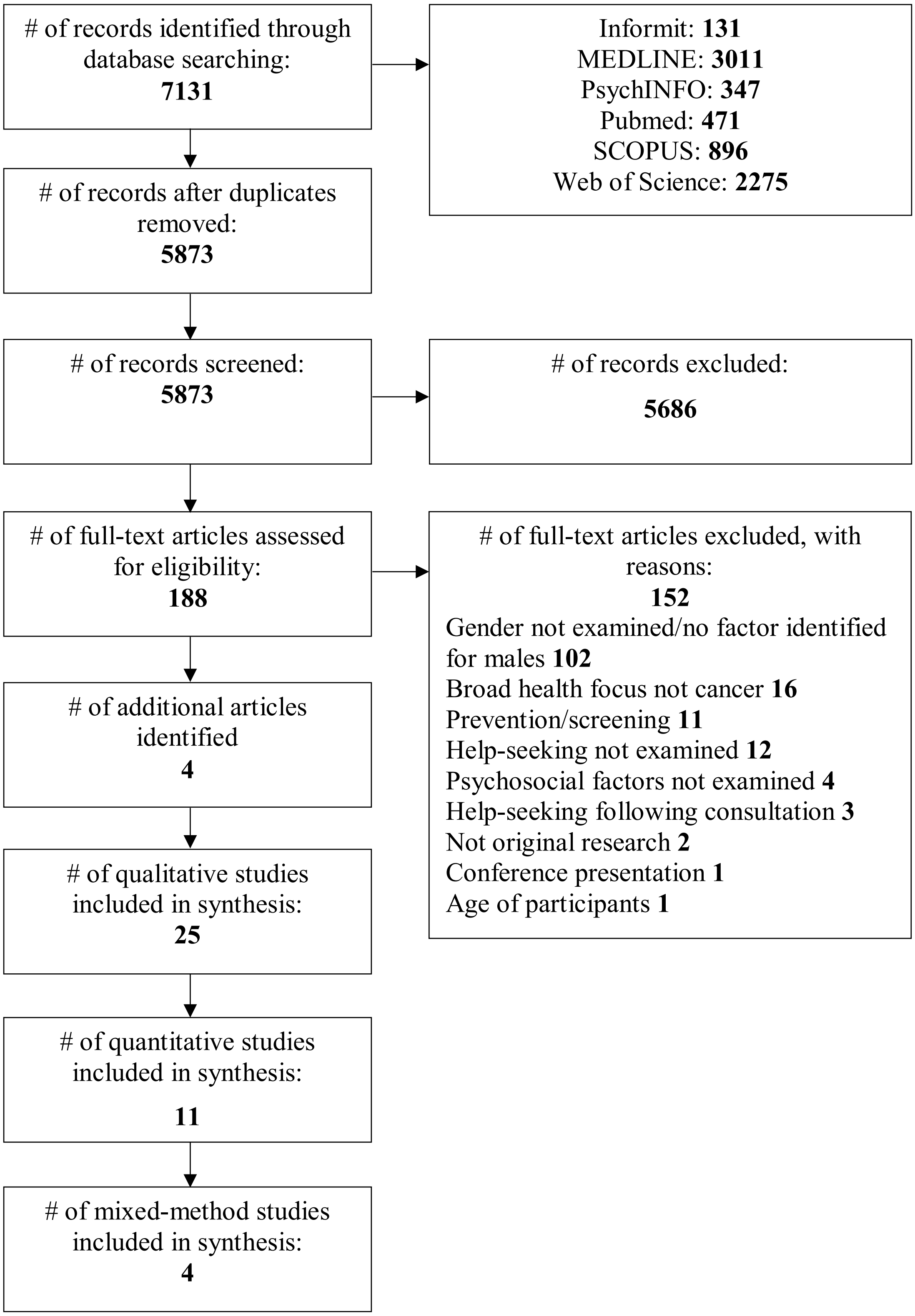

Figure 2.1. PRISMA flow diagram of study selection. Adapted from “Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement,” by D. Moher, A. Liberati, J. Tetzlaff, D. G., Altman, the PRISMA Group, 2009, *British Medical Journal*, 339, p. b2535, © Jun, 2019 by BMJ Publishing Group Ltd.

Data Synthesis

Data extraction and synthesis were conducted by the first author. All included studies were imported into NVivo 10 (QSR International Pty Ltd), and relevant findings were extracted and detailed according to research method (e.g., qualitative or quantitative; see Tables 2.1 and 2.2 in results section respectively). For mixed-method studies, findings were extracted and reported according to the relevant method (i.e., qualitative or quantitative; Heyvaert, Maes, & Onghena, 2013). Qualitative and quantitative findings were synthesised separately and according to factor type (i.e., barrier or facilitator)[6]. A barrier was defined as a risk factor associated with delayed medical help-seeking, whereas a facilitator was defined as a protective factor associated with timely medical help-seeking. Qualitative and quantitative findings were integrated during interpretation and discussion.

Critical Appraisal

Studies were critically appraised for methodological quality, using three adapted critical appraisal instruments specifically designed for each method. Items were predominantly taken from the Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a Variety of Fields (Kmet, Lee, & Cook, 2004), supplemented with items and detail from the Evaluation Tool for Qualitative Studies (Long & Godfrey, 2004), and guidelines provided by O'Cathain, Murphy, and Nicholl (2008). An average quality rating score was calculated for each study (score range 0-1; Kmet et al., 2004). A score $\leq .50$ was considered low quality, and indicated a substantial number of checklist criteria had not been fulfilled. A score between .51 and .80 was considered medium quality and a score $> .80$ was considered high quality. To assess inter-rater reliability, a subset of included articles (n =

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[6] The purpose of this review was to identify and summarise the psychosocial factors associated with men's help-seeking for cancer symptoms, and consequently an aggregative approach to synthesis was chosen (Sandelowski, Voils, Leeman, & Crandell, 2012). This approach also aligns with the ontological and epistemological position of scientific realism in this thesis. It is acknowledged that more interpretive methods of mixed-methods synthesis are also available for theory generation, such as Critical Interpretative Synthesis (Dixon-Woods et al., 2006).

13) were critically appraised by the first author and an independent research associate. A good level of inter-rater reliability was observed using a single-measures intraclass correlation (*ICC* = .74, 95% CI [.35, .91]; Cicchetti, 1994). To improve reliability, discrepancies in item scoring were discussed and appraisal instruments were revised by the first author, followed by independent critical appraisal for the same studies by both researchers. An excellent level of inter-rater reliability was found on the second set of scores (*ICC* = .86, 95% CI [.60, .96]), and the remaining studies were appraised for quality by the first author. Quality judgements are reported as supplementary information for synthesis and interpretation of findings. No studies were excluded or weighted in the results on the basis of quality scores.

Results

Forty studies were included in the review (25 qualitative, 11 quantitative, and four mixed-method). Methodological heterogeneity was high across studies. Qualitative evidence was extracted from 25 qualitative studies and three mixed-method studies (see Table 2.1). Qualitative research methods included interview (*n* = 20), focus group (*n* = 3), and focus group plus interview (*n* = 2). Quantitative evidence was extracted from 11 quantitative studies and one mixed-method study (see Table 2.2). All quantitative research methods were observational; research methods included survey/ structured interview (*n* = 11), and clinical data analysis (*n* = 1). Research objectives and outcomes (e.g., recall of actual help-seeking behaviour vs. anticipated help-seeking behaviour) differed across studies, and consequently, statistical and analytical heterogeneity were also high. The majority of articles were rated as medium quality (*n* = 25), with 14 rated as high quality, and one qualitative study rated as low quality (see Tables 2.1 and 2.2). Higher quality ratings indicate more rigorous methodology and relevant results (Hill & Spittlehouse, 2001).

Table 2.1.

Outline of included studies and data extracted: qualitative research

Authors (Year & Country)	Sample	Methods	Results	Quality rating
Adams et al. (2013, Australia)	Qualitative aspect of study: *N* = 38 age range: 29-45 years general population ethnicity: Aboriginal and Torres Strait Islander (*n* = 38) Focus groups *n* = 20 (3 male-only groups, 1 female-only group) Interviews *n* = 18 (all male)	Semi-structured interviews and focus groups Domains examined: -sexual and reproductive health issues -barriers to help-seeking for erectile dysfunction and prostate disease	Barriers: -Lack of understanding regarding symptom -Difficulties in communication with other males, partner, and/or health professional -Shame/embarrassment -Concern about confidentiality and stigma -Inadequate culturally appropriate healthcare Facilitator: -Symptom severity	Medium
Anderson et al. (2013, England)	*N* = 7 (all male) age range: 60-76 years (*M* = 67) cancer site: prostate diagnosed within previous 3 years ethnicity: African (*n* = 3) and Afro-Caribbean (*n* = 4)	Semi-structured interviews Domains examined: -awareness of prostate cancer -perceptions of prostate cancer associated risks -cancer screening -factors influencing screening and help-seeking	Facilitators: -Recognising signs and symptoms of cancer -Importance of family health -Concern regarding future sexual functioning	Medium
Buckley & Tuama (2010, Ireland)	*N* = 18 (3 male-only groups) age range: 50-70 years general population	Focus groups	Barriers: -Low level of cancer knowledge	Medium

		Adapted from Eadie & MacAskill (2008) Domains examined: -cancer awareness -help-seeking for cancer symptoms -health information campaigns	-Perceived gender differences in health behaviours and health-seeking - Masculine gender role norms (e.g., self-examination not masculine, self-reliance) -Embarrassment -Fear (e.g., cancer, doctor) -Fatalism -Self-reliance (e.g., self-diagnosis, self-medication) -Previous negative experience with health professional/system -Disconnection from health service providers -Concern over loss of dignity/respect -Perceived financial cost -Perceived long wait times	
Carbone et al. (2009, Australia)	$N = 11$ (all male) age range: 28-44 years ($M = 35.3$) cancer site: testicular diagnosed within previous 5 years	Semi-structured interviews Domains examined: -early symptoms -duration of symptoms -factors influencing help-seeking -help-seeking experiences	Barriers: -Optimism (e.g., symptom will go away) -Symptom misattribution -Low level of cancer knowledge -Belief that cancer affects older people -Symptom mildness -Conflicting responsibilities (e.g., family, work) -Low level of previous contact with health system -Embarrassment -Body image concerns (e.g., having testicle removed)	High

			Facilitators: -Informal cancer knowledge from family -Symptom severity -Prolonged symptoms -Comfortable help-seeking -Encouragement by partner or family member -Concern about symptom	
Carpentier et al. (2011, USA)	*N* = 21 (all male) age range: 18-34 years (*M* = 27.1) cancer site: testicular completed treatment within previous 3-36 months	Semi-structured interviews Domains examined: -quality of life -impact of cancer (general) -impact of cancer on current romantic relationships and sexual relationships	Barriers: -Embarrassment/discomfort disclosing -Optimism -Masculine gender role norms Facilitator: -Encouragement by partner	High
Carroll et al. (2009, USA)	*N* = 24 (all male) age range: 45-74 years *(M* = 59) cancer site: head and neck ethnicity: African American (*n* = 24)	Semi-structured interviews Domains examined: -patterns of tobacco use -cancer detection -treatment experiences	Barriers: -Symptom misattribution -Low level of cancer knowledge Facilitators: -Prolonged symptoms -Encouragement by family member	Medium
Chapple & Ziebland (2002, UK)	*N* = 52 (all male) age range: 50-85 years cancer site: prostate mixed stage of diagnosis ethnicity: White British (*n* = 48), Caribbean (*n* = 1), Nigerian (*n* = 1), Indian (*n* = 1), Former Czechoslovakia (*n* = 1)	Unstructured interviews Respondents were invited to tell their pathway to treatment story Domains examined: -factors influencing help-seeking -expectations of treatment	Barriers: -Masculine gender role norms (e.g., machismo) -Perceived gender differences in health behaviours and health-seeking -Embarrassment	Medium

Chapple et al. (2004, UK)	*N* = 45 (all male) age range: 21-55 years cancer site: testicular mixed stage of diagnosis ethnicity: White British (*n* = 43), Canadian (*n* = 1), Former Czechoslovakia (*n* = 1)	Unstructured interviews Respondents were invited to tell their pathway to treatment story Domains examined: -factors influencing help-seeking delay	Barriers: -Symptom mildness -Symptom misattribution -Masculine gender role norms (e.g., machismo) -Embarrassment -Fear (e.g., treatment, being seen as a hypochondriac) -Fatalism -Conflicting responsibilities (e.g., work) Facilitators: -Information via media or pamphlets -Cancer awareness and knowledge -Informal cancer knowledge from family and friends	Medium
Connolly e al. (2011, Ireland)	*N* = 100 age range: 16-50 years (*M* = 31) cancer site: testicular ethnicity: White (*n* = 98), other (*n* = 2)	Interview Domains examined: -clinical characteristics -diagnostic delay -patient dependent delay -prior knowledge of testicular cancer -factors influencing patient dependent delay	Of respondents (*n* = 25) with a symptomatic interval exceeding the mean: Barriers: -Lack of awareness (*n* = 11) -Fear (*n* = 8) -Denial (*n* = 6) -Embarrassment (*n* = 3) -Lack of access to health professional (*n* = 4)	Medium
de Nooijer et al. (2001, Netherlands)	*N* = 23 (mixed gender: male *n* = 10, female *n* = 13) male age range: 24-61 years female age range: 35-75 years male cancer sites: testicular (*n* = 5), colon (*n* = 4), melanoma	Semi-structured interviews Respondents were invited to tell their pathway to treatment story Domains examined:	Barrier: -Belief that cancer would never happen to them	Medium

	(*n* = 1) female cancer sites: breast (*n* = 6), colon (*n* = 2), melanoma (*n* = 5)	-cancer awareness -experience of symptoms -symptom appraisal -factors influencing help-seeking -first medical consultation		
Eadie & MacAskill (2008, Scotland)	*N* = 57 (mixed gender: 4 male-only groups, 4 female-only groups) male age range: 40-70 years female age range: 40-70 years general population	Focus groups Domains examined: -cancer awareness -help-seeking for cancer symptoms -health information campaigns	Barriers: -Males more likely than females to deny fear of cancer and express fatalism -Females more likely than males to be familiar with healthcare services -Males (particularly rural) less likely than females to acknowledge health problems/symptoms -Males more likely than females to self-treat Facilitator: -Encouragement by family or friends	High
Emery et al. (2013, Australia)	*N* = 66 (mixed gender: male *n* = 28, female *n* = 38) Mean age = 60.5 years cancer sites: prostate (*n* = 14), breast (*n* = 24), colorectal (*n* = 20), lung (*n* = 8) majority diagnosed in previous 3 months	Semi-structured interviews Domains examined: -clinical characteristics -initial symptoms -symptom appraisal -factors influencing help-seeking	Of male respondents with longer (> 50 days; *n* = 11) and shorter (< 10 days; *n* = 5) appraisal intervals: Barriers: -Symptom misattribution (*n* = 11) -Symptom mildness (*n* = 7) -Symptom progressed gradually (*n* = 6) -Stoicism/machismo (*n* = 6) -Intermittent symptom (*n* = 5) -Absence of other symptom (*n* = 4) -Self-reliance (*n* = 4) -Previous benign diagnosis (*n* = 3) -Optimism (*n* = 3)	High

			-No symptom interference with work (n = 3) -Embarrassment (n = 2) -Competing demand (n = 2) -Disclosure to others (n = 1) Facilitators: -Symptom severity/subsequent symptom (n = 8) -Disclosure to others (n = 4) -Alternative explanation (n = 1) -Previous benign diagnosis (n = 1) -Optimism (n = 1)	
Forbat et al. (2014, Scotland)	N = 30 (all male) cancer site: prostate diagnosed within previous year In addition, 19 partners interviewed	Semi-structured interviews Domains examined: -awareness of risk factors and symptoms -pathway to treatment -initial symptoms -factors influencing help-seeking -interaction with healthcare system -PSA tests	Barriers: -Emotional protection of others -Embarrassment -Symptom mildness -Low level of cancer knowledge Facilitators: -Encouragement from partners and friends -Symptom impact on partner -Informal cancer knowledge from family and friends	Medium
France et al. (2000, Wales)	N = 6 (all male) cancer site: breast treatment phase In addition, partners were invited to participate	Unstructured interviews Domains examined: -physical experience of cancer -psychological experience of cancer -adjustment to condition -embarrassment about diagnosis -psychosocial support	Barriers: -Low level of male breast cancer knowledge -Symptom mildness	Medium

		-impact of diagnosis		
Gascoigne et al. (1999, Wales)	*N* = 6 (all male) age range: 20-59 years (*M* = 39) cancer site: testicular In addition, four partners and one mother interviewed	Semi-structured interviews Domains examined: -initial symptoms -symptom appraisal -pathway to treatment -factors influencing help-seeking -interaction with healthcare system -cancer awareness -normal health behaviours	Barriers: -Symptom misattribution -Fear (e.g., cancer, castration) -Masculine gender role norms -Embarrassment -Body image concerns (e.g., having testicle removed) -Symptom mildness -Perceived gender differences in health behaviours and health-seeking Facilitators: -Encouragement by partners -Symptom severity	High
George & Fleming (2004, Northern Ireland)	*N* = 12 (all male) age range: 50-60+ years cancer site: prostate symptomatic and asymptomatic males	Semi-structured interviews Domains examined: -reasons for attending a prostate service -attitudes towards healthcare services and help-seeking -prostate cancer awareness and knowledge -experience of service -experience following interaction with service -ideas for future health promotion initiatives	Barriers: -Fear (e.g., cancer, being seen as a hypochondriac) -Masculine gender role norms (e.g., machismo) -Health as taboo subject for males -Perceived gender differences in health behaviours and health-seeking -Disconnection from health service provider Facilitators: -Cancer knowledge -Symptom severity -Encouragement by partners	Medium

Hajdarevic et al. (2011, Sweden)	*N* = 30 (mixed gender: male *n* = 15, female *n* = 15) Mean male age = 56 years (*SD* = 14.9) Mean female age = 55 years (*SD* = 15.2) cancer site: malignant melanoma diagnosed in previous 2 years	Open-ended narrative interviews Domains examined: -initial symptoms -symptom appraisal -factors influencing help-seeking	Barriers: -Males more likely than females to express low level of attentiveness to body and health -Males more likely than females to report conflicting work responsibilities -Males perceived gender differences in health behaviours and health-seeking Facilitators: -Males more likely than females to seek help following encouragement by partners or friends -Males more likely than females to seek help quickly due to lack of emotional response to symptoms -Trust in expert assessment	High
Hale et al. (2007, England)	*N* = 20 (all male) age range: 51-75 years mixed sample: prostate disease, including prostate cancer diagnostic phase	Semi-structured interviews Domains examined: -health history -initial symptoms -response to symptoms -contact with health services	Barriers: -Perceived gender differences in health -Masculine gender role norms (e.g., machismo) -Low level of prostate knowledge -Avoidance of cancer knowledge due to anxiety -Social status of symptom -Fear (e.g., cancer, doctor, examination, hospitalization, and treatment side effects) -Symptom mildness Facilitators: -Symptom severity -Cancer knowledge gained by interpersonal communication	High

			-Encouragement by partners -Private health insurance	
Leydon et al. (2003, UK)	*N* = 33 Interviews *n* = 17 (mixed gender: male *n* = 5, female *n* = 12) male age range: 45-74 years female age range: 35-66 years male cancer sites: bowel (*n* = 1), prostate (*n* = 1), lung (*n* = 1), colorectal (*n* = 1), stomach (*n* = 1) female cancer sites: breast (*n* = 6), ovarian (*n* = 1), lung (*n* = 1), leukaemia (*n* = 2), colon (*n* = 1), lymphoma (*n* = 1) diagnosed in previous 2 years Focus groups *n* = 16 (2 female-only groups, 1 mixed-gender group: males *n* = 2, females *n* = 5) diagnosed in previous 2 years	Semi-structured interviews Domains examined: -pathway to diagnosis -interaction with health system Focus groups Domains examined: -perceptions of healthcare system -barriers to accessing healthcare -financial and social costs	Barriers: -Perceived gender difference in health behaviours and health-seeking -Conflicting responsibilities (e.g., work) -Reluctance to confront possibility of illness	Medium

Mason & Strauss (2004, UK)	*N* = 10 (all males) age range: 28-44 years cancer site: testicular Treatment phase	Semi-structured interviews Domains examined: -history of symptoms -response to symptoms -pathway to treatment -masculinity	Barriers: -Uncertainty regarding symptoms -Optimism (e.g., symptom will go away) -Symptom misattribution -Low level of cancer knowledge -Denial -Belief that older people get cancer -Emotional protection of others -Disclosure to friends -Embarrassment -Marginalisation of men's health -Masculine gender role norms -Taboos around genital health Facilitators: -Symptom progression/severity -Disclosure to partners or friends -Encouragement from partners and family	Medium
O'Brien et al. (2005, UK)	*N* = 55 (14 male-only groups) age range: 15-72 years (majority over 18 years) mixed sample: general population and men who had experienced ill health, including a prostate cancer group (*n* = 4)	Focus groups Domains examined: -experience of health-related help-seeking -health-related discussion with other men	Barriers: -Low level of cancer knowledge -Perceived gender differences in health behaviours and health-seeking -Masculine gender role norms (e.g., machismo) Facilitator: -Type of symptom (e.g., testicular lump)	Medium

Ramos et al. (2010, Spain)	*N* = 12 (mixed gender: males *n* = 7, females *n* = 5) male age range: 45-82 years female age range: 49-79 years cancer site: colorectal diagnosed in previous 12 months	Semi-structured interviews Domains examined: -symptoms -symptom appraisal -response to symptoms -interaction with healthcare system	Barrier: -Symptom misattribution Facilitators: -Prolonged symptoms or changes in symptoms -Males more likely than females to seek help following encouragement by partner or family member	Medium
Sanden et al. (2000, Sweden)	*N* = 21 (all male) age range: 20-49 years cancer site: testicular post-treatment	Semi-structured interviews Domains examined: -initial symptoms -response to symptoms -subsequent actions	Barrier: -Optimism (e.g., symptom will go away) -Misattribution -Location of symptom (e.g., sexual organ) -Intermittent symptoms (e.g., pain) -Embarrassment Facilitators: -Encouragement from partner or family member -Symptom progression/severity	Low
Scanlon et al. (2006, UK)	*N* = 115 (mixed-gender; male *n* = 47, female *n* = 68) age range: 35-75 years general population ethnicity: Irish (*n* = 58), White British (*n* = 57) Interviews *n* = 32 (mixed-gender) Focus groups	Focus groups Domains examined: -cancer beliefs -help-seeking behaviours Semi-structured interviews Domains examined: -factors influencing health -knowledge of cancer -beliefs about cancer prevalence	*Whole sample* Barriers: -Males had lower level of cancer knowledge than females -Males less likely to consider cancer risk or discuss cancer than females -Optimism (e.g., symptom will go away) -Fear (e.g., cancer) -Conflicting responsibilities -Perceived long wait times and short appointments	Medium

	n = 86 (25 mixed-gender focus groups)	-attitudes towards cancer prevention -experience with health services -perceived factors influencing help-seeking	*Irish-specific* Barriers: -Masculine gender role norms (e.g., machismo)	
Taghipour et al. (2011, Iran)	*N* = 12 (all male) age range: 55-80 years (*M* = 67 years) cancer site: prostate	Semi-structured interviews Domains examined: -beliefs and feelings regarding cancer -experience of cancer	Barriers: -Low level of prostate knowledge -Perceiving symptoms as trivial -Denial -Self-reliance (e.g., self-monitoring, self-medication) -Inaccurate advice from friends -Inadequate referral system Facilitators: -Death of significant other due to cancer -Symptom severity -Disclosure to partner or family member -Help of partner or family member -Informal cancer knowledge from family and friends	Medium
Tod et al. (2007, UK)	*N* = 20 (mixed gender: male *n* = 12, female *n* = 8) age range: 47-81 years cancer site: lung majority diagnosed in previous 6 months	Semi-structured interviews Domains examined: -factors influencing delay in reporting symptoms	Barrier: -Stoicism	High

	In addition, 12 partners/friends participated in interviews			
Vaartio et al. (2003, Finland)	*N* = 8 (all male) age range: 42-64 years (*M* = 53) diagnosed in previous 6-23 months (*M* = 11) cancer sites: melanoma (*n* = 2), stomach (*n* = 1), lung (*n* = 1), Hodgkin's disease (*n* = 1), testicular (*n* = 1), prostate (*n* = 1), bladder (*n* = 1)	Semi-structured interviews Domains examined: -cancer experiences -intrapersonal resources -extrapersonal resources	Facilitators: -Symptom severity - Encouragement from partner	Medium
Williams et al. (2003, New Zealand)	*N* = 20 (all male) age range: 40-70 years mixed sample: symptomatic of prostate disease (*n* = 16) and asymptomatic (*n* = 4) ethnicity: Maori (*n* = 20)	Semi-structured interviews Domains examined: -importance of health -accessibility of prostate cancer information -feelings regarding help-seeking -quality of life -treatment types -family health	Barriers: -Inadequate culturally appropriate healthcare -Concerns regarding examination and treatment -Embarrassment/shame -Inadequate culturally appropriate information/ low level cancer knowledge -Optimism (e.g., symptom will go away) -Masculine gender role norms (e.g., machismo) -Conflicting responsibilities (e.g., work) Facilitators: -Culturally appropriate healthcare -Importance of family and family health	Medium

-Encouragement by partner or family member -Symptom impact on family -Social norms (e.g., friends seeking help)

Note. M = mean; *SD* = standard deviation.

Table 2.2.

Outline of included studies and data extracted: quantitative research

Authors (Year & Country)	Sample	Methods	Results	Quality rating
Attard (1985, England)	*N* = 23 (all male) cancer site: testicular	Retrospective analysis of clinical cases Variables examined: -clinical characteristics -factors influencing delay in help seeking -factors influencing delay in treatment	Patient delay contributed to treatment delay for six men: <u>Barriers</u>: -Did not think symptom was important as it was painless (*n* = 3) -Attributed symptom to trauma (*n* = 2) -Not aware of symptom (*n* = 1)	Medium
Chojnacka-Szawłowska et al. (2013, Poland)	*N* = 301 (mixed sample: male *n* = 115, female *n* = 186) age range: 16–80 years (*M* = 42, *SD* = 12.2; majority over 18 years) cancer sites: breast *n* = 140, bowel *n* = 29, bronchial *n* = 28, reproductive organs *n* = 16, lymphoma *n* = 15, head and neck *n* = 15, gastric *n* = 14, sarcoma *n* = 6, laryngeal *n* = 6, prostate *n* = 8, urinary system *n* = 4 diagnostic phase	Structured and unstructured interviews Measures: -State-Trait Anxiety Inventory -Beck Depression Inventory -Harris and Guten's health appraisal scale Variables examined: -socio-demographic characteristics -clinical characteristics -symptom characteristics -cancer knowledge - health beliefs regarding curability of cancer -personal experience with cancer	<u>Barriers</u>: - Considerable delay (more than 9 months) was found in men who held a belief that cancer is incurable, a good/very good self-appraisal of health, low levels of depression and state anxiety (29.1%; *n* = 35)	Medium

		Respondents were invited to tell their pathway to treatment story		
Douglass et al. (1998, New Zealand)	$N = 909$ (mixed gender: male $n = 465$, female $n = 444$) sample age = 21 years general population	Self-administered questionnaire Variables examined: -sun behaviour -sun protection -knowledge of melanoma -skin checking and help-seeking -help seeking for skin cancer symptoms -reasons for delay	Of respondents who had noticed changes in a mole or freckle in the past 12 months ($n = 185$), 54% ($n = 101$) did not seek help Barrier: -Men were more likely than women to report being unsure what to do	High
Fitzpatrick et al. (1998, Ireland)	$N = 280$ (all male) age range: 40-69 years ($M = 53.7$) general population	Interview questionnaire Variables examined: -socio-demographic characteristics -willingness to attend a doctor with urinary symptoms -perception of attendance as urgent or important -awareness of prostate cancer -GP questioning about urinary symptoms -personal or family history of cancer	81% ($n = 226$) would see a GP if they developed urinary symptoms Facilitator: -Having heard of prostate cancer (adjusted $OR = 3.0$, $p < .01$) 56% ($n = 156$) would see a GP, and considered it urgent and important Facilitator -Having heard of prostate cancer (adjusted $OR = 2.4$, $p < .05$) 25% ($n = 70$) would see a GP, but considered it not important or urgent Barriers: -not important unless they had very severe symptoms with bleeding (44%) -merely an unimportant sign of ageing (23%)	Medium

			-embarrassment at attending a female GP with urinary complaints (3%) -fear of cancer and surgery (1.5%) 19% (*n* = 54) would not see a GP if they developed urinary symptoms Barriers: -dislike of doctors and hospitals (23%) -embarrassment (14%) -fear of side-effects of treatment (11%) -would only attend a GP if they had severe pain or bleeding (11%)	
Pedersen et al. (2011, Denmark)	*N* = 910 (mixed gender; male *n* = 423, female *n* = 487) Mean male age = 64.2 years (*SD* = 12.8) Mean female age = 59.8 years (*SD* = 14.7) cancer site: mixed	Self-administered questionnaire Variables examined: -socio-demographic characteristics -clinical characteristics -family history of cancer -patient delay -social support -disclosure	Facilitator: -Perceived partner support significantly reduced the likelihood of patient delay in men (adjusted *RRR* = 0.54, 95% CI = 0.34-0.85, *p* = .008)	High
Robb et al. (2009, UK)	*N* = 2208 (mixed gender: male *n* = 968, female *n* = 1240) age range: 16-65+ (majority over 18 years) general population ethnicity: White (*n* = 2064; 93.5%), other (*n* = 144; 6.5%)	Interview questionnaire Measures: -Cancer Awareness Measure Variables examined: -socio-demographic characteristics -awareness of cancer warning signs -anticipated delay -barriers to help seeking	Barriers: -Difficult making an appointment (37%) -Not wanting to ‘waste the doctor’s time’ (36%) -Worry about what the doctor might find (34%)	High

Skeppner et al. (2012, Sweden)	*N* = 59 (all male) age range: 37-63 years (*Mdn* = 61.5) cancer site: penile treatment phase In addition, 36 partners interviewed	Structured interviews Measures: -Hospital Anxiety and Depression Scale -International Index of Erectile Function-5 - Life Satisfaction-11 Domains examined: -socio-demographic characteristics -clinical characteristics -initial symptoms -treatment seeking -sexual activity/function	Of men who delayed help-seeking more than 6 months: Barriers: -Embarrassment (*n* = 17) -Lack of knowledge (*n* = 7) -Thought symptom would disappear (*n* = 7) -Fear of severe disease (*n* = 2) -Did not think symptoms could be something severe (*n* = 1)	Medium
Sunny et al. (2008, Sweden)	*N* = 219 (all male) age range: 50-80 years (*M* = 71 years, *SD* = 7.1) cancer site: prostate diagnosed in past 4 years	Self-administered questionnaire Variables examined: -socio-demographic characteristics -clinical characteristics -information seeking	Facilitator: -Men who obtained information from the internet were significantly more likely to delay help seeking less than 3 weeks than men who delayed help seeking for more than 3 weeks (adjusted *OR* = 3.2, 95% CI = 1.2-8.7, *p* < .02)	High
Swetter et al. (2009, USA)	*N* = 316 (mixed gender: male patient *n* = 158, female spouses *n* = 158) Mean male age = 63 years Mean female age = 59 years cancer site: melanoma diagnosed in past 3 months	Self-administered questionnaire Variables examined: -socio-demographic characteristics -clinical characteristics -skin cancer examination -skin cancer awareness and attitudes -medical access -source of health information	Facilitator: -80% of men agreed/strongly agreed that their female spouses ensured they went to see a physician	Medium

	ethnicity: White (male *n* = 97, female *n* = 95), other (male *n* = 61, female *n* = 63)			
Talcott et al. (2007, USA)	*N* = 555 (all male) age range: 41-70+ cancer site: prostate diagnostic phase ethnicity: Caucasian *n* = 348, African American *n* = 207	Interview questionnaire Measure: Trust in Physician Scale Variables: -socio-demographic characteristics -clinical characteristics -screening history -access to care -health attitudes and beliefs -trust in physician -factors influencing delayed help-seeking	7% of overall sample had symptoms but delayed for > 3 weeks <u>Barriers</u>: -African American men more often reported that they “thought the problem would go away” (85% versus 70%, $p < .01$) -African American men more often reported fear (11% versus 7%, $p < .01$) -4% of both groups reported delay because “they did not have time”	Medium
Waller et al. (2009, England)	*N* = 1500 (mixed gender) age range: 18-55+ general population ethnicity: Indian *n* = 467 (males 50%), Pakistani *n* = 333 (males 50%), Bangladeshi *n* = 126 (males 52%), Caribbean *n* = 252 (males 47%), African n = 216 (males 48%), Chinese *n* = 106 (males 51%)	Interview questionnaire Measure: Cancer Awareness Measure Variables: -socio-demographic characteristics -awareness of cancer warning signs -anticipated delay -barriers to help seeking	<u>Barrier</u>: -Males significantly more likely than females ($p = .02$) to indicate they were too busy to seek help for symptoms across all ethnic groups except for the African groups	High

Young et al. (2000, Australia)	*N* = 100 (mixed gender: male *n* = 52, female *n* = 48) age range: 43-92 years (*M* = 70.4 years) cancer site: colorectal diagnostic phase In addition, relatives and caregivers interviewed	Structured interview Domains examined: -symptom history -help seeking for cancer symptoms -factors influencing delayed help seeking	patient delay > 3 months (male *n* = 16) Barriers: -Did not seek help until symptoms were severe (*n* = 3) -Not concerned by their symptoms (*n* = 2) -Misattribution (*n* = 1) -Conflicting responsibilities (e.g., family) (*n* = 1) -Concerns regarding bothering health professional (*n* = 1)	High

Note. CI = confidence interval; *M* = mean; *Mdn* = median; *OR* = odds ratio; *RRR* = relative risk ratio, *SD* = standard deviation.

The characteristics of the studies and samples were varied (see Tables 2.1 and 2.2). Research was conducted in a range of locations, including Europe (*n* = 29), Australia/ New Zealand (*n* = 6), USA (*n* = 4), and Iran (*n* = 1). The majority of research conducted in Europe was done in the United Kingdom/Ireland (*n* = 20), with the remaining studies predominantly conducted in high-income countries from Western Europe[7]. Samples varied according to size (qualitative range: 6 – 115, quantitative range: 23 – 2208), gender (male-only *n* = 24, mixed-gender *n* = 16), age (range: 15 – 92+ years), cancer site (male-specific and non-gender specific cancers), and diagnostic cut-off period (for retrospective studies). Ethnicity of participants was infrequently reported across studies.

A range of psychosocial barriers and facilitators were associated with men's help-seeking for cancer symptoms (see Tables 2.3 and 2.4). Psychosocial factors were categorised according to themes: knowledge and awareness of cancer (i.e., previously knowing about cancer and symptoms), symptom recognition and interpretation (i.e., noticing and explaining bodily changes/symptoms), emotions (i.e., feelings towards a situation), attitudes (i.e., learned response to people and situations) and health beliefs (i.e., beliefs about health problems), coping processes (i.e., ways of dealing with stressors), social norms (i.e., group expectations about group members' behaviour), social support (i.e., resources provided by others to assist with coping), family and relationship health, and health system factors (i.e., how a system operates and is perceived to operate by individuals; Gerrig, Zimbardo, Campbell, Cumming, & Wilkes, 2011).

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[7] The remaining European countries included: Denmark (*n* = 1), Finland (*n* = 1), the Netherlands (*n* = 1), Poland (*n* = 1), Spain (*n* = 1), and Sweden (*n* = 4).

Table 2.3.

Summary of psychosocial factors associated with men's help-seeking for cancer symptoms: qualitative evidence

Themes	Barriers	Facilitators
Knowledge and awareness	Low level awareness/knowledge of cancer (Adams et al., 2013; Buckley & Ó Tuama, 2010; Carbone et al., 2009; Carroll et al., 2009; Connolly et al., 2011; Forbat, Place, Hubbard, Leung, & Kelly, 2014; France et al., 2000; Hale, Grogan, & Willott, 2007; Mason & Strauss, 2004b; O'Brien, Hunt, & Hart, 2005; Scanlon et al., 2006; Taghipour, Vydelingum, & Faithfull, 2011) Low level of risk perception (Scanlon et al., 2006)	Informal cancer knowledge of friends and family (Carbone et al., 2009; Chapple, Ziebland, & McPherson, 2004; Forbat et al., 2014; Hale et al., 2007; Taghipour et al., 2011) Knowledge of cancer symptoms (Anderson, Marshall-Lucette, & Webb, 2013; Chapple et al., 2004; George & Fleming, 2004) Death of significant other due to cancer (Taghipour et al., 2011)
Symptom recognition and interpretation	Symptom mildness/gradual progression (Carbone et al., 2009; Chapple et al., 2004; Emery et al., 2013; Forbat et al., 2014; France et al., 2000; Gascoigne, Mason, & Roberts, 1999; Hale et al., 2007) Misattribution (Carbone et al., 2009; Carroll et al., 2009; Chapple et al., 2004; Emery et al., 2013; Gascoigne et al., 1999; Mason & Strauss, 2004b; Ramos et al., 2010; Sandén, Larsson, & Eriksson, 2000) Intermittent symptom (Emery et al., 2013; Sandén et al., 2000) Absence of additional symptom (Emery et al., 2013) Location of symptom (Sandén et al., 2000) Low attentiveness to health (Hajdarevic, Schmitt-Egenolf, Brulin, Sundbom, & Hörnsten, 2011) Previous benign diagnosis (Emery et al., 2013) Trivialisation of symptom (Taghipour et al., 2011) Uncertainty regarding symptom (Mason & Strauss, 2004b)	Symptom severity/progression (Adams et al., 2013; Carbone et al., 2009; Emery et al., 2013; Gascoigne et al., 1999; George & Fleming, 2004; Hale et al., 2007; Mason & Strauss, 2004b; Sandén et al., 2000; Taghipour et al., 2011; Vaartio, Kiviniemi, & Suominen, 2003) Prolonged symptom (Carbone et al., 2009; Carroll et al., 2009; Ramos et al., 2010) Changes in symptom (Ramos et al., 2010) Misattribution (Emery et al., 2013) Previous benign diagnosis (Emery et al., 2013) Type of symptom (O'Brien et al., 2005)

Emotions	Embarrassment/shame (Adams et al., 2013; Buckley & Ó Tuama, 2010; Carbone et al., 2009; Carpentier, Fortenberry, Ott, Brames, & Einhorn, 2011; Chapple & Ziebland, 2002; Chapple et al., 2004; Connolly et al., 2011; Emery et al., 2013; Forbat et al., 2014; Gascoigne et al., 1999; Mason & Strauss, 2004b; Sandén et al., 2000; Willams et al., 2003) Fear/ anxiety (e.g., cancer, treatment) (Buckley & Ó Tuama, 2010; Chapple et al., 2004; Connolly et al., 2011; Gascoigne et al., 1999; George & Fleming, 2004; Hale et al., 2007; Scanlon et al., 2006) Body image concerns (e.g., removal of testicle) (Carbone et al., 2009; Gascoigne et al., 1999) Concern about examination (Willams et al., 2003)	Concern about symptom (Carbone et al., 2009) Lack of emotional response to symptom/help-seeking (Carbone et al., 2009; Hajdarevic et al., 2011)
Attitudes and health beliefs	Conflicting responsibilities/low prioritisation of health (Carbone et al., 2009; Chapple et al., 2004; Emery et al., 2013; Hajdarevic et al., 2011; Leydon, Bynoe-Sutherland, & Coleman, 2003; Scanlon et al., 2006; Willams et al., 2003) Optimism (i.e., symptom will go away) (Carbone et al., 2009; Carpentier et al., 2011; Emery et al., 2013; Mason & Strauss, 2004b; Sandén et al., 2000; Scanlon et al., 2006; Willams et al., 2003) Fatalism (i.e., lack of control over outcome) (Buckley & Ó Tuama, 2010; Chapple et al., 2004; Eadie & MacAskill, 2008) Belief that cancer affects older people (Carbone et al., 2009; Mason & Strauss, 2004b) Belief that cancer would never happen to them (de Nooijer, Lechner, & de Vries, 2001)	Optimism (Emery et al., 2013)
Coping processes	Denial (e.g., lack of symptom acknowledgement) (Connolly et al., 2011; Eadie & MacAskill, 2008; Mason & Strauss, 2004b; Taghipour et al., 2011) Avoidance (e.g., possible illness, cancer information) (Hale et al., 2007; Leydon et al., 2003)	

Social norms	Masculine gender role norms (e.g., machismo) (Buckley & Ó Tuama, 2010; Carpentier et al., 2011; Chapple & Ziebland, 2002; Chapple et al., 2004; Emery et al., 2013; Gascoigne et al., 1999; George & Fleming, 2004; Hale et al., 2007; Mason & Strauss, 2004b; O'Brien et al., 2005; Scanlon et al., 2006; Tod, Craven, & Allmark, 2008; Willams et al., 2003) Perceived gender differences in health/health behaviours (e.g., women have more health issues) (Buckley & Ó Tuama, 2010; Chapple & Ziebland, 2002; Gascoigne et al., 1999; George & Fleming, 2004; Hajdarevic et al., 2011; Hale et al., 2007; Leydon et al., 2003; O'Brien et al., 2005) Self-reliance (e.g., self-treat) (Buckley & Ó Tuama, 2010; Eadie & MacAskill, 2008; Emery et al., 2013; Taghipour et al., 2011) Difficulty disclosing/communicating (e.g., due to social norms) (Adams et al., 2013; Scanlon et al., 2006) Taboos around health/discussing health (George & Fleming, 2004; Mason & Strauss, 2004b) Marginalisation of men's health (Mason & Strauss, 2004b) Status of symptom (e.g., lesser than other health issues) (Hale et al., 2007)	Help-seeking as social norm (i.e., significant others seek help) (Willams et al., 2003)
Social support	Disclosure to others (e.g., inaccurate advice) (Emery et al., 2013; Mason & Strauss, 2004b; Taghipour et al., 2011) Emotional protection of others (Forbat et al., 2014; Mason & Strauss, 2004b)	Encouragement by or support of partner/family member (Carbone et al., 2009; Carpentier et al., 2011; Carroll et al., 2009; Eadie & MacAskill, 2008; Forbat et al., 2014; Gascoigne et al., 1999; George & Fleming, 2004; Hajdarevic et al., 2011; Hale et al., 2007; Mason & Strauss, 2004b; Ramos et al., 2010; Sandén et al., 2000; Taghipour et al., 2011; Vaartio et al., 2003; Willams et al., 2003) Disclosure to others (Emery et al., 2013; Mason & Strauss, 2004b; Taghipour et al., 2011)

Family and relationship health		Importance of family health (Anderson et al., 2013; Willams et al., 2003) Symptom impact on partner/family (Forbat et al., 2014; Willams et al., 2003) Concern over future sexual functioning (Anderson et al., 2013)
Health system	Lack of access (Connolly et al., 2011; Taghipour et al., 2011) Disconnection from health service providers (Buckley & Ó Tuama, 2010; George & Fleming, 2004) Inadequate culturally appropriate healthcare and information (Adams et al., 2013; Willams et al., 2003) Perceived long wait times and short appointments (Buckley & Ó Tuama, 2010; Scanlon et al., 2006) Low level of previous contact with health system (Carbone et al., 2009; Eadie & MacAskill, 2008) Concerns about confidentiality (Adams et al., 2013) Concern about loss of dignity/respect with healthcare professionals (Buckley & Ó Tuama, 2010) Previous negative experience with health system (Buckley & Ó Tuama, 2010)	Culturally appropriate healthcare (Willams et al., 2003) Private health insurance (Hale et al., 2007) Trust in expert assessment (Hajdarevic et al., 2011)

Note. Table was originally published (Fish et al., 2015) and referenced in Vancouver Reference Style, in which references were numbered consecutively. The table has been reformatted in APA Style (6th Edition) in accordance with the disciplinary area (psychology) and the remainder of the thesis.

Table 2.4.

Summary of psychosocial factors associated with men's help-seeking for cancer symptoms: quantitative evidence

Themes	Barriers	Facilitators
Knowledge and awareness	Low cancer knowledge (Skeppner et al., 2012)	Information seeking (Sunny, Hopfgarten, Adolfsson, & Steineck, 2008) Cancer awareness (Fitzpatrick, Corcoran, & Fitzpatrick, 1998)
Symptom recognition and interpretation	Symptom mildness (e.g., painless) (Attard, 1985; Fitzpatrick et al., 1998; Young et al., 2000) Misattribution (Attard, 1985; Young et al., 2000) Not aware of symptom (Attard, 1985) Trivialisation of symptom (Fitzpatrick et al., 1998) Uncertainty regarding response to symptom (Douglass, McGee, & Williams, 1998)	Symptom severity (Fitzpatrick et al., 1998)
Emotions	Embarrassment (Fitzpatrick et al., 1998; Skeppner et al., 2012) Fear/ anxiety (e.g., cancer, treatment) (Fitzpatrick et al., 1998; Robb et al., 2009; Skeppner et al., 2012; Talcott et al., 2007) Concern about bothering health professional/wasting time (Robb et al., 2009; Young et al., 2000) Low level of depression and state anxiety (Chojnacka-Szawłowska, Kościelak, Karasiewicz, Majkowicz, & Kozaka, 2013) Low level of concern about symptom (Young et al., 2000)	
Attitudes and health beliefs	Conflicting responsibilities/low prioritisation of health (Talcott et al., 2007; Waller et al., 2009; Young et al., 2000) Optimism (i.e., symptom will go away; Skeppner et al., 2012; Talcott et al., 2007) Fatalism (e.g., belief that cancer is incurable; Chojnacka-Szawłowska et al., 2013)	

	Negative attitude towards health professionals and system (Fitzpatrick et al., 1998) Good self-appraisal of health status (Chojnacka-Szawłowska et al., 2013)	
Social support		Encouragement/perceived support of partner (Pedersen, Olesen, Hansen, Zachariae, & Vedsted, 2011; Swetter et al., 2009)
Health system	Perceived difficulty making an appointment (Robb et al., 2009)	

Note. Table was originally published (Fish et al., 2015) and referenced in Vancouver Reference Style, in which references were numbered consecutively. The table has been reformatted in APA Style (6th Edition) in accordance with the disciplinary area (psychology) and the remainder of the thesis.

Qualitative Synthesis

Psychosocial barriers to help-seeking. Knowledge and awareness of cancer symptoms were associated with men's help-seeking behaviour, with a low level of cancer awareness or knowledge associated with delayed help-seeking for cancer symptoms in twelve studies (Adams et al., 2013; Buckley & Ó Tuama, 2010; Carbone et al., 2009; Carroll et al., 2009; Connolly et al., 2011; Forbat et al., 2014; France et al., 2000; Hale et al., 2007; Mason & Strauss, 2004b; O'Brien et al., 2005; Scanlon et al., 2006; Taghipour et al., 2011). This barrier was found across a range of cancer samples, including prostate (Forbat et al., 2014; Hale et al., 2007; Taghipour et al., 2011), testicular (Carbone et al., 2009; Connolly et al., 2011; Mason & Strauss, 2004b), male breast (France et al., 2000), and head and neck (Carroll et al., 2009) cancer. Low level of risk perception was also found to be a barrier in one study (Scanlon et al., 2006).

Symptom recognition and appraisal were commonly found to influence men's help-seeking behaviour. Symptom mildness and/or a gradual progression in symptom were associated with delayed help-seeking in seven studies (Carbone et al., 2009; Chapple et al., 2004; Emery et al., 2013; Forbat et al., 2014; France et al., 2000; Gascoigne et al., 1999; Hale et al., 2007). Another related barrier was symptom misattribution, with eight studies reporting that some respondents initially attributed their symptoms to benign conditions (Carbone et al., 2009; Carroll et al., 2009; Chapple et al., 2004; Emery et al., 2013; Mason & Strauss, 2004b; Ramos et al., 2010; Sandén et al., 2000). Other symptom related barriers to help-seeking were uncertainty regarding symptom (Mason & Strauss, 2004b), sporadic symptoms (Emery et al., 2013; Sandén et al., 2000), low level of attentiveness to body or health (Hajdarevic et al., 2011), previous benign diagnosis (Emery et al., 2013), trivialisation of symptoms (Taghipour et al., 2011), absence of an additional symptom (Emery et al., 2013), and the location of symptom (Sandén et al., 2000).

Emotional factors were negatively associated with men's help-seeking behaviour. Thirteen studies found feelings of embarrassment and/or shame to be barriers to help-seeking for cancer symptoms (Adams et al., 2013; Buckley & Ó Tuama, 2010; Carbone et al., 2009; Carpentier et al., 2011; Chapple & Ziebland, 2002; Chapple et al., 2004; Connolly et al., 2011; Emery et al., 2013; Forbat et al., 2014; Gascoigne et al., 1999; Mason & Strauss, 2004b; Sandén et al., 2000; Willams et al., 2003), predominantly in male-specific cancers such as testicular (Carbone et al., 2009; Carpentier et al., 2011; Chapple et al., 2004; Connolly et al., 2011; Gascoigne et al., 1999; Mason & Strauss, 2004b; Sandén et al., 2000) and prostate cancer (Adams et al., 2013; Chapple & Ziebland, 2002; Forbat et al., 2014; Willams et al., 2003). Fear and anxiety were associated with delayed help-seeking in seven studies (Buckley & Ó Tuama, 2010; Chapple et al., 2004; Connolly et al., 2011; Gascoigne et al., 1999; George & Fleming, 2004; Hale et al., 2007; Scanlon et al., 2006). Specific fears reported across studies included: cancer (Buckley & Ó Tuama, 2010; Gascoigne et al., 1999; Hale et al., 2007; Scanlon et al., 2006), health professionals (Buckley & Ó Tuama, 2010; Hale et al., 2007), examination (Chapple et al., 2004; Hale et al., 2007), treatment or treatment side effects (Chapple et al., 2004; Gascoigne et al., 1999; Hale et al., 2007), hospitalisation (Hale et al., 2007), and perceived hypochondria (Chapple et al., 2004; George & Fleming, 2004). Other concerns included examination in a sacred area of the body for Maori men (Willams et al., 2003), and body image in men affected by testicular cancer (Carbone et al., 2009; Gascoigne et al., 1999).

Attitudes and health beliefs were associated with men's help-seeking behaviour. Conflicting responsibilities were associated with men's delayed help-seeking in seven studies, suggesting a low prioritisation of health among some males (Carbone et al., 2009; Chapple et al., 2004; Emery et al., 2013; Hajdarevic et al., 2011; Leydon et al., 2003; Scanlon et al., 2006; Willams et al., 2003). Five studies described employment as impacting on help-seeking (Carbone et al., 2009; Chapple et al., 2004; Hajdarevic et al., 2011; Leydon et al., 2003; Willams et al., 2003); men were aware of their symptoms but were too busy to visit the doctor, were too busy to detect symptoms, or there was pressure from within the workplace to continue working. One study reported family responsibility as impeding help-seeking (Carbone et al., 2009). Optimism was a barrier to help-seeking in seven studies; some men believed their symptoms would go away without intervention (Carbone et al., 2009; Carpentier et al., 2011; Emery et al., 2013; Mason & Strauss, 2004b; Sandén et al., 2000; Scanlon et al., 2006; Willams et al., 2003). Other barriers to help-seeking were fatalism (Buckley & Ó Tuama, 2010; Chapple et al., 2004; Eadie & MacAskill, 2008), and beliefs that cancer affects older people (Carbone et al., 2009; Mason & Strauss, 2004b) or would never happen to them (de Nooijer et al., 2001). Two coping strategies were associated with delayed help-seeking: denial (Connolly et al., 2011; Eadie & MacAskill, 2008; Mason & Strauss, 2004b; Taghipour et al., 2011) and avoidant coping (Hale et al., 2007; Leydon et al., 2003).

Social normative factors were frequently reported as barriers to men's help-seeking. Thirteen studies reported at least one masculine gender role norm as inhibiting appropriate help-seeking behaviour (Buckley & Ó Tuama, 2010; Carpentier et al., 2011; Chapple & Ziebland, 2002; Chapple et al., 2004; Emery et al., 2013; Gascoigne et al., 1999; George & Fleming, 2004; Hale et al., 2007; Mason & Strauss, 2004b; O'Brien et al., 2005; Scanlon et al., 2006; Tod et al., 2008; Willams et al., 2003). The most commonly reported masculine gender role norm influencing help-seeking was machismo (Buckley & Ó Tuama, 2010; Chapple & Ziebland, 2002; Chapple et al., 2004; George & Fleming, 2004; Hale et al., 2007; O'Brien et al., 2005; Scanlon et al., 2006; Willams et al., 2003); men who wanted to appear strong and in control feared appearing weak if they sought help. Additional masculine gender role norms that negatively impacted on help-seeking behaviour were stoicism (Emery et al., 2013; Tod et al., 2008) and self-reliance (Buckley & Ó Tuama, 2010; Eadie & MacAskill, 2008; Emery et al., 2013; Taghipour et al., 2011). The perception of health as a feminine issue also appeared to delay help-seeking for cancer symptoms among men in eight studies (Buckley & Ó Tuama, 2010; Chapple & Ziebland, 2002; Gascoigne et al., 1999; George & Fleming, 2004; Hajdarevic et al., 2011; Hale et al., 2007; Leydon et al., 2003; O'Brien et al., 2005). Other social normative factors included difficulty with communication due to social norms (Adams et al., 2013; Scanlon et al., 2006), taboos around men's health and discussing health (George & Fleming, 2004; Mason & Strauss, 2004b), the marginalisation of men's health (Mason & Strauss, 2004b), and social status of symptom (e.g., prostate symptoms were perceived as less serious than other symptoms, such as heart symptoms; Hale et al., 2007).

Two social support factors were found to influence men's help-seeking behaviour. Emotional protection of others was found to be a barrier, with respondents indicating that they did not want to burden their families with a potential illness (Forbat et al., 2014; Mason & Strauss, 2004b). Disclosing symptoms to others was a barrier in three studies (Emery et al., 2013; Mason & Strauss, 2004b; Taghipour et al., 2011), with friends reassuring respondents that their symptoms were normal or benign in two studies (Mason & Strauss, 2004b; Taghipour et al., 2011).

Cultural factors were seldom explored across studies. Four of the included qualitative studies explicitly examined ethnicity as a factor related to help-seeking for cancer symptoms (Adams et al., 2013; Anderson et al., 2013; Scanlon et al., 2006; Willams et al., 2003). Absence of culturally sensitive healthcare and information were found to inhibit help-seeking among Maori (Willams et al., 2003) and Aboriginal and/or Torres Strait Islander men (Adams et al., 2013). Maori men affected by prostate symptoms reported reservations about being examined in a sacred area of the body and did not feel culturally safe in seeking help (Willams et al., 2003). Machismo was reportedly a greater barrier to help-seeking for Irish men in comparison to White British men (Scanlon et al., 2006).

Health system and service factors associated with delayed help-seeking included perceived lack of access (Connolly et al., 2011; Taghipour et al., 2011), inadequate culturally appropriate healthcare and information (Adams et al., 2013; Willams et al., 2003), perceived long wait times and short appointments (Buckley & Ó Tuama, 2010; Scanlon et al., 2006), concerns about confidentiality (Adams et al., 2013), and concerns regarding loss of dignity or respect with healthcare professionals (Buckley & Ó Tuama, 2010). Two studies found respondents felt disconnected from health service providers (e.g., due to lack of attention from healthcare professionals; Buckley & Ó Tuama, 2010; George & Fleming, 2004). Moreover, some men reported a previous negative experience with the healthcare system (Buckley & Ó Tuama, 2010), or a low level of previous contact with the system (Carbone et al., 2009; Eadie & MacAskill, 2008). Financial cost was a barrier in one study (Buckley & Ó Tuama, 2010).

Psychosocial facilitators of help-seeking. The most frequently reported factor positively associated with men's help-seeking behaviour was social support from spouses or family members, which was found to facilitate timely help-seeking in fifteen studies (Carbone et al., 2009; Carpentier et al., 2011; Carroll et al., 2009; Eadie & MacAskill, 2008; Forbat et al., 2014; Gascoigne et al., 1999; George & Fleming, 2004; Hajdarevic et al., 2011; Hale et al., 2007; Mason & Strauss, 2004b; Ramos et al., 2010; Sandén et al., 2000; Taghipour et al., 2011; Vaartio et al., 2003; Willams et al., 2003). Similarly, disclosing symptoms to friends was found to facilitate help-seeking in three studies (Emery et al., 2013; Mason & Strauss, 2004b; Taghipour et al., 2011). In addition to social support, perceiving help-seeking as a social norm (e.g., where significant others are described as comfortable seeking help) was found to facilitate help-seeking behaviour in one study (Willams et al., 2003).

Perceived symptom severity/prolonged symptoms were found to facilitate help-seeking in twelve studies (Adams et al., 2013; Carbone et al., 2009; Carroll et al., 2009; Emery et al., 2013; Gascoigne et al., 1999; George & Fleming, 2004; Hale et al., 2007; Mason & Strauss, 2004b; Ramos et al., 2010; Sandén et al., 2000; Taghipour et al., 2011; Vaartio et al., 2003). Changes in symptom (Ramos et al., 2010), alternative explanation for symptom (Emery et al., 2013), previous benign diagnosis (Emery et al., 2013), and type of symptom (O'Brien et al., 2005) were also found to facilitate men's help-seeking. Furthermore, in support of the importance of cancer knowledge, seven studies found higher levels of cancer knowledge to facilitate timely help-seeking (Anderson et al., 2013; Carbone et al., 2009; Chapple et al., 2004; Forbat et al., 2014; George & Fleming, 2004; Hale et al., 2007; Taghipour et al., 2011). Knowledge was gained through a variety of channels, including informal knowledge through friends and family (Carbone et al., 2009; Chapple et al., 2004; Forbat et al., 2014; Hale et al., 2007; Taghipour et al., 2011), or a cancer-related death of a significant other (Taghipour et al., 2011).

Several family and relationship health factors were found to facilitate men's help-seeking for cancer symptoms. A belief in the importance of family health was found to be an enabling factor for Maori (Willams et al., 2003), African, and Afro-Caribbean men (Anderson et al., 2013). Perceiving the symptom to impact on a partner or family member (Forbat et al., 2014; Willams et al., 2003) and concern among prostate cancer patients over future sexual functioning (Anderson et al., 2013) facilitated timely help-seeking for some men.

A small number of additional factors were positively associated with men's help-seeking. Contradictory emotional factors that facilitated timely help-seeking were lack of an emotional response to symptom or medical help-seeking (Carbone et al., 2009; Hajdarevic et al., 2011), as well as worry about a symptom (Carbone et al., 2009). Optimism/low risk perception was associated with timely help-seeking for cancer symptoms (Emery et al., 2013). Health service and system factors found to facilitate help-seeking in men were having private health insurance (Hale et al., 2007), trust in expert assessment (Hajdarevic et al., 2011), and culturally appropriate healthcare (e.g., increasing clients' perception of being culturally safe with healthcare professionals; Willams et al., 2003).

Quantitative Synthesis

Psychosocial barriers to help-seeking. A range of knowledge and symptom recognition factors were associated with help-seeking behaviour across quantitative studies. A low level of cancer knowledge was associated with delayed help-seeking in men affected by penile cancer (Skeppner et al., 2012). Symptom mildness and symptom misattribution were associated with help-seeking delay among men affected by testicular (Attard, 1985) and colorectal cancer (Young et al., 2000). Not being aware of a symptom also contributed to help-seeking delay in one study (Attard, 1985). In one questionnaire study (Douglass et al., 1998), 54% (n = 101) of mixed-gender respondents who had noticed changes to a mole or freckle in the past year did not seek help, with men more likely than women to report being unsure what to do in response to the change.

Emotions were also associated with men's delayed help-seeking for cancer symptoms. Fear was a barrier to timely help-seeking in two studies (Skeppner et al., 2012; Talcott et al., 2007), with African American men more likely to report fear than White men ($p < .01$) (Talcott et al., 2007). In one study of men affected by colorectal cancer, a low level of concern about symptoms and concern about bothering health professionals were associated with help-seeking delay (Young et al., 2000). Embarrassment was associated with delayed help-seeking behaviour in men with penile cancer symptoms (Skeppner et al., 2012).

Psychological barriers, such as attitudes and health beliefs, were associated with men's help-seeking for cancer symptoms. Conflicting responsibilities or not having time to see a doctor were barriers to help-seeking for men affected by prostate (Talcott et al., 2007) and colorectal cancer (Young et al., 2000). Optimism was associated with delayed help-seeking in two studies (Skeppner et al., 2012; Talcott et al., 2007), with African American men more likely than White men ($p < .01$) to believe a symptom would go away (Talcott et al., 2007). In one study, delayed help-seeking of 9 months or more was found in men who held a belief that cancer is incurable (i.e., fatalism), a good appraisal of health status, and low levels of depression and state anxiety (Chojnacka-Szawłowska et al., 2013).

Several quantitative studies explored intention to seek help for cancer symptoms, as well as anticipated barriers to help-seeking (Fitzpatrick et al., 1998; Robb et al., 2009; Waller et al., 2009). Symptom mildness, trivialisation of symptoms, embarrassment, and fear were associated with anticipated delays in help-seeking for urinary symptoms (Fitzpatrick et al., 1998). Specific fears included cancer, treatment, and treatment side effects (Fitzpatrick et al., 1998). Concerns about what a doctor might discover and wasting a doctor’s time were also reported as barriers to seeking medical advice (Robb et al., 2009). Other anticipated barriers included, perceived difficulty making an appointment with health-professionals (Robb et al., 2009), a negative attitude towards health professionals/system (Fitzpatrick et al., 1998), and being ‘too busy to make time’ to see a doctor (Waller et al., 2009).

Psychosocial facilitators of help-seeking. Several varied psychosocial factors were associated with more timely help-seeking behaviour in quantitative studies. Encouragement or perceived support from a partner was associated with help-seeking behaviour in two studies (Pedersen et al., 2011; Swetter et al., 2009). Information seeking was associated with more timely help-seeking behaviour (less than 3 weeks; $p < .02$) in men affected by prostate cancer (Sunny et al., 2008). In one quantitative study that explored intention to seek help for urinary symptoms, prostate cancer awareness and symptom severity were associated with intention to seek medical help (Fitzpatrick et al., 1998).

Discussion

The aim of this paper was to review the psychosocial barriers to and facilitators of help-seeking for cancer symptoms among men. Overall, a range of psychosocial factors were found to influence help-seeking behaviour, with strong observational evidence for a number of emerging factors: the impact of symptom knowledge and interpretation, embarrassment and fear, conformity to gender role norms, and conflicting responsibilities. Almost all studies were considered of sound quality (medium to high quality), however, methodological heterogeneity was high across the included studies and integrated findings should be interpreted with caution.

Symptom knowledge and symptom interpretation were frequently associated with men's help-seeking behaviour across studies. Just under half of the included studies found evidence for an aspect of cancer knowledge or awareness to influence help-seeking behaviour (Adams et al., 2013; Anderson et al., 2013; Buckley & Ó Tuama, 2010; Carbone et al., 2009; Carroll et al., 2009; Chapple et al., 2004; Connolly et al., 2011; Fitzpatrick et al., 1998; Forbat et al., 2014; France et al., 2000; George & Fleming, 2004; Hale et al., 2007; Mason & Strauss, 2004b; O'Brien et al., 2005; Scanlon et al., 2006; Skeppner et al., 2012; Taghipour et al., 2011). Low levels of cancer knowledge were associated with delayed help-seeking, while a higher level appeared to facilitate timely help-seeking. These findings are in line with non-gender specific (Almuammar et al., 2010; Macleod et al., 2009; L. K. Smith et al., 2005) and female-specific research (Ramirez et al., 1999) that has found knowledge of cancer warning signs to influence help-seeking behaviour. This suggests that the significance of this factor is widespread and may not be gender-specific. Furthermore, symptom interpretation influenced men's help-seeking behaviour. Perceived symptom mildness and misattribution were frequently recurring barriers (Attard, 1985; Carbone et al., 2009; Carroll et al., 2009; Chapple et al., 2004; Emery et al., 2013; Fitzpatrick et al., 1998; Forbat et al., 2014; France et al., 2000; Gascoigne et al., 1999; Hale et al., 2007; Mason & Strauss, 2004b; Ramos et al., 2010; Sandén et al., 2000; Young et al., 2000), with studies commonly finding respondents wrongly attributed cancer symptoms to benign illness and self-monitored symptoms until they were severe and required medical attention. Although symptom recognition is an important factor in help-seeking behaviour, behavioural research has indicated that symptom recognition is not always associated with seeking help among men and women (de Nooijer et al., 2002; Sheikh & Ogden, 1998). This suggests other psychosocial factors are likely to impact help-seeking intentions and behaviour, such as attitudes towards cancer (de Nooijer et al., 2002; Scott & Walter, 2010).

Overall, embarrassment (Adams et al., 2013; Buckley & Ó Tuama, 2010; Carbone et al., 2009; Carpentier et al., 2011; Chapple & Ziebland, 2002; Chapple et al., 2004; Connolly et al., 2011; Emery et al., 2013; Fitzpatrick et al., 1998; Forbat et al., 2014; Gascoigne et al., 1999; Mason & Strauss, 2004b; Sandén et al., 2000; Skeppner et al., 2012; Willams et al., 2003) and fear/ anxiety (Buckley & Ó Tuama, 2010; Chapple et al., 2004; Connolly et al., 2011; Fitzpatrick et al., 1998; Gascoigne et al., 1999; George & Fleming, 2004; Hale et al., 2007; Robb et al., 2009; Scanlon et al., 2006; Skeppner et al., 2012; Talcott et al., 2007) were dominant emotional factors negatively influencing men's help-seeking for cancer symptoms. This is in line with the wider literature, in which fear of severe disease, medical consultation, and embarrassment has been associated with delayed health-related help-seeking in both men and women (Macleod et al., 2009; L. K. Smith et al., 2005; Yousaf et al., 2015). In this review, fear of embarrassment was predominantly reported in studies sampling men affected by cancers of the reproductive organs. L. K. Smith et al. (2005) have also shown fear of embarrassment to be a barrier to help-seeking in both men and women, particularly for symptoms in a sexual area. A unique finding in this review was that embarrassment was often expressed concomitantly with masculine gender role norms and perceived gender differences in health and health behaviours across qualitative studies.

Conformity to masculine gender role norms (Buckley & Ó Tuama, 2010; Carpentier et al., 2011; Chapple & Ziebland, 2002; Chapple et al., 2004; Emery et al., 2013; Gascoigne et al., 1999; George & Fleming, 2004; Hale et al., 2007; Mason & Strauss, 2004b; O'Brien et al., 2005; Scanlon et al., 2006; Tod et al., 2008; Willams et al., 2003) and perceived gender differences in health (Buckley & Ó Tuama, 2010; Chapple & Ziebland, 2002; Gascoigne et al., 1999; George & Fleming, 2004; Hajdarevic et al., 2011; Hale et al., 2007; Leydon et al., 2003; O'Brien et al., 2005) appeared to be important barriers to men's help-seeking, which is consistent with the wider health-related help-seeking literature (Galdas et al., 2005). A considerable number of men indicated that masculine gender role norms influence decisions to seek help for medical symptoms. This was often related to perceptions of gender differences in health and health behaviours across qualitative studies, in which men considered medical help-seeking behaviour to be a feminine activity (Buckley & Ó Tuama, 2010; Chapple & Ziebland, 2002; Gascoigne et al., 1999; George & Fleming, 2004; Hajdarevic et al., 2011; Hale et al., 2007; Leydon et al., 2003; O'Brien et al., 2005). Women were commonly seen as knowing their bodies more intimately than men, to be more comfortable disclosing health issues, and to be more psychologically at ease seeking help for illness.

These findings are in line with theories of masculine gender role socialisation and male help-seeking (Addis & Mahalik, 2003; Courtenay, 2000), which propose men perceive social pressure to conform to dominant masculine gender role norms (e.g., independence, control) that are in contrast to the help-seeking process (Addis & Mahalik, 2003; Courtenay, 2000). Deviation from dominant gender role norms may lead to gender role conflict, a psychological state that can lead to emotional, cognitive and/or behavioural problems

(O'Neil, 2008), including risky health behaviours. Recent research has highlighted the importance of context for masculine gender role ideals (Oliffe, 2009). It is theorised that masculinities interact with contextual factors, such as age, class, culture, and illness characteristics, to influence health behaviour (Oliffe, 2009). This is illustrated by one qualitative study, where Irish men were found to be more reluctant than White British men to talk about cancer and health due to “macho” Irish culture, which was linked to historical and social contextual factors (Scanlon et al., 2006).

Encouragement and support of spouses and family members was commonly associated with timely help-seeking behaviour (Carbone et al., 2009; Carpentier et al., 2011; Carroll et al., 2009; Eadie & MacAskill, 2008; Forbat et al., 2014; Gascoigne et al., 1999; George & Fleming, 2004; Hajdarevic et al., 2011; Hale et al., 2007; Mason & Strauss, 2004b; Pedersen et al., 2011; Ramos et al., 2010; Sandén et al., 2000; Swetter et al., 2009; Taghipour et al., 2011; Vaartio et al., 2003; Willams et al., 2003). While this is in line with non-gender specific reviews (Chatwin & Sanders, 2013; Macleod et al., 2009), this factor appeared to be distinctly gender-specific. For example, disclosure of a symptom to a healthcare professional was seen as a threat to masculinity, but disclosure to a female spouse was considered acceptable and non-threatening. Hale et al. (2007) argued that pressure from female partners to consult with a healthcare professional provides men with an acceptable excuse for help-seeking and may prevent men from feeling that their masculinity is compromised.

The frequent disclosure of symptoms to female romantic partners also highlights the occurrence of informal help-seeking behaviour. During the help-seeking interval, it is proposed that an individual considers and selects an appropriate source of help based on level of personal comfort and/or consideration of knowledge (Cornally & McCarthy, 2011). Many men from the included studies appeared to consider women as knowledgeable and experienced in the health domain. As such, female spouses and family members may play an important intermediary or “gate-keeper” role in men’s health by checking symptoms, collecting or providing information, prompting help-seeking, and maintaining gender role norms.

Men also commonly perceived conflicting responsibilities as inhibiting medical help-seeking, which may indicate a low prioritisation of health (Carbone et al., 2009; Chapple et al., 2004; Emery et al., 2013; Hajdarevic et al., 2011; Leydon et al., 2003; Scanlon et al., 2006; Talcott et al., 2007; Waller et al., 2009; Willams et al., 2003; Young et al., 2000). Furthermore, some studies reported that work responsibilities impacted on the ability of men to seek help from a medical professional (Chapple et al., 2004; Hajdarevic et al., 2011; Leydon et al., 2003; Willams et al., 2003). The association between low prioritisation of health and delayed help-seeking behaviour has also been observed in women affected by cancer (Burgess, Hunter, & Ramirez, 2001), suggesting that this factor may not be gender specific. Future research might explore conflicting responsibilities further by investigating the value of employment and health among men, and whether this is associated with conformity to masculine gender role norms.

Differences in results were also observed between qualitative and quantitative research studies. Across both qualitative and quantitative studies, evidence was found for the importance of cancer knowledge and symptom interpretation, conflicting responsibilities, fear and embarrassment. Evidence also emerged in qualitative research about the importance of social normative and health system factors, but these factors were not observed in quantitative research. Future research in men’s help-seeking could build on findings from qualitative research using quantitative methods to test the limits and generalisability of observations arising from the former.

Limitations of Existing Research and Future Directions

There is growing evidence of a number of psychosocial factors associated with men's help-seeking for cancer symptoms, but there are significant limitations with existing research that limit the strength of this evidence. First, a majority (*n* = 34) of studies included in this review explored factors associated with help-seeking through open-ended questions and reported descriptive results, and as such the predictive strength of emerging psychosocial factors are unknown (Scott & Walter, 2010). The different goals of quantitative and qualitative research, and the associated epistemological frameworks, may explain why strong themes regarding social norms and masculinity were found across qualitative studies, but masculinity variables were not examined in the quantitative research. Validated measures focused on perceptions of masculinity and their impact on behaviour (Eisler & Skidmore, 1987; Mahalik et al., 2003; O'Neil, Helms, Gable, David, & Wrightsman, 1986) could be utilised in future studies to test the predictive strength of masculinity variables in relation to real or anticipated help-seeking for cancer symptoms. Furthermore, a mixed-method approach (i.e., using both qualitative and quantitative methods concurrently or sequentially) may assist in exploring the underlying processes involved in men's help-seeking behaviour (Leech & Onwuegbuzie, 2009).

Second, research in this area has largely been independent of theory. Theoretical grounding provides a context for generating interventions that may redress problems with help-seeking. Evidence for an increasingly wide range of factors associated with help-seeking behaviour has emerged, therefore the application and testing of health behaviour models is required to identify the pathway of influence in order to assist with the design of effective health promotion interventions (Scott & Walter, 2010).

Third, the two main research designs used across studies (i.e., retrospective and anticipated help-seeking designs) have limitations. Retrospective designs may have resulted in recall errors due significant time elapsed since initial symptom or diagnosis (Scott &

Walter, 2010). Also, several quantitative studies investigated anticipated barriers to help-seeking for hypothetical symptoms, which may not accurately reflect real barriers to help-seeking due to the influence of unforeseen factors (Scott & Walter, 2010). While these designs have limitations, they appear to be predominantly used due to ethical concerns regarding prospective designs. Future retrospective studies may include calendar land-marking instruments to improve accuracy of recall (Glasner & van der Vaart, 2009; Scott & Walter, 2010), or use verification procedures.

Finally, only a minority of included studies explored variation between different groups of men (e.g., based on ethnicity, age), limiting generalisability. The qualitative studies reviewed commonly used small samples, and only one quantitative study examined differences between men (Talcott et al., 2007). It is reasonable to propose that psychosocial factors associated with help-seeking behaviour in men may differ according to a variety of demographic or socio-cultural factors (Addis & Mahalik, 2003; Oliffe, 2009). For example, masculine gender role norms were found to be recurring barriers to help-seeking for cancer symptoms in men, but the reported role norms (e.g., machismo) are arguably Western traditional concepts (Galdas et al., 2005).

Despite these limitations, preliminary evidence suggests that cancer prevention initiatives to improve men’s help-seeking behaviour should aim to increase cancer knowledge, reduce embarrassment and fear, address social norms deterring timely help-seeking, and acknowledge informal help-seeking. Cancer prevention strategies may attempt to address gender role norms deterring help-seeking by normalising or reframing men’s help-seeking, or alternatively, by targeting health promotion messages at spouses and family members. An example of this approach is the Stand by Your Man campaign run in the UK, which asked women to encourage the men in their lives to increase their cancer knowledge and talk more frequently about health issues (Prostate Cancer UK, 2014). Future health promotion initiatives should consider targeting the range of psychosocial factors found to influence men's help-seeking for cancer symptoms.

Conclusion

This review provides an overview of psychosocial barriers and facilitators found to influence help-seeking for cancer symptoms among men. Cancer prevention initiatives to improve men's help-seeking behaviour should aim to increase cancer knowledge, reduce strong emotions such as embarrassment and fear, and address social norms deterring timely help-seeking. Moreover, the design of cancer prevention interventions should acknowledge informal help-seeking with spouses and family members. Future research should examine variation between men, use statistical hypothesis testing based on factors emerging from qualitative research, and increase the theoretical grounding of research.

Subsequent Research Evidence

Since conducting this systematic review several notable studies have been published. Subsequent research evidence was in accordance with the results of the review, highlighting a range of psychosocial factors associated with men's help-seeking for cancer symptoms. Key barriers to men's timely help-seeking included symptom experience and appraisal factors (e.g., minimising or misinterpretation of symptoms; Maclean et al., 2017; Oberoi et al., 2016; Saab, Landers, & Hegarty, 2017), gendered stereotypes or cultural norms (e.g., self-reliance, stoicism; Fennell et al., 2017; Maclean et al., 2017; Saab et al., 2017; Shahid et al., 2016), health beliefs (e.g., unrealistic optimism, fatalism; Maclean et al., 2017; Oberoi et al., 2016; Saab et al., 2017), conflicting responsibilities (Oberoi et al., 2016; Saab et al., 2017), strong emotional responses (e.g., fear of a diagnosis, embarrassment; Oberoi et al., 2016; Saab et al., 2017; Shahid et al., 2016), and system-related barriers (e.g., long wait times; Saab et al., 2017). Key facilitators of men's timely help-seeking for cancer symptoms were recognition of cancer symptoms (Maclean et al., 2017), the severity of symptoms (Oberoi et al., 2016; Saab et al., 2017), and social support (Maclean et al., 2017; Oberoi et al., 2016; Saab et al., 2017). All subsequent research studies were qualitative and the predictive strength of psychosocial factors remains unclear.

Chapter Summary

To summarise, this systematic review of international literature investigating men's help-seeking for cancer symptoms was conducted to advance the research area and inform the present research program. The review synthesised evidence from mixed-method research to provide a higher level of evidence than that available from individual research studies alone. Observational evidence was found for the negative influence of low cancer knowledge, inaccurate appraisal of symptoms, embarrassment, fear, conformity to traditional masculine gender norms, and conflicting responsibilities on men's help-seeking for cancer symptoms (Fish et al., 2015). Furthermore, social support was found to be the strongest facilitator of timely help-seeking for cancer symptoms.

This preliminary observational evidence suggests that future cancer prevention and early detection interventions may usefully target a number of psychosocial factors, however, caution should be applied due to several important limitations of the research area. For example, only a minority of studies examined within-gender variation in men's help-seeking, preventing the generalisability of findings and the design of broadly effective interventions (Fish et al., 2015; J. Smith, 2007). Comparative research is required because men's help-seeking experiences are expected to differ according to demographic, health, and socio-cultural circumstances (Addis & Mahalik, 2003; Oliffe, 2009; J. Smith, 2007). Validation of context-specific influences is required for tailored intervention design, and to improve the early detection behaviours and cancer outcomes of all men, including those who may be more disadvantaged (J. Smith, 2007). For example, men living in rural Australia are less likely to access diagnostic and treatment services than those living in urban areas, and experience poorer cancer outcomes (AIHW, 2012; Baade et al., 2011; Schlichthorst et al., 2016). Research is required to understand potential differences in urban and rural men's help-seeking behaviour, as well as potential variation in the psychosocial aspects influencing help-seeking for cancer symptoms.

Moreover, although the systematic review reported in this chapter provided important information about current approaches and knowledge about men's help-seeking for cancer symptoms internationally, it also highlighted that the experiences of Australian men are not well understood due to the small number of research studies. To date, Australian studies have been heterogeneous in design and findings, and generally conducted within a narrow scope, limiting generalisability of findings. Studies have either focused on specific cancer sites, such as testicular (Carbone et al., 2009), colorectal (Oberoi et al., 2016), or skin cancer (Fennell et al., 2017), or specific socio-cultural contexts, such as help-seeking in rural Australia (Emery et al., 2013). Although informative, research utilising more inclusive eligibility criteria is required to examine the influence of different cancer types and symptoms, as well as socio-cultural contexts, on Australian men's help-seeking for cancer symptoms. With consideration to these issues, the next chapter presents a qualitative study of potential variation in urban and rural Australian men's experiences of help-seeking for cancer symptoms.

Finally, strong themes were identified when research findings were aggregated, however, a hierarchical conclusion could not be drawn. Although the more frequent identification of a psychosocial factor across research studies may indicate greater importance, this approach is likely to be biased because of high methodological heterogeneity across the included studies. Further research specifically designed to establish the relative importance of factors is required. Accordingly, Chapters 4 and 5 of this thesis statistically test the relative predictive strength of both theory- and research-derived psychosocial influences on Australian men's anticipated help-seeking for cancer symptoms.

Chapter Three: Study 2 - Understanding Variation in Men's Help-Seeking for Cancer Symptoms: A Semi-Structured Interview Study

Statement of Authorship

The following chapter presents a qualitative research article published in *Psychology of Men & Masculinities* in 2019. The authors included PhD candidate, Jennifer Fish, and her supervisory team: Prof Carlene Wilson, Dr Ivanka Prichard, Dr Kerry Ettridge, and Prof Elizabeth Grunfeld. Full citation: Fish, J.A., Prichard, I., Ettridge, K., Grunfeld, E.A., & Wilson, C. (2019). Understanding variation in men's help-seeking for cancer symptoms: A semi-structured interview study. *Psychology of Men & Masculinities*, *20*, 61-70.

Candidate Statement

I confirm I was the primary author of the research article, and that guidance and supervision were provided by the co-authors throughout the manuscript preparation, submission, and revision processes. I was responsible for development of the research design, participant recruitment, data collection, data cleaning and analysis, and writing. I was the corresponding author on the research article and was also responsible for the execution of revisions and communication with the peer-review journal. Co-authors provided suggestions regarding the methodology, participant recruitment, data analysis, and manuscript presentation, and provided advice on drafts and responding to the journal reviewers. The percentage contribution of each author was as follows:

- Research design: Jennifer Fish (60%), Dr Ivanka Prichard (10%), Dr Kerry Ettridge (10%), Prof Elizabeth Grunfeld (10%), and Prof Carlene Wilson (10%)

- Data collection and analysis: Jennifer Fish (80%), Dr Ivanka Prichard (5%), Dr Kerry Ettridge (5%), Prof Elizabeth Grunfeld (5%), and Prof Carlene Wilson (5%)
- Writing and editing: Jennifer Fish (80%), Dr Ivanka Prichard (5%), Dr Kerry Ettridge (5%), Prof Elizabeth Grunfeld (5%), and Prof Carlene Wilson (5%)

Preamble

The findings of the systematic review reported in Chapter 2 (Fish et al., 2015) highlighted that very few studies of men's help-seeking for cancer symptoms have investigated variation between groups of men. For example, variations in help-seeking might be linked to socio-demographic characteristics, such as age, sexuality, rurality, or ethnicity. Evidence for potential within-gender variation in help-seeking is important for the design of effective interventions; if variation is identified between sub-groups of men, approaches targeted by gender alone may be ineffective and require a more tailored approach.

Moreover, there is enduring concern about Australian men's postponement of medical help-seeking (Australian Medical Association, 2018; Department of Health, 2019). It was argued in Chapter 2 that although much is known about men's help-seeking for cancer symptoms internationally, Australian men's experiences of help-seeking for cancer symptoms are not well understood because of the small number of Australian research studies published in the area and the narrow focus of existing studies. Australian men's help-seeking for cancer symptoms is likely to be influenced by a variety of context-specific barriers, such as the nature of the healthcare system or cultural factors. For instance, unique masculine roles exist within Australia, including "the mate" (reflecting male camaraderie), "the larrikin" (reflecting a jovial attitude and someone who defies authority), and "the ocker" (reflecting an uncultured demeanour and a working class man; Mahalik, Levi-Minzi, & Walker, 2007). Aspects of these roles may impact on Australian men's experiences of and responses to cancer symptoms. Further research evidence is required to inform interventions designed to improve Australian men’s early detection practices.

The present chapter presents a qualitative, semi-structured interview study of Australian men’s experiences of, and help-seeking responses, to cancer symptoms, with an investigation of potential differences between men residing in urban and rural areas. Interviews were conducted with men who had received a cancer diagnosis within the previous 12 months. Interviews were also conducted with participants’ partners to enable data triangulation and verification of participants’ recollections. The two research questions were:

i. Which psychosocial influences are important to men’s help-seeking for cancer symptoms?
ii. Do men from urban and rural Australia experience and respond to cancer symptoms differently?

Abstract

Men appear more likely to delay seeking medical advice for cancer symptoms, resulting in later stage at diagnosis and poorer health outcomes. Limited research has investigated variation in men's experiences of and responses to cancer symptoms. This study examined the psychosocial aspects of men's help-seeking for cancer symptoms, as well as potential variation across men residing in urban and rural Australia. Semi-structured interviews were conducted with men recently diagnosed with cancer (*n* = 13). Participants' partners (*n* = 8) were recruited to enable data triangulation. Interview schedules addressed participants' pathway to cancer treatment, cancer knowledge, masculinity, and rural living. A theoretical thematic analysis approach was used. Medical help-seeking behaviour was similar for participants residing in urban and rural areas. Five key themes and one sub-theme were identified, including: symptom factors, traditional masculine norms (sub-theme: women's health-related responsibilities), level of concern, conflicting responsibilities and access, and trust in medical professionals. Participants from rural Australia experienced greater access difficulties and noted optimism regarding symptoms. Results highlight important within-gender differences in the psychosocial barriers to help-seeking for cancer symptoms. Future research should further explore variation between men and test the predictive strength of factors.

Introduction

The argument for early detection and diagnosis of cancer has been growing in momentum, with increasing evidence that it can be important for improving survival rates and health outcomes (Etzioni et al., 2003; Neal et al., 2015). Early detection of cancer requires that a tumour be in situ or localised, and has not spread throughout the body (Etzioni et al., 2003). Some cancers (e.g., colorectal, melanoma, head and neck) present with early symptoms that may signal to health practitioners that further investigation is warranted. Symptoms may appear as minor or severe bodily changes, for example, persistent unexplained pain or fatigue, unexplained bleeding, persistent unexplained cough, or a change in the appearance of a mole (Power & Wardle, 2015). Symptom attribution may be difficult for the general population because symptoms differ according to cancer site and can also be associated with multiple health problems, including minor ailments. However, the onus is not on individuals to diagnose a condition, but on medical professionals through consultation (Scott & Walter, 2010). Cancer organisations recommend that individuals seek medical advice promptly after noticing a cancer warning sign (Cancer Council Australia, 2017; Cancer Research UK, 2017).

Globally and within Australia, there is evidence of gender differences in cancer mortality rates and medical help-seeking behaviour. Men are more likely than women to die of non-sex specific cancers internationally, including lung, stomach, liver, oesophageal, and blood cancers (International Agency for Research on Cancer, 2017). Likewise, with respect to the leading causes of death in Australia, men are more likely than women to die of non-sex specific cancers such as skin, lung, blood, and lymph cancers (ABS, 2016). This may be due, in part, to delayed help-seeking and associated diagnostic delay (Evans et al., 2005), with Australian men less likely than women to seek services from a GP across all age groups (ABS, 2012; Bayram et al., 2016).

In addition to the already lower rates of help-seeking among Australian men, those residing in rural areas of Australia are less likely to access health services (i.e., diagnostic and treatment services) and have poorer cancer outcomes than those in urban areas (AIHW, 2012; Baade et al., 2011; Schlichthorst et al., 2016). For example, among Australian men, increased remoteness has been associated with increased mortality from lung, prostate, and colorectal cancer, as well as cancers of unknown primary sites (AIHW, 2012). This pattern of results is likely to be influenced, in part, by the considerable distances between some rural areas of Australia and GP services. For instance, a number of rural areas in South Australia are greater than 320 kilometres (199 miles) in distance from the nearest GP service (Bamford & Dunne, 1999).

Health education interventions are often aimed at increasing early detection behaviour in the general population by increasing cancer knowledge. Research suggests that cancer awareness interventions may increase knowledge, but there is limited evidence to suggest such knowledge prompts help-seeking (Austoker et al., 2009). Many factors underpin health behaviours and increasing knowledge alone may be insufficient to change maladaptive behaviours, such as delayed help-seeking (Glanz & Bishop, 2010). Further exploration of the underlying psychosocial factors that influence help-seeking behaviour is required to inform the design of effective cancer prevention interventions.

Several psychosocial barriers to men's medical help-seeking have been highlighted by international research. For instance, misinterpretation and minimising of symptoms (Braybrook et al., 2011; Fish et al., 2015; Yousaf et al., 2015), and strong negative emotions (e.g., embarrassment and fear; Fish et al., 2015; L. K. Smith et al., 2005; Yousaf et al., 2015) appear to be important barriers to men's medical help-seeking. In addition, traditional masculine norms have been associated with delayed help-seeking for cancer symptoms and other health issues (Braybrook et al., 2011; Fish et al., 2015; L. K. Smith et al., 2005; Yousaf et al., 2015). Masculine role socialisation models posit that cultural norms associated with maleness can negatively affect men's health when endorsed and performed (Addis & Mahalik, 2003; Courtenay, 2000). Dominant masculine norms relevant to help-seeking include self-reliance, emotional control and stoicism, appearing physically strong, invulnerability, and risk-taking (Courtenay, 2000).

The psychosocial variables that influence men's help-seeking within Australian contexts are currently not well understood. Differences in cancer incidence and help-seeking between urban and rural environments may be due to aforementioned access difficulties, as well as cultural factors. These include occupational differences, unique attitudes towards health and help-seeking found among people living in rural areas (Emery et al., 2013; Fennell et al., 2017), and hegemonic rural masculinity (Alston & Kent, 2008; Courtenay, 2000). In the case of the latter, conformity to dominant rural masculinity positions men as hard working, physically tough, self-reliant, and stoic (Alston & Kent, 2008). These normative factors are incongruent with help-seeking behaviour, which involves communicating a problem to another individual and relying on them for assistance (Addis & Mahalik, 2003).

Despite the breadth of barriers to help-seeking identified above, to date, research into help-seeking for cancer symptoms among Australian men has been conducted with a narrow focus. Studies have explored help-seeking for specific cancer sites (Carbone et al., 2009; Oberoi et al., 2016) or sub-cultural contexts[8] (Adams et al., 2013; Emery et al., 2013). Consequently, variation in men's health-related behaviour has been seldom addressed, despite the fact that men's experiences of medical help-seeking are likely to differ across health and cultural contexts (Addis & Mahalik, 2003; Oliffe, 2009). For example, Emery et al. (2013) and Fennell et al. (2017) found aspects of rural identity, including optimism,

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[8] For example, research was conducted in rural Australia (Emery et al., 2013), or sampled Aboriginal and/or Torres Strait Islander men exclusively (Adams et al., 2013).

stoicism, machismo, and self-reliance contributed to rural men's delayed help-seeking. However, conclusions were limited in these studies as direct comparisons between urban and rural men were not conducted. Broadening eligibility criteria would importantly allow for an exploration of the influence of symptom type, cancer type, and cultural context on men's medical help-seeking. Comparative research is required to validate context-specific barriers and for the design of widely effective men's health interventions (J. Smith, 2007).

Current Study

This study purposively sampled men from urban and rural South Australia to investigate self-reported psychosocial influences on help-seeking for cancer symptoms according to area of residence. Participants' partners were also recruited to provide further insight into the cancer experience and previous help-seeking behaviour, providing some evidence of convergent validity. To the best of our knowledge, this is the first Australian study to use broad diagnostic eligibility criteria, and to directly compare urban and rural cohorts, building upon the research of Emery et al. (2013) and Fennell et al. (2017). By understanding within-gender variation in men's help-seeking, and in particular the role of rural living, it is possible to design and implement targeted cancer prevention interventions within Australia and internationally. Following this, early detection practices may be improved leading to increases in cancer survival rates. The research questions were: 1) which psychosocial influences are important to men's help-seeking for cancer symptoms, and 2) do men from urban and rural Australia experience and respond to cancer symptoms differently?

Method

This study is part of a larger multi-method research project exploring men's help-seeking for cancer symptoms, which takes an ontological and epistemological position of scientific realism (Madill, Jordan, & Shirley, 2000). As such, even within a qualitative research study, objectivity and reliability have been prioritised as much as possible (Madill et al., 2000). A qualitative paradigm was chosen for this study because qualitative research allows for greater examination of the impact of context (Braun & Clarke, 2013), which was deemed important for answering the research questions. This study uses a qualitative descriptive approach as described by Sandelowski (2000). This approach is recommended for multi- and mixed-method research projects, as well as projects that are connected to and guided by relevant literature (Neergaard, Olesen, Andersen, & Sondergaard, 2009).

Procedure

Appropriate ethical approval was obtained prior to study commencement. Purposive sampling was used; men recently diagnosed with cancer (referred to as participants throughout) were recruited because of their firsthand experience with cancer and medical help-seeking. This also enabled the exploration of recollected help-seeking, rather than anticipated help-seeking. Recruitment occurred in urban and rural areas to allow for a direct comparison between groups. The majority of participants were residing in South Australia when help-seeking for cancer symptoms, with two participants seeking medical advice in the Northern Territory. Therefore, the study largely reflects men's experiences of help-seeking within a mixed public-private healthcare system in South Australia.

Participants' partners were recruited to facilitate data triangulation and provide some evidence of convergent validity. Behavioural confirmation by others is particularly important when the circumstances being recalled are highly stressful, as in the case of a cancer diagnosis. Under these circumstances participants may not remember their experience accurately. Existing research also indicates that some men have difficulty with personal disclosure (Yousaf et al., 2015), and consequently, including participants' partners allowed for a better understanding of participants' help-seeking. Eligibility criteria included: being aged 18 years or older and having the ability to read and speak fluent English. In addition, men were eligible for inclusion if they had received a cancer diagnosis within the last 12 months. The diagnostic time period (12 months) was selected in order to ensure an accurate recollection of pathway to treatment. A broad diagnostic eligibility criterion was used to allow for any similarities or differences across symptoms and cancer types to be identified.

A community-based sampling strategy was used to facilitate the inclusion of a diverse range of cases from both urban and rural areas and to increase external validity. Men's health (i.e., Freemasons SA/NT) and cancer organisations (i.e., Cancer Council SA, Cancer Voices SA, Cancer Care Centre) were the main avenues for recruitment. Strategies for promotion of the study included: social media sites (e.g., website, Facebook, Twitter, community noticeboards), email distribution through targeted organisations, advertising in print media, information sharing through oncology social workers at Cancer Council SA, and study press releases. In addition, participants were encouraged to share study details in an attempt to benefit from snowball sampling. Following data saturation, a further three participants were recruited to ensure no new themes emerged.

Data Collection Methods and Data Collection Instruments

Semi-structured interviews were used to investigate men's experiences with medical help-seeking. Potential participants contacted the principal researcher directly or via oncology social workers, and were then screened via telephone according to eligibility criteria. Eligible participants were invited to participate in a one-on-one interview with the principal researcher, a female PhD candidate with training in counselling and behavioural science. Participants were provided with multiple opportunities to provide and withdraw informed consent.

The interview schedule contained two distinct but related parts: a) a request for participants to share their pathway to cancer treatment in their own words, and b) follow-up questions guided by previous research (Fish et al., 2015; see Table 3.1 for example interview questions). It was anticipated that the outsider status of the interviewer (i.e., a young female researcher interviewing older male participants) would influence the responses of participants. Accordingly, gender and masculinity were explicitly and purposely investigated towards the end of the interview. The age and female gender of the interviewer may have also influenced participant comfort in discussing their health and bodily changes. Strategies to reduce the likelihood of discomfort included using open-ended questions and actively demonstrating empathy and sensitivity during interviews (Elmir, Schmied, Jackson, & Wilkes, 2011). To increase the accuracy of recall, a calendar land-marking technique was used (Mills et al., 2014). The interviewer noted the participant's experience on a calendar during interviews, and asked about personal and public events that occurred at the time. This technique is used primarily to increase accuracy of recall, but also results in useful contextual information to increase the interviewer's understanding of the experience. The interview schedule was modified for participants' partners who were asked to recall their partner's cancer experience in detail and to discuss their own cancer knowledge. The interview schedule was used as a guide and questions were omitted if they were already addressed by the participant or were not relevant. Couple dyads were interviewed separately in the majority of cases; two pairs of individuals were interviewed together at the request of the cancer survivor.

Table 3.1.

Example interview questions for male participants

Domains	Interview questions	Prompts
Cancer experience	Could you please describe in detail your experience starting from when you first noticed a change in your body? If cancer is detected from asymptomatic screen: Could you please describe in detail your journey starting from when you first decided to make an appointment with a doctor?	What were the bodily changes that you experienced? What were your thoughts at the time? How long did you experience [the symptom] for? Who did you talk to? Did the symptom change at all? When did you think that your symptom required medical attention? When did you make an appointment with a doctor? What were your reasons for making an appointment then? When did you visit a doctor for your symptom?
Knowledge	Before this experience, what signs and symptoms of cancer were you aware of?	Where did you gain your knowledge of warning signs?
	What was your understanding of your cancer risk?	
Masculinity	Do you think men view health issues differently from women?	
	Some men feel that seeking help for a health issues is not masculine. How did help-seeking affect your sense of masculinity?	What do you think being masculine is?
Rural living	How does living in the country influence who you are?	
	Do you think men from the country view health issues differently from men in the city?	

Two pilot interviews with men affected by cancer were conducted in March 2015 to test the usefulness of the interview schedule. Minimal changes were made and, consequently, one of the pilot interviews was included in the study (with permission). The other pilot interview participant did not meet eligibility criteria. All interviews except one were conducted in-person. The exception was conducted over the telephone. In this instance, the participant had been posted a copy of the calendar to refer to during the interview. Interviews were conducted over a six month period. All interviews were audio recorded and transcribed verbatim. Participants were invited to read their interview transcript and were given the opportunity to ask for certain sections or for the whole interview to be omitted from the study. Twelve participants requested to review their transcripts, with none requesting modifications or omissions.

Data Processing and Analysis

Patient intervals (*n* = 9) were calculated from the date of first symptom until first presentation to a clinician. Although patient intervals could not be calculated for asymptomatic cancer survivors (*n* = 4), they were included in analyses because they provided diversity in perspectives about men's medical help-seeking. In this study, prompt help-seeking was defined as seeking medical advice within 2 weeks of noticing a cancer symptom, in line with recent research (Quaife et al., 2014).

Qualitative data were coded and analysed using NVivo 11. Data analysis followed a theoretical thematic analysis approach (see Table 3.2; Boyatzis, 1998; Joffe, 2011), in which analysis was predominantly deductive, and guided by theory, previous research, and researcher knowledge (Braun & Clarke, 2013). This approach was deemed the most suitable by the research team because a literature review completed by the principal researcher prior to the design of the study was used to facilitate theme identification (Joffe, 2011). Following initial coding of the data set by the principal researcher, a coding frame was developed based on previous research (Fish et al., 2015), social science theory (i.e., masculine role socialisation; Courtenay, 2000), and some inductive content analysis.

Table 3.2.

Systematic analytic method

Stage	Description
1.	Transcription.
2.	Read and reread transcripts. Initial coding.
3.	Create coding frame – developed on the basis of theoretical codes (past research/theory) and supplemented with minimal inductive (data-driven) content.
4.	Check reliability of coding frame with independent research associate (30% of data). Refine coding frame through discussion, including data-driven codes.
5.	Complete coding, across the entire dataset. Minimal changes to coding frame.
6.	Search for themes and analyse data (including visual mapping).
7.	Review themes.
8.	Defining themes and final analysis - writing.

Reliability of the coding frame was tested by calculating coding inter-rater reliability. Approximately one-third of the interview transcripts were coded by the principal researcher and an independent female research associate (project officer and PhD candidate in behavioural science). The average Kappa coefficient was .60, indicating a moderate level of agreement (Landis & Koch, 1977). The statistic appeared overly sensitive to the coders. Coding sensitivity differed between researchers (i.e., variance in size of codes), and the researchers had selected different data to highlight the same code within a data item. There were also some discrepancies in coding, which were likely due to the greater familiarity of the principal researcher with the coding frame and research topic. The coding frame was refined through discussion. Complete coding of the dataset and subsequent thematic analysis was conducted by the principal researcher. To minimise potential coding bias due to researcher familiarity with the interview topic and personal engagement with participants, coding and emerging themes were discussed at length with the remaining authors who possessed extensive knowledge in health psychology and postgraduate qualifications in behavioural science. All researchers involved with this study were female. An approach to analysis (Steps 6 – 8; see Table 3.2) was adapted consistent with recommendations by Braun and Clarke (2013). Variations according to geographical location were identified using frequency analysis of codes.

Results

Sample Characteristics

Interviews were conducted with 13 men recently diagnosed with cancer (referred to as participants throughout) and eight female partners (one identifying as a carer)[9]. See Table 3.3 for sample characteristics. All participants were over 50 years of age (*M* = 68 years, range: 54 – 79 years) and a majority (92%) were currently in a relationship. Six resided in an urban area and seven in a rural area. Most partners were over 50 years of age (*M* = 62 years, range: 43 – 71 years). All participants identified as heterosexual. Ten participants had experienced a cancer diagnosis previously.

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[9] Partners were indirectly invited to participate in this study through providing information to the participant. Several participants did not wish to invite their partners to participate in an interview and one partner did not contact the principal researcher after receiving the study information.

Table 3.3.

Pseudonyms and sample characteristics

Participant	Age	Region	Diagnosis	Symptoms
P1	70	Urban	Melanoma	Change in mole
P2	68	Rural	Unknown	Lump (throat)
P3	79	Rural	Throat cancer	Lump (throat)
P4	61	Rural	Prostate cancer	Fatigue[a]
P5	61	Rural	Lung cancer	Cough
P6	67	Rural	Bowel cancer & Hodgkins Lymphoma	Taste & vomiting
P7	54	Urban	Melanoma	Change in mole[a]
P8	74	Urban	Secondary Bowel Cancer	Cough
P9	79	Urban	Melanoma	Change in mole[b]
P10	68	Rural	Prostate cancer	Urinary flow
P11	59	Urban	Prostate cancer	N/A
P12	73	Rural	Prostate cancer	N/A
P13	75	Urban	Non-melanoma skin cancer	Skin change

[a] Symptom noticed by spouse.
[b] Symptom noticed by health professional.

Patient Intervals

Nine participants (69%) actively sought help for symptoms. Four participants (31%) reported they had not noticed any cancer symptoms prior to diagnosis, and were diagnosed by means of prostate-specific antigen test (*n* = 3) or skin cancer check (*n* = 1). Participants' help-seeking intervals were difficult to differentiate from appraisal intervals, thus patient intervals are reported. It should be noted that these time periods are an estimate. As expected, the longer a patient interval the more imprecise the recall appeared to be (Scott & Walter, 2010).

Patient intervals ranged from four days to 12 months among participants who actively sought help (*n* = 9). Three participants were classified as “prompt” help-seekers because they had visited a doctor within 2 weeks (Quaife et al., 2014) of noticing a lump; a change in a mole; and a change in taste (with associated vomiting). One of these participants (changed mole) had a pre-arranged GP appointment, and believed he would not have otherwise sought medical advice. Six participants delayed seeking help for symptoms for more than two weeks, with delays ranging from approximately 4 weeks to 12 months. The majority of participants delayed seeking help, with no difference between participants residing in urban and rural areas.

Validation of patient intervals was possible for six participants who sought help for cancer symptoms. Four recollections were validated by partners, with minor differences reported for one couple dyad, i.e., small differences in the recollection of the exact date and the patient interval (three days difference). For the two intervals that were not confirmed by partners, lack of disclosure appeared to influence recollections. One participant did not disclose the symptom (lump in throat) to his partner initially and his recollected patient interval was longer (5 weeks) in comparison to his partner’s (less than 1 week). The partner of a participant who experienced a new dry cough believed he had not experienced any symptoms and that it had been detected at a general check-up. She also commented, “*He keeps a lot to his chest*.” In contrast, the participant reported that his wife was aware of the cough and had encouraged him to seek medical advice. It was not clear whether he had disclosed the purpose of his GP appointment.

Thematic Synthesis

Five key themes and one subtheme were identified in the data (see Figure 3.1 for thematic map). The overarching theme was the influence of symptom factors, including symptom knowledge, experience, and attribution. Other key themes included, traditional masculine norms (subtheme: women’s health-related responsibilities), level of concern, conflicting responsibilities and difficulty with access, and trust in medical professionals. Thematic variations according to geographical location are addressed within themes. Exemplar data are reported within the synthesis; additional empirical data are reported in Table 3.4.

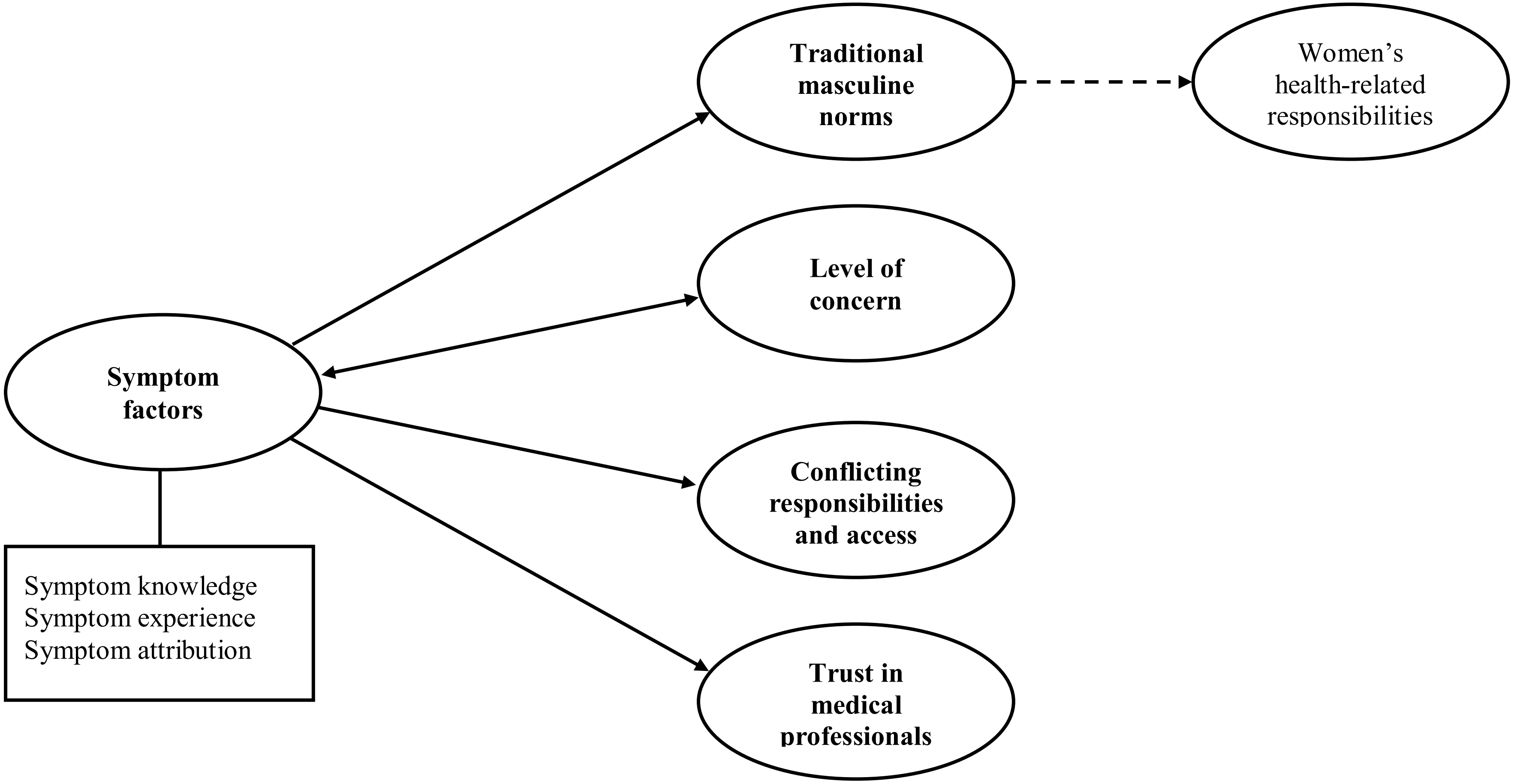

Figure 3.1. Final thematic map. A solid arrow indicates a relationship between the overarching theme and other main themes; a bi-directional solid arrows indicate a relationship functioning in two directions; a dotted arrows indicates a relationship between a theme and a subtheme. Visual mapping approach adapted from "Successful qualitative research: A practical guide for beginners," by V. Braun and V. Clarke, © 2013 by SAGE.

Table 3.4.

Empirical data from interviews according to themes

Theme	Illustrative data
Theme 1: *“I thought it was something else”*: Symptom knowledge, experience, and attribution	Symptom knowledge: *I knew a little bit, you know, you see things on the television. I mean, I didn't know a lot, but I knew a little bit that they can get darker and sort of look a bit strange and this, that and the other. (P7, Melanoma)* *I knew that sores that don't heal need to be looked at, I did have that general knowledge. (P13, Non-melanoma skin cancer)* *He doesn't have any perception of how his body works and what sort of things can happen. (P6 partner)* Symptom attribution: *Again, it was all … coming from the fact that cancer has been sort of in the foremost of my mind. (P1, Melanoma)* *I just knew it was cancer, mate, I just knew it, eh. The doctor told me it was there, and I knew it was there. Hoping to Christ it wasn't but it was. (P2, unknown diagnosis)* *Well, it just sort of … it was just one of those … a funny thing, you know, like if you had a little virus or, you know, you were getting a cold. That's all I felt when it happened. (P6, Bowel cancer and Hodgkin Lymphoma)* Symptom experience:

	…but it healed, and it was still a mole. And then I knocked it again later on, and it bled, and then it healed. (P1, Melanoma) *That was probably one of the reasons I followed thing up because I seemed to be getting up more frequently in the night time to go to the toilet, and ah yeah, and the flow was slowing down. (P10, Prostate cancer)* *He didn't have any phlegm or anything, it was just a tickly annoying cough. (P5 partner)*
Theme 2: *"If I can't do it on my own, I won't do it":* Traditional masculine norms	Traditional masculine norms: *I think it's a man thing. I'm not sure. I think… when I look back at my medical history I know that I should have done things a lot sooner rather than delay them. (P1, Melanoma)* *Not my masculinity, but it made me feel that I'm not that invincible … I'm vulnerable. I'm vulnerable to everything else that people sometimes get, you know. (P2, unknown diagnosis)* *Probably, probably that bloody man-thing I suppose, you know. I dunno. You keep pushing, pushing and pushing, do this, do that... Dunno. She said to me, "I've been telling you!" (P12, Prostate cancer)* *Being sick was weak, you know; it's only women. (P4 partner)* Societal change: *Most men have at the back of their mind that they're the breadwinner, you know, because there wasn't very many married women that worked in those days, you know, but it's a lot different now, you know. (P12, Prostate cancer)*

	I think years ago that some women would ignore things. I think of my mother and my mother was one case in particular, she ignored things and that proved her undoing and she finished up with breast cancer and she just ignored it, but I've got a feeling now this generation wouldn't ignore it. (P10, Prostate cancer)
Subtheme: *“I was lucky, I had someone pushing me to go”*: Women’s health-related responsibilities	Gender differences in health: *I think that ladies are stronger, to cope with it I think, without a doubt, and I think men think it's going to be okay, that it will go away, where ladies get it fixed. Yeah, go and get it fixed, or get the treatment started. And I think men delay and pussyfoot around and, yeah. (P7, Melanoma)* *I've noticed with [wife’s name], she'll tend to send the dogs to the vet or send the kids to the doctor for what I regard as trivial things and I must admit they have always been trivial but I guess there's always that 1 in a 100 that isn't trivial and that's, you know, blokes probably wouldn't go, feel that had to go to the doctor at the drop of a hat where probably women are more concerned about that. (P11, Prostate cancer)* Women’s family and health responsibilities: *She made me go to the doctors. (P4, Prostate cancer)* *And then everything goes wrong and the woman's got to fix it up. (P4 partner)* *She said, "Go and see the doctor, maybe he can give you something for it", you know. (P8, Secondary bowel cancer)*

	I was lucky, I had someone pushing me to go. (P7, Melanoma)
Theme 3: *"She'll be right"*: Level of concern	Emotions: *Worried in as much as that I'm thinking, well, this has got to come off, but the more it changed the more that thought was there. (P1, Melanoma)* *Yes. Yes, because I knew something bad was likely to happen, yeah. (P13, Non-melanoma skin cancer, referring to concerns about seeing a doctor)* *Probably too frightened to know what they … too frightened to learn that they could have something really wrong with them I think. (P2 partner)* Optimism: *I thought it might go away, but it didn't. (P2, unknown diagnosis)* *Oh, it comes by itself, it'll go by itself. (P4 partner, referring to P4's attitude)* *It's just an odd thing that you weren't well, and you would fight it off, but it didn't go that way. (P6, Bowel cancer and Hodgkin Lymphoma)*
Theme 4: *"I'll get to it a little bit later"*: Conflicting	Conflicting responsibilities: *The only thing that might have held that up, we have a spate of things around that time in my life of a grandson's birthday, um... (P13, Non-melanoma skin cancer)*

responsibilities and access	*I'm coordinator out at the [Gaol] up at home - it's a museum – and um, I was putting a lot of time into that, you know, and it just sort of didn't cross my mind. (P12, Prostate cancer)* Minimising wasted time: *I usually take a list in with me and, yeah, "Is there anything else on your list?" (P5, Lung Cancer)* *Yeah, I use the internet quite a lot, but I don't think you should do that because it frightens you. (P8, Secondary bowel cancer)* Access: *The only problem at [home town] is that we've only got one doctor that's really much good. They have… she's not there all the week, but they do have others coming up from [nearby town], and to get an appointment there is a problem. (P3, Throat cancer)*
Theme 5: *"Best get it fixed by the doctors in White coats"*: Trust in medical professionals	Trust: *But as a GP she is a good GP, she's incredible. She will niggle and chase things up, you know. (P5, Lung Cancer)* *So I'm really in their hands. This man, he seems to have an ability to see a melanoma from several paces but, I don't know. (P13, Non-melanoma skin cancer)*

Theme 1: "I thought it was something else": Symptom knowledge, experience, and attribution. The most prominent theme identified in the data described the limited nature of participant knowledge about symptoms, their symptom experience, and symptom attribution. Participants appeared to have limited knowledge of common cancer symptoms, with the exception of skin cancer symptoms. Several participants noted they had no knowledge of cancer warning signs: "*I didn't have much idea on what symptoms you had because, you know, you hear about people with skin cancers where you've got a mark or a blemish on there, which you have a look at, but I didn't ... I've never realised ... some people say that they've had a pain, you know, they've had a pain somewhere, or you know, and that didn't get better." (P6, Bowel cancer and Hodgkin Lymphoma).* One partner agreed that her husband had limited health knowledge: *"He doesn't have any perception of how his body works and what sort of things can happen." (P6 partner).* This limited knowledge may perhaps be a function of conformity to dominant masculine norms, in which men are reluctant to perceive themselves as vulnerable to health issues (Courtenay, 2000). One participant reflected that men do not have the same level of health knowledge as women, and followed on that men do not want the knowledge: "*I think we just don't want the problem or we don't want the knowledge, and, yeah, "Oh, it'll be right." But we're just not going to be alright with cancer." (P7, Melanoma).*

Potentially as a result of limited cancer knowledge, attributing the cause of a symptom was often challenging for participants. Ten participants experienced a symptom that was either noticed by themselves ($n = 8$) or their partner ($n = 2$). Some participants thought their bodily change might be a warning sign of cancer, but many were uncertain. One man who experienced a new dry cough for roughly five to six weeks before seeking medical advice explained that he "*always knew there was a chance*" of cancer. He had described a history of exposure to and concern about asbestos. However, this participant also indicated he thought the cough he was experiencing "*can't be much*;" a belief supported by his partner: "*At the time it was just a cough. If it's still there when I go to the doctors I'll tell her about it, but it wasn't… I wasn't in pain or wasn't, you know…" (P5, Lung cancer).*

Symptom experience was identified as important within participants' accounts of help-seeking. Participants who delayed help-seeking often perceived a symptom to be mild (e.g., not bothersome or causing pain) and/or experienced it intermittently: "*I only knew it was there when I went to touch the thing, that's about it, but otherwise it didn't affect my health in any way, you know, not at all." (P2, unknown diagnosis).* Participants explained they sought help for symptoms if they changed, were perceived to be more severe, or were prolonged: "*I was aware that it had changed in its appearance. It looked more like a burn blister than a mole." (P1, Melanoma).*

Theme 2: "If I can't do it on my own, I won't do it": Traditional masculine norms. Another main theme captured participants' beliefs about traditional masculine norms. Masculine norms were outlined in the coding frame according to masculine role socialisation models (Addis & Mahalik, 2003; Courtenay, 2000), and included the importance of appearing strong and tough, being emotionally in control or stoic, preferring self-reliance, believing themselves invulnerable to disease, inexpressiveness and a preference for privacy, as well as a focus on being successful and powerful. Traditional masculine norms were identified within many participants' experiences of seeking help for cancer symptoms and health issues: "*True, I'm a male chauvinist as far as that's concerned. You know, I won't ask directions, I'm that sort of person. If I can't do it on my own I won't do it, and it wasn't until I got really ill that I realised that, you know, you're an idiot, you know, there's people there that can help you." (P8, Secondary bowel cancer)*. Although some participants openly acknowledged the importance of masculinity, for others the influence was identified through reported behaviours associated with aforementioned traditional masculine norms. These behaviours included: a failure to disclose symptom worries to a partner or others, a preference for self-reliance (e.g., self-monitoring and medication) rather than seeking assistance, a belief in being healthy or never getting sick, as well as a commitment to battling through symptoms by ignoring them or distracting themselves. Five partners also suggested that masculine norms (e.g., lack of disclosure, stoicism, a belief in illness as weakness) were barriers to men's medical help-seeking: "*He's a boy and they're supposed to be stoic and not be bothered by little things, but it's the little things you've got to keep an eye on." (P9, partner).*

However, many participants also discussed societal changes in relation to masculinity, whereby they believed that pressure to conform to a macho ideal was more prevalent in their fathers' generation, and the pressure was reduced for men younger than themselves: "*I think it's because "men don't cry", that sort of attitude we were brought up with, although I do, often. But we were brought up with that. You know, you fall over, you get up and carry on; that was the attitude we were brought up with. I think it's less so now in modern society. I think boys are not supposed to be so macho, as they were in my day." (P8, Secondary bowel cancer).* The data indicated that while traditional attitudes towards gender and help-seeking might still be prevalent in older populations, this factor should not be generalised to younger populations.

Several participants perceived traditional masculine norms (e.g., self-reliance) to be pronounced in rural areas: "*It can be a pretty blokey thing working on the land, there's lot of physical work and stuff involved and it is insular and remote often, you know, so you know, they're used to fixing up their own tractors and doing all that sort of stuff for themselves and I think they probably almost view medicine the same way, "I'll fix this up myself"." (P11, Prostate cancer).* One rural participant believed both of his parents delayed or avoided seeking medical advice. This may suggest a generational rather than a gendered change, or a preference for self-reliance commonly found in rural areas. A frequency analysis of the data indicated no differences in the endorsement of traditional masculine norms or the influence of norms between rural and urban participants in this study.

Subtheme: "I was lucky, I had someone pushing me to go": Women's health-related responsibilities. A subtheme identified within traditional masculine norms was the importance of social support and women's responsibilities for family health. Many participants referenced gendered differences in health-related help-seeking; they believed women are more aware of health issues, more proactive, promptly seek medical advice, and are in a better position to take care of their health due to their broader focus on responsibilities for health within the family: "*But she was always one for making those women's decisions about ... because it's family as well, you've got the responsibility; the children and their health, so yeah, you can't pussyfoot around and, you know, make ... procrastinate, you can't delay. So I think maybe the women are in a better decision-making position." (P1, Melanoma).*

A pattern was identified linking perceived gender differences in health with a reliance on partners for assistance with health matters, highlighting the health-related responsibilities of women. Among participants who were symptomatic, half indicated they had sought informal support from their partner when they first noticed a symptom. Most participants indicated they received instrumental social support from their partner who arranged appointments with healthcare professionals or provided advice about medical help-seeking: "*And sometimes the decisions need to be made by the support base to make sure things at least get on, you know, get started, to be dealt with." (P1, Melanoma).* Almost all partners confirmed providing this social support: "*So he's somebody who doesn't really take a lot of notice of symptoms and things and tends to rely on me for everything, to make decisions and to identify things and do something about it." (P6 partner).*

Theme 3: "She'll be right": Level of concern. Men's accounts of help-seeking often included reference to their level of concern. Two participants who delayed help-seeking discussed a low level of concern about their symptoms: "*Yeah, well, I was pretty slow to react. No, I wasn't too concerned about it." (P10, Prostate cancer).* As symptoms changed over time, concern increased and medical help-seeking became more important. A moderate to high level of negative emotion (e.g., concern, worry, fear) within accounts of help-seeking was paradoxically referenced by both those who had sought medical advice promptly and those who had delayed. This is consistent with the Yerkes-Dodson law (Yerkes & Dodson, 1908), in which a moderate level of arousal is required for action.

Participants who delayed seeking help often expressed optimism about symptoms; believing that symptoms come and go by themselves without action. They commented that men are generally optimistic when it comes to health issues: "*I think men think it's going to be okay, that it will go away." (P7, Melanoma).* Optimism regarding symptoms was predominantly a feature of rural participants' accounts of help-seeking: "*Always had an attitude; it come by itself, it'll go by itself." (P4, Prostate cancer).* This finding was validated by two partners. For one rural participant who experienced a new lump, his wife also indicated being optimistic about his symptom: "*He said he had a bit of a lump on his neck and, and I said ... because sometimes your glands go up and down. I said, "It might just go away"." (P2 partner).* Several rural participants also noted a slower paced life and 'laid back' attitude within rural areas: *"It's a lot slower pace; you don't have to rush to do anything." (P5, Lung Cancer).* These themes rarely featured in urban participants' accounts of help-seeking. This pattern is consistent with health beliefs and attitudes differing between men from urban and rural areas.

Theme 4: "I'll get to it a little bit later": Conflicting responsibilities and difficulty with access. Participants who delayed help-seeking commonly spoke of conflicting responsibilities and competing demands within their accounts of help-seeking. For instance, family commitments, other medical issues, travel, volunteering, and work were sometimes prioritised over seeking help for medical concerns: "*It was something that I was very well aware of that needed attention. But did I put top priority on it? I think I was travelling a bit and thinking that I'll get to it a little bit later." (P1, Melanoma).* There was a tendency for participants to seek medical advice in ways that were designed to minimise time lost to other activities. For example, participants reported seeking professional medical advice when multiple health issues needed attention or at a pre-arranged appointment: "*I think I probably mentioned to the doctor the next time I went to see him for some other reason, it might have been to do with, I don't know, a flu shot or something." (P10, Prostate cancer).* Several participants reported seeking medical advice from the internet or a relevant information source in the first instance.

Several rural participants noted greater difficulty in accessing professional medical advice: "*Well, there's only ... the problem is in the country, you might have to wait for a while." (P5, Lung cancer).* A frequency analysis of the data indicated that rural participants more commonly discussed access issues than urban participants, confirming the proposition that access to professional medical advice can be more restricted in rural areas. Access was particularly an issue during the holiday season: "*It was at a time when I could not go and see the doctor straightaway because the medical centre there had more or less closed down for Christmas." (P3, Throat cancer).* Moreover, two participants discussed the increased inconvenience of help-seeking for farmers: *"Well, for a farmer it's a bit of a difficulty. Because a lot of the fellow Rotary members were farmers and they've got to ... to come in from a farm to a doctor is a damn nuisance." (P3, Throat cancer).* However, it is important to note that no farmers participated in this study.

Theme 5: "Best get it fixed by the doctors in White coats": Trust in medical professionals. The final theme captured the extent to which participants' trusted healthcare professionals: "*I won't look at that on the Internet. I only believe what the doctors and nurses are telling me, I don't believe that thing. I like to get my information from word of mouth, eh." (P2, unknown diagnosis).* Trust in health professionals was expressed by both those who had sought medical advice promptly and those who had delayed. This suggests that while trust is important for medical help-seeking, other variables may play a role in delaying help-seeking. It should be noted that participants were either in treatment or had recently completed treatment at the time of the interview, which may have influenced the degree of trust in medical professionals they expressed, i.e., trust may have been established after treatment, rather than before help-seeking.

Discussion

This study investigated men's experiences of help-seeking for cancer symptoms, with a focus on variation between men from urban and rural Australia. Patient intervals were comparable across urban and rural groups, with the majority of both groups delaying help-seeking. However, experiences of medical help-seeking appeared to differ in two important ways. First, rural participants more commonly described issues with access to professional medical advice. This is to be expected considering the lower prevalence of GPs in rural areas in Australia (AIHW, 2005), and is in line with broader medical help-seeking literature (Schlichthorst et al., 2016)[10]. Second, optimism regarding symptoms was a noteworthy barrier to help-seeking for rural participants. This is consistent with previous research that found aspects of rural identity, including optimism, stoicism, and machismo, to contribute to

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[10] This finding is also in accordance with a recent international review on cancer survival in rural communities (Carriere et al., 2018). The review highlighted that rural areas worldwide have fewer healthcare professionals and cancer services (i.e., diagnostic and treatment services), and that issues with transport may influence help-seeking decisions.

men’s delayed help-seeking (Emery et al., 2013). However, the present study’s findings were also unique in that there were no differences identified in the endorsement of masculine norms (including stoicism) or the influence of norms across urban and rural accounts of help-seeking, suggesting this factor may be influential regardless of area of residence.

The findings of the present study also provide new evidence from an Australian context, confirming the international relevance of factors previously identified from the wider literature (Fish et al., 2015). The overarching theme was the importance of symptom factors when seeking medical advice, including symptom knowledge, experience, and attribution. Participants appeared to have minimal knowledge of cancer symptoms and difficulty identifying the cause of their symptoms. This limited knowledge could be a consequence of dominant masculine norms and perceptions of invulnerability (Courtenay, 2000). It may also explain why cancer type and associated treatments did not appear to play an important role in men’s experiences. Consistent with the international literature supporting symptom perception as a key barrier to men’s medical help-seeking (Braybrook et al., 2011; Fish et al., 2015; Yousaf et al., 2015), participants who delayed help-seeking often perceived their symptoms to be mild or experienced symptoms intermittently, and sought advice only when symptoms progressed in severity or were experienced for an extended period of time. These findings highlight the importance of interventions aimed at increasing knowledge about symptoms and appropriate help-seeking timeframes, such as the “Be Clear on Cancer” campaigns in the UK (Power & Wardle, 2015).

Linkages were identified between traditional masculine norms and delayed help-seeking. This finding was validated by partners, and is in line with wider research (Fish et al., 2015), and masculine role socialisation models (Addis & Mahalik, 2003; Courtenay, 2000). However, many participants in this study also perceived a societal shift in relation to masculinity and help-seeking. Participants believed that pressure to conform to a traditional masculine ideal has reduced over time and that younger men may feel greater freedom in seeking medical advice. Preliminary evidence suggests that younger Australian men (18 – 25 years) support relaxed masculine norms, which has been theorised to positively influence men's health-related help-seeking behaviour (Drummond, Filiault, Anderson, & Jeffries, 2015). However, this is in contrast to international research that has found young men to delay health-related help-seeking due to masculine norms (Carpentier et al., 2011; O'Brien et al., 2005) and stability in the endorsement of masculine traits over time (K. Donnelly & Twenge, 2016). Future research exploring changing gender norms and attitudes towards help-seeking among young Australian men would be valuable.

Women were commonly perceived to be more proactive in regards to health and more likely to seek medical advice promptly. Moreover, female partners were often consulted about health issues before medical professionals and were sometimes relied upon for instrumental support. This supports previous international research findings that women may play an important intermediary role in men's help-seeking (Fish et al., 2015), and the argument that relationships can be important for promoting early detection behaviours (Wang, Wilson, Stewart, & Hollenbeak, 2011). It also highlights the ongoing division of labour, unpaid work in the home, and pressure for women to take responsibility for men's health within the family unit (Reczek & Umberson, 2012; Roy, 2008). Nevertheless, gender role norms may only partly account for this recurring pattern of results. Reczek and Umberson (2012) found that "specialised health behaviour work" is commonly performed by one partner in straight, lesbian, and gay relationships. This may suggest that one individual, regardless of gender, predominantly takes responsibility for health in intimate relationships. Future research into men's help-seeking for cancer symptoms may include same-sex couples to provide further insight into this relationship.

Conflicting responsibilities were commonly referenced within men's accounts of help-seeking, consistent with the wider help-seeking literature sampling men and women (Fish et al., 2015; L. K. Smith et al., 2005). Family commitments, other medical issues, travel, and work were sometimes prioritised over seeking help for cancer symptoms. Participants appeared to avoid "wasting time" by seeking medical advice for multiple issues at one time or at a pre-arranged appointment. It was clear, however, that help-seeking with clinicians was preferred over other forms of help-seeking (e.g., talking to a pharmacist), with a high level of trust in health professionals expressed by a majority of participants.

Future Directions

The findings of this study are importantly comparable to themes emerging from international research (Fish et al., 2015). This suggests a broad international approach to improving men's early detection practices and help-seeking behaviour may be feasible. Cancer prevention interventions could potentially address cancer knowledge, unrealistic optimism, and gender role norms that appear to influence help-seeking behaviour. However, Australian and international research remains predominantly descriptive, and the predictive strength of emerging factors are unknown (Fish et al., 2015; Scott & Walter, 2010). An international comparative quantitative study would be useful to investigate the relative predictive strength of these factors and to further test generalisability. An international comparative study is also likely to highlight the influence of different healthcare systems on men's help-seeking behaviour.

Limitations

Although qualitative research is not intended to be generalised, the results of this study should be considered in relation to the sample. Most participants in this study had a partner and many indicated they received social support. As such, results may not apply to single men who might experience additional barriers (e.g., reduced instrumental and information support) or attitudinal differences. Additionally, a majority of participants in this study reported a cancer history, which may result in greater symptom and treatment knowledge, as well as more optimistic feelings about cancer and help-seeking. However, these participants commonly described or demonstrated limited general cancer knowledge, and reported delays in help-seeking, which is likely explained by the type of cancer they previously experienced: eight of ten participants had experienced skin cancer. Skin cancer was not considered to be as serious to participants, compared to other cancers. This is likely due to the commonality of basal cell carcinomas, which are more common and slow growing compared to melanoma and squamous cell carcinomas. Consequently, previous diagnoses did not meaningfully influence the findings of this study. Finally, a majority of participants delayed help-seeking, but the delays could be considered moderate. This sample may have experienced fewer or different barriers to help-seeking than men within the community who delay for longer periods or who would not seek help. For example, fear, embarrassment, and shame rarely featured in participants' accounts, and may be important barriers to help-seeking for men who would not seek help or delay for longer intervals.

Accurate recall of help-seeking can be challenging for participants, particularly for those with long patient intervals, mild symptoms, or a stressful diagnosis (Scott & Walter, 2010). As expected, some participants appeared to have difficulty recalling the early stages of their cancer experience; instead preferring to focus on the diagnostic and treatment phase. Factors that influenced help-seeking behaviour may not have been recalled accurately or may have been considered irrelevant and therefore not mentioned by participants. Many participants also reported a change in identity as a result of their cancer experience, which may have influenced recall. A strength of this study is the calendar land-marking technique (Mills et al., 2014) and verification procedures used to address these limitations.

The female gender of the principal interviewer may have influenced the level of comfort participants felt when discussing their health, bodily changes, and masculinity. One recent qualitative study found differences in how men discuss masculinity depending on the gender of the interviewer, such that men may be more likely to endorse masculine norms with a male interviewer and emphasise a societal shift in gender role norms with a female interviewer (Sallee & Harris, 2011). This is important to note considering the results of this study. While the results may have differed if a male interviewer had been employed, using a female interviewer allowed participants the opportunity to challenge stereotypes and less pressure to adhere to masculine norms (Sallee & Harris, 2011).

Conclusion

This study investigated variability across men’s help-seeking for cancer symptoms. Men’s accounts highlighted that psychosocial barriers to medical help-seeking can vary across contexts. This implies that targeted cancer prevention interventions may be required to improve help-seeking behaviour. Follow-up quantitative research is required to confirm results and inform targeted interventions to improve men’s medical help-seeking. Future research should further explore variation between men, potentially across countries, and test the predictive strength of psychosocial factors associated with help-seeking.

Chapter Summary

Retrospective semi-structured interviews were undertaken with men recently diagnosed with cancer in order to explore Australian men's experiences of help-seeking for cancer symptoms, as well as to highlight potential within-gender variation according to area of residence. Five main themes and one subtheme were identified in the data. In line with the findings of the systematic review reported in Chapter 2 (Fish et al., 2015), the overarching theme was the influence of symptom factors (including knowledge, experience, and attribution). Other important themes were: beliefs about traditional masculine norms, level of concern, conflicting responsibilities, difficulties with access, and trust in medical professionals. Even though patient intervals were comparable across men residing in urban and rural Australia, experiences of seeking medical advice from healthcare professionals appeared notably different between the two groups. Men from rural Australia reported greater difficulty with accessing help, and also appeared more optimistic about symptoms, believing symptoms would subside without treatment.

As outlined in the limitations section, however, the results of this study should be considered in relation to the sample. For example, several participants reported they were not symptomatic at diagnosis. These participants experienced a different pathway to cancer treatment, and therefore, patient intervals could not be calculated. Moreover, a number of interview prompts (see Table 3.1) could not be addressed. Asymptomatic participants were retained in the study and included in analyses because they provided further insight into men's help-seeking for cancer symptoms and health issues generally. This approach has been used in another study on men's help-seeking for colorectal cancer (Oberoi et al., 2016).

Moreover, owing to the descriptive, qualitative approach of the study, the predictive strength and relative importance of psychosocial factors could not be determined. A follow-up empirical study was required to examine the relative effect size of psychosocial influences on men’s help-seeking for cancer symptoms. In addition to this, the psychosocial aspects identified in Studies 1 (Chapter 2; Fish et al., 2015) and 2 (Chapter 3; Fish et al., 2019) appear largely consistent with constructs included in social cognitive models of behaviour (Ajzen, 1991; Fishbein & Ajzen, 2010; Rosenstock, 1974). With consideration to the findings and suggestions of the systematic review reported in Chapter 2 (Fish et al., 2015), the next study was developed to incorporate a strong theoretical grounding to improve the explanatory value of the findings, identify a pathway of influence, and, potentially, inform the design of effective interventions. Accordingly, the next chapter presents a theory-driven study, testing predictors of Australian men’s intentions to seek help for cancer symptoms.

In addition to this, the themes identified in the qualitative study of the current chapter appear to be comparable to the findings of the systematic review reported in Chapter 2, which included studies conducted in a number of international jurisdictions (Fish et al., 2015). This may indicate that psychosocial influences on men’s help-seeking for cancer symptoms are generalisable across countries. To confirm this, follow-up empirical comparisons are required to determine whether psychosocial influences on men’s help-seeking are invariant across jurisdictions. Accordingly, Chapter 5 of this thesis presents a study which tests the generalisability of psychosocial influences on men’s anticipated help-seeking for cancer symptoms between geographical locations (men from Australia and the UK).

Therefore, in line with the recommendations for future research outlined in Study 1 (Chapter 2; Fish et al., 2015), and the findings of Study 2 (Chapter 3; Fish et al., 2019), the next two chapters of this thesis are designed to statistically test the predictive strength and relative importance of psychosocial influences on help-seeking behaviour, apply and test relevant health behaviour models, and further investigate variation in men’s help-seeking for cancer symptoms. Moreover, with consideration to the strong themes on social norms and masculinity found in Studies 1 (Chapter 2; Fish et al., 2015) and 2 (Chapter 3; Fish et al., 2019), the next two chapters aim to statistically test the predictive power of social norms and traditional masculine ideals on men’s anticipated help-seeking for cancer symptoms.

Chapter Four: Study 3 – What Predicts Men's Intentions to Seek Help for Cancer Symptoms? A Comparison of the Validity of the Theory of Planned Behaviour and the Health Belief Model

Introduction

Interviews undertaken with Australian men recently diagnosed with cancer in Study 2 (Chapter 3; Fish et al., 2019) highlighted the extent to which decisions to seek help for symptoms were affected by perceived social influence, as well as the health and behavioural beliefs commonly incorporated in social cognitive models of health behaviour. Although the descriptive qualitative approach used within the previous study offered insight into influences on behaviour, the relative importance of social cognitive influences could not be established. Evidence regarding the relative importance of social cognitive influences is vital to the identification of strategies likely to impact intention to seek help, and in turn, for the design of successful early detection interventions (Scott & Walter, 2010). Consequently, a follow-up empirical study was conducted to examine further the relative importance of specific social cognitive variables in the prediction of men's help-seeking for cancer symptoms.

Justification for this quantitative study is further substantiated by the findings of the systematic review reported in Chapter 2 (Fish et al., 2015). This highlighted that research into men's help-seeking for cancer symptoms has been largely atheoretical. Application of theory to behaviour can provide a framework to assist in understanding the influence of social cognitive predictive variables and serve to guide hypotheses and intervention design (Prochaska, Wright, & Velicer, 2008). Accordingly, the present study aimed to investigate the predictive capacity of two pertinent social cognitive models, widely applied to the prediction of health intentions and behaviours; the Theory of Planned Behaviour (TPB; Ajzen, 1991; Fishbein & Ajzen, 2010) and Health Belief Model (HBM; Rosenstock, 1974), for understanding men's help-seeking intentions.

Social Cognitive Models: Overview and Application to Help-Seeking

Research has demonstrated that both health enhancing and harming behaviours are influenced by a wide range of psychological factors including, motivation, self-efficacy, attitude to the required behaviour or disease, and health beliefs (Glanz & Bishop, 2010). In an attempt to explain health behaviours, potential predictors have been incorporated into theoretical models that hypothesise a pathway of influence (Glanz, Rimer, & Viswanath, 2008; Prochaska et al., 2008). Social cognitive models of behaviour propose that perceptions of situations make a significant contribution to explaining behaviour (Conner & Norman, 2005).

Social cognitive models provide a framework from which to understand and test determinants of men’s help-seeking behaviour. The research described in preceding chapters (Chapters 2 and 3; Fish et al., 2015, 2019) identified several psychosocial factors that are consistent with those described in these models. These include: social norms, perceived behavioural control, and health beliefs. The finding that these specific constructs influence men’s help-seeking for cancer symptoms highlights the potential applicability of both the TPB (Ajzen, 1991; Fishbein & Ajzen, 2010) and the HBM (Rosenstock, 1974), given that both models measure similar constructs.

Theory of Planned Behaviour. The TPB (Ajzen, 1991; Fishbein & Ajzen, 2010) defines behaviour as an outcome of a deliberative cognitive process (see Figure 4.1 for a diagram of the model). It was originally designed to predict social behaviours broadly (Conner & Sparks, 2005) and has been frequently used to explain health behaviour and guide the design of health promotion interventions (Glanz & Bishop, 2010). The theory proposes that behaviour is predicted by two proximal (i.e., directly related) determinants: intention to act (e.g., motivation, conscious decision) and perceived behavioural control (Ajzen, 1991; Fishbein & Ajzen, 2010). Intention to act is an essential characteristic of help-seeking behaviour, and one that differentiates it from help-*receiving* (Cornally & McCarthy, 2011) Perceived behavioural control refers to an individual's beliefs about how easy it is for them to perform the behaviour under consideration. The results of the interview study reported in Chapter 3 (Fish et al., 2019) highlighted that beliefs about difficulty with access and how easy it is to seek medical advice can influence help-seeking behaviour. Perceived behavioural control is theorised to predict behaviour directly (i.e., influence is via a direct pathway to the behaviour) and indirectly by interacting with intentions (i.e., influence is by an indirect link to intentions, which in turn, influence behaviour).

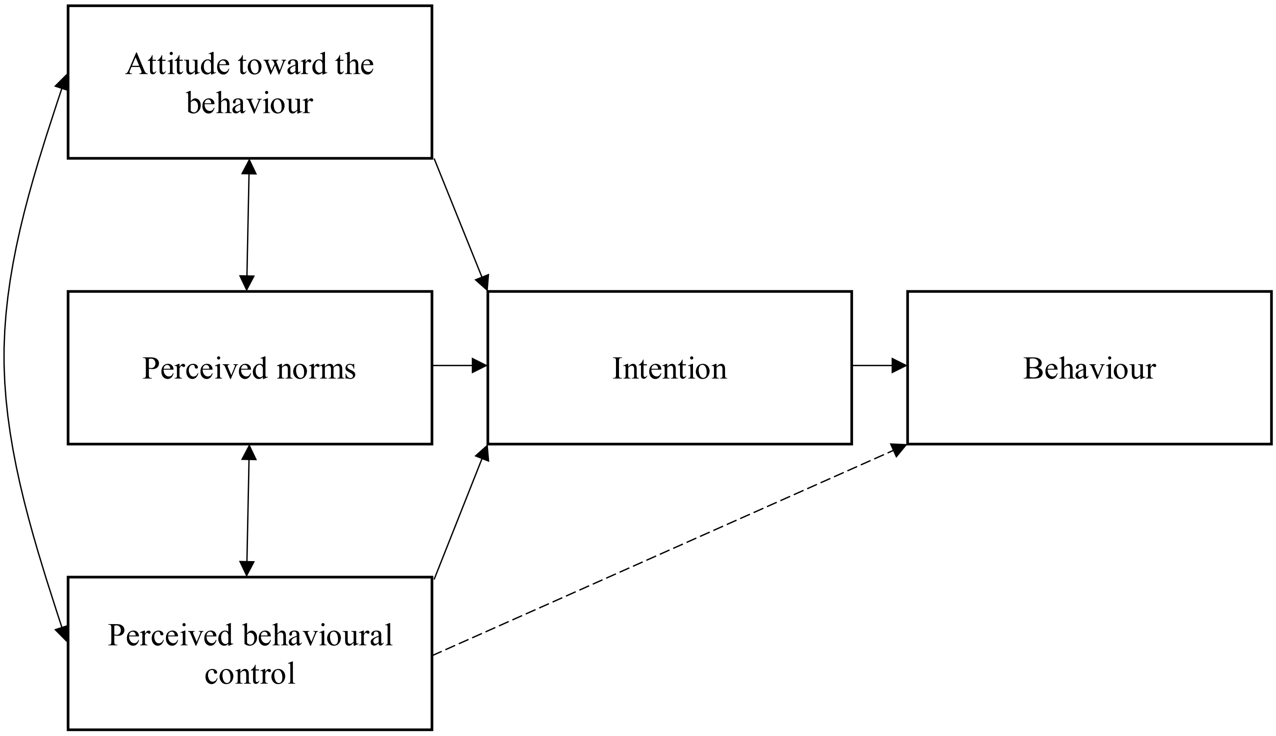

Figure 4.1. Adapted diagram of the Theory of Planned Behaviour. Adapted from "The theory of planned behaviour," by I. Ajzen, *Organizational Behavior and Human Decision Processes*, 50, 179-211, © Dec 1, 1991 by Elsevier. Adapted with permission from Elsevier.

Intentions are also influenced by two other determinants: an individual's attitude towards a behaviour, and perceived norms (Ajzen, 1991; Fishbein & Ajzen, 2010). An attitude refers to a favourable or unfavourable evaluation of a behaviour, which is determined by salient behavioural beliefs (i.e., beliefs about a specific behaviour, such as, "help-seeking for a cancer symptom would be a waste of time"). Perceived norms refer to social influences on behaviour, including injunctive and descriptive norms. Injunctive norms capture an individual's perceptions about whether significant individuals or groups think the individual should or should not perform a behaviour (e.g., whether a partner thinks they should seek help for cancer symptoms). Descriptive norms include perceptions about whether significant individuals or groups are or are not performing the behaviour themselves and whether it is normative to do so. The predictive strength of each determinant is hypothesised to vary across contexts and behaviours (Ajzen, 1991).

One large scale meta-analysis of the efficacy of the TPB identified 237 prospective tests of the model in 206 articles (McEachan, Conner, Taylor, & Lawton, 2011). The meta-analysis indicated that, as a whole, the model (i.e., attitude toward behaviour, perceived norms, and perceived behavioural control) explains 44.3% of variance in intention to behave in a certain way with regard to health behaviour, and 19.3% of the variance in actual behaviour. This demonstrates moderate to large effect sizes according to Cohen (1992). The strongest predictor of behavioural intention across studies was attitude toward the behaviour, followed by perceived behavioural control, and perceived norms respectively. Differences were observed in the predictive validity of the model between behaviours. For example the model explained the most variance for physical activity (23.9%) and dietary (21.2%) behaviours, and considerably less variance for safer sex (13.8%) and detection behaviours (15%; e.g., general health check, cervical screening with healthcare professional, breast self-examination).

The utility of the Theory of Planned Behaviour for explaining help seeking. Previous studies on men's help-seeking for cancer symptoms have not tested the utility of the TPB, however, two studies have applied the TPB to men's help-seeking for other health concerns (Hyde et al., 2016; J. P. Smith, Tran, & Thompson, 2008). Hyde et al. (2016) examined men's intentions to seek medical advice for sexual dysfunction using an adapted TPB model. The TPB variables included were: attitude towards help-seeking for sexual concerns, subjective norms, and perceived behavioural control. In addition to this, the study included measures of masculine beliefs and past sexual help-seeking. The study sampled 510 Australian prostate cancer survivors who reported at least mild erectile dysfunction and were on average 7.55 years (*SD* = 4.68 years) post-diagnosis. After controlling for socio-demographic characteristics, medical history, and masculine beliefs, the TPB explained a significant 23.1% of additional variance in intention to seek help for sexual concerns. In the final model (explaining 56.2% of variance in the outcome), level of education completed, past sexual help-seeking, masculine beliefs, attitude towards help-seeking for sexual concerns, and perceived norms were significant predictors of intention to seek help for sexual concerns. The strongest predictor of men's intentions to seek help for sexual concerns was perceived norms. There was also a trend for perceived behavioural control to predict intentions (*p* = .06), and the authors supported further research to investigate this construct.

J. P. Smith et al. (2008) also found preliminary support for the utility of the TPB model in explaining variance in men's intentions to seek psychological help. The TPB variables included were: attitude towards psychological help-seeking, and intention to seek psychological help. An additional measure of traditional masculine ideology was incorporated. The study sampled 307 undergraduate students from a university in the United States. Findings suggested that attitudes mediated the association between traditional masculine ideology and psychological help-seeking intentions, with the predictors explaining

29.6% of variance in psychological help-seeking intentions. Taken together, these two studies suggest that the TPB may be a useful model for highlighting a pathway of influence in men's help-seeking for health concerns.

Evidence from a study sampling women also suggests the TPB may be applicable to help-seeking for cancer symptoms. Hunter, Grunfeld, and Ramirez (2003) investigated the combined utility of the TPB with the self-regulation model (Leventhal, Leventhal, & Contrada, 1998) for explanation of women's intentions to seek help for breast cancer symptoms. This study sampled 546 women from the UK general population. In correlational and hierarchical multiple regression analyses, attitudes and perceived behavioural control were found to significantly predict help-seeking intention, but subjective norms did not. The TPB explained a significant 7% of additional variance in intention to seek help for breast cancer symptoms over the self-regulation model (22.1% of variance explained in Step 1 of regression analysis). Although these results are informative, the predictive strength of theoretical constructs is hypothesised to vary across contexts and behaviours (Ajzen, 1991). Therefore, it remains unknown how the predictive strength and relative importance of determinants may differ for Australian men's help-seeking for cancer symptoms.

Health Belief Model. Rosenstock's (1974) original version of the HBM proposed that health behaviours were predicted by an individual's health beliefs. Beliefs included were: perceived seriousness (or severity) of a health issue, personal susceptibility to a health threat, potential costs (or barriers) of performing the health behaviour designed to reduce the threat, and potential benefits of performing the behaviour (see Figure 4.2 for a diagram of the model). These determinants were thought to be influenced, in turn, by socio-demographic variables (e.g., age, gender) and psychological characteristics (e.g., personality).

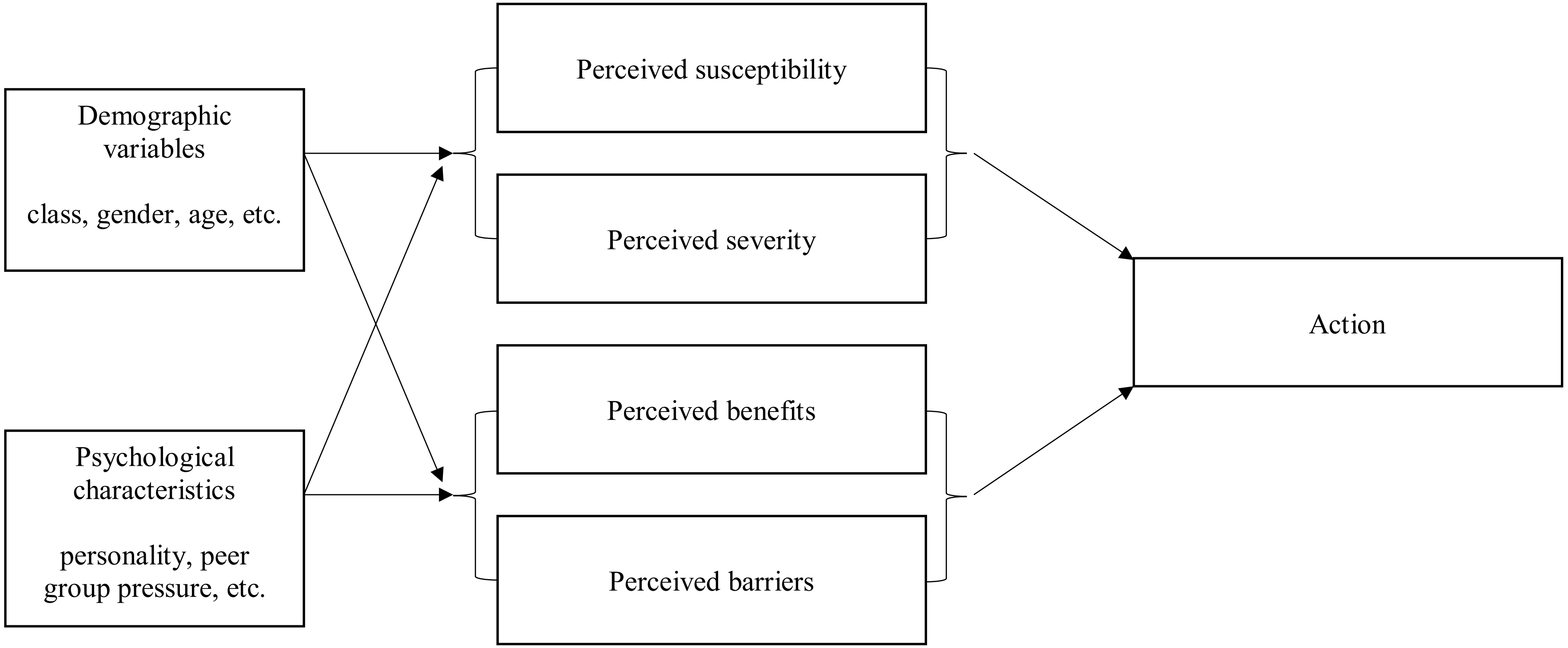

Figure 4.2. Adapted diagram of the Health Belief Model. Adapted from “Predicting health behaviour: Research and practice with social cognition models (2nd ed),” by M. Conner and P. Norman, © 2005. Reproduced with the kind permission of Open International Publishing Ltd. All rights reserved.

In contrast to the TPB, the HBM consists of both affective (perceived threat) and cognitive (evaluation of costs and benefits) influences on behaviour. In the context of help-seeking behaviour, the model would propose that an individual is likely to seek medical advice for a potential cancer symptom if they perceive cancer to be a serious threat to which they are susceptible, that the symptom is consistent with cancer, and that the benefits of help-seeking outweigh the potential costs.

Several reviews have been undertaken to examine the predictive validity of the HBM for a range of health behaviours (e.g., Carpenter, 2010; Harrison, Mullen, & Green, 1992; Janz & Becker, 1984). For example, Harrison et al. (1992) conducted a meta-analysis of the relationships between model constructs (i.e., susceptibility, severity, benefits, and barriers) and health behaviours (e.g., adherence to treatment regimen, self-examination, cancer screening), including 16 studies (retrospective and prospective; $N = 3515$). Relatively small, but significant, relationships were observed between each of the four HBM constructs and health behaviours overall. The largest average correlation was between barriers and health behaviours, followed by susceptibility, benefits, and severity respectively. More recently, Carpenter (2010) conducted a meta-analysis of the usefulness of the HBM with 18 longitudinal studies of various health behaviours (e.g., quit smoking, safe sex behaviour, cancer screening). Perceived benefits of and barriers to the behaviours were the strongest predictors, followed by the perceived severity of health outcome and perceived susceptibility to the health outcome respectively. The variance explained by the whole model in health behaviours generally was not examined within either meta-analysis.

The utility of the Health Belief Model for explaining help seeking. To the best of our knowledge, no studies have tested the utility of the HBM for explaining men's help-seeking for health concerns. However, one mixed-gender study has applied the HBM to visiting a doctor for general symptoms. Berkanovic, Telesky, and Reeder (1981) investigated the social psychological influences of seeking medical advice in a longitudinal study of 769 men and women who had experienced any symptom. The HBM variables included were: susceptibility to illness (i.e., perceived susceptibility), seriousness of illness (i.e., perceived severity), perceived efficacy of care (i.e., perceived benefits) and accessibility (i.e., perceived barriers). A range of other socio-demographic and social psychological measures were also included, as well as a measure of medical help-seeking behaviour. Preliminary correlations indicated that perceived susceptibility, efficacy of care, and seriousness of the illness were significantly associated with help-seeking behaviour. However, HBM variables were not significant predictors of the outcome in a hierarchical multiple regression including a variety of socio-demographic and social psychological variables. These results suggest that the HBM may not be an optimal model for predicting medical help-seeking behaviour generally, however, the utility of the HBM for explaining help-seeking for cancer symptoms remains unknown. Further research is required to determine how helpful the HBM might be for explaining Australian men's help-seeking for cancer symptoms specifically.

Comparison of the social cognitive models. The TPB and HBM consist of both overlapping and distinct components. First, there is some commonality across the constructs because both theories use an expectancy-value framework, in which behaviour is a function of the expectations (or beliefs) and the values of an individual (Brewer & Rimer, 2008). Behavioural evaluation (weighing of perceived benefits versus barriers) within the HBM is comparable to behavioural beliefs, which underlie attitudes towards the behaviour within the TPB model (Conner & Norman, 2005; Fishbein & Ajzen, 2010). Self-efficacy (Bandura, 1982) is also incorporated within both models, through perceived barriers within the HBM, and partially through perceived behavioural control in the TPB (Conner & Norman, 2005). There are also several important differences between the two models. The HBM includes measurement of affective variables by including perceived threat (perceived severity and susceptibility), whereas the TPB includes a social normative factor (i.e., perceived norms) (Conner & Norman, 2005). The HBM proposes that health belief constructs predict behaviour directly, and therefore the model does not include a key intermediate variable, such as intention (as is the case for TPB). However, it has been proposed that including an intention construct would likely improve the model (Conner & Norman, 2005), and therefore it was included in this study.

Comparing the utility of the TPB and HBM for explaining help seeking for cancer symptoms. The predictive utility of both the TPB and HBM has been tested across multiple behaviours, with the predictive success of the theories appearing to differ. Meta-analyses of individual theories and comparative reviews reveal greater empirical support for the TPB than the HBM (Carpenter, 2010; Norman & Conner, 2005). Although empirical studies directly comparing social cognitive theories remain relatively uncommon (Noar & Zimmerman, 2005), there is also some evidence from comparative studies for the greater predictive ability of the TPB compared to the HBM as a whole. For example, the TPB has been shown to predict greater variance in cervical cancer screening and breast self-exam intentions compared to the original HBM (Bish, Sutton, & Golombok, 2000; Garcia & Mann, 2003).

Previous studies on hypothetical and actual help-seeking for cancer symptoms have not directly compared the utility of the TPB and HBM, however, van Osch et al. (2007) examined the combined predictive power of social cognitive models (including aspects of the TPB and HBM) in a mixed-gender population. The study tested the utility of various aspects of the TPB and HBM for explaining timely medical help-seeking among a sample of 459 Dutch men and women aged 55 years or over. Constructs examined included: personal engagement, symptom knowledge, perceived susceptibility, perceived severity, personal experience with cancer, attitudes toward help-seeking, self-efficacy, intention to seek help for cancer symptoms, as well as timely anticipated medical help-seeking. Participants were asked to anticipate after what period of time they would seek help for 14 cancer symptoms. Data were recoded to reflect whether help-seeking time periods were appropriate according to clinical cut-off points used in the study (e.g., within 1 week for blood in stool vs within 4 weeks for changes in bowl habits), and summed. Results of a hierarchical multiple regression indicated that perceived advantages of help-seeking, self-efficacy (ability and difficulty), perceived susceptibility to cancer, and intention to seek help significantly predicted timely anticipated medical help-seeking in the final regression model (Step 4). This explained 26% of variance in the outcome. This study provides preliminary evidence that aspects within both the TPB and HBM are relevant to intentions to seek help for cancer symptoms. Nonetheless, the predictive power of individual specific theoretical models for explaining help-seeking for cancer symptoms remains unknown. Comparative research on the relative predictive power of theories is required to determine which variables, and potentially which theory, may be most useful for explaining help-seeking for cancer symptoms (Noar & Zimmerman, 2005; Weinstein, 1993).

Current Study

The purpose of this study was to test the predictive power of the TPB and the HBM for explaining men’s intentions to seek help for common cancer symptoms using a cross-sectional survey. Predictive power (one indicator of empirical adequacy) is an important criterion by which to evaluate theories, which is not restricted to longitudinal or experimental research methods (Prochaska et al., 2008). Predicting relationships between variables at one point in time provides important information about the usefulness of a theory in a specific context (Prochaska et al., 2008). In addition, the current study aimed to determine the relative contribution of the different constructs within the TPB and the HBM to the explanation of variance in self-reported help-seeking intention.

The cross-sectional survey design required a focus on intention to seek help rather than actual help-seeking behaviour. Notwithstanding evidence of a moderate association between intention and behaviour reported in previous reviews (e.g., Sheeran, 2002), and confirmed in a meta-analysis (Webb & Sheeran, 2006), intention is a likely necessary, although not sufficient, precondition for the enactment of one-off health behaviours. Consequently, confirming predictors of variance in intention to seek help for cancer symptoms is an important first step in understanding men's help-seeking behaviour.

Another issue considered in the development of this study was the potential influence of participants' previous experience of seeking medical advice for a cancer symptom on intention to seek help. Prior help-seeking experience for potential cancer symptoms has been shown to impact perceptions of health, and delay future medical help-seeking for symptoms consistent with cancer (e.g., Renzi et al., 2015; L. K. Smith et al., 2005; Walter et al., 2014). This would likely influence intentions to seek help for future cancer symptoms. Therefore, in order to ascertain the effects of the model constructs in isolation from prior help-seeking experience, and to avoid any potential confounding, the sample was restricted to men with no prior experience of cancer (as opposed to cancer survivors)[11].

In summary, research is required to determine which social cognitive theory of health-related decision-making may be most useful for explaining men's help-seeking for cancer symptoms. Separate and combined model testing were undertaken in this study to determine: a) the relative predictive power of the TPB and HBM for the prediction of intention to seek help for cancer symptoms among men, b) the potential overlap in the variance explained by the two models, and c) the most salient constructs within the TPB and HBM.

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[11] Participants were asked about their personal cancer history to confirm eligibility for participation, but were not asked about their previous help-seeking for cancer symptoms. It is acknowledged that the sample may still include men who had previously sought help for a potential cancer symptom without a subsequent cancer diagnosis.

Although previous research in other health domains and samples suggests that the TPB is a more useful model than the HBM in predicting health behaviours, as summarised above, there has been no prior research directly testing, nor comparing, the usefulness of the theories within the context of men's help-seeking for cancer symptoms to guide predictions. Certain aspects of both theories have been previously associated with men's help-seeking for cancer symptoms (Fish et al., 2015, 2019). Therefore, there were no predictions regarding which theory would explain the most variance. Instead, predictions were made regarding specific aspects of the models based on the findings of Study 2 (Chapter 3; Fish et al., 2019). It was expected that perceived norms, perceived behavioural control, and perceived barriers to help-seeking would be the strongest predictors of men's intentions to seek help for cancer symptoms, as opposed to other theory-derived constructs, including attitude towards help-seeking, perceived benefits of help-seeking, as well as perceived severity of and susceptibility to cancer.

Method

Procedure

A cross-sectional survey tested the separate and combined predictive power of variables included in the TPB and HBM for explaining intention to seek help for cancer symptoms in a sample of adult South Australian men. Ethics committee approval was provided by the Social and Behavioural Research Ethics Committee at Flinders University (Project Number 7078). Non-probability, self-selection sampling was used; South Australian adults (aged 18 years or older) were invited to complete an anonymous online survey. Only survey respondents who identified as male were included in the present study; however, data from female participants are reported separately in Study 4 (Chapter 5) of this thesis. Respondents who indicated a previous cancer history (*n* = 32) or reported that they looked up symptoms online while completing the survey (*n* = 5) were also excluded from the analysis of this study.

A number of community organisations and local councils in South Australia were approached to assist with recruitment by promoting the study to their members. Advertisements (see Appendix A) designed to recruit adult South Australians were posted at public spaces (i.e., community noticeboards), Flinders University, community organisations (e.g., Lions Clubs, Freemasons SA/NT, Southern Football League), and local councils (e.g., City of Playford, City of Charles Sturt; see Appendix B for full list of recruiting organisations/councils). Promotional information was shared through social media, emails to member lists (organisations and councils), and printed flyers. Although it was not a primary aim of this study to investigate differences between urban and rural men, the study was intentionally advertised through rural community avenues and organisations to allow for statistical comparisons. Moreover, community and university-based sampling were used to overcome the difficulty of recruiting men into psychological studies and to facilitate a sample more representative of the male population (Alto, McCullough, & Levant, 2018). Recruitment occurred between March and September 2016.

The promotional information invited potential participants to follow a web address (URL) to complete an online survey (see Appendix A). Invitees were electronically presented with a Letter of Introduction and Information Sheet before proceeding to the survey. Submission of the survey was considered informed consent. Upon completion of the survey participants were also asked to share the survey link and/or information with friends and family members via email and social media to enable snowball sampling.

Participants were given the opportunity to enter a prize draw for gift vouchers on completion of the survey as a thank you for their time. They were informed of the opportunity to enter a prize draw in the promotional information (see Appendix A) and

Information Sheet (see Appendix C). The prize draw was for one of ten shopping vouchers valued at $25. To enter the draw, participants were directed to a second separate online form in which they could enter their email address.

Measures Utilised and Data Reduction Strategies

Participants completed the online survey anonymously. The survey was programmed using Qualtrics Survey Software (Qualtrics, 2016) and included a range of pre-existing standardised scales, as well as items adapted for the study when suitable pre-existing scales were not available (see Appendix D for the full survey). To identify potential bias and problems with question wording in the whole survey overall (i.e., survey items relevant to Studies 3 and 4 in this thesis), the survey was pre-tested with five individuals who were familiar with the research project. Minor survey revisions were undertaken based on the feedback received prior to recruitment.

The survey, in its entirety, assessed a range of areas relevant to this thesis, however, only those relevant to the specific research questions addressed in this chapter are reported in detail here. The remaining constructs assessed in the survey are described in detail in Study 4 (Chapter 5). In addition to socio-demographic characteristics, items and scales assessing the theory-derived constructs relevant to this chapter were: intention to seek help for common cancer symptoms (the key outcome variable), attitudes towards help-seeking (TPB), perceived norms (TPB), perceived behavioural control (TPB), susceptibility to and severity of cancer (HBM), as well as the benefits of and barriers to help-seeking for cancer symptoms (HBM). Questions were grouped into topic blocks, and in order to minimise any confounding from the order of questions, the order was randomised within blocks (with the exception of attitude-related items, which were constrained by the platforms' requirements). The average amount of time required to complete the survey was 50 minutes.

Socio-demographic information. To enable adequate description of the sample and to address potential confounds, participants were asked their gender, age, postcode, relationship status, sexual identity, highest level of education completed, and current work status (see Appendix D for response options). Participants were also asked about their personal cancer history to confirm eligibility for participation.

Theory of Planned Behaviour: Attitudes, perceived norms, and perceived behavioural control. To test the utility of the TPB for predicting help-seeking intentions, a questionnaire was constructed according to the recommendations of the model originators, Fishbein and Ajzen (2010), and guided by Conner and Sparks (2005). When possible, items followed the format set by Hunter et al. (2003) in a previous research study on help-seeking for cancer symptoms. The behaviour of interest was defined as intention to visit (action) a doctor (target) for the evaluation of common cancer symptoms (context; i.e., help-seeking for potential cancer symptoms). Providing a uniform time element in the questionnaire was not deemed appropriate because widely accepted recommendations regarding what would constitute prompt help-seeking were not available, and time thresholds have been inconsistent across the research literature. More evidence is required to determine suitable time thresholds for medical help-seeking for common cancer symptoms and to inform research methods in the area.

Although Fishbein and Ajzen (2010) recommend the use of 7-point scales to assess TPB constructs, research evidence indicates minimal differences in data quality produced by 5- and 7-point scales (Krosnick & Presser, 2010; Revilla, Saris, & Krosnick, 2014). Moreover, for Agree-Disagree scales, 5-point response options have been found to produce better quality data, defined as "the strength of the relationship between the observed variable and the underlying construct" (Revilla et al., 2014, p. 75), and to have similar reliability to that of 7-point scales (Krosnick & Presser, 2010). Therefore, items that assessed TPB constructs in the current study used 5-point scales (Fishbein & Ajzen, 2010). A 5-point scale was used throughout the questionnaire for consistency (see Appendix D for the full list of items).

Attitude towards help-seeking. Four semantic differential items (Osgood, 1964) were used to directly assess attitudes towards visiting a doctor for a symptom that might be cancer (see Table 4.1 for example items, response options, and scale reliability (internal consistency)). Polar adjectives included: bad/good, unpleasant/pleasant, unenjoyable/enjoyable, and foolish/wise. Adjectives were selected based on previously published factor analyses (Fishbein & Ajzen, 2010; Osgood, Suci, & Tannenbaum, 1957), as well as those used in a comparable study of help-seeking for cancer symptoms (Hunter et al., 2003). The attitude scale used by Hunter et al. (2003) was found to have low but acceptable scale reliability ($\alpha = .57$). Likewise, within this study, scale reliability was acceptable but low ($\alpha = .54$). The average inter-item correlation was .22, which is within the recommended range of .2 to .4 (Briggs & Cheek, 1986). Item scores were averaged to establish an overall attitude score (score range: 1-5). Higher scores indicated a more positive attitude to help-seeking for cancer symptoms.

Table 4.1.

Example questionnaire items used to measure theory-derived constructs and reliabilities for the complete scales (Cronbach's alpha)

Construct	Items	Example item	Response options	α
Theory of Planned Behaviour				
Attitude to help-seeking for cancer symptoms	4	Visiting a doctor for a symptom that might be cancer would be…	1 (bad) to 5 (good)	.54
Perceived norms	8	My male friends would visit a doctor if they noticed a symptom that might be cancer.	1 (definitely not) to 5 (definitely)	.80
Perceived behavioural control	3	I feel in complete control over whether I could visit a doctor.	1 (strongly disagree) to 5 (strongly agree), or 1 (very easy) to 5 (very difficult)	.61
Health Belief Model				
Susceptibility	6	There is a good possibility that I will get cancer	1 (strongly disagree) to 5 (strongly agree)	.80
Severity	8	I am afraid to even think about cancer	1 (strongly disagree) to 5 (strongly agree)	.71
Benefits	5	Doctors are good at detecting cancer in its early stages	1 (strongly disagree) to 5 (strongly agree)	.72
Barriers	6	Visiting a doctor is time consuming	1 (strongly disagree) to 5 (strongly agree)	.65
Outcome variable				
Intention to seek help for cancer symptoms	11	How likely would you be to visit a doctor if you noticed unexplained bleeding?	1 (very unlikely) to 5 (very likely)	.93

Perceived norms. Perceived norms were assessed within the questionnaire using items addressing both descriptive and injunctive normative beliefs. Items were adapted from a sample questionnaire provided by Fishbein and Ajzen (2010), and were similar to those used in a comparable study of help-seeking for cancer symptoms (Hunter et al., 2003). Participants were asked to assess and respond to descriptive normative beliefs in relation to four different referents: "My [referent] would visit a doctor if they noticed a symptom that might be cancer." Referents were adapted from those used by Hunter et al. (2003) and included: male friends, female friends, family, and spouse/partner if applicable. Likewise, participants were asked to respond to four injunctive normative belief statements featuring the same referents: "My [referent] would think that I should visit a doctor if I noticed a symptom that might be cancer." Although Hunter et al. (2003) included a 'motivation to comply with referents' weight in their subjective norm measure, the weight was not included in the present study because empirical evidence suggests that these constructs ('motivation to comply' and 'identification with referent') add negligibly to the predictive power of the TPB (Fishbein & Ajzen, 2010). Participants responded on a scale of 1 (*definitely not*) to 5 (*definitely*) for all items. Due to a large positive correlation between mean descriptive and injunctive normative belief scores ($r = .67$, $p < .001$) found in this study, a higher-order variable of perceived norms was used in analyses, as suggested by Fishbein and Ajzen (2010). All normative belief item scores were averaged to create an overall "perceived norms" score (range: 1-5). Higher scores indicated that participants perceived help-seeking behaviour to be normal within their social network and sensed social pressure to seek help for cancer symptoms. The internal consistency for this scale was high ($\alpha = .80$).

Perceived behavioural control. Perceived behavioural control was assessed using three items designed to measure perceived control over visiting a doctor. Within the current study, two items used 5-point *strongly agree* to *strongly disagree* scales (e.g., "If I wanted to visit a doctor I could”). One item asked participants to estimate how easy it would be for them to visit a doctor by responding on a 5-point scale from 1 (*very easy*) to 5 (*very difficult*). The perceived behavioural control scale used by Hunter et al. (2003) was found to have acceptable scale reliability (α = .74). Scale reliability in this study was acceptable but low (α = .61; average inter-item correlation = .36). Item scores were averaged to give an overall control score (score range: 1-5), with higher scores indicating greater perceived control over help-seeking behaviour.

Health Belief Model: Perceived susceptibility, perceived severity, perceived benefits of and barriers to help-seeking. To test the utility of the HBM for predicting help-seeking intentions, a questionnaire (see Appendix D) was constructed based on items included in previous research to assess HBM constructs in non-cancer populations and within a cancer screening context (Bish et al., 2000; Champion, 1984), with items adapted to fit the current context of intended help-seeking for cancer symptoms. Items assessed: perceived susceptibility to cancer (6 items), perceived severity of cancer (8 items), perceived benefits of help-seeking (5 items), and perceived barriers to help-seeking (6 items; see Table 4.1 for example items). Participants were asked to respond to all items on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*). Item scores on subscales were averaged (score range: 1-5), with higher scores indicating greater perceived susceptibility, severity, costs, and benefits. Bish et al. (2000) and Champion (1984) found their measurements of HBM constructs to be psychometrically sound, with acceptable reliability and validity. Internal consistency in this study was acceptable across HBM variables (α range: .65-.80; see Table 4.1 for scale reliabilities).

Outcome variable: Intention to seek help for cancer symptoms. Items to assess intention to seek help for cancer symptoms were developed according to the recommendations of Fishbein and Ajzen (2010) and guided by Conner and Sparks (2005).

Participants were asked how likely they would be to visit a doctor for eleven common cancer symptoms, including: persistent unexplained fatigue, unexplained lump or swelling, persistent unexplained pain, unexplained bleeding, a persistent unexplained cough or hoarseness, persistent change in bowel habits, persistent change in bladder habits, persistent difficulty swallowing, change in the appearance of a mole, a sore that does not heal, and unexplained weight loss. Symptoms were selected based on previous research (Stubbings et al., 2009) and reputable cancer websites (e.g., Cancer Council SA, 2015). Participants responded on a scale of 1 (*very unlikely*) to 5 (*very likely*). Item scores were averaged to give an overall intention score (score range: 1-5), with higher scores indicating a greater likelihood of help-seeking for common cancer symptoms. Internal consistency was high (α = .93).

Data Analysis

Participants. A power analysis was performed to determine the approximate sample size required prior to sample recruitment (Cohen, 1992). Although the exact number of variables to be included in the analyses was not confirmed, there were at least seven theory-derived variables to be included (combined theoretical regression model only) along with numerous potential confound variables; therefore, the power analysis assumed the inclusion of at least eight variables. To detect a medium effect size, at Power = .80, α = .05, and with eight regression variables, 107 participants were required.

As previously outlined, only respondents who identified as male were included in this study. Respondents were excluded if they reported a previous cancer history or reported that they looked up symptoms online while completing the survey. Of those who commenced the survey and met these eligibility criteria (*n* = 158), 127 respondents (80.38%) completed the component of the survey that measured TPB and HBM constructs (first half of the survey); 31 (19.62%) did not complete the required sections. There were no systematic differences between the two groups (stay-ins and drop-outs) for mean age, relationship status, sexual identity, highest level of education completed, or current work status (all *p's* > .05). Four participants (3%) were missing item level data. Due to the small amount of missing data, these participants were retained in the dataset and available item analysis (i.e., averaging the available data without replacing missing values) was used during scoring of variables and assessment of reliability (Parent, 2013). In total, data from 127 participants were analysed in this study.

Bootstrapped correlation analyses (see Results section) indicated that intention to seek help for cancer symptoms was significantly correlated with participants' age, $r = .27$, 95% BCa CI [.02, .50], $p = .002$, but was not significantly associated with the remaining socio-demographic characteristics included in this study (all *p's* > .05). Participants' age was also significantly associated with most theory-derived variables. Consequently, participants' age was controlled for in hierarchical multiple regressions, and a maximum of eight independent variables were included in the analyses (combined theoretical regression model only). Therefore, analyses were considered to be sufficiently powered to detect medium to large effect sizes.

Statistical methods. Analyses were conducted in IBM SPSS Statistics 25. Significance levels were set at $p < .05$. Exploratory tests revealed non-normal distribution for certain variables (i.e., intention to seek help for cancer symptoms, attitudes towards seeking help for cancer symptoms, perceived behavioural control, perceived benefits and barriers to help-seeking), as well as non-normal standardised residuals and several outliers. The variables were transformed to correct violated assumptions in accordance with the advice of Tabachnick and Fidell (2014). For moderate skewness, a square root or log transformation was conducted, while for severe skewness an inverse transformation was performed. Moderate or severe skewness was determined by comparing the original variable distributions to examples provided by Tabachnick and Fidell (2014). Variables were reflected when negative skewness was evident. However, transformed data also violated normality assumptions. Consequently, more robust methods of analysis were required to address potential bias and bootstrapping was used with the original variables (Field, 2013; Wright, London, & Field, 2011). Bootstrapped analyses used 1000 samples and calculated 95% bias corrected and accelerated confidence intervals (BCa CI), which are reported in square brackets in-text.

As has been discussed in Chapters 2 and 3 (Fish et al., 2015, 2019), responses to cancer symptoms and men's help-seeking are likely to differ according to a variety of health and socio-demographic factors (Addis & Mahalik, 2003; Oliffe, 2009). Accordingly, bootstrapped correlation analyses were run between intention to seek help for cancer symptoms, various socio-demographic characteristics, and theory-derived predictor variables to assess potential relationships and confounds. Small, medium, and large effect sizes for correlations were set at .10, .30, and .50, respectively (Cohen, 1992). A series of bootstrapped hierarchical multiple regressions were used to test the separate and combined predictive power of the TPB and HBM for explaining men's help-seeking intentions, and to determine the relative contribution to explained variance in intentions to seek help. Age was entered in Step 1 as a potential confounding variable because of a significant positive correlation between participants' age and intention to seek help for cancer symptoms ($p = .002$; see Results section for further information). Theory-derived variables were entered in Step 2 of each regression analysis. For the combined model, theory-derived variables were entered simultaneously in Step 2 because of limited evidence that one theory would have greater predictive power than the other for explaining men's intentions to seek help for common cancer symptoms. Cohen's f effect size was calculated for multiple regression models ($f^2 = R^2 / (1 - R^2)$), with small, medium, and large effect sizes set at .02, .15, and .35, respectively (Cohen, 1992).

Results

Sample Characteristics

Participant (*N* = 127) socio-demographic characteristics are reported in Table 4.2. Participants' mean (*M*) age was 54.99 years (Standard Deviation [*SD*] = 15.96 years; range: 19 – 90) and median age was 55.00 years. Most participants identified as White or European (88.98%), were in a relationship (83.46%), identified as heterosexual (96.06%), and lived in a metropolitan area of South Australia (72.44%). Approximately three-quarters of participants had completed tertiary education (77.17%) and were employed at the time of the survey (71.65%). Socio-demographic characteristics were compared to the overall population of Australian males. This sample was older than the general population of Australian males (AIHW, 2019b). Additionally, men with a tertiary education were over-represented (ABS, 2017), and men who were single were under-represented (AIHW, 2011).

Table 4.2.

Socio-demographic characteristics of participants (N = 127)

Characteristic	*n*	(%)
Area of residence:		
Metropolitan	92	(72.44)
Regional or remote	35	(27.56)
Current relationship status:		
Single[a]	21	(16.54)
In a relationship	106	(83.46)
Sexual identity:		
Heterosexual	122	(96.06)
Homosexual	3	(2.36)
Bisexual	2	(1.57)
Highest level of education completed:		
Primary education	1	(0.79)
Secondary education	28	(22.05)
Tertiary education	98	(77.17)
Current work status:		
Employed (full or part-time)	91	(71.65)
Retired	31	(24.41)
Unemployed or other	5	(3.94)
Ethnicity:		
White	73	(57.48)
European	40	(31.50)
Asian	5	(3.94)
Mixed or other	9	(7.09)

[a] Single includes participants identifying as single, widowed, separated, and divorced.

Mean overall intention to seek help for cancer symptoms was high (*M* = 4.19, *SD* = 0.71; see Table 4.3), indicating that on average participants intended to seek medical advice for common cancer symptoms. However, intention to seek help differed across individual cancer symptoms (see Table 4.4). Most participants indicated that they would be *very likely* to seek help for a persistent change in bowel (70.08%) and bladder habits (66.14%), as well as unexplained bleeding (63.78%)[12]. In comparison, less than one-fifth (18.90%) of participants indicated that they would be *very likely* to seek help for persistent unexplained fatigue. Ten per cent (n = 13) of participants responded they would be *very likely* to seek help for all common cancer symptoms. Although some variability was observed across cancer symptoms, internal consistency for the outcome variable was high (α = .93), which suggests the scale measures an underlying factor (i.e., intention to seek help for common cancer symptoms; Field, 2013).

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[12] Two supplementary bootstrapped correlations were run to test the association between recognition of symptoms as cancer warning signs (variable described in Chapter 5) and intention to seek help for unexplained bleeding (a symptom highly likely to lead to help-seeking) and persistent unexplained fatigue (a symptom less likely to lead to help-seeking). The two symptoms were selected based on the highest and lowest mean intention scores reported in Table 4.4. Both correlations were non-significant ($p > .05$).

Table 4.3.

Means, standard deviations, and inter-correlations between theory-derived variables (N = 127)

Scales	*M* (*SD*)	1	2	3	4	5	6	7	8
1. Attitude to help-seeking	3.35 (0.68)	-							
2. Perceived norms	4.28 (0.56)	-.07	-						
3. Perceived behavioural control	4.43 (0.63)	.14	.31**	-					
4. Susceptibility	2.57 (0.77)	-.04	-.07	-.06	-				
5. Severity	3.05 (0.65)	-.07	-.12	-.20*	.39**	-			
6. Benefits	4.37 (0.52)	.21*	.31**	.34**	-.15	-.16	-		
7. Barriers	2.03 (0.65)	-.13	-.23*	-.58**	.28**	.38**	-.47**	-	
8. Intention to seek help	4.19 (0.71)	.12	.23**	.37**	.02	-.15	.40**	-.28**	-

Note. Attitude to help-seeking = attitude towards visiting a doctor for a cancer symptom; Perceived norms = perceived normative influence to seek help for a cancer symptom; Perceived behavioural control = perceived behavioural control over visiting a doctor; Susceptibility = perceived susceptibility to cancer; Severity = perceived severity of cancer; Benefits = perceived benefits of visiting a doctor for a cancer symptom; Barriers = perceived barriers to visiting a doctor for a cancer symptom; Intention to seek help = Intention to seek help for cancer symptoms.
* $p < .05$; ** $p < .01$.

Table 4.4.

Intention to seek help for individual cancer symptoms (N = 127)

		Very likely		Somewhat likely		Neither		Somewhat unlikely		Very unlikely	
Cancer symptom	*M* (*SD*)	*n*	(%)	*n*	(%)	*n*	(%)	*n*	(%)	*n*	(%)
Unexplained bleeding	4.55 (0.72)	81	(63.78)	39	(30.71)	5	(3.94)	-	-	2	(1.57)
Change in bowel habits	4.54 (0.88)	89	(70.08)	27	(21.26)	3	(2.36)	6	(4.72)	2	(1.57)
Change in bladder habits	4.51 (0.87)	84	(66.14)	34	(26.77)	2	(1.57)	4	(3.15)	3	(2.36)
Change in mole	4.51 (0.81)	80	(62.99)	40	(31.50)	1	(0.79)	4	(3.15)	2	(1.57)
Unexplained lump/swelling	4.34 (0.82)	62	(48.82)	53	(41.73)	7	(5.51)	3	(2.36)	2	(1.57)
Sore does not heal	4.21 (0.88)	53	(41.73)	58	(45.67)	8	(6.30)	6	(4.72)	2	(1.57)
Unexplained pain	4.20 (0.89)	53	(41.73)	58	(45.67)	7	(5.51)	7	(5.51)	2	(1.57)
Difficulty swallowing	4.11 (0.98)	52	(40.94)	51	(40.16)	12	(9.45)	10	(7.87)	2	(1.57)
Persistent cough	3.80 (1.12)	35	(27.56)	58	(45.67)	16	(12.60)	10	(7.87)	8	(6.30)
Unexplained weight loss	3.64 (1.17)	33	(25.98)	46	(36.22)	24	(18.90)	17	(13.39)	7	(5.51)
Persistent unexplained fatigue	3.62 (1.05)	24	(18.90)	57	(44.88)	25	(19.69)	16	(12.60)	5	(3.94)

Associations between Socio-Demographic Characteristics and Theory-Derived Variables

Bootstrapped correlation analyses were conducted with intention to seek help for cancer symptoms as the outcome variable, and with socio-demographic characteristics and theory-derived variables as predictors. Intention to seek help for cancer symptoms was significantly and positively correlated with participants' age, $r = .27$, 95% BCa CI [.02, .50], $p = .002$, indicating that as age increased, intention to seek help also increased. Intention to seek help for cancer symptoms was not significantly associated with area of residence, relationship status, sexual identity, highest level of education completed, or current work status ($p > .05$).

Participants' age was also significantly associated with most theory-derived variables. Age was negatively correlated with perceived severity, $r = -.32$, 95% BCa CI [-.47, -.14], $p < .001$, and perceived barriers to help-seeking, $r = -.30$ 95% BCa CI [-.44, -.16], $p = .001$. As age increased, perceived severity and perceived barriers decreased, indicating that as age increased, health issues may become more normalised. In addition to this, participants' age was positively correlated with perceived benefits of help-seeking, $r = .36$, 95% BCa CI [.20, .51], $p < .001$, and a more positive attitude towards help-seeking, $r = .31$, 95% BCa CI [.16, .45], $p < .001$. As age increased, the perceived benefits associated with seeking help for cancer symptoms and having a positive attitude towards help-seeking increased. Consequently, participants' age was controlled for in regression analyses.

Small to medium sized positive correlations were observed between intention to seek help for cancer symptoms and TPB variables (see Table 4.3), including perceived behavioural control, $r = .37$, 95% BCa CI [.19, .56], $p < .001$, and perceived norms, $r = .23$, 95% BCa CI [.06, .40], $p = .01$. A non-significant association was observed between attitude towards help-seeking and intention to seek help for cancer symptoms. Small to medium correlations were observed between help-seeking intention and HBM variables. Help-seeking intention was positively associated with perceived benefits, $r = .40$, 95% BCa CI [.19, .58], $p < .001$, and negatively associated with perceived barriers, $r = -.28$, 95% BCa CI [-.48, -.10], $p = .001$. Non-significant associations were observed between perceived susceptibility and severity, with intention to seek help for cancer symptoms. Although several non-significant correlations were observed, all variables were retained in regression analyses for model testing for completeness.

Social Cognitive Predictors of Help-Seeking Intentions

Three primary bootstrapped hierarchical multiple regressions were run to test the separate and combined predictive utility of the TPB and HBM for explaining average intention to seek help across all common cancer symptoms. In each regression analysis, age was entered and controlled in Step 1, and theory-derived variables were entered in Step 2. For the third regression (combined model), theory-derived variables were entered simultaneously in Step 2. Average intention to seek help for cancer symptoms was entered for each participant as the outcome variable in each regression analysis.

Theory of Planned Behaviour. Regression results testing the predictive power of the TPB are reported in Table 4.5. In the first step, age explained a significant 7% of the variance in intention to seek help for cancer symptoms, with a small effect size ($f^2 = .08$). In Step 2, adding the three TPB variables (attitude towards help-seeking, perceived norms, and perceived behavioural control) explained an additional 12% of variance in help-seeking intention, $R^2_{Change} = .12$, $F_{Change}(3, 122) = 6.21$, $p = .001$. Perceived behavioural control (see Table 4.5) was the only significant predictor of intention to seek help for cancer symptoms. The positive direction of the beta value indicated that greater perceived behavioural control was associated with greater intention to seek help for cancer symptoms. The final TPB model explained 20% of variance in intention to seek help for common cancer symptoms, with a medium effect size ($f^2 = .25$).

Table 4.5.

Predictors of intention to seek help for common cancer symptoms utilising the Theory of Planned Behaviour (N = 127)

Predictor variables	*B*	Std. Error	β	BCa 95% Confidence Interval Lower	BCa 95% Confidence Interval Upper
Step 1.					
Age	.01	.01	**.27***	.00	.02
	$R^2 = .07$, $F(1, 125) = 9.74$, $p = .002$, $f^2 = .08$				
Step 2.					
Age	.01	.01	.20[13]	-.00[14]	.02
Attitude to help-seeking	.03	.08	.03	-.12	.20
Perceived norms	.15	.09	.12	-.04	.33
Perceived behavioural control	.34	.08	**.30****	.16	.49
	$R^2 = .20$, $F(4, 122) = 7.40$, $p < .001$, $f^2 = .25$				

Note. Bootstrapped results reported based on 1000 bootstrap samples. Attitude to help-seeking = attitude towards visiting a doctor for a cancer symptom; Perceived norms = perceived normative influence to seek help for a cancer symptom; Perceived behavioural control = perceived behavioural control over visiting a doctor.
* $p < .05$; ** $p < .01$.

Health Belief Model. Regression results testing the predictive power of the HBM constructs are reported in Table 4.6. Step 1 (age) explained a significant 7% of the variance in

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[13] Bootstrapped results for coefficients reported. In the standard regression analysis, age ($p = .02$) and perceived behavioural control ($p = .001$) were both significant predictors of help-seeking intentions controlling for other variables. The difference in results indicates potential bias in the standard regression results and caution should be applied when interpreting the beta values and the predictive strength of variables.

[14] Lower BCa 95% Confidence Interval = -.002.

intention to seek help for cancer symptoms. The four HBM variables entered in Step 2 (susceptibility, severity, perceived benefits of and barriers to help-seeking) explained an additional 13% of variance, $R^2_{Change} = .13$, $F_{Change}(4, 121) = 4.83$, $p = .001$. Perceiving benefits of help-seeking (see Table 4.6) was the only significant predictor of intention to seek help for cancer symptoms after controlling for other variables. The positive direction of the beta value indicated that greater perceived benefits of help-seeking was associated with greater intention to seek help for common cancer symptoms. The final model explained a significant 20% of variance in intention to seek help, with a medium effect size ($f^2 = .25$).

Table 4.6.

Predictors of intention to seek help for common cancer symptoms utilising the Health Belief Model (N = 127)

				BCa 95% Confidence Interval	
Predictor variables	*B*	Std. Error	β	Lower	Upper
Step 1.					
Age	.01	.01	**.27***	.00	.02
	$R^2 = .07$, $F(1, 125) = 9.74$, $p = .002$, $f^2 = .08$				
Step 2.					
Age	.01	.01	.12	-.01	.02
Susceptibility	.13	.08	.14	-.01	.30
Severity	-.08	.13	-.08	-.34	.14
Benefits	.42	.19	**.31***	.03	.74
Barriers	-.12	.10	-.11	-.31	.07
	$R^2 = .20$, $F(5, 121) = 6.05$, $p < .001$, $f^2 = .25$				

Note. Bootstrapped results reported based on 1000 bootstrap samples. Susceptibility = perceived susceptibility to cancer; Severity = perceived severity of cancer; Benefits = perceived benefits of visiting a doctor for a cancer symptom; Barriers = perceived barriers to visiting a doctor for a cancer symptom.
* $p < .05$; ** $p < .01$.

Combined theoretical model. Regression results testing the predictive power of a combined TPB and HBM model (incorporating all theory derived constructs) are reported in Table 4.7. As before, Step 1 (age) explained a significant 7% of the variance in intention to seek help for cancer symptoms. With all variables entered in Step 2, an additional 18% of variance was explained, $R^2_{Change} = .18$, $F_{Change}(7, 118) = 4.01$, $p = .001$. Perceived behavioural control was the only significant predictor of help-seeking intentions after controlling for other variables in the final model. The final model explained a significant 25% of variance in intention to seek help for cancer symptoms, slightly more than the previous two models separately (Tables 4.5. and 4.6), and approached a large effect size ($f^2 = .33$).

Table 4.7.

Predictors of intention to seek help for common cancer symptoms utilising a combined theoretical model (N = 127)

Predictor	*B*	Std. Error	β	BCa 95% Confidence Interval Lower	BCa 95% Confidence Interval Upper
Step 1.					
Age	.01	.01	**.27***	.00	.02
	$R^2 = .07$, $F(1, 125) = 9.74$, $p = .002$, $f^2 = .08$				
Step 2.					
Age	.01	.01	.13	-.01	.02
Attitude to help-seeking	.00	.08	.00	-.14	.16
Perceived norms	.08	.10	.06	-.11	.24
Perceived behavioural control	.29	.11	**.26****	.05	.50
Susceptibility	.10	.07	.11	-.02	.24
Severity	-.07	.12	-.06	-.32	.15
Benefits	.36	.21	.27[15]	-.06	.71
Barriers	.04	.12	.04	-.17	.27
	$R^2 = .25$, $F(8, 118) = 4.94$, $p < .001$, $f^2 = .33$				

Note. Bootstrapped results reported based on 1000 bootstrap samples. Attitude to help-seeking = attitude towards visiting a doctor for a cancer symptom; Perceived norms = perceived normative influence to seek help for a cancer symptom; Perceived behavioural control = perceived behavioural control over visiting a doctor; Susceptibility = perceived susceptibility to cancer; Severity = perceived severity of cancer; Benefits = perceived benefits of visiting a doctor for a cancer symptom; Barriers = perceived barriers to visiting a doctor for a cancer symptom.
* $p < .05$; ** $p < .01$.

Supplementary Analyses

Variation in social cognitive predictors according to symptom type. Study 3 has examined the predictive power of the TPB and HBM for explaining men's intentions to seek

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[15] Bootstrapped results for coefficients reported. In the standard regression analysis testing a combined theoretical model, perceiving benefits of help-seeking ($p = .01$) and perceived behavioural control ($p = .01$) were both significant predictors of help-seeking intentions controlling for other variables. The difference in results indicates potential bias in the standard regression results and caution should be applied when interpreting the beta values and the predictive strength of variables.

help for a common cancer symptoms combined. Two supplementary bootstrapped hierarchical multiple regressions tested the combined predictive utility of the TPB and HBM for explaining intended help-seeking for unexplained bleeding (a symptom highly likely to lead to help-seeking) and persistent unexplained fatigue (a symptom less likely to lead to help-seeking). The two symptoms were selected based on the highest and lowest mean intention scores reported in Table 4.4. In line with the primary regression analyses, age was entered and controlled in Step 1, and all theory-derived variables were entered simultaneously in Step 2.

Unexplained bleeding. Regression results testing the predictive power of a combined theoretical model for explaining intentions to seek help for unexplained bleeding are reported in Table 4.8. In Step 1, a non-significant R^2 was observed, as well as a non-significant association between age and the outcome variable. When all theory-derived variables were entered in Step 2, an additional 17% of variance was explained, $R^2_{Change} = .17$, $F_{Change}(7, 118) = 3.48$, $p = .002$. Perceived behavioural control was the only significant predictor of intention to seek help for unexplained bleeding after controlling for other variables in the final model. The final model explained a significant 18% of variance in intention to seek help for unexplained bleeding, with a medium effect size ($f^2 = .22$).

Table 4.8.

Predictors of intention to seek help for unexplained bleeding utilising a combined theoretical model (N = 127)

Predictor	*B*	Std. Error	β	BCa 95% Confidence Interval	
				Lower	Upper
Step 1.					
Age	.01	.01	.10	-.01	.01
	$R^2 = .01, F(1, 125) = 1.31, p > .05, f^2 = .01$				
Step 2.					
Age	.00	.01	-.03	-.02	.01
Attitude to help-seeking	.00	.08	.00	-.15	.17
Perceived norms	.12	.11	.10	-.11	.33
Perceived behavioural control	.36	.10	**.32****	.15	.55
Susceptibility	.05	.07	.06	-.06	.18
Severity	-.21	.12	-.19	-.46	.02
Benefits	.18	.18	.13	-.13	.46
Barriers	.12	.11	.10	-.08	.31
	$R^2 = .18, F(8, 118) = 3.23, p = .002, f^2 = .22$				

Note. Bootstrapped results reported based on 1000 bootstrap samples. Attitude to help-seeking = attitude towards visiting a doctor for a cancer symptom; Perceived norms = perceived normative influence to seek help for a cancer symptom; Perceived behavioural control = perceived behavioural control over visiting a doctor; Susceptibility = perceived susceptibility to cancer; Severity = perceived severity of cancer; Benefits = perceived benefits of visiting a doctor for a cancer symptom; Barriers = perceived barriers to visiting a doctor for a cancer symptom.
* $p < .05$; ** $p < .01$.

Persistent unexplained fatigue. Regression results testing the predictive power of a combined theoretical model for explaining intention to seek help for persistent unexplained fatigue are reported in Table 4.9. In the first step, age explained a significant 7% of the variance in intention to seek help for persistent unexplained fatigue, with a small effect size ($f^2 = .08$). Entering all theory-derived variables in Step 2 explained an additional 17% of variance, $R^2_{Change} = .17$, $F_{Change}(7, 118) = 3.64$, $p = .001$. Perceiving benefits to visiting a doctor for a cancer symptom was the only significant predictor of intention to seek help for persistent unexplained fatigue after controlling for other variables in the final model. The final model explained a significant 24% of variance in intention to seek help for persistent unexplained fatigue, with a medium effect size ($f^2 = .31$).

Table 4.9.

Predictors of intention to seek help for persistent unexplained fatigue utilising a combined theoretical model (N = 127)

Predictor	*B*	Std. Error	β	BCa 95% Confidence Interval Lower	BCa 95% Confidence Interval Upper
Step 1.					
Age	.02	.01	**.27****	.01	.03
	$R^2 = .07, F(1, 125) = 9.56, p = .002, f^2 = .08$				
Step 2.					
Age	.01	.01	.08	-.01	.02
Attitude to help-seeking	.05	.15	.03	-.21	.37
Perceived norms	-.20	.14	-.11	-.47	.08
Perceived behavioural control	.17	.17	.10	-.21	.47
Susceptibility	.10	.12	.07	-.15	.31
Severity	-.18	.16	-.11	-.50	.11
Benefits	.74	.24	**.37****	.24	1.15
Barriers	-.07	.19	-.05	-.43	.29
	$R^2 = .24, F(8, 118) = 4.55, p < .001, f^2 = .31$				

Note. Bootstrapped results reported based on 1000 bootstrap samples. Attitude to help-seeking = attitude towards visiting a doctor for a cancer symptom; Perceived norms = perceived normative influence to seek help for a cancer symptom; Perceived behavioural control = perceived behavioural control over visiting a doctor; Susceptibility = perceived susceptibility to cancer; Severity = perceived severity of cancer; Benefits = perceived benefits of visiting a doctor for a cancer symptom; Barriers = perceived barriers to visiting a doctor for a cancer symptom.
* $p < .05$; ** $p < .01$.

Discussion

The present study examined the predictive power of two social cognitive theories commonly used to explain health behaviours, the TPB and the HBM, for the prediction of variance in Australian men's intentions to seek help for common cancer symptoms. Mean help-seeking intention was high, indicating on average participants were very likely to seek help for common cancer symptoms. Both the TPB and HBM were found to have moderate validity for the prediction of intention to seek help, each explaining 20% of variance in men's help-seeking intentions when age was controlled as an initial predictor. The results of the combined theoretical regression model (i.e., where both TPB and HBM variables were entered simultaneously) showed marginal improvement in predictive power, explaining, in total, 25% of variance in the intention to seek help.

Taken as a whole, the results of this study suggest the TPB and the HBM may not be optimal models for explaining men's help-seeking intentions, and that there is some overlap in the variance explained by these models. This is in line, in part, with the meta-analysis conducted by McEachan et al. (2011), which highlighted differences in the predictive validity of the TPB between behaviours and low variance explained for detection behaviours (15%; e.g., general health check, cervical screening with healthcare professional, breast self-examination). These results may also provide support for broader criticisms of the TPB and other social cognitive models, which call for further theory development and the use of more complex explanatory models (e.g., Ogden, 2015; Sniehotta, Presseau, & Araújo-Soares, 2014).

Another main aim of this study was to determine which socio-demographic and theory-derived variables made a unique contribution in explaining intentions to seek help for cancer symptoms. Based on the qualitative findings of Study 2 (Chapter 3; Fish et al., 2019), it was expected that perceived norms, perceived behavioural control, and barriers to help-seeking would be the strongest predictors of men’s intentions to seek help. In partial support of this prediction, perceived behavioural control was the only significant predictor of men’s intentions to seek help in the TPB-only and combined theoretical regression models. The positive direction of the beta value indicated that as perceived control for visiting a doctor increased, so too did intention to visit a doctor for medical advice. Perceived benefits of help-seeking was also a significant predictor of men’s intentions to seek help in the HBM-only regression model, however, was no longer significant in the combined theoretical regression model when perceived behavioural control was taken into account.

This new evidence suggests that intention to seek help for common cancer symptoms may be principally determined by an individual’s perception that they could easily access or attend medical services. As such, the current study extends the qualitative findings of Study 2 (Chapter 3; Fish et al., 2019), by highlighting the relative importance of social cognitive influences on men’s help-seeking for cancer symptoms. This result is also partially consistent with two prior studies sampling women or mixed-gender adults, which found perceived behavioural control, or the related construct of self-efficacy, to significantly predict intention to seek help for cancer symptoms in regression models (de Nooijer, Lechner, & de Vries, 2003; Hunter et al., 2003). The observation that men are motivated to act on the same basis as women is important to note, although the finding is certainly not unique. The result confirms recent gender-comparative qualitative research, which has suggested more similarities than differences between men and women’s experiences of, and responses to, cancer symptoms (MacLean et al., 2017). However, further empirical comparisons of men and women are required to systematically document variation and similarities in the help-seeking process according to gender (Hunt et al., 2012). Chapter 5 of this thesis aims to address this existing gap in current help seeking research and to extend the results of this study by comparing the psychosocial influences on anticipated help-seeking between men and women.

The finding that perceived behavioural control is an important predictor of men's intentions to seek help for common cancer symptoms is in contrast, however, to prior research on men's intentions to seek medical advice for sexual dysfunction within a cancer context (Hyde et al., 2016). Hyde et al. (2016) found that perceived norms was the strongest predictor of intentions to seek help among prostate cancer survivors. This difference in results shows that the predictive strength of determinants can vary across symptom- and disease-specific contexts among men. This is also highlighted by the supplemental findings of the current study, which revealed variation in the importance of social cognitive predictors according to symptom type. Perceived behavioural control was found to be the only significant predictor of intentions to seek help for unexplained bleeding, whereas perceiving benefits to visiting a doctor for a cancer symptom was the only significant predictor of intentions to seek help for persistent unexplained fatigue. This indicates that the relative importance of predictors can vary according to health contexts, and that the operationalisation of outcome variables (e.g., symptom-specific or combined outcome measure) used in help-seeking research should be considered carefully. Although the results of this study indicate that combining participants' responses across symptoms may obscure variation in reactions to different bodily symptoms, it was deemed important to broadly focus on common cancer symptoms in this thesis to maximise the relevance and generalisability of results, and to reduce the likelihood of Type I error occurring by conducting multiple statistical tests.

Based on the findings of Studies 1 and 2 (Chapters 2 and 3; Fish et al., 2015, 2019), it was predicted that perceiving barriers to help-seeking would be a strong predictor of men's intentions to seek help for cancer symptoms. Contrary to prediction, perceiving benefits to visiting a doctor for a cancer symptom, as opposed to perceiving barriers, was a significant predictor of men's help-seeking intentions, albeit in the HBM-only regression. This is in accordance with previous research conducted on a mixed-gender general population, which found that perceiving advantages to help-seeking for cancer symptoms was significantly associated with more timely anticipated medical help-seeking (van Osch et al., 2007). Although the beta values in the combined model suggested that the predictive strength of perceived behavioural control and perceived benefits to help-seeking was comparable, the robust bootstrapped coefficient results indicated perceived behavioural control was the only reliable significant predictor (Field, 2013; Wright et al., 2011). This may indicate that the measurement of the perceived benefits variable was not optimal. Scale items were constructed based on items used in previous research to assess the HBM within specific cancer screening contexts (Bish et al., 2000; Champion, 1984), and adapted more generally to address visiting a doctor for cancer symptoms. By reducing the specificity within the adapted items, items may have been too general and have inadequately encompassed the construct. Therefore, participants may have consistently overestimated the perceived benefits of visiting a doctor after noticing a cancer symptom.

Bootstrapped results are also in line with the findings of the systematic review reported in Chapter 2 (Fish et al., 2015) and interviews with Australian men affected by cancer summarised in Chapter 3 (Fish et al., 2019). Both studies found evidence for the potential importance of perceived personal control as a barrier to help-seeking, but perceived benefits of help-seeking has not been explicitly linked to men's help-seeking for cancer symptoms. Further research using more robust measures of perceiving benefits of help-seeking may more accurately determine the relative importance of this construct in predicting men's help-seeking intentions.

Social normative influences have previously been found to be associated with men's help-seeking for cancer symptoms (Fish et al., 2015, 2019) and men's health behaviours more broadly (Mahalik, Burns, & Syzdek, 2007). Although preliminary correlations confirmed perceived norms were significantly associated with help-seeking intentions, the association was non-significant after controlling for age and other theory-derived variables, indicating perceived norms do not explain variation in help-seeking beyond that explained by the other variables in the model (i.e., perceived behavioural control). This is somewhat consistent with previous breast cancer research, in which subjective norms were not predictive of women's help-seeking intentions in correlational or regression analyses (Hunter et al., 2003). Conversely, a mixed-gender study found social norms to significantly predict intention to seek help for cancer symptoms during an appropriate time period[16] (de Nooijer et al., 2003). Divergent results may be due to socio-cultural differences across studies (e.g., gendered context, location), measurement differences in social normative influence (e.g., the use of motivation to comply weights), or variances in the variables included in regression models.

Future research should include a direct comparison across genders and/or locations to determine the impact of social influence on help-seeking intentions. The social norm construct included in the current study was intended to provide initial insight into normative influences on men's intentions to seek help for cancer symptoms, extending the findings of previous qualitative research. Data indicated little influence from perceptions of what significant others do or think about help-seeking for cancer. Nonetheless, this finding may reflect measurement issues; other measures of gendered social influence may show a different relationship to help-seeking intention. For example, it remains unclear how endorsement of, or conformity to, specific gender norms affects men's help-seeking for cancer symptoms. For example, the importance of appearing strong, stoic, and self-reliant have been implicated in men's postponement of medical help-seeking (Fish et al., 2015, 2019). Chapter 5 of this thesis aims to address the above-listed limitations and suggestions by comparing men and

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[16] Participants were asked to anticipate after what period of time they would seek help for 10 cancer symptoms. Data were recoded to reflect whether help-seeking time periods were appropriate (1 = appropriately timed, 0 = not appropriately timed) according to clinical thresholds used in the study (e.g., within 1 week for blood in stool vs within 4 weeks for changes in bowl habits), and averaged.

women across international locations (Australian and the UK), and by including measures of specific masculine gender norms.

Although perceived cancer susceptibility has been previously associated with anticipated help-seeking for cancer symptoms in a mixed-gender sample (van Osch et al., 2007), affective components of the HBM (perceived severity and susceptibility) were not significantly associated with help-seeking intentions in the current study. This result suggests that cognitive variables, as opposed to affective components, are the principal determinants of men's help-seeking intentions. Another possible explanation is that study participants may have found it difficult to anticipate hypothetical emotional reactions to cancer symptoms, cancer, and help-seeking (Conner & Sparks, 2005).

It is important to note that men's actual help-seeking for cancer symptoms has been previously associated with cancer knowledge and strong emotions (Fish et al., 2015), including embarrassment and shame (Adams et al., 2013; Buckley & Ó Tuama, 2010; Carbone et al., 2009; Carpentier et al., 2011; Chapple & Ziebland, 2002; Chapple et al., 2004; Connolly et al., 2011; Emery et al., 2013; Forbat et al., 2014; Gascoigne et al., 1999; Mason & Strauss, 2004b; Sandén et al., 2000; Skeppner et al., 2012; Willams et al., 2003). These psychological processes were not explored in-depth within the present study, although one item did address embarrassment within the barriers to help-seeking scale. Chapter 5 of this thesis aims to address this issue by including the Privacy subscale (5 items) from the Barriers to Help Seeking Scale (Mansfield, Addis, & Courtenay, 2005), as well as the Warning Signs section of the Cancer Awareness Measure (Stubbings et al., 2009), as predictors of anticipated help-seeking for cancer symptoms.

Limitations and Implications

The inherent limitations of this study should be considered when interpreting the results. Participants were asked to anticipate behaviour within hypothetical scenarios;

accuracy of this may be poor and not map onto actual behaviour when cancer symptoms are experienced. Nonetheless, exploring predictors of behavioural intention is also a commonly used approach in help-seeking and health behaviour research (e.g., de Nooijer et al., 2003; Garcia & Mann, 2003; Smith-McLallen & Fishbein, 2008; Smith-McLallen & Fishbein, 2009; J. P. Smith et al., 2008). Furthermore, as previously discussed, investigating the predictors of variance in intention to seek help for cancer symptoms is an important first step to understanding men's help-seeking behaviour, considering the moderate association between intention and behaviour reported across the health literature (Sheeran, 2002; Webb & Sheeran, 2006).

Mean intention to seek help was high, indicating on average participants were very likely to seek help for common cancer symptoms. This could indicate that participants were overly optimistic about their help-seeking behaviour, or that they were particularly cognisant of symptoms that could be indicative of cancer. Indeed, knowledge of some cancer symptoms may be increasing (Power & Wardle, 2015), and could therefore prompt greater help-seeking intentions. Alternatively, the sample may have been predominantly comprised of men who usually seek medical help. In this case, results may not reflect the views of men who do not seek help, and the utility of social cognitive models may differ according to the extent of variability in the sample. Future research could use purposive sampling to recruit men who usually seek medical help promptly, as well as men who do not seek help (e.g., Facione & Facione, 2006; Whitaker, Macleod, Winstanley, Scott, & Wardle, 2015), to determine any difference in the utility of social cognitive models when predicting men's intentions to seek help for cancer symptoms.

A related limitation was the lack of socio-demographic diversity in the sample. Participants were predominantly White or European, well educated, employed, heterosexual, urban-dwelling, and in a relationship. Therefore, findings may not generalise to men from other ethnic backgrounds, single men, men living in rural areas, or men from various sexual- or gender-diverse backgrounds. These men could experience different diagnostic pathways because of lower social support or attitudinal differences. Future research may use more representative sampling (e.g., Whitaker, Scott, Winstanley, Macleod, & Wardle, 2014) to test the predictors of men's intentions to seek help for cancer symptoms.

Self-report measures were used in this study, which are likely to lead to some self-presentation bias. Participants were likely aware of the purpose of the survey and may have inflated responses as a result. To reduce the likelihood of bias, survey instructions and items were pilot tested; carefully worded so that cultural norms were mitigated; multiple items were used to measure each theory-derived construct; and survey responses were anonymous (Krumpal, 2013). Survey items were also randomised, where possible, as outlined in the methods section, in order to reduce the likelihood that participants would identify the constructs being measured.

Finally, this study used a cross-sectional design. Further research using longitudinal or experimental methods to assess causal relationships would be beneficial, although beyond the scope of this thesis. However, as previously noted, investigations of predictive power are not limited to longitudinal or experimental research methods, and cross-sectional research adds important information about the usefulness of a theory (Prochaska et al., 2008).

Chapter Summary

To summarise, this study tested the separate and combined predictive strength of the TPB and the HBM for explaining men's intentions to seek help for common cancer symptoms. Men's self-reported, hypothetical intention to seek help for cancer symptoms was moderately explained by TPB and HBM variables. This finding persisted when models were considered separately or combined. Results indicated that perceived behavioural control was the most influential factor associated with men's help-seeking intentions, in comparison to the other social cognitive and demographic variables. This evidence suggests that although the TPB and HBM may not be optimal models for explaining men's help-seeking intentions, perceived behavioural control should be investigated further. Moreover, that future interventions may usefully target control beliefs to increase men's help-seeking intentions.

The moderate amount of variance explained by the theoretical models in this study suggests that other variables likely influence Australian men's intentions to seek help for cancer symptoms. Restricting the exploration of variables potentially influencing help-seeking intentions to only those from the TPB and HBM led to the exclusion of other potentially important constructs identified in Chapters 2 (Fish et al., 2015) and 3 (Fish et al., 2019). Norman and Conner (2005) propose that an optimal approach may be to include theory-derived constructs in combination with research-derived constructs associated with the specific health behaviour. For example, it may be useful to investigate perceived behavioural control in combination with optimism, specific traditional masculine norms, conflicting responsibilities, and fear of embarrassment (e.g., embarrassment related to taking clothes off [Chapple et al., 2004], genital examination [Carbone et al., 2009], and describing symptoms [Carpentier et al., 2011]).

Moreover, as mentioned in the discussion section of this chapter, a comparative quantitative study investigating differences between men and women would be beneficial to systematically determine the influence of gender on responses to cancer symptoms and help-seeking intentions (Hunt et al., 2012; MacLean et al., 2017). Therefore, the next chapter presents a study which tests the relative predictive strength of both theory- and research-derived psychosocial influences on Australian men's anticipated help-seeking for cancer symptoms. The chapter will also investigate the generalisability of the psychosocial model between geographical locations and genders (men and women from Australia and the UK).

Chapter Five: Study 4 - The Relative Importance of Psychosocial Factors Associated with Help-Seeking for Cancer Symptoms

Introduction

As described in the previous chapter, to date most studies investigating the psychology of men's help-seeking for cancer symptoms have used qualitative descriptive methods (Fish et al., 2015), and hence the predictive strength and relative importance of research-derived psychosocial influences remains unclear (Scott & Walter, 2010). The cross-sectional survey study reported in Chapter 4 aimed to address this gap by testing the predictive utility of two relevant social cognitive models, the Theory of Planned Behaviour (TPB; Ajzen, 1991; Fishbein & Ajzen, 2010) and the Health Belief Model (HBM; Rosenstock, 1974), for the explanation of variance in Australian men's intentions to seek help for common cancer symptoms. A modest amount of variance was explained by the theoretical models in separate and combined regression models, with perceived behavioural control found to be the most influential predictor of men's help-seeking intentions when controlling for other theory-based variables.

On the basis of these findings, it might be concluded that neither the TPB nor HBM are optimal models for explaining variance in Australian men's help-seeking intentions, although the impact of perceived behavioural control warrants further investigation. One drawback of research based exclusively on social cognitive models is inattention to potentially important factors associated with a specific behaviour (Norman & Conner, 2005). Social cognitive models are designed to be parsimonious and widely applicable to a variety of behaviours, and therefore may not include constructs that have unique importance for specific behaviours. Norman and Conner (2005) have suggested that a useful approach for understanding the determinants of health behaviours is to test potentially influential theory-derived constructs in combination with research-derived constructs associated with the specific behaviour in order to address this limitation. Consistent with this approach, the current study aims to extend the findings of Study 3 (Chapter 4) and investigate perceived behavioural control in combination with the research-derived constructs identified in Studies 1 (Chapter 2; Fish et al., 2015) and 2 (Chapter 3; Fish et al., 2019). These consist of: symptom knowledge, optimism, specific traditional masculine norms, conflicting responsibilities/prioritisation of health, and fear of embarrassment during a medical consultation.

Furthermore, as outlined in the discussion sections of Studies 2 (Chapter 3; Fish et al., 2019) and 3 (Chapter 4), psychosocial variables that influence experiences of, and responses to, cancer symptoms appear to be comparable for men across international locations, as well as between men and women. However, empirical comparisons are required to investigate potential similarities and differences, and to test the generalisability of a psychosocial model of help-seeking for cancer symptoms. Importantly, evidence regarding the generalisability of a model would highlight whether a broad international and/or gender neutral approach to improving help-seeking behaviour may be feasible, resulting in an optimal use of limited healthcare resources. Accordingly, the current study aimed to test the predictive strength of the psychosocial influences highlighted in the preceding chapters on anticipated help-seeking behaviour using cross-sectional, questionnaire data with four samples, varying by country of residence and gender.

Generalisability across Locations

Findings of the interview study described in Chapter 3 (Fish et al., 2019) suggested that Australian men's experiences of, and responses to, cancer symptoms were comparable to men's experiences reported in the international research reviewed in Study 1 (Chapter 2; Fish et al., 2015). If this generalisability can be confirmed, it suggests a consistent approach to improving men's help-seeking may be feasible across at least two jurisdictions internationally, with the potential for greater generalisability internationally. Confirmation of this requires simultaneous, or near simultaneous, data collection confirming influences on men's help seeking for cancer symptoms in at least two countries.

The majority of the studies reviewed in Study 1 (Chapter 2; Fish et al., 2015) were conducted in the UK, suggesting that the UK would be a good comparison sample that would be a suitable first step in establishing this generalisability. Australia and the UK also share many cultural similarities due to historical links. Important differences exist between the two countries, however, such as the nature of the healthcare system (i.e., the mixed welfare-market system within Australia and the welfare system within the UK; Willis & Parry, 2012), unique masculine gender roles (e.g., "the larrikin" and "the ocker" in Australia; Mahalik et al., 2007), and different approaches towards men's health promotion (e.g., an established National Male Health Policy in Australia, which has not been established in the UK; Baker, 2015). A direct comparison between these countries would usefully highlight any context-specific barriers to help-seeking, and the best ways to promote men's timely help-seeking behaviour internationally.

To date, no research studies have compared men's experiences of, and responses to, cancer symptoms across Australia and the UK, but studies have compared the countries without a gender analysis. Even though the results of Study 2 (Chapter 3; Fish et al., 2019) suggests a degree of conformity in influences on men's help-seeking between the UK and Australia, epidemiological data indicate that the 1-year cancer survival rates are lower in the UK than Australia (Coleman et al., 2011). This may indicate differences in health behaviour between the two jurisdictions, which may include help-seeking for symptoms, leading to greater diagnostic delay in the UK (Forbes et al., 2013).

One empirical study has compared help-seeking for cancer symptoms between the UK and Australia, reporting evidence that men and women living in the UK perceive more barriers to help-seeking for cancer symptoms than men and women living in Australia (Forbes et al., 2013). These barriers included; embarrassment, worry about what a doctor might find, or worry about wasting a doctor's time. Although this study suggests significant differences in help-seeking between the two countries, and highlights the importance of empirical comparisons, the generalisability of these findings to men is unclear. The study did not differentiate between genders in the analysis, and included a restricted, 4-item measure of barriers to help-seeking that was not focused on gender-specific barriers. Assessment of gender-specific barriers is important because there is currently inconsistent evidence for gender differences in the psychosocial factors associated with help-seeking behaviour. For example, an examination of the literature in Study 1 (Chapter 2; Fish et al., 2015) suggested that barriers to help-seeking are broadly consistent across genders, however, qualitative research suggests subtle gender differences may be evident. Different types of conflicting responsibilities have been found to postpone medical help-seeking for men and women, such as men's work responsibilities and women's family responsibilities (Leydon et al., 2003; L. K. Smith et al., 2005). Moreover, embarrassment and conformity to masculine gender role norms may be connected for some men, as highlighted by qualitative research (Carpentier et al., 2011; Chapple et al., 2004; Mason & Strauss, 2004b). The present study aimed to address this limitation by predominantly using validated multi-item measures of constructs, as well as measures specifically designed for use with men and with consideration to masculine gender norms (although still appropriate for use with women).

In summary, further investigation of the similarities and differences between Australia and the UK is warranted, particularly focusing on psychosocial factors impacting men's help-seeking as identified in Studies 1 (Chapter 2; Fish et al., 2015) and 2 (Chapter 3; Fish et al., 2019). A direct comparison between men living in the UK and Australia would highlight any potential within-gender variation and context-specific barriers to help-seeking, such as the nature of the health system. As outlined in the introduction to this thesis (Chapter 1), the UK has a welfare state model of healthcare, with free universal healthcare provided through the National Health Service (NHS), which has specific implications for how people seek and receive medical care (Grosios et al., 2010; Lewis & Yates, 2012). This system shares some similarities with, but also differences to, the Australian mixed welfare-market healthcare system (Willis & Parry, 2012). The extent to which differences between these systems impacts men's help-seeking for cancer symptoms is unknown, although research does indicate that patient reports of health system difficulties varies between countries. For example, Australian patients are less likely than British patients to visit a doctor when sick because of the associated cost (Schoen et al., 2005). In contrast, and as previously outlined, British men and women are more likely than Australian men and women to worry about wasting a doctors time when seeking medical advice for symptoms (Forbes et al., 2013). Further investigation of complex access issues is required within the context of men's help-seeking for cancer symptoms. The present study aimed to address this need by investigating the influence of perceived behavioural control on anticipated time to consultation across groups.

Generalisability across Genders

Even though research suggests men postpone help-seeking for cancer symptoms more than women for non-gender specific cancers (Evans et al., 2005; Oberoi et al., 2014; Porta et al., 1996; van Osch et al., 2007; Young et al., 2000), an examination of the literature also suggests that psychosocial barriers to help-seeking are broadly consistent across genders. As discussed in the systematic review reported in Chapter 2 (Fish et al., 2015), low cancer knowledge and inaccurate symptom interpretation, embarrassment, fear, and conflicting responsibilities have been found to inhibit help-seeking for cancer symptoms among both men and women. Furthermore, as considered in Study 3 (Chapter 4), perceived behavioural control has been associated with intentions to seek help among both men and women.

Although this previous research suggests non-gender specific interventions may be feasible, conclusions are limited. This prior research remains predominantly descriptive and there are limited gender-comparative research studies to fully address the distinct influence of gender on help-seeking behaviour. Researchers have cautioned that taking a superficial approach to understanding gender and medical help-seeking can lead to ineffective or inappropriate interventions that may not improve the health of men or women, and that further comprehensive gender-comparative research is needed (Hunt et al., 2012). Widespread gendered assumptions about help-seeking behaviour may unwittingly result in biased interpretations of patient concerns by healthcare professionals, as well as inappropriately gendered policy and interventions, leading to misuse of valuable healthcare system resources (Hunt et al., 2012; MacLean et al., 2017). There is currently inadequate evidence regarding whether a gender neutral approach is reasonable, or whether male-targeted interventions are necessary. In order to inform healthcare practice and intervention design, it is essential that research comprehensively investigates the influence of gender.

Within the Australian context, there has been little investigation of gender variation in help-seeking for cancer symptoms. Fennell et al. (2017) examined gender differences in the barriers to help-seeking for skin cancer symptoms in rural Australia. Even though men were significantly more likely to endorse several barriers at the item-level (e.g., "*I don't like other people telling me what to do*"), the study found comparable total barrier and subscale scores among men and women. This suggests broad similarities in the barriers to help-seeking between men and women, but that the nature of differences in barriers may be subtle. Although informative, the study was narrow in focus; it was limited to rural locations, specific to skin cancer, and utilised only one measure of barriers to help-seeking. Therefore, the generalisability of the findings was limited. It remains unclear whether influences on help-seeking would be comparable across genders in Australian urban contexts, for other cancer symptoms and types of cancer, nor whether variation may be apparent on other potentially important psychosocial barriers to help-seeking not assessed by this study (e.g., symptom knowledge, optimism). The present study aimed to address these gaps by investigating the range of factors commonly associated with men and women's help-seeking for cancer symptoms including: symptom knowledge, perceived behavioural control, optimism, conflicting responsibilities, and fear of embarrassment. This study also sampled men and women across urban and rural areas, and had a broad cancer application. Reactions to all common cancer symptoms were investigated, as opposed to specific forms of cancer and associated symptoms, to increase the relevance and generalisability of the research findings.

Defining and Measuring Anticipated Help-Seeking for Cancer Symptoms

As described above, the present study builds upon the cross-sectional survey study reported in Chapter 4, which assessed social cognitive predictors of intentions to seek help for cancer symptoms. The outcome variable was the likelihood of help-seeking in accordance with the theories under investigation. The outcome was temporally constrained; it was unable to differentiate between those who anticipated seeking help promptly and those who anticipated a longer time to consultation. The present study aimed to extend Study 3 (Chapter 4) by investigating anticipated time to consultation for cancer symptoms, with a focus on potential postponement of help-seeking (see Appendix E for a flowchart of thesis research).

There are currently no standardised clinical recommendations for help-seeking for common cancer symptoms (Pedersen et al., 2018), with cancer organisations generally advising that individuals visit a doctor "promptly" if they notice any potential cancer symptom without any specific qualification of what constitutes a "prompt" time frame

(Cancer Council Australia, 2017; Cancer Research UK, 2017). On the other hand, recommendations for help-seeking have been proposed for specific types of cancer and symptoms. For example, several national campaigns for lung and bowel cancer symptoms have been run in the UK, highlighting the importance of seeking help for changes in bowel habits (i.e., blood in stool or looser stools) or a cough when experienced for 3 weeks (e.g., Athey, Suckling, Tod, Walters, & Rogers, 2012; Ironmonger et al., 2014; Moffat et al., 2015). These campaigns have been based on early referral guidelines published by the National Institute for Health and Care Excellence (NICE) in the UK (Clinical Governance Research and Development Unit, 2005).

In the absence of uniform recommendations for help-seeking for cancer symptoms, it is not surprising that definitions of prompt help-seeking have been inconsistent within the research literature. Studies have varied in the overall time-frame used (e.g., immediately, Hunter et al., 2003; vs. within 6 months, Skeppner et al., 2012), and across cancer symptoms (de Nooijer et al., 2002; C. Donnelly et al., 2017). For instance, cut-off points for prompt medical help-seeking have ranged from 1 week for symptoms such as rectal bleeding, to 4 weeks for other symptoms, such as a persistent cough or hoarseness (de Nooijer et al., 2002; C. Donnelly et al., 2017; Pedersen et al., 2018).

Although cut-offs for timely help-seeking have varied according to symptoms in the literature, a standardised cut-off point was used in this study because of a lack of widely accepted guidelines. Prompt help-seeking was defined as intending to visit a doctor within 2 weeks of noticing a potential cancer symptom. This time-frame was chosen to align with the standardised cut-off points used in research similar to the present study (Quaife et al., 2014; Robb et al., 2009), and was in accordance with the interview study outlined in Chapter 3 (Fish et al., 2019). Robb et al. (2009) noted that a 2-week cut-off for prompt help-seeking was a relatively quick response time; they proposed that acting within this timeframe would reasonably indicate an intention to seek help promptly, whereas estimating beyond 2 weeks was indicative of some degree of procrastination.

Current Study

To date, there is a significant body of descriptive research collected internationally that suggests that symptom knowledge and responses to bodily changes suggestive of cancer are associated with men's help-seeking behaviour. Empirical testing of the size of this relationship is limited. Moreover, whether psychosocial influences on help-seeking are truly invariant across countries and between genders remains to be addressed. Validation of the generalisability of a model of help-seeking behaviour is important because it is these models that form the basis of evidence-based interventions designed to improve early detection practices of people at risk for cancer. Consequently, the main objective of the present study was to test the predictive strength and relative importance of a number of psychosocial variables empirically and theoretically associated with Australian men's help-seeking for cancer symptoms. A secondary objective was to test the generalisability of the associations relevant to Australian men across countries of residence and genders. Comparisons were designed to highlight whether a universal or targeted approach to the design of help-seeking interventions may be required. In line with the methods of Chapter 4, and to avoid any potential confounding, this study focused on anticipated help-seeking among the general population without a history of cancer.

Consistent with the wider literature (Evans et al., 2005; Oberoi et al., 2014; Porta et al., 1996; van Osch et al., 2007; Young et al., 2000), it was predicted that male participants would indicate longer average time to seek help for cancer symptoms than female participants. Second, consistent with the findings of Studies 2 (Chapter 3; Fish et al., 2019) and 3 (Chapter 4) in this thesis, it was expected that lower symptom knowledge, symptom minimisation, and lower perceived behavioural control would be the strongest predictors of men's anticipated time to consultation.

Method

Procedure

A cross-sectional survey study of men and women in Australia and the UK tested the association between predictors identified in a systematic review (Chapter 2; Fish et al., 2015) and in interviews (Chapter 3; Fish et al., 2019), and anticipated help-seeking for cancer symptoms. Ethics committee approval was provided by the Social and Behavioural Research Ethics Committee at Flinders University (Project Number 7078) and the Coventry University Ethics Committee (Project Number P41023). The procedure and participant recruitment for the Australian arm of the study was reported in Chapter 4 (pp. 136-138), and replicated in the UK where possible; therefore, it is only briefly described here to avoid repetition.

In brief, non-probability self-selection sampling was used in South Australia and the UK; adults aged 18 years or older were invited to complete an anonymous online survey. Respondents who indicated a previous cancer history (Australia $n = 44$; UK $n = 11$) or reported that they looked up symptoms online (Australia $n = 9$; UK $n = 9$) while completing the survey were excluded from this study. In addition to this, although an attempt was made to recruit a diverse range of participants into this study to increase the representation of minority groups (e.g., people from the Lesbian Gay Bisexual Trans Intersex and Questioning community), due to the low number of respondents, those who selected 'Prefer not to say' ($n = 6$) on the gender survey question were also excluded from this study. Future research specifically exploring gender diversity and help-seeking for cancer symptoms would be valuable, but was beyond the scope of the present thesis.

UK participant recruitment occurred throughout the UK, but was intensive in the West Midlands. Paper-based and electronic advertisements (see Appendix A) designed to recruit men and women were distributed through Coventry University, community organisations (e.g., The Britain-Australia Society, Coventry and North Warwickshire Cricket Club; see Appendix B for full list of recruiting organisations) and local councils (i.e., Coventry City Council and Birmingham City Council). In accordance with the Australian participant recruitment, promotional information was shared either through social media, emails to member lists (Coventry University, organisations, and councils), and printed flyers. Participants were given the opportunity to enter a prize draw for gift vouchers on completion of the survey. The prize draw was for one of twenty shopping vouchers valued at $25 (in Australia) or £25 (in the UK), with ten vouchers allocated to each country.

Measures Utilised and Data Reduction Strategies

Participants completed the survey anonymously online using the Qualtrics Survey Software (Qualtrics, 2016). The same survey was used in Studies 3 and 4, and a detailed description of the survey development was reported in Chapter 4 (p. 138). The final survey collected the following information (in order): socio-demographic characteristics, importance of health, symptom knowledge, anticipated time to consultation, theory-derived constructs (theory component reported in detail in Chapter 4, pp. 139-144), barriers to help-seeking, traditional masculine gender norms, social support, and health history. Only selected variables relevant to the aims of this chapter were examined and are outlined below.

Socio-demographic information. As reported in Chapter 4, to enable description of the sample and to assess potential confounds, a range of socio-demographic data were collected in this study (i.e., gender, age, location, relationship status, sexual identity, highest level of education completed, and current work status; see Appendix D for response options). Participants were also asked about their personal cancer history to address eligibility criteria.

Importance of my own health. Participants were asked to complete an adapted measure of life priorities (Bowling, 1995; Zajac et al., 2017) in order to assess the impact of conflicting responsibilities on health prioritisation. Ten aspects of lifestyle were rated in terms of importance in their life at the present time. In order of presentation these were: relationships with family, relationships with other people, their own health, the health of other people they are close to or responsible for, finances and standard of living, the environment, ability to work/find work, an active social life, religion and spirituality, and education. In the original measure, participants selected and ranked the three most important factors in their life at the present time (Zajac et al., 2017). Although evidence for the psychometric soundness of the measure was not reported for the original measure, it was used with a similar population (i.e., South Australian mixed-gender general population). In the present study, participants were asked to rate each lifestyle aspect on a scale of 1 (*not very important*) to 5 (*very important*). The single item 'importance of my own health' was used in regression analyses, with a higher score representing greater importance of health at the present time.

Symptom knowledge. The Warning Signs section of the Cancer Awareness Measure (CAM; Stubbings et al., 2009) was adapted for use in this study to assess symptom knowledge. The original 'Warning Signs' section used one open recall question and nine closed recognition items to assess symptom awareness. The CAM instrument has demonstrated content and face validity among a panel of experts (Stubbings et al., 2009), as well as acceptable construct validity for the 'Warning Signs' section (Robb et al., 2009). In the present study, the 'Warning Signs' recognition scale was adapted to include additional cancer symptoms that were selected based on reputable cancer websites (e.g., Cancer Council SA, 2015).

Participants were asked whether they thought 13 different symptoms could be a sign of cancer. Eleven symptoms were common cancer symptoms, including: persistent unexplained fatigue, unexplained lump or swelling, persistent unexplained pain, unexplained bleeding, persistent unexplained cough or hoarseness, persistent change in bowel habits, persistent change in bladder habits, persistent difficulty swallowing, change in the appearance of a mole, sore that does not heal, and unexplained weight loss. The remaining two symptoms, unexplained hair loss and weight gain, were not commonly indicative of cancer. These additional symptoms were included as "distractors" that were plausible (i.e., similar to the other included cancer symptoms) but not cancer warning signs to determine whether participants could correctly distinguish between symptoms (de Nooijer et al., 2002). Response options included, "*Yes*", "*No*", and "*Don't know.*" Correct responses were summed to reach a total symptom knowledge score (score range: 0-13), with higher scores indicating greater awareness of symptoms. Scale internal consistency (Cronbach's alpha) was good and statistically comparable ($p > .05$)[17] across sub-groups in this study, ranging from .78 to .85 (see Table 5.1 for sub-group internal consistency).

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[17] Statistical comparisons of internal consistency were conducted using 'cocron' ("Comparing CRONbach's alphas" v. 1.0-1), an internet platform designed to compare Cronbach's alphas across groups (Diedenhofen & Musch, 2016). The interface uses the methods proposed by Feldt, Woodruff, and Salih (1987).

Table 5.1.

Statistical comparisons of Cronbach's alphas across sub-groups (N = 370)

Scale	Australian men *n* = 114 α	Australian women *n* = 111 α	British men *n* = 59 α	British women *n* = 86 α
Symptom knowledge (13 items)	.78	.82	.85	.81
Barriers to Help Seeking Scale:				
'Need for control and self-reliance' (10 items)	.85	.85	.86	.87
'Minimising problem and resignation' (6 items)	.85	.80	.82	.80
'Privacy' (5 items)	.80	.78	.79	.80
Multidimensional Scale of Perceived Social Support (12 items)	.92	.93	.91	.92
Masculinity in Chronic Disease Inventory:				
'Emotional self-reliance' (6 items)	.78	.78	.82	.78
'Optimistic capacity' (4 items)	.78	.78	.79	.76
Perceived behavioural control (3 items)	.63	.80	.59	.68
Anticipated time to consultation (11 items)	.92	.89	.92	.90

Barriers to Help Seeking Scale (BHSS). The BHSS (Mansfield et al., 2005) was adapted for use in this study to assess a range of psychosocial barriers to men's help-seeking. The BHSS assesses the reasons for not seeking professional advice for health problems with 31 items and five subscales. Three of the original five subscales were included in this study based on alignment with the psychosocial barriers to help-seeking identified in Chapters 2 (Fish et al., 2015) and 3 (Fish et al., 2019). The 'Need for control and self-reliance' subscale (10 items; e.g., "*It would seem weak to ask for help*") assessed the extent to which participants want to appear in control and prefer self-reliance. 'Minimising problem and resignation' (6 items; e.g., "*The problem wouldn't be a big deal; it would go away over time*") was chosen to measure unrealistic optimism and symptom minimisation. Finally, the 'Privacy' subscale (5 items; e.g., "*I don't like taking off my clothes in front of other people.*") assessed embarrassment and concerns about privacy. This subscale provides a more in-depth measurement of embarrassment than that in included in Study 3 (Chapter 4)[18], because it includes a diverse range of items relevant to help-seeking for health issues, including: not wanting other people to know about personal problems, thinking the health issue or symptom is embarrassing, feeling embarrassed taking off clothes during consultation, and feeling uncomfortable being touched by a stranger or someone of the same sex.

The original BHSS measure was designed to assess a specific health problem, for example, pain in the body. It was adapted in this study to assess barriers to seeking professional advice for health problems generally, but with a prompt to think of common cancer symptoms. Participants were presented with the following scale directions: "Below are some reasons why you might choose **NOT** to seek help for a health problem, such as unexplained persistent pain, change in bladder or bowel habits, or unexplained lump or swelling. Please indicate the extent to which you agree the following reasons would **keep you**

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[18] One item addressed embarrassment within the perceived barriers to help-seeking measure.

from seeking help." Several items were also revised to align with the new directions (e.g., "*This problem is embarrassing*" was revised to "*Seeking medical help for the problem would be embarrassing*"). Participants were asked to rate the degree to which the reason would keep them from seeking help on a scale of 1 (*strongly disagree*) to 5 (*strongly agree*). Subscale item scores were averaged to reach an overall subscale score (score range: 1-5), with higher scores reflecting greater barrier importance.

Previous research had found the BHSS to be psychometrically sound among men and women, with acceptable internal consistency, convergent and criterion validity (Fennell et al., 2017; Mansfield et al., 2005). In this study, internal consistency (Cronbach's alpha) was good and statistically comparable ($p > .05$) across sub-groups for the three subscales, ranging from .78 to .87 (see Table 5.1 for sub-group internal consistency).

Masculinity in Chronic Disease – Inventory (MCD-I). The MCD-I (Chambers & Hyde, 2015; Chambers et al., 2016) was adapted for use in the study to assess endorsement of masculine gender norms. The MCD-I measures masculinity within the context of prostate cancer and chronic disease. The initial measure included 22 items and six subscales, and has demonstrated good internal consistency ($\alpha = .88$), convergent and divergent validity with a sample of Australian men. The scale was revised and expanded to 37 items, with 15 prostate cancer survivors confirming face validity. Two subscales from the revised 37 item version were used in the present study based on their alignment with the psychosocial barriers to help-seeking identified in Chapters 2 (Fish et al., 2015) and 3 (Fish et al., 2019). The 'Emotional self-reliance' subscale (6 items; e.g., "*I cope with personal worries on my own*") assessed stoicism and a preference for emotional self-reliance. 'Optimistic capacity' (4 items; e.g., "*I am a positive person*") measured a tendency to have a positive frame of mind.

Both male and female participants completed the MCD-I in this study, however, the scale instructions varied. Male participants were presented with the original scale directions:

“The following is a series of statements about how men might think or feel about themselves, and about what is important for men. Thinking about you personally, please indicate how true each statement is for you.” Therefore, the preamble instructs the respondent to consider masculine gender norms during their consideration of the items, which is a key aspect of interest in this study. The constructs measured by the MCD-I are not exclusively relevant to men, however, and the measure was also completed by female participants. Although it is desirable for surveys to be equivalent across groups, it was reasoned that the focus on *men* in the scale instructions was not suitable for female participants. As such, the instructions were slightly modified for this group to have a universal focus, which was approved by the scale authors (S.K. Chambers, & M.K. Hyde, personal communication, 15 October 2015). Consequently, female participants were presented with an altered scale preamble: “The following is a series of statements about how people might think or feel about themselves, and about what is important. Thinking about you personally, please indicate how true each statement is for you.”

Participants were asked to indicate on a scale of 1 (*not at all true*) to 5 (*very true*) how true each statement was for them. Subscale item scores were averaged for a subscale score (score range: 1-5), with higher scores indicating greater importance of masculine beliefs. In the present study, internal consistency (Cronbach’s alpha) for the two subscales was good and statistically comparable (p > .05) across sub-groups, ranging from .76 to .82 (see Table 5.1 for sub-group internal consistency). This suggests participants’ interpretations of scale items were similar.

Multidimensional Scale of Perceived Social Support (MSPSS). Perceived social support was measured using the MSPSS (Zimet, Dahlem, Zimet, & Farley, 1988). Participants were asked to a respond on a scale of 1 (*very strongly disagree*) to 7 (*very strongly agree*) to twelve statements about how they felt about their access to social support.

Statements assessed perceived social support from three sources: family (e.g., "*My family really tries to help me*"), friends (e.g., "*I can count on my friends when things go wrong*"), and significant others (e.g., "*There is a special person who is around when I am in need*"). Items were summed and averaged to obtain an overall score. Potential scores ranged from 1-7, with higher scores indicating greater perceived social support (referred to as social support throughout). The scale has demonstrated acceptable reliability and validity with men and women (Zimet et al., 1988; Zimet, Powell, Farley, Werkman, & Berkoff, 1990). In this study, internal consistency (Cronbach's alpha) was excellent and statistically comparable ($p > .05$) for the total measurement instrument across sub-groups, ranging from .91 to .93 (see Table 5.1 for sub-group internal consistency).

Perceived behavioural control. Items to assess perceived behavioural control were reported in detail in Chapter 4 (pp. 142-143). In brief, perceived behavioural control was measured using three items that addressed perceived control over visiting a doctor, with items adapted from a sample TPB questionnaire (Fishbein & Ajzen, 2010) and those items used in a comparable study of help-seeking for breast cancer symptoms (Hunter et al., 2003). Averaged item scores gave an overall perceived behavioural control score (score range: 1-5). Higher scores represented greater perceived control over visiting a doctor. Internal consistency was acceptable but low for Australian ($\alpha = .63$, inter-item correlation = .39) and British male groups ($\alpha = .59$, inter-item correlation = .33). Internal consistency was better for female groups (Australian women $\alpha = .80$; British women $\alpha = .\ 68$). Differences in internal consistency across sub-groups approached statistical significance ($p = .07$), which suggests that men and women may have varied in their interpretation of individual items leading to differences in reliability.

Anticipated time to consultation. Anticipated time to consultation was the outcome variable in this study. Participants were asked to anticipate after what period of time they would seek help for 11 common cancer symptoms (e.g., '*After what period of time would you visit a doctor if you felt persistent unexplained fatigue?*'). In line with the outcome variable reported in Chapter 4 (pp. 143-144), and the symptom knowledge variable previously outlined in this chapter, cancer symptoms were chosen on a validated scale designed to assess awareness of cancer warning signs (Stubbings et al., 2009), with additional symptoms selected based on reputable cancer websites (e.g., Cancer Council SA, 2015). Participants were asked to respond on an ordinal scale with seven response options, from immediately (i.e., within 24-hours), to relatively promptly (i.e., 'within 1 week' or 'over 1 up to 2 weeks'), to some postponement (i.e., 'over 2 up to 3 weeks', 'over 3 up to 4 weeks', 'more than a month'), or choosing not to contact their doctor. Response options were adapted from the Awareness and Beliefs about Cancer measure (Simon et al., 2012).

Responses were combined across items (i.e., cancer symptoms) to maximise the relevance and generalisability of results. As outlined in the introduction of this chapter, potential postponement of help-seeking was defined as anticipating consultation with a healthcare professional after 2 weeks. Thus, symptoms for which the anticipated time to consultation exceeded 2 weeks were summed. Potential scores ranged from 0-11, with higher scores indicating a greater number of symptoms for which someone would postpone seeking help. Internal consistency was excellent in the present study, as demonstrated by comparable Cronbach's alphas across sub-groups ($p > .05$) ranging from .89 to .92 (see Table 5.1).

With consideration to the lack of standardised clinical recommendations for help-seeking for cancer symptoms and inconsistencies in measurement of help-seeking in the literature as discussed in the introduction (pp. 177-179), sensitivity analyses were also run on a reformed outcome variable. The cut-off point for prompt help-seeking was increased from intending to visit a doctor within 2 weeks to 4 weeks of noticing a potential cancer symptom. Symptoms for which the anticipated time to consultation exceeded 4 weeks ('more than a month' and 'would not contact a doctor') were summed (score range 0-11) for inclusion in supplemental analyses.

Data Analysis

Participants. In total, 543 respondents commenced the survey and met eligibility criteria as previously outlined (p. 180). Seventy-five per cent (74.77%; $n = 406$) completed *all* sections of the survey, and 137 (25.23%) respondents did not. There were no systematic differences between the two groups ("stay-ins" and "drop-outs") according to gender, country of residence, age, relationship status, sexuality, education, or work status ($p > .05$).

Missing data at the item-level were less than 1% across each of the predictor variables and statistically Missing Completely At Random ($p > .05$). Due to the small amount of missing data, where possible, available item analysis (Parent, 2013) was used during scoring of variables and assessment of reliability in line with the methods used in Chapter 4. One participant was missing data for all of the MSPSS items and was excluded from analyses. Missing data at the item-level was higher for the outcome variable (item range: 6.7% to 7.4%) due to an unanticipated fault with the online Qualtrics Survey Software. In the initial stage of data collection the online survey did not display correctly for a number of participants because of an incompatibility between the survey software and internet browser used. Once the issue was identified, a warning regarding the browser incompatibility was displayed on the first page of the online survey. The fault solely impacted data collection for the outcome variable. Of participants who completed all sections of the survey ($n = 406$), 27 experienced the fault and were excluded from analyses. A further eight participants had a small amount of missing item-level data on the outcome variable, but did not experience the fault. Due to the scoring procedure as previously outlined, available item analysis was not possible for this variable, and these participants were excluded from analyses. Accordingly, 370 participants were included and analysed in the present study. Sub-groups included

Australian men (*n* = 114), Australian women (*n* = 111), British men (*n* = 59), and British women (*n* = 86). It should be noted that the same sample of Australian men were used in Studies 3 (Chapter 4) and 4 (Chapter 5).

Statistical methods: Preliminary analyses. Analyses were conducted in IBM SPSS Statistics 25 and significance levels were set at $p \leq .05$ unless otherwise stated. As recommended by Tabachnick and Fidell (2014), univariate outliers were identified by examining *z*-scores. Outliers (*z*-scores > 3) were identified on the following scales: MCD-I 'Optimistic capacity' subscale (*n* = 1), MSPSS total score (*n* = 5), and symptom knowledge (*n* = 5). Consequently, winsorising was applied by replacing extreme scores with the next highest score on a scale that was not extreme (Field, 2013; Sokal & Rohlf, 1995).

Multicollinearity was also assessed during exploration of the key variables. The BHSS subscale 'Need for control and self-reliance' was significantly positively related to anticipated time to consultation, $r = .21$, 95% BCa CI [.03, .37], $p = .03$, but was also highly positively correlated with 'Minimising problem and resignation' for Australian men, $r = .64$, 95% BCa CI [.51, .75], $p < .001$. There is currently no commonly accepted cut-off for evidence of multicollinearity, with bivariate correlations ranging from .5 to greater than .9 considered evidence of multicollinearity (Field, 2013; Tabachnick & Fidell, 2014; Vatcheva, Lee, McCormick, & Rahbar, 2016). After controlling for 'Minimising problem and resignation', 'Need for control and self-reliance' was no longer significantly related to anticipated time to consultation ($p > .05$). This was considered evidence that these variables could include material that may be appropriately omitted. Although self-reliance was proposed as an important barrier to men's help-seeking in Studies 1 (Chapter 2; Fish et al., 2015) and 2 (Chapter 3; Fish et al., 2019), the 'Need for control and self-reliance' scale was not included in multivariate analyses to reduce the impact of multicollinearity. The inclusion of the 'Minimising problem and resignation' subscale over the 'Need for control and self-reliance' subscale was to enable testing of the second prediction as outlined in the introduction of this chapter. It was also reasoned to be appropriate because of evidence from the literature suggesting that symptom perception and minimising may be one of the strongest barriers to timely help-seeking behaviour (Braybrook et al., 2011; Fish et al., 2015; Yousaf et al., 2015).

Inspection of variables and regression scatterplots indicated that the assumptions of normality and homogeneity of variance were violated across sub-groups. Accordingly, more robust methods of analysis were required, and bootstrapping was applied to correlation and regression analyses (Field, 2013). Bootstrapped analyses used 1000 samples and calculated 95% bias corrected and accelerated confidence intervals (BCa CI). For Analysis of Variance (ANOVA), the central limit theorem proposes that sampling distributions of means are normal with large enough sample sizes, however, this may not apply when sample sizes are unequal (Tabachnick & Fidell, 2014). Consequently, when investigating differences between groups, the non-parametric Scheirer-Ray-Hare extension of the Kruskal-Wallis test was used on variables where non-normally distributed raw data were evident (Sokal & Rohlf, 1995). This extension allowed for a two-way ANOVA of ranked data. The results of non-parametric analyses were comparable to that of parametric analyses (two-way ANOVAs). Subsequently, the results of parametric analyses are reported in this thesis due to greater ease of interpretation, with the test statistics of the non-parametric analyses provided in footnotes.

Statistical methods: Main analyses. Categorical socio-demographic data were analysed to assess sub-group variation using chi-square tests, with Australian men as the reference group. Univariate analyses, including frequencies and means, were run to explore the data. Bivariate analyses were run to establish significant relationships and to develop a set of psychosocial predictors. Bootstrapped correlation analyses were run to assess the relationship between anticipated time to consultation, various socio-demographic characteristics, and predictor variables. A point-biserial correlation was run when the relationship was between a continuous variable (i.e., anticipated time to consultation) and a dichotomous variable (e.g., current work status). Small, medium, and large effect sizes for correlations were interpreted as meeting the cut-offs of .10, .30, and .50 respectively (Cohen, 1992). Ten between-subjects factorial ANOVAs were run to examine variation between sub-groups on predictor and outcome variables. To reduce the likelihood of Type I error occurring, a Bonferroni correction (*p*-value divided by the number of tests) was applied to ANOVA results, with a new *p*-value set at .005 (Field, 2013).

Finally, multivariate analyses were used to test the predictive strength of the set of psychosocial determinants and the relative importance of individual psychosocial variables. A series of bootstrapped hierarchical multiple regressions were run across sub-groups. Multivariate analyses controlled for age, current work status, and level of education because of significant associations with the outcome variable. Cohen's *f* effect size was calculated for multiple regression models ($f^2 = R^2 / (1 - R^2)$), with small, medium, and large effect sizes set at .02, .15, and .35, respectively (Cohen, 1992). Correlation and regression analyses used bootstrapping because of violated assumptions as previously outlined. Bootstrapped analyses used 1000 samples and calculated 95% bias corrected and accelerated confidence intervals. Analyses were considered sufficiently powered to detect medium to large effect sizes for Australian sub-groups, however, were underpowered for British sub-groups (Cohen, 1992). Nonetheless, analyses were still conducted for British sub-groups to provide preliminary evidence to answer the research question.

Results

Sample Characteristics

Sample socio-demographic characteristics are reported in Table 5.2. No significant differences were observed between male groups. Australian men were more likely to be in a relationship, χ^2 (1) = 25.14, $p < .001$, and identify as heterosexual, χ^2 (1) = 4.81, $p = .03$, compared to Australian women. Australian men were more likely to be in a relationship, χ^2 (1) = 12.00, $p = .001$, and have completed a lower level of education, χ^2 (1) = 5.29, $p = .02$, compared to British women. Additionally, a majority of participants identified as either White ($n = 256$; 69.19%) or European ($n = 67$; 18.11%).

Table 5.2.

Socio-demographic characteristics of participants with chi-square test for independence comparing groups against Australian men (N = 370)

Characteristic	Australian men *n* = 114 Frequency (%)	Australian women *n* = 111 Frequency (%)	British men *n* = 59 Frequency (%)	British women *n* = 86 Frequency (%)
Current relationship status:				
Single[a]	18 (15.79)	53 (47.75)	17 (28.81)	33 (38.37)
In a relationship	96 (84.21)	58 (52.25)	42 (71.19)	53 (61.63)
		$p < .001$	*ns*	$p < .001$
Sexual identity:				
Heterosexual	109 (95.61)	95 (86.36)	52 (89.66)	80 (94.12)
Homosexual, bisexual, other	5 (4.38)	15 (13.63)	6 (10.34)	5 (5.88)
		$p = .03$	*ns*	*ns*
Highest level of education completed:				
Primary or Secondary	24 (21.05)	25 (22.52)	9 (15.25)	7 (8.14)
Tertiary	90 (78.94)	86 (77.48)	50 (84.75)	79 (91.86)
		ns	*ns*	$p = .02$
Current work status:				
Employed (full or part-time)	85 (74.56)	80 (72.07)	42 (71.19)	70 (81.40)
Retired, unemployed, other	29 (25.44)	31 (27.93)	17 (28.81)	16 (18.60)
		ns	*ns*	*ns*

Note. Missing data for some socio-demographic variables. Valid percent reported.

[a] Single includes participants identifying as single, widowed, separated, and divorced.

Mean (*M*) age was 54.25 years (Standard Deviation [*SD*] = 15.31 years; Median [*Mdn*] age = 55.00 years) for Australian men, 33.98 years (*SD* = 14.06 years; *Mdn* age = 28.00) for Australian women, 43.85 years (*SD* = 16.17 years; *Mdn* age = 43.00) for British men, and 41.34 years (*SD* = 13.18 years; *Mdn* age = 43.00) for British women. Differences in mean age according to country of residence and gender (independent variables) were analysed using a between-subjects factorial ANOVA. As previously outlined, to reduce the likelihood of Type I error occurring, a Bonferroni correction was applied to all ANOVA analyses, with significance levels set at $p < .005$. The main effect of country was non-significant, $F(1, 366) = .94$, $p > .005$, however, the main effect of gender was significant, $F(1, 366) = 52.38$, $p < .001$, $\eta^2 = .13$. Male participants (*M* = 50.70 years, *SD* = 16.33 years) were significantly older than female participants (*M* = 37.19 years, *SD* = 14.13 years). However, the effect of gender on age varied depending on country as indicated by a significant interaction, $F(1, 366) = 31.83$, $p <.001$, $\eta^2 = .08$. Differences in mean age were greater for Australian men and women, compared to British men and women.

Socio-demographic characteristics were compared to the general populations of men and women in Australia and the UK. As outlined in Study 3 (Chapter 4), the Australian male sample was older (AIHW, 2019b), reported a higher level of education (ABS, 2017), and were more likely to be in a relationship (AIHW, 2011) than the general population of Australian males. In contrast, the Australian female sample in this study was younger than the general population of Australian females (AIHW, 2019c). Australian women with a tertiary education (ABS, 2017), currently employed (ABS, 2019), and identifying as non-heterosexual (Wilson & Shalley, 2018) were also over-represented in this study. For the UK samples in this study[19], employed British women were over-represented, while employed British men were under-represented, compared to the general population (Office for National

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[19] Suitable comparative data was not available for current relationship status.

Statistics [ONS], 2019a). Additionally, both men and women with a tertiary education (ONS, 2019b) and identifying as non-heterosexual (ONS, 2019c) were over-represented in this study.

Psychosocial Determinants of Anticipated Time to Consultation

Mean scores and *SD*s for all scales are reported in Table 5.3. Differences between sub-groups were analysed using a series of between-subjects factorial ANOVAs to assess the main effects of gender and country of residence (independent variables) and the interaction effect between variables on each of the scales (dependent variables).

Table 5.3.

Means and standard deviations for all scales according to sub-groups (N = 370)

Scale	Australian men *n* = 114 *M* (*SD*)	Australian women *n* = 111 *M* (*SD*)	British men *n* = 59 *M* (*SD*)	British women *n* = 86 *M* (*SD*)
Importance of my own health	4.37 (0.66)	4.45 (0.71)	4.46 (0.68)	4.50 (0.63)
Symptom knowledge	9.02 (2.50)	9.46 (2.39)	9.47 (2.25)	9.52 (2.39)
Minimising problem and resignation	2.83 (0.98)	3.04 (0.94)	3.00 (0.96)	3.14 (0.95)
Privacy	2.19 (0.88)	2.37 (0.96)	2.06 (0.91)	2.55 (1.01)
Social support	5.36 (1.00)	5.34 (1.21)	5.41 (1.09)	5.69 (1.01)
Optimistic capacity	3.77 (0.70)	3.78 (0.76)	3.67 (0.88)	3.79 (0.77)
Emotional self-reliance	3.38 (0.74)	3.35 (0.78)	3.40 (0.89)	3.31 (0.84)
Perceived behavioural control	4.41 (0.64)	4.20 (0.84)	4.25 (0.75)	3.85 (0.92)
Anticipated time to consultation	4.34 (3.38)	5.23 (2.93)	4.64 (3.24)	5.48 (3.07)

Variation was observed on the ‘Privacy’ subscale of the BHSS and perceived behavioural control. A main effect of gender was observed on the ‘Privacy’ subscale, $F(1, 366) = 10.74, p = .001$, $\eta^2 = .03$[20], with Australian and British men ($M = 2.15$, $SD = 0.89$) indicating a lower preference for privacy compared to Australian and British women ($M = 2.44$, $SD = 0.98$). The main effect of country, $F(1, 366) = .05, p > .005$, and the interaction, $F(1, 366) = 2.45, p > .005$, were non-significant. Variation was also observed on the perceived behavioural control variable. A significant main effect of gender was observed, $F(1, 366) = 12.59, p < .001$[21], with Australian and British men indicating greater perceived behavioural control ($M = 4.35$, $SD = 0.68$) compared to Australian and British women ($M = 4.05$, $SD = 0.89$). Additionally, a significant main effect of country was observed, $F(1, 366) = 8.95, p = .003$[22], with Australian men and women indicating greater perceived behavioural control ($M = 4.31$, $SD = 0.75$) than British men and women ($M = 4.01$, $SD = 0.87$). The interaction was non-significant, $F(1, 366) = 1.22, p > .005$.

Anticipated Time to Consultation

Differences in anticipated time to consultation according to country of residence and gender (independent variables) were also analysed using a between-subjects factorial ANOVA. The main effects of gender, $F(1, 366) = 6.45, p > .005$, and country, $F(1, 366) = .64, p > .005$, were non-significant. The interaction effect, $F(1, 366) = .01, p > .005$, was also non-significant.

In addition to this, preliminary correlations were run between the outcome variable, anticipated time to consultation, and socio-demographic variables among Australian men to identify potential confounders. Age, $r = -.25$, 95% BCa CI [-.23, -.12], $p = .008$, and current

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[20] The non-parametric Scheirer-Ray-Hare extension of the Kruskal-Wallis test was used on variables where non-normally distributed raw data were evident. A preference for privacy was significantly different for men and women, $H(1) = 9.46, p < .005$.

[21] Perceived behavioural control was significantly different for men and women, $H(1) = 9.27, p < .005$.

[22] Perceived behavioural control was significantly different for participants living in Australia and the UK, $H(1) = 7.98, p < .005$.

work status, $r_{pb} = -.28$, 95% BCa CI [-.44, -.10], $p = .002$, were significantly negatively correlated with anticipated time to consultation. The significant negative point-biserial correlation coefficient indicated that being unemployed or retired was associated with lower anticipated time to consultation, compared to being employed (reference group). Anticipated time to consultation was also significantly positively associated with level of education, $r_{pb} = .25$, 95% BCa CI [.07, .41], $p = .009$, indicating that higher education was associated with greater anticipated time to consultation for Australian men. Anticipated time to consultation was not significantly associated with sexual identity. Consequently, age, current work status, and level of education were included in all subsequent regression analyses as potential confounding variables.

Associations between Determinants and Anticipated Time to Consultation

The main objective of the present study was to develop and test a predictive psychosocial model of help-seeking for Australian men. Accordingly, correlations between subscales were run for Australian men and are reported in Table 5.4. Overall, anticipated time to consultation was positively correlated with conformity with specific traditional masculine norms; ‘Minimising problem and resignation’, $r = .43$, 95% BCa CI [.26, .58], $p < .001$, ‘Privacy’, $r = .23$, 95% BCa CI [.06, .40], $p = .01$, and ‘Emotional self-reliance’, $r = .30$, 95% BCa CI [.12, .46], $p = .001$. Anticipated time to consultation was also significantly negatively correlated with the perceived behavioural control variable ($r = -.40$, 95% BCa CI [-.53, -.24], $p < .001$), with Australian men intending to seek help promptly for more symptoms where they reported greater control over help-seeking behaviour.

Table 5.4.

Inter-correlations between subscales for Australian men (n = 114)

Scales	1	2	3	4	5	6	7	8	9
1. Importance of my own health	-								
2. Symptom knowledge	.03	-							
3. Minimising problem and resignation	**-.35****	-.05	-						
4. Privacy	-.18	-.15	**.47****	-					
5. Social support	**.40****	.11	**-.23***	-.11	-				
6. Optimistic capacity	.11	.07	.17	.01	**.34****	-			
7. Emotional self-reliance	**-.22***	-.17	**.38****	**.24****	**-.34****	.06	-		
8. Perceived behavioural control	**.29****	.13	**-.42****	**-.28****	.08	.08	**-.26****	-	
9. Anticipated time to consultation	-.13	-.05	**.43****	**.23***	-.14	-.11	**.30****	**-.40****	**-**

* *p* < .05; ** *p* < .01.

All remaining psychosocial variables and scales were not significantly associated with anticipated time to consultation among Australian men. Accordingly, a limited set of psychosocial determinants was retained for use in subsequent regression analyses based on significant associations for Australian men and excluding non-significant associations. The final set of predictors included: 'Minimising problem and resignation', 'Privacy', 'Emotional self-reliance', and perceived behavioural control.

For completeness, inter-correlations between subscales were run for the remaining sub-groups and are reported in brief (see Tables 5.5 to 5.7 for further detail). For Australian women and British men, anticipated time to consultation was significantly correlated with perceived behavioural control ($p < .001$), the 'Minimising problem and resignation' subscale ($p = .002$), as well as ratings of the importance of my own health ($p \leq .01$). For British women, anticipated time to consultation was significantly correlated with the 'Minimising problem and resignation' subscale ($p = .002$), ratings of the importance of my own health ($p = .002$), as well as with the 'Optimistic capacity' subscale ($p = .01$). Although significant associations differed between Australian men and the remaining sub-groups, only predictor variables found to be significantly associated with anticipated time to consultation among the sample of Australian men were retained in regression analyses for testing. This was in accordance with the focus of the present thesis, and because the model developed to predict the behaviour of the Australian men provided the referent against which the other groups were tested.

Table 5.5.

Inter-correlations between all subscales for Australian women (n = 111)

Scales	1	2	3	4	5	6	7	8	9
1. Importance of my own health	-								
2. Symptom knowledge	.14	-							
3. Minimising problem and resignation	**-.32****	-.02	-						
4. Privacy	**-.34****	-.09	**.43****	-					
5. Social support	.05	.12	**-.27****	**-.23***	-				
6. Optimistic capacity	**.25****	-.03	-.16	**-.29****	**.19***	-			
7. Emotional self-reliance	.09	-.18	**.26****	.13	**-.26****	.13	-		
8. Perceived behavioural control	**.30****	.11	**-.36****	**-.32****	.10	.13	-.11	-	
9. Anticipated time to consultation	**-.28****	-.14	**.29****	.10	-.10	.02	-.02	**-.37****	**-**

* *p* < .05; ** *p* < .01.

Table 5.6.

Inter-correlations between all subscales for British men (n = 59)

Scales	1	2	3	4	5	6	7	8	9
1. Importance of my own health	-								
2. Symptom knowledge	-.03	-							
3. Minimising problem and resignation	**-.27***	-.10	-						
4. Privacy	**-.30***	.06	**.43****	-					
5. Social support	.19	-.08	-.18	**-.35****	-				
6. Optimistic capacity	**.33***	-.02	-.09	**-.35****	**.52****	-			
7. Emotional self-reliance	**-.26***	-.15	**.47****	**.43****	**-.29***	-.16	-		
8. Perceived behavioural control	**.35****	-.06	**-.34****	**-.39****	**.30***	**.33****	**-.31***	-	
9. Anticipated time to consultation	**-.33***	-.09	**.39****	.16	-.14	-.15	.22	**-.48****	**-**

* $p < .05$; ** $p < .01$.

Table 5.7.

Inter-correlations between all subscales for British women (n = 86)

Scales	1	2	3	4	5	6	7	8	9
1. Importance of my own health	-								
2. Symptom knowledge	-.19	-							
3. Minimising problem and resignation	**-.32****	.10	-						
4. Privacy	-.15	-.05	**.34****	-					
5. Social support	.04	-.08	-.21	.03	-				
6. Optimistic capacity	**.29****	-.16	-.12	-.14	.05	-			
7. Emotional self-reliance	-.08	.09	**.30****	.21	**-.27***	.13	-		
8. Perceived behavioural control	**.32****	-.12	**-.34****	**-.29****	-.02	**.30****	-.20	-	
9. Anticipated time to consultation	**-.33****	.13	**.33****	.10	-.02	**-.28****	.20	-.19	**-**

* $p < .05$; ** $p < .01$.

Psychosocial Predictors of Anticipated Time to Consultation for Cancer Symptoms

The primary objective of this study was to assess the predictive strength of an empirically driven set of psychosocial determinants of help-seeking, as well as the relative importance of psychosocial influences on anticipated time to consultation among Australian men. The set of included predictor variables was based on significant correlations previously reported for Australian men: ‘Minimising problem and resignation’, ‘Privacy’, ‘Emotional self-reliance’, and perceived behavioural control. A bootstrapped hierarchical multiple regression was run including age, current work status, level of education, and perceived behavioural control in Step 1 to control for potential confounding effects and the influence of perceived behavioural control, which was the main theory-derived construct deemed important in Study 3 (Chapter 4) in this thesis. All remaining psychosocial predictor variables (i.e., those validated by a significant correlation) were entered in Step 2. This order was chosen to test whether research-derived variables could predict anticipated time to consultation over and above socio-demographic and theory-derived variables.

A secondary objective of the present study was to test whether the model, which was developed to predict the behaviour of Australian men, has relevance across countries of residence and genders. In order to test the generalisability of the model among sub-groups, bootstrapped hierarchical multiple regressions were run for Australian women, as well as British men and women. All aspects were kept constant (i.e., the set of psychosocial determinants and regression steps were equivalent for all sub-groups) to ensure completeness and to allow for comparisons.

Variance in Australian men’s anticipated time to consultation. Regression results testing the predictive strength of the set of predictor variables among Australian men are reported in Table 5.8. The first step explained a significant 26% of the variance in anticipated time to consultation, with a large effect size ($f^2 = .35$). Perceived behavioural control was the strongest predictor of anticipated time to consultation. The negative direction of the beta value indicated Australian men intended to seek help promptly for more symptoms where they reported greater control over help-seeking behaviour. Level of education was also significantly positively correlated with anticipated time to consultation. The positive direction of the beta value indicated that higher levels of education were associated with a greater number of symptoms for which someone would postpone seeking help.

Table 5.8.

Predictors of anticipated time to consultation among Australian men (n = 114)

Predictor	*B*	Std. Error	β	BCa 95% Confidence Interval Lower	BCa 95% Confidence Interval Upper
Step 1.					
Age	-.03	.02	-.12	-.07	.01
Level of education completed	1.93	.58	**.23****	.69	3.21
Current work status	-.77	.77	-.10	-2.15	3.21
Perceived behavioural control	-1.92	.44	**-.37****	-2.86	-1.00
	$R^2 = .26$, $F(4, 109) = 9.59$, $p < .001$, $f^2 = .35$				
Step 2.					
Age	-.02	.02	-.08	-.05	.01
Level of education completed	2.01	.61	**.24****	.72	3.43
Current work status	-.57	.69	-.07	-1.87	.90
Perceived behavioural control	-1.32	.45	**-.25****	-2.29	-.30
Minimising problem and resignation	.97	.30	**.28****	.35	1.63
Privacy	-.21	.34	-.06	-.95	.48
Emotion self-reliance	.45	.39	.10	-.34	1.24
	$R^2 = .34$, $F(7, 106) = 7.69$, $p < .001$, $f^2 = .52$				

Note. Bootstrapped results reported based on 1000 bootstrap samples.
* $p < .05$; ** $p < .01$.

In Step 2, three empirically-derived psychosocial predictors were added to the set of determinants ('Minimising problem and resignation', 'Privacy', and 'Emotional self-reliance'), explaining an additional 8% of the variance in anticipated time to consultation, $R^2_{Change} = .08$, $F_{Change}(3, 106) = 4.06$, $p = .01$. The beta values indicated that 'Minimising problem and resignation' was the stronger predictor of anticipated time to consultation. The positive association indicated that greater problem minimising and resignation was associated with a greater number of symptoms for which someone would postpone seeking help. Both perceived behavioural control and level of education remained significantly associated with anticipated time to consultation, but with a reduced predictive strength for perceived behavioural control. Overall, the final model explained 34% of the variance in anticipated time to consultation, with a large effect size ($f^2 = .52$).

Variance in Australian women's anticipated time to consultation. A hierarchical multiple regression was run to test the extent to which variables that predict Australian men's anticipated time to consultation also predict Australian women's anticipated help-seeking behaviour (see Table 5.9). For Australian women, perceived behavioural control and level of education explained a significant 18% of the variance in anticipated time to consultation in Step 1 of the regression analysis, with a medium effect size ($f^2 = .22$). Adding the above-mentioned research-derived variables in Step 2 did not explain any additional variance in anticipated time to consultation, $R^2_{Change} = .04$, $F_{Change}(3, 103) = 1.57$, $p > .05$. The final model explained a significant 22% of variance in anticipated time to consultation, with a medium effect size ($f^2 = .28$). Beta values suggest that for Australian women perceived behavioural control was the strongest predictor of anticipated time to consultation in the final model, followed by 'Minimising problem and resignation'.

Table 5.9.

Predictors of anticipated time to consultation among Australian women (n = 111)

Predictor	*B*	Std. Error	β	BCa 95% Confidence Interval Lower	Upper
Step 1.					
Age	-.02	.02	-.10	-.05	.03
Level of education completed	1.12	.55	**.16***	.15	2.07
Current work status	-.71	.61	-.11	-1.86	.61
Perceived behavioural control	-1.23	.24	**-.35****	-1.71	-.74
	$R^2 = .18, F(4, 106) = 5.82, p < .001, f^2 = .22$				
Step 2.					
Age	-.01	.02	-.06	-.05	.03
Level of education completed	1.00	.55	.14	-.04	2.04
Current work status	-.78	.67	-.12	-2.07	.69
Perceived behavioural control	-1.11	.26	**-.32****	-1.60	-.61
Minimising problem and resignation	.69	.30	**.22***	.09	1.34
Privacy	-.32	.32	-.11	-.96	.30
Emotion self-reliance	-.26	.36	-.07	-1.00	.42
	$R^2 = .22, F(7, 103) = 4.05, p = .001, f^2 = .28$				

Note. Bootstrapped results reported based on 1000 bootstrap samples.
* $p < .05$; ** $p < .01$.

Variance in British men and women's anticipated time to consultation. Two hierarchical multiple regressions were run to test the extent to which variables that predict Australian men's anticipated time to consultation, also predict British men and women's anticipated help-seeking behaviour. Regression results for British men are reported in Table 5.10. In the first step, current work status and perceived behavioural control explained a significant 35% of the variance in anticipated time to consultation, with a large effect size ($f^2 = .54$). The beta values suggested the predictive strength of the two variables was approximately equal. For current work status, the negative direction of the beta value indicated that being unemployed or retired was associated with lower anticipated time to consultation, compared to being employed (reference group).

In Step 2, several research-derived psychosocial variables were added to the model. A non-significant R^2_{Change} was observed, $R^2_{Change} = .06$, $F_{Change}(3, 51) = 1.59$, $p > .05$. As reported in Table 5.10, the overall predictive model explained a significant 40% of the variance in anticipated time to consultation, with a large effect size ($f^2 = .67$). Current work status and perceived behavioural control were negatively associated with anticipated time to consultation in the final model, while ‘Minimising problem and resignation’ was positively associated with anticipated time to consultation for British men. Beta values suggest that the predictive strength of the three influences was approximately equal.

Table 5.10.

Predictors of anticipated time to consultation among British men (n = 59)

Predictor	*B*	Std. Error	β	BCa 95% Confidence Interval Lower	BCa 95% Confidence Interval Upper
Step 1.					
Age	.00	.03	.01	-.04	.06
Level of education completed	1.24	1.08	.14	-.90	3.43
Current work status	-2.43	.86	**-.34****	-4.07	-.78
Perceived behavioural control	-1.44	.57	**-.33***	-2.58	-.36
	$R^2 = .35$, $F(4, 54) = 7.18$, $p < .001$, $f^2 = .54$				
Step 2.					
Age	.01	.03	.06	-.04	.07
Level of education completed	1.21	1.08	.14	-.88	3.44
Current work status	-2.29	.83	**-.32***	-3.78	-.79
Perceived behavioural control	-1.35	.59	**-.31***	-2.43	-.08
Minimising problem and resignation	.93	.41	**.28***	.10	1.58
Privacy	-.45	.54	-.13	-1.48	.75
Emotion self-reliance	-.06	.55	-.02	-1.09	1.06
	$R^2 = .40$, $F(7, 51) = 4.92$, $p < .001$, $f^2 = .67$				

Note. Bootstrapped results reported based on 1000 bootstrap samples.
* $p < .05$; ** $p < .01$.

Regression results testing the predictive strength of a set of psychosocial determinants of help-seeking among British women are reported in Table 5.11. With consideration to the non-significant correlations previously reported for British women, as expected, the set of predictor variables explained minimal variance in anticipated time to consultation. In Step 1, a non-significant R^2 was observed, as well as non-significant associations between predictors and the outcome variable. A non-significant R^2_{Change} was also observed, $R^2_{Change} = .08$, $F_{Change}(3, 78) = 2.39$, $p > .05$. Although the final model was non-significant for British women, ‘Minimising problem and resignation’ was a significant positive predictor of anticipated time to consultation in the regression equation. The beta value was comparable to that reported for other sub-groups (see Table 5.12 for a summary of beta-values and levels of significance for predictor variables across sub-groups, as well as total variance explained and effect sizes for final regression models).

Table 5.11.

Predictors of anticipated time to consultation among British women (n = 86)

				BCa 95% Confidence Interval	
Predictor	*B*	Std. Error	β	Lower	Upper
Step 1.					
Age	.03	.03	.13	-.02	.08
Level of education completed	.64	1.50	.06	-2.45	3.96
Current work status	.31	.72	.04	-1.05	1.79
Perceived behavioural control	-.65	.35	-.20	-1.33	.18
	$R^2 = .06, F(4, 81) = 1.23, p > .05, f^2 = .06$				
Step 2.					
Age	.02	.03	.10	-.03	.07
Level of education completed	.27	1.33	.02	-2.41	3.34
Current work status	.33	.83	.04	-1.31	2.08
Perceived behavioural control	-.31	.40	-.09	-1.09	.61
Minimising problem and resignation	.87	.34	**.27***	.15	1.63
Privacy	-.07	.38	-.02	-.80	.75
Emotion self-reliance	.35	.37	.10	-.36	1.13
	$R^2 = .14, F(7, 78) = 1.76, p > .05, f^2 = .16$				

Note. Bootstrapped results reported based on 1000 bootstrap samples.
* $p < .05$; ** $p < .01$.

Table 5.12.

Summary of final hierarchical regression models (Step 2) according to sub-groups (N = 370)

Predictor in Step 2 of regression	Australian men *n* = 114 β[a]	Australian women *n* = 111 β	British men *n* = 59 β	British women *n* = 86 β
Age	-.08	-.06	.06	.10
Level of education completed	**.24****	.14	.14	.02
Current work status	-.07	-.12	**-.32***	.04
Perceived behavioural control	**-.25****	**-.32****	**-.31***	-.09
Minimising problem and resignation	**.28****	**.22***	**.28***	**.27***
Privacy	-.06	-.11	-.13	-.02
Emotion self-reliance	.10	-.07	-.02	.10
Total variance explained (R^2)	**.34****	**.22****	**.40****	.14
Effect size (f^2)	.52	.28	.67	.16

Note. Bootstrapped results reported based on 1000 bootstrap samples.
[a] Standardised regression coefficients.
* $p < .05$; ** $p < .01$.

Robustness of Psychosocial Predictors

In order to test whether psychosocial predictors of anticipated time to consultation vary according to the clinical cut-off used for “prompt” help-seeking, bootstrapped regression analyses were re-run keeping all aspects constant, but with a changed outcome definition. The cut-off point for prompt help-seeking was increased from intending to visit a doctor within 2 weeks to 4 weeks of noticing a potential cancer symptom.

For Australian men, sensitivity analysis revealed some notable variations in results. The first step in the supplemental regression analysis explained a comparable 25% of the variance in anticipated time to consultation, $R^2 = .25$, $F(4, 109) = 8.86$, $p < .001$, with a medium effect size ($f^2 = .32$). In accordance with the primary regression analysis, perceived behavioural control, $\beta = -.41$, 95% BCa CI [-2.13, -.52], $p = .001$, and level of education, $\beta = .14$, 95% BCa CI [.05, 1.62], $p = .03$, were significant predictors of anticipated time to consultation. By using a less restrictive definition of prompt help-seeking, however, age also emerged as a significant predictor of the outcome variable, $\beta = -.20$, 95% BCa CI [-.06, -.01], $p = .02$. The negative direction of the beta value indicated that Australian men intended to seek help promptly for a greater number of symptoms as age increased.

Step 2 explained an additional 6% of the variance in anticipated time to consultation, $R^2_{Change} = .06$, $F_{Change}(3, 106) = 3.23$, $p = .03$. The relative importance of psychosocial predictors in Step 2 also differed from the primary regression analysis when using a less restrictive definition of prompt help-seeking. The beta values indicated that perceived behavioural control was the strongest predictor of anticipated time to consultation, $\beta = -.35$, 95% BCa CI [-1.92, -.28], $p = .003$. This was followed by ‘Emotional self-reliance’, $\beta = .22$, 95% BCa CI [.22, 1.26], $p = .01$. The positive direction of the association between the ‘Emotional self-reliance’ subscale and anticipated time to consultation indicated that higher levels of emotional self-reliance were associated with a greater number of symptoms for which someone would postpone seeking help. Age, β = -.19, 95% BCa CI [-.06, -.01], p = .02, and level of education, β = .16, 95% BCa CI [.19, 1.67], p = .008, remained significant predictors of the outcome variable. In contrast to the primary regression analysis, a non-significant association was observed between the 'Minimising problem and resignation' subscale, β = .14, 95% BCa CI [-.13, .77], $p > .05$, and anticipated time to consultation in the second step. Overall, the final model explained a comparable 31% of the variance in anticipated time to consultation, $R^2 = .31$, $F(7, 106) = 6.76$, $p < .001$, with a large effect size ($f^2 = .45$).

For the remaining sub-groups, results from sensitivity analyses were, for the most part, found to be comparable with previous regression findings. In brief, the relative importance of psychosocial predictors was unchanged in Steps 1 and 2 of the supplemental regression analysis for Australian women, however, the final regression model explained less variance (14% vs 22% of variance explained) in the outcome. For British men, the variance explained (35% vs 39% of variance explained) and relative importance of psychosocial predictors were comparable across the first steps of the primary and supplemental regression analyses. In Step 2 of the supplemental regression, however, only perceived behavioural control, β = -.52, 95% BCa CI [-2.87, -.44], p = .002, was a significant predictor of anticipated time to consultation, explaining 44% of variance in the outcome, compared to 40% previously.

For British women, comparable amounts of variance explained were observed in Steps 1 (4% vs 6% of variance explained) and 2 (14% vs 17% of variance explained) of the primary and supplemental regression analyses. In contrast to the primary regression analysis, perceived behavioural control, β = -.21, 95% BCa CI [-1.00, -.04], p = .03, was a significant predictor of anticipated time to consultation in the first step of the sensitivity analysis. In line with the previous regression analysis, however, 'Minimising problem and resignation', β =

.27, 95% BCa CI [.26, 1.11], $p = .006$, was the only significant predictor of anticipated time to consultation in the final regression model. The final model explained a significant 17% of variance in anticipated time to consultation in the sensitivity analyses, $R^2 = .17$, $F(7, 78) = 2.31$, $p = .03$, with a medium effect size ($f^2 = .21$).

Discussion

The present study was the first to empirically investigate the predictive strength and relative importance of psychosocial variables linked to help-seeking for cancer symptoms among Australian men, and to make comparisons to other demographic groups varying by gender and nationality. The findings of this study confirmed that several influences were significantly correlated with Australian men's anticipated time to consultation, including: perceived behavioural control, 'Minimising problem and resignation', 'Privacy', and 'Emotional self-reliance'. Accordingly, a set of predictive psychosocial determinants was developed and tested, comprising theory- and research-derived predictors, while controlling for potential confounding socio-demographic variables. The final regression model, including all variables, was found to have moderate validity for predicting Australian men's anticipated time to consultation (a significant 34% of variance explained). This result was an improvement on the predictive power of the two theory-based models reported in Study 3 (Chapter 4; 20% of variance explained respectively).

Consistent with the findings of Studies 2 (Chapter 3; Fish et al., 2019) and 3 (Chapter 4) in this thesis, it was predicted that lower symptom knowledge, symptom minimisation, and lower perceived behavioural control would be the strongest predictors of men's anticipated time to consultation. In partial support of predictions, level of education, perceived behavioural control, and 'Minimising problem and resignation' were significant predictors of Australian men's anticipated time to consultation in the primary regression analysis. The beta-values suggested that the predictive strength and importance of the three variables was comparable. This suggests that interventions may usefully target health and behavioural beliefs, however, further prospective or experimental studies are required to establish causal relationships.

Contrary to prediction, however, correlation analyses revealed only a weak relationship between symptom knowledge and anticipated time to consultation for the purpose of seeking help. This finding was surprising and in contrast to Studies 1 (Chapter 2; Fish et al., 2015) and 2 (Chapter 3; Fish et al., 2019) of this thesis, which found strong qualitative evidence for the influence of cancer knowledge on help-seeking for cancer symptoms. Nevertheless, this finding is not unique to this study, and is in accordance with de Nooijer et al. (2002), who found weak correlations between symptom recognition and anticipated help-seeking for various cancer symptoms in a mixed-gender sample. Taken together, these findings suggest interventions designed to improve medical help-seeking behaviour may be more successful if they target health and behavioural beliefs, as opposed to cancer knowledge (de Nooijer et al., 2002).

This study was also the first to empirically examine the potential generalisability of psychosocial influences on Australian men's anticipated time to consultation across international locations (Australia and the UK) and genders. The same set of psychosocial predictors explained a comparable amount of variance in anticipated time to consultation in seeking help for both male groups, and less variance for female groups, indicating the final tested model may be more predictive for men than women. The relative importance and predictive strength of variables was comparable across sub-groups, with 'Minimising problem and resignation' a consistently strong predictor of anticipated time to consultation relative to other psychosocial and demographic variables across all four groups. Perceived behavioural control was also a significant predictor of anticipated time to consultation for three sub-groups, although non-significant for British women in primary analyses. These results provide some evidence for generalisability in the predictive validity of the variables associated with a potential postponement in seeking help for cancer symptoms, across countries of residence and genders. Additional socio-demographic factors, including level of education (Australian men) and current work status (British men), significantly predicted greater anticipated time to consultation for men. This is in accordance with qualitative research that has found employment responsibilities to be a barrier to help-seeking among men, as opposed to the family responsibilities that are commonly reported as a barrier among women (Leydon et al., 2003; L. K. Smith et al., 2005).

The sensitivity analyses included in this study also highlighted that the relative importance of psychosocial predictors can differ depending on the outcome definition. By using a less restrictive definition of prompt help-seeking (i.e., increasing the threshold from 2 to 4 weeks), the importance of 'Minimising problem and resignation' reduced to non-significance for both male groups. Moreover, 'Emotional self-reliance' emerged as a strong predictor of the re-defined outcome for Australian men only. The 'Emotional self-reliance' subscale measured stoicism and a preference for emotional self-reliance, which are attributes associated with traditional masculine gender norms. This suggests that outcome definitions should be carefully considered in help-seeking research, and that developing evidence-based clinical recommendations for appropriate help-seeking for cancer symptoms would be beneficial for informing future research.

Stages of Problem Recognition and Help-Seeking

The Model of Pathways to Treatment (see Figure 5.1; Scott et al., 2013) may be usefully applied to understand how the variables influencing help-seeking for cancer symptoms may vary depending upon actual time cut-offs used. As outlined previously in the introduction of the present thesis, the model extended Anderson's General Model of Total Patient Delay (Andersen et al., 1995), and outlined intervals and processes that may occur during an individual's pathway to primary care and treatment. The appraisal and help-seeking intervals included in the model are particularly relevant to the current study. The appraisal interval describes the stage when a bodily change is detected and interpreted, whereas the help-seeking interval occurs from when an individual perceives a reason to seek medical advice for a symptom until they see a healthcare professional to discuss their symptoms. Both intervals include processes (i.e., "cognitive, emotional, behavioural, organisational, or structural actions that occur within intervals" [p. 51]) that determine how an individual proceeds through the intervals on the pathway to cancer treatment.

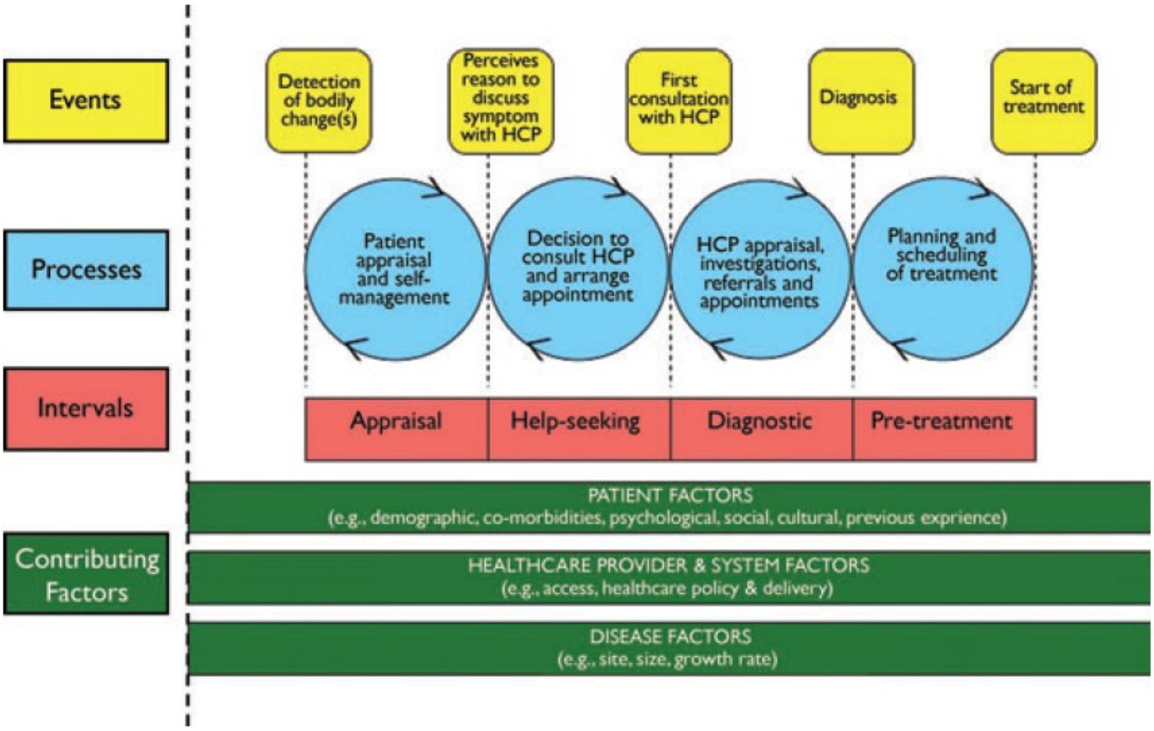

Figure 5.1. The Model of Pathways to Treatment. Reproduced from "The model of pathways to treatment: Conceptualization and integration with existing theory," by S. Scott, F. Walter, A. Webster, S. Sutton, and J. Emery, *British Journal of Health Psychology,* 18, 45-65, © Apr 27, 2012 by John Wiley and Sons. Reproduced with the kind permission of John Wiley and Sons.

The results of this study provide some validation of the processes described in the model. The 'Minimising problem and resignation' scale of the BHSS (Mansfield et al., 2005) was an important predictor of anticipated time to consultation across all sub-groups in the primary analyses of this study (i.e., cut-off point for prompt help-seeking across symptoms was 2 weeks). The scale represents the perception that a symptom was not serious enough for presentation to a healthcare professional, as well as worry about overacting to a symptom, which supports the model proposition that symptom interpretation processes occur during the appraisal interval. The predictive strength of this variable remained constant for both female groups irrespective of the threshold used for prompt help-seeking, but declined in significance for men when using a less restrictive definition (i.e., increasing the threshold from 2 to 4 weeks) in the sensitivity analyses. This provides some preliminary evidence that the factors that impact behaviour in the shorter term may differ from those that have impact later.

For Australian men, symptom perception and worry about overreacting to a symptom may lead to some initial postponement in visiting a doctor (beyond 2 weeks), but emotional self-reliance may be a stronger predictor of longer postponement (beyond 4 weeks) in medical help-seeking. This may occur for a wide variety of reasons, for instance symptoms may progress in severity or individuals may recognise the prolonged nature of symptoms (Carbone et al., 2009; Carroll et al., 2009; Emery et al., 2013; Mason & Strauss, 2004b; Ramos et al., 2010), or individuals may find it increasingly difficult to normalise and ignore symptoms. These differences in findings between the primary and sensitivity analyses provide some support for the differentiation between the appraisal and help-seeking intervals in the Model of Pathways to Treatment (Scott et al., 2013), and the different cognitive and affective predictors associated with appraisal and help-seeking behaviours. Further research explicitly measuring the appraisal and help-seeking intervals is required to confirm this interpretation.

Perceived behavioural control from the TPB (Ajzen, 1991; Fishbein & Ajzen, 2010) was also an important predictor of anticipated time to consultation for three sub-groups, highlighting that as participants' perceived level of control regarding whether they could visit a doctor increased, anticipated time to consultation decreased. The relative effect size for perceived behavioural control increased for both male groups when the threshold for help-seeking delay was defined as greater than 4 weeks, which may suggest that control beliefs or concerns about accessibility are particularly important during the process of seeking help (i.e., the help-seeking interval as described by Scott et al. [2013]) compared to the impact during the initial appraisal interval (i.e., bodily change is detected and interpreted) for men. This result supports the propositions within the Model of Pathways to Treatment (Scott et al., 2013) that expectations regarding access to care may prolong the duration of the interval.

The Model of Pathways to Treatment (Scott et al., 2013) also proposes that contributing factors (e.g., patient socio-demographic characteristics, disease factors) influence processes (e.g., cognitive, behavioural, and affective actions), and consequently the time spent in each interval (Scott et al., 2013). Having a higher level of education was associated with greater anticipated time to consultation for Australian men, whereas being employed was associated with greater anticipated time to consultation for British men. The finding that employment can postpone medical help-seeking is common (e.g., Carbone et al., 2009; Chapple et al., 2004; Hajdarevic et al., 2011; Leydon et al., 2003; Willams et al., 2003), but the association between higher education and anticipated time to consultation among Australian men was unexpected.

The positive association between education and anticipated time to consultation is uncommon, but certainly not unique to this study. Although lower educational achievement has more commonly been associated with greater help-seeking delay in systematic reviews (e.g., Mitchell, Macdonald, Campbell, Weller, & Macleod, 2008; Ramirez et al., 1999), several studies have also observed the opposite relationship with higher education (Pedersen et al., 2018; Quaife et al., 2014; van Osch et al., 2007), and the related concept of higher SES (Robb et al., 2009). One explanation is that higher levels of education, and possibly SES, may correlate with employment in demanding professional roles, which may impose greater conflicting responsibilities. A high proportion of participants in the present study had completed tertiary education, and therefore, may be employed in professional roles with greater responsibility. This would be in accordance with Robb et al. (2009), who found a relationship between higher SES and participants' reports of being too busy to seek help, as well as with greater anticipated time to consultation. Another explanation may be that those with a higher level of education may be more confident in their knowledge and monitoring of medical symptoms leading to greater anticipated time to consultation.

Social Responsibility in Medical Help-Seeking

Recent qualitative research (Llanwarne et al., 2017; MacLean et al., 2017) emerging from the UK has highlighted the potential importance of the moral aspect of decision-making during the help-seeking interval. Judgements regarding "responsible" service use may influence help-seeking decision-making in a variety of ways, including whether the patient thinks they are responsible for their illness due to lifestyle factors (e.g., smoking and lung cancer) and anticipated judgement regarding the appropriateness of accessing medical advice from a healthcare professional (Llanwarne et al., 2017). Judgements regarding appropriateness of help-seeking may be particularly relevant in welfare and mixed welfare-market healthcare systems, such as those implemented in Australia and the UK, which are sometimes viewed by healthcare professionals and patients as stretched and struggling to meet demand (Llanwarne et al., 2017; MacLean et al., 2017). MacLean et al. (2017) found that men and women from the UK were influenced by the notion of responsible service use during help-seeking decision-making when experiencing symptoms of lung cancer. Participants appeared to be conscious of constrained GP services and worried about seeking medical advice unnecessarily. This is line with broader medical help-seeking research, which found patients in primary care worry about the legitimacy of their help-seeking behaviour, questioning whether their reasons for seeking medical advice were good enough (Llanwarne et al., 2017).

It could be speculated that the results of this study further suggest social responsibility may play an important role in the help-seeking interval on the pathway to cancer treatment. Negative associations were observed between perceived behavioural control and 'Minimising problem and resignation' for all four groups, indicating that as perceived behavioural control decreased 'Minimising problem and resignation' increased. Moreover, the two variables were significant predictors of anticipated time to consultation in final regression models (except for British women for whom only 'Minimising problem and resignation' was significant). This may indicate that individuals who perceive difficulty in visiting a doctor, potentially due to perceptions of a stretched healthcare system, are likely to worry about overreacting to a symptom and resign themselves to the health problem, resulting in postponing consultation with a healthcare professional. To better understand the impact of social responsibility during the help-seeking interval and to confirm this interpretation, it would be useful for future research to include scales specifically designed to measure these constructs.

Generalisability across Locations and Genders

Previous research evidence suggests that men are more likely to postpone help-seeking for cancer symptoms than women (Evans et al., 2005; Oberoi et al., 2014; Porta et al., 1996; van Osch et al., 2007; Young et al., 2000). Consistent with this wider literature, it was predicted that male participants would be significantly more likely to anticipate greater time to consultation for cancer symptoms compared to female participants. Contrary to prediction, anticipated time to consultation was comparable across genders, as well as across locations. This may be due, in part, to the hypothetical nature of the study, and may suggest that men were overly optimistic about their future help-seeking behaviour. However, the result is in accordance with research that has also found no gender differences in help-seeking (Mitchell et al., 2008). This interesting finding challenges the widespread assumption that men are poorer at help-seeking for cancer symptoms than women. To better understand gender differences in help-seeking for cancer symptoms within Australia and globally; additional prospective research is required measuring actual help-seeking behaviour to confirm this result.

The present study extends previous research by demonstrating the approximately equal strength of help-seeking influences across sub-groups, with the exception of British women. These results suggest that there may be potential for applying a broad international and non-gender specific approach to improving help-seeking behaviour by focusing on health and behavioural beliefs. However, studies investigating the relationships between these factors across multiple locations would be required to further generalise these findings and substantiate this approach. Furthermore, it should be noted that while results are indicative of association, the ability to detect causality was limited due to the correlational design of this study. Further research could use prospective or experimental designs to assess casual relationships.

The results of this study also indicated some key differences between groups that highlight some context- and gender-specific variation in determinants of help-seeking for cancer symptoms. Although several small to medium correlations were found between psychosocial influences and anticipated time to consultation to seek help for Australian men, these results, for the most part, were not replicated for the other sub-groups. With respect to both female groups, this pattern of results was not surprising because the psychosocial predictors included in this study were expected to be most relevant to men’s help-seeking. However, it was interesting to note the differences in results between Australian and British men, which in accord with the findings of Study 2 (Chapter 3; Fish et al., 2019), provides further evidence for within-gender cross-cultural differences.

Differences between men were observed on two of the BHSS (Mansfield et al., 2005) subscales, ‘Privacy’ and ‘Emotional Self-Reliance’, with the subscales significantly associated with anticipated time to consultation for Australian men only. Variation could be accounted for by the different ages of the male sub-groups (British men: 43.85 years vs Australian men: 54.25 years) and/or a variety of different cultural factors, including distinctive masculine roles within each culture. As previously outlined in Chapter 3, it has been proposed that there are unique masculine roles within Australian culture, including “the athlete” (reflecting strength and the importance of sports), “the mate” (reflecting male camaraderie and relationships), “the larrikin” (reflecting a jovial and mischievous attitude and someone who defies authority), and “the ocker” (reflecting an uncultured, rough demeanour and a working class man; Mahalik et al., 2007). Whilst not all Australian men may identify with these masculine roles, facets of these roles may impact upon masculine role norms within Australia (Mahalik et al., 2007). The masculine norms investigated in this study (i.e., preference for privacy/embarrassment, emotional self-reliance) may be significant predictors of Australian men’s help-seeking, but other norms not included in this study may be more relevant in describing British men’s help-seeking behaviour. However, caution should be taken when interpreting these results because analyses may have been under powered and unable to detect significant relationships for British men. Under powered analyses may also explain why the results of this study were in contrast to previous research, which found that men and women in the UK were more likely than those in Australia to perceive embarrassment as a barrier to help-seeking for cancer symptoms (Forbes et al., 2013).

Another key difference between the sub-groups was the variation in the predictive strength of health prioritisation. Conflicting responsibilities and low health prioritisation had previously been identified within descriptive research as a potentially important barrier to help-seeking for cancer symptoms among both Australian (Carbone, Walker, Burney, & Newton, 2009; Emery et al., 2013; Fish et al., 2019; Young, Sweeney, & Hunter, 2000) and British male samples (Chapple, Ziebland, & McPherson, 2004; Leydon, Bynoe-Sutherland, & Coleman, 2003; Scanlon et al., 2006). The correlational results of this study indicated that health prioritisation was significantly associated with anticipated time to consultation for all sub-groups *except* for Australian men. It was therefore not included in regression analyses, and this study did not determine the relative importance of health prioritisation compared to the included psychosocial variables for Australian women or British sub-groups. While beyond the scope of this thesis given it primarily focused on Australian men, future research may usefully explore the predictive strength of health prioritisation for the other sub-groups, potentially using a more in-depth measure (a one item measure was used in this study). These results highlight the worth of using a mixed-method approach for exploring the determinants of men's help-seeking behaviour, as well as for investigating within-group variance.

Limitations

The results of this study should be considered in light of several important limitations. First, men are typically underrepresented in psychological research and the recruitment of male participants was challenging. To increase the likelihood of recruiting sufficient participants to power analyses, a variety of tailored promotional methods were used to engage possible male participants. For example, advertising materials promoted gift cards for hardware stores in Australia. Male dominated or focused organisations were also approached for assistance with recruitment, including local sporting organisations in both countries. Despite efforts, the minimum number of participants identified in power analyses was not reached in the UK. Analyses were still conducted for British sub-groups to provide preliminary evidence on the relative importance of psychosocial factors associated with help-seeking for cancers symptoms.

Second, and in line with the limitations discussed in Study 3 (Chapter 4), non-probability self-selection sampling was used in this study and samples were not representative of men and women from Australian nor the UK. Of particular relevance, participants were highly educated and findings may not generalise to those with lower educational attainment. Furthermore, participants were asked to anticipate behaviour within hypothetical scenarios, thus actual help-seeking behaviour was not investigated. Although this limitation is common to help-seeking and health behaviour research, it has been argued that this approach does not take into account a variety of important contextual and personal factors that may influence help-seeking, which should be noted when interpreting these results (Scott & Walter, 2010). Investigating the predictors of variance in hypothetical help-seeking is an important first step, but a follow-up study is needed to verify the results in this thesis.

It should also be noted that this study was conducted at the time of campaigning and voting for the UK European Union membership referendum (also known as the Brexit referendum) in 2016. The NHS and healthcare were importantly featured in the referendum campaigns, and it remains unclear how the referendum will influence healthcare in the UK (Wildman, Baker, & Donaldson, 2017). This may have influenced British participants' attitudes towards healthcare professionals and the healthcare system, which in turn, may have influenced survey response rates and participants' responses to survey questions about health and help-seeking.

Chapter Summary

Empirical testing was undertaken to establish the predictive strength of a range of psychosocial variables on help-seeking, and the extent to which results obtained from Australian men were predictive for Australian women and British citizens, in order to inform evidence-based interventions designed to optimise help-seeking for cancer symptoms. Overall, the model of help-seeking based on preliminary data analysis with Australian men explained a good amount of variance in anticipated time to consultation for both male groups, but less variance for female groups. Perceived behavioural control and 'Minimising problem and resignation' were found to be consistently strong predictors of anticipated time to consultation compared with other psychosocial and demographic factors across sub-groups (except for British women where only 'Minimising problem and resignation' was significant). The validity of the 'Minimising problem and resignation' subscale of the BHSS (Mansfield et al., 2005), as well as the feasibility of a broad international and non-gender specific approach to improving help-seeking behaviour, will be discussed in detail in the final discussion chapter.

Finally, the findings of this study provided support for the Model of Pathways to Treatment (Scott et al., 2013), which highlights the importance of cognitive and affective processes during the appraisal and help-seeking intervals that occur on an individual's pathway to cancer treatment. The findings also suggest that social responsibility may play an important role in decision-making during the help-seeking interval. These concepts and processes will be discussed further in the final chapter, as well as the implications of these results.

Chapter Six: Conclusions

Preamble

Cancer is one of the leading causes of death for men and women worldwide (Bray et al., 2018). To reduce the burden of cancer, a range of strategies have been proposed, including the early diagnosis and treatment of cancer (Etzioni et al., 2003). Internationally, a notable proportion of men postpone seeking professional medical advice for common cancer symptoms (e.g., Forbes et al., 2014; Keeble et al., 2014; Skeppner et al., 2012), resulting in later diagnosis of cancer. Moreover, men appear more likely than women to postpone consulting a doctor for non-gender-specific cancers (Evans et al., 2005; Oberoi et al., 2014; Porta et al., 1996; van Osch et al., 2007; Young et al., 2000). This is problematic because evidence indicates that early diagnosis is associated with improved survival and better health outcomes for certain types of cancer (Neal et al., 2015).

Cancer burden, as indexed by incidence and mortality, appears to be an especially prominent problem for Australian men (AIHW, 2017a; Bray et al., 2018; Ferlay et al., 2018b). Although current evidence for Australian men's medical help-seeking behaviour for cancer symptoms is scarce, evidence suggests that Australian men are less likely than women to access GP services across all age groups (ABS, 2018b; Bayram et al., 2016), and are more likely to die from non-sex specific cancers, including lung, skin, blood, and lymph cancers (ABS, 2018a). Taken together, this is consistent with international observations of greater postponement in help-seeking among men (e.g., Evans et al., 2005; Oberoi et al., 2014).

Despite the growing body of research that has investigated men's help-seeking for cancer symptoms internationally, there is currently limited understanding of Australian men's experiences of, and responses to, common cancer symptoms. Due to this gap, it is difficult to address the issue and improve men's help-seeking behaviour. The principle goal of this thesis was to determine psychosocial influences on Australian men's help-seeking for cancer symptoms, with the aim of identifying informational or alternative intervention strategies designed to facilitate timely help-seeking behaviour. Several empirical questions were asked:

i. What are the psychosocial factors that influence men’s help-seeking for cancer symptoms internationally?
ii. What are the main psychosocial barriers to, and facilitators of, Australian men’s timely help-seeking for common cancer symptoms, as identified cross-sectionally?
iii. Do men’s responses to cancer symptoms vary between different socio-demographic groups?
iv. Are psychosocial correlates of timely help-seeking for common cancer symptoms generalisable between men and women?

This concluding chapter summarises the findings of the four studies included in the present thesis. The summary is followed by a discussion of the main implications for research and practice, the strengths and weaknesses of the research conducted, and suggestions for future research directions.

Brief Summary of the Research Findings

Study 1 (Chapter 2; Fish et al., 2015) systematically reviewed research investigating the psychosocial factors associated with men’s medical help-seeking for cancer symptoms. Forty international studies were included in the review: 25 qualitative studies, 11 quantitative studies, and four mixed-method studies. Observational evidence was found for the influence of symptom knowledge and appraisal, strong emotions (e.g., fear and embarrassment), traditional masculine norms, conflicting responsibilities, and social support on men’s help-seeking behaviour. This review highlighted several important limitations with existing research and the need for future research to examine variation between groups of men, increase theoretical grounding to identify a pathway of influence, and test the predictive strength and relative importance of relevant psychosocial factors.

Based on the findings of the systematic review, Study 2 (Chapter 3; Fish et al., 2019) qualitatively explored the psychosocial influences on Australian men's help-seeking for cancer symptoms, as well as potential variation between men residing in urban and rural areas using semi-structured interviews. Australian men recently diagnosed with cancer (n = 13) were asked to describe their pathway to cancer treatment. Participants' partners (n = 8) were also interviewed to verify accounts. Nine participants reported actively seeking help for their symptom(s), with patient intervals (i.e., date of first symptom until clinical presentation) ranging from four days to 12 months. Results indicated that patient intervals were similar across men from urban and rural areas. Key themes identified in the data included: symptom appraisal factors, traditional masculine norms, level of concern, conflicting responsibilities and access, and trust in healthcare professionals. Participants from rural areas were more likely to discuss difficulty with accessing healthcare and optimism regarding symptoms.

Study 3 (Chapter 4) tested the separate and combined predictive power of the Theory of Planned Behaviour (Ajzen, 1991; Fishbein & Ajzen, 2010) and the Health Belief Model (Rosenstock, 1974) for explaining intentions to seek help for common cancer symptoms among 127 Australian men using a cross-sectional survey. Due to evidence that prior help-seeking experience for potential symptoms can impact perceptions of health and delay future medical help-seeking behaviour (e.g., Renzi et al., 2015; L. K. Smith et al., 2005; Walter et al., 2014), the study sampled men without a history of cancer. Overall, men's intentions to seek help were moderately explained by the two theories in separate (each model explained 20% of variance) and combined (25% of variance explained) regression analyses. Results indicated that perceived behavioural control was the only significant theory-derived predictor of men's help-seeking intentions when controlling for age in the combined regression analysis.

Considering the modest variance explained in Study 3 (Chapter 4), the final study of this thesis (Study 4; Chapter 5) aimed to investigate the predictive strength and relative importance of theory-derived constructs in combination with research-derived constructs associated with anticipated time to consultation. Moreover, empirical comparisons between international jurisdictions and genders were performed to determine whether psychosocial correlates were generalisable. The cross-sectional study surveyed Australian men (*n* = 114) and women (*n* = 111), as well as British men (*n* = 59) and women (*n* = 86), without a prior history of seeking medical advice for cancer symptoms.

Results indicated that anticipated time to consultation was comparable across groups. Collectively, the set of psychosocial predictors explained a good amount of variance in anticipated time to consultation for both male groups (34-40% of variance explained), but less variance for female groups (14-22% of variance explained). Perceived behavioural control and 'Minimising problem and resignation' were the only significant psychosocial predictors of the outcome for the Australian groups and British men. Only 'Minimising problem and resignation' significantly predicted the outcome for British women. Sensitivity analyses designed to test the robustness of findings revealed some important variations in results for both male groups. By using a less restrictive definition of prompt help-seeking (i.e., increasing threshold from 2 to 4 weeks), the importance of the 'Minimising problem and resignation' variable reduced to non-significance. 'Emotional self-reliance' emerged as a strong predictor of the re-defined outcome for Australian men only.

Conceptual Summary of the Research Findings

Australian Men's Help-Seeking for Common Cancer Symptoms

Evidence describing Australian men’s help-seeking for common cancer symptoms is limited, and to some extent, out-of-date (e.g., Dent et al., 1990; McDermott et al., 1981; Young et al., 2000). The present thesis has advanced knowledge in the area by highlighting patterns in Australian men’s actual (Study 2) and anticipated (Studies 3 and 4) help-seeking for common cancer symptoms. Overall, qualitative evidence of Australian men’s actual help-seeking behaviour showed that some men postponed seeking medical advice for cancer warning signs. In contrast, when asked to anticipate help-seeking behaviour, Australian men predicted prompt help-seeking for most common cancer symptoms. These findings could imply a gap exists between intentions and actual medical help-seeking behaviour for some men.

The findings of Study 2 (Chapter 3; Fish et al., 2019), provided a description of help-seeking behaviour from Australian men diagnosed with cancer. Prompt help-seeking was defined as visiting a doctor to seek medical advice within 2 weeks of noticing a cancer warning sign. Three participants were categorised as seeking medical advice promptly, however, it should be noted that one of these participants had a prearranged appointment and indicated he probably would not have otherwise sought advice regarding a changed mole. Six participants postponed help-seeking for their cancer symptom(s) for more than 2 weeks, with patient intervals ranging from 4 weeks to 12 months. Thus, most participants postponed seeking medical advice for cancer symptom(s) in this study.

Study 3 (Chapter 4) examined Australian men’s intentions to seek help for common cancer symptoms. Intention to seek help for cancer symptoms, averaged across all symptoms, was high. Intentions to seek help did differ across symptoms; most participants intended to seek help for symptoms of bowel and bladder cancer, but a smaller proportion of participants intended to seek help for more general symptoms, such as persistent unexplained fatigue. Although these findings were informative, the outcome variable used in Study 3 was the likelihood of seeking help at any point in time in accordance with the theories under investigation. It was therefore temporally constrained, and did not assess whether participants intended to seek help promptly or after some postponement.

To extend these findings, Study 4 (Chapter 5) examined the psychosocial predictors of anticipated time to consultation for potential cancer symptoms. In line with Study 2 (Chapter 3; Fish et al., 2019) and similar research (Quaife et al., 2014; Robb et al., 2009), potential postponement of help-seeking was defined as intending to visit a doctor after 2 weeks of noticing a potential cancer symptom. The symptoms for which anticipated time to consultation exceeded 2 weeks were summed (score range: 0-11), with scores indicating the number of symptoms for which someone would postpone seeking help for greater than two weeks. Among Australian men, the average number of symptoms for which the help-seeking interval may be longer was moderate ($M = 4.34$, $SD = 3.38$), which suggested participants anticipated prompt help-seeking (within 2 weeks) for most common cancer symptoms. When the threshold for prompt help-seeking was increased from 2 to 4 weeks, the average number of symptoms for which the help-seeking interval may be longer was low ($M = 1.86$, $SD = 2.38$). Taking the results of Studies 3 and 4 together, Australian men anticipated seeking medical advice for most cancer warning signs promptly.

Although it would be imprudent to draw prevalence conclusions from a small qualitative study, collectively, these results could suggest that some men are at risk of postponing help-seeking for cancer symptoms, and that a temporal gap between intention to act and actual medical help-seeking may characterise Australian men. At a more general level, this disjunction between intention and behaviour is consistent with the moderate association between intention and behaviour generally reported (Webb & Sheeran, 2006). However, further prospective research specifically designed to understand the relationship between Australian men's help-seeking intentions and behaviour is required to confirm this speculation.

Salient Psychosocial Predictors of Australian Men's Help-Seeking

The number of psychosocial predictors empirically linked with men's help-seeking for cancer symptoms continues to grow internationally, as shown in the systematic review reported in Study 1 (Chapter 2; Fish et al., 2015). However, the predictive strength and relative importance of psychosocial factors has yet to be determined (Scott & Walter, 2010). The findings of this thesis highlight the relative effect size of psychosocial influences, which is an essential precursor for the identification of strategies likely to improve men's help-seeking for cancer symptoms.

Although perceived personal control factors have not featured prominently in past international research (see Study 1 [Chapter 2]; Fish et al., 2015), perceived behavioural control was a consistently strong predictor of help-seeking for cancer symptoms in the studies in this thesis. This result was found to be robust across Studies 2 (Chapter 3; Fish et al., 2019), 3 (Chapter 4), and 4 (Chapter 5), as well as between diverse samples differing by help-seeking experience (i.e., actual vs anticipated help-seeking), location, and gender. The results of the retrospective qualitative study (Chapter 3; Fish et al., 2019) investigating the psychosocial aspects of Australian men's help-seeking for cancer symptoms, indicated that '*conflicting responsibilities and difficulty with access'* was one of the main influences on the sample's help-seeking for cancer symptoms. Several rural men described difficulties accessing professional medical advice, which impacted help-seeking behaviour.

Perceived behavioural control (i.e., perception of having control over performing a behaviour) was also included in the empirical studies described in Studies 3 and 4 (Chapters 4 and 5). As predicted in both studies, perceived behavioural control was one of the strongest predictors of men's anticipated help-seeking for cancer symptoms. In Study 3 (Chapter 4), the separate and combined predictive strength of the TPB and HBM for explaining men's intentions to seek help for common cancer symptoms was somewhat modest, which suggested they were suboptimal models for explaining variance in Australian men's help-seeking intentions. This is in line with criticisms of the TPB (e.g., Ogden, 2015; Sniehotta et al., 2014) and HBM (e.g., Armitage & Conner, 2000), which call for alternative explanatory models. Nonetheless, perceived behavioural control was the strongest predictor of men's help-seeking intentions compared to other demographic and social cognitive variables. Study 4 (Chapter 5) extended this finding by investigating perceived behavioural control in combination with other potentially important research-derived constructs (e.g., symptom knowledge, optimism, traditional masculine norms, fear of embarrassment). Perceived behavioural control remained a significantly strong negative predictor of anticipated time to consultation after controlling for other socio-demographic and psychosocial variables. As perceived behavioural control increased, anticipated time to consultation for cancer symptoms decreased.

The findings reported in this thesis also showed that symptom perceptions and worry about overreacting to a symptom significantly contributed to Australian men's medical help-seeking. This result was also found to be robust across the qualitative and quantitative studies in this thesis. The retrospective qualitative study (Chapter 3; Fish et al., 2019) identified symptom perception factors as the most prominent theme in the data. Participants appeared to have limited knowledge of cancer symptoms and had difficulty attributing the cause of their symptom(s). Therefore, they relied on the perceived severity of their experience of the symptom (e.g., experienced as mild vs severe bodily change) when deciding whether to seek help. Consistent with this, another important theme identified in the data was '*level of concern*'. Participants who postponed help-seeking often expressed a low level of concern and greater optimism about their symptoms, believing their symptoms would subside without the need for professional intervention.

Subsequently, the extent of influence of these psychosocial factors was investigated in Study 4 (Chapter 5). The ‘Minimising problem and resignation’ subscale of the BHSS (Mansfield et al., 2005) used in Study 4 assessed symptom minimisation, worry about overreacting to a symptom, and unrealistic optimism. ‘Minimising problem and resignation’ was a significantly strong positive predictor of anticipated time to consultation in comparison to other socio-demographic and psychosocial variables; greater problem minimisation and resignation was associated with greater anticipated time to consultation for cancer symptoms. The results of the final regression model showed that perceived behavioural control and ‘Minimising problem and resignation’ were comparable in effect size. Thus, both the qualitative and quantitative results of this thesis confirmed that perceived behavioural control, as well as symptom perceptions, are strong contributors to Australian men’s help-seeking behaviour, and explain more variance than the other psycho-social variables that were included.

To test the robustness of these findings in Study 4 (Chapter 5), sensitivity analyses were undertaken to determine whether the specific cut-off of 2 weeks as a definition of “prompt help-seeking” influenced the result. This is a particularly important consideration given the fact that potential postponement of help-seeking was operationalised as the sum of an array of symptoms, some of which may not necessarily require follow-up within the 2 weeks initially used to define “prompt”. Subsequent sensitivity analyses defined action within 4 weeks as timely.

Analyses using this less restrictive definition indicated that the ‘Minimising problem and resignation’ subscale of the BHSS (Mansfield et al., 2005) no longer predicted anticipated time to consultation for Australian men. In its place, perceived behavioural control and the ‘Emotional self-reliance’ subscale of the MCD-I (Chambers et al., 2016) were significant predictors of anticipated time to consultation. The ‘Emotional self-reliance’ subscale measures stoicism and a preference for emotional self-reliance, attributes generally associated with traditional masculine gender norms and identified as important in the wider help-seeking literature reviewed in Study 1 (Chapter 2; Fish et al., 2015). These results are also consistent with responses from interviews undertaken with Australian men recently diagnosed with cancer and summarised in Study 2 (Chapter 3; Fish et al., 2019). This suggests that symptom perception and worry about overreacting to a symptom can lead to an initial postponement in visiting a doctor (i.e., taking longer than 2 weeks), but that emotional self-reliance is a stronger predictor of longer postponement in help-seeking for cancer symptoms (i.e., taking longer than 4 weeks or not seeking help). This finding also underscored the importance of perceived behavioural control, which remained a robust predictor of help-seeking for cancer symptoms irrespective of the threshold to define “prompt” help-seeking.

Finally, knowledge and awareness of cancer symptoms featured prominently in past qualitative research (see Study 1 [Chapter 2]; Fish et al., 2015), however, symptom recognition was inconsistently associated with men’s help-seeking for cancer symptoms in the studies included in this thesis. The qualitative analysis described in Study 2 (Chapter 3; Fish et al., 2019), which investigated the psychosocial aspects of Australian men’s help-seeking for cancer symptoms, identified that the overarching theme was symptom factors (including symptom knowledge and appraisal). In contrast, recognition of symptoms as cancer warning signs was not associated with intentions to seek help for unexplained bleeding (a symptom highly likely to lead to help-seeking) or persistent unexplained fatigue (a symptom less likely to lead to help-seeking) in Study 3 (Chapter 4). Building on this finding, correlation analyses in Study 4 (Chapter 5) revealed a non-significant relationship between symptom knowledge and anticipated time to consultation for cancer symptoms among Australian men, and the variable was not examined in regression analyses. Although the relationship between cancer knowledge and help-seeking behaviour is complex (e.g., Sheikh & Ogden, 1998), and symptom recognition is likely to be an important influence of help-seeking behaviour, these findings suggest interventions designed to improve medical help-seeking behaviour may be more successful if they target health and behavioural beliefs, as opposed to cancer knowledge (de Nooijer et al., 2002).

Variation between Men from Diverse Backgrounds

Although it has been proposed that men's help-seeking is very likely to differ according to demographic, health, and cultural contexts (Addis & Mahalik, 2003; Oliffe, 2009), very few studies have explored within-gender variation in men's help-seeking for cancer symptoms. Understanding within-gender variation is important for the design of appropriate interventions designed to improve men's help-seeking behaviour. Two studies in the present thesis specifically aimed to examine potential variation in men's actual and anticipated help-seeking for cancer symptoms according to residential location (Study 2: urban versus rural Australia; Study 4: Australia versus the UK). In general, men's experiences of, and responses to, help-seeking for cancer symptoms were comparable across groups, however, a few within-gender, cross-cultural differences were observed in the psychosocial determinants of men's help-seeking.

In Study 2 (Chapter 3; Fish et al., 2019), male cancer survivors from urban and rural Australia were interviewed about their experience of seeking help for cancer symptoms. Although findings should be interpreted with caution owing to the qualitative approach of the study and small sample size, results suggested that men from urban and rural Australia may be alike, with participants reporting similar experiences and responses to cancer symptoms. Most participants sought professional medical advice after 4 weeks, with no difference identified in patient intervals according to area of residence. The psychosocial influences of urban and rural men's help-seeking were also comparable. It was noted, however, that rural men were more likely to describe optimism about their symptoms and difficulties with accessing professional medical advice. This suggested some within-gender variation across locations in Australia, and supported the need for more detailed investigation of men's help-seeking. Study 3 (Chapter 4) investigated Australian men's self-reported, hypothetical intentions to seek help for cancer symptoms. Men from urban and rural areas were found to respond to respond to cancer symptoms similarly and were comparable in their overall help-seeking intentions. Consequently, rural living was not explored further in the thesis.

Study 4 (Chapter 5) further investigated potential variation in anticipated help-seeking for cancer symptoms between Australian and British men. Overall, male groups from both countries were found to respond to potential cancer symptoms similarly. Anticipated time to consultation (i.e., seeking help within 2 weeks) was comparable. Moreover, the same set of psychosocial predictors tested explained a good amount of variance in the outcome for both Australian (34% of variance explained) and British (40% of variance explained) men in the primary regression analyses. Perceived behavioural control and 'Minimising problem and resignation' were significant predictors of anticipated time to consultation for both groups. One point of difference was that a higher level of education predicted greater anticipated time to consultation among Australian men, whereas being employed was a significant predictor of greater anticipated time to consultation for British men. However, it was proposed that higher levels of education may correspond to employment in a more demanding professional role and greater conflicting responsibilities, in which case both findings may indicate that men may be influenced by the perception that they are "too busy to seek help".

Greater variation was observed between Australian and British men when using a less restrictive definition of prompt help-seeking (i.e., seeking help within 4 weeks) in the sensitivity analyses. The set of psychosocial predictors tested continued to explain a good amount of variance in anticipated time to consultation for both groups, however, the difference in variance explained between Australian and British men slightly increased (31% vs 44% respectively). This represented a change from 6% to 13% difference between male groups. These results suggest that the model was slightly more relevant for predicting greater postponement of help-seeking among British men than Australian men. For both groups, perceived behavioural control remained an important influence on anticipated help-seeking using the reformed outcome variable (i.e., cut-off extended to 4 weeks), although 'Minimising problem and resignation' decreased to non-significance. Moreover, age, level of education, and 'Emotional self-reliance' emerged as significant predictors for Australian men only. The findings of the primary and secondary analyses considered together suggest that barriers to men's help-seeking for cancer symptoms may be invariant across groups during the appraisal interval (as defined by Scott et al., [2013]), but may differ during the help-seeking interval. Thus, this study provides preliminary evidence that both general and targeted interventions designed to improve men's help-seeking behaviour could be useful.

Gender Differences in Help-Seeking for Common Cancer Symptoms

Despite some evidence that men are more likely than women to postpone help-seeking for cancer symptoms (Evans et al., 2005; Oberoi et al., 2014; Porta et al., 1996; van Osch et al., 2007; Young et al., 2000), an examination of the wider literature in Study 1 (Chapter 2; Fish et al., 2015) suggested that psychosocial barriers to help-seeking for cancer symptoms may be consistent across genders. This ambiguity highlighted the potential value of gender comparative research. Subsequently, data were collected from both men and women in order to investigate whether responses to potential cancer symptoms varied according to gender, and to determine whether a non-gendered approach to early detection interventions is likely to be efficacious.

Study 4 (Chapter 5) examined variation in men and women's anticipated help-seeking for cancer symptoms, as well as the relative importance of psychosocial predictors associated with help-seeking for participants from Australia and the UK. Anticipated time to consultation was comparable across genders and locations, and there was no interaction effect. This finding is in accordance with a systematic review of 54 studies investigating delayed diagnosis in colorectal cancer, which concluded that there were no gender differences in delayed help-seeking behaviour (Mitchell et al., 2008). However, these results conflict with that of a comparable survey study that assessed anticipated help-seeking for 14 common cancer symptoms among 459 Dutch adults (van Osch et al., 2007). The Dutch study found that women were significantly more likely than men to report timely consultation for common cancer symptoms. Differences in results may be due to the divergent research methods used including; different thresholds for timely help-seeking (i.e., standardised 2 weeks vs mixed-classification dependent on symptom), and different age-related eligibility criteria (i.e., over 18 years of age vs over 55 years of age). Further research is required to truly determine whether responses to common cancer symptoms vary according to gender.

Within this thesis, similarities were also observed between men and women in the relative importance of the psychosocial predictors associated with help-seeking for cancer symptoms. The 'Minimising problem and resignation' subscale of the BHSS (Mansfield et al., 2005) was a significant predictor of anticipated time to consultation for all groups, with approximately equal predictive strength across groups. Moreover, perceived behavioural control was a significant predictor of the outcome for Australian men and women, as well as British men, although the relationship was non-significant for British women. However, differences were observed between men and women in the amount of variance explained by the regression model. The set of psychosocial predictors explained a good amount of variance in anticipated time to consultation for both male groups (34 – 40%), but less variance for female groups (14 – 22%). Variance explained was particularly low for British women (14%), which indicates that the model did not fit the data well for this group. The variability in results reported between studies, together with the significant amounts of unexplained variance, indicates a gap in knowledge regarding other potential predictors of help-seeking for cancer symptoms. This suggests the need for further comprehensive gender comparative research in order to inform healthcare practice and intervention design (Hunt et al., 2012).

Implications of the Research Findings for Practice

The overarching intention of this thesis was to highlight variables that influence Australian men's help-seeking for cancer symptoms in order to suggest possible approaches for improving this behaviour. The most important result consistently observed through all studies in this thesis was the significant relationship between perceived behavioural control over seeking help, symptom appraisal factors, and the outcome of help-seeking for cancer symptoms, whether defined as anticipated or actual help-seeking. As a result, the findings in this thesis question the previous qualitative evidence (Fish et al., 2015) that masculine norms are a key determinant of men's help-seeking behaviour. Other key insights gained from this thesis include: the potential for taking a gender neutral approach to improving help-seeking for cancer symptoms within Australia, the importance of our definitions and theoretical models for understanding correlates of longer help-seeking intervals, and the potentially detrimental impact that confusing health system messaging may have on help-seeking behaviour.

Significant Psychosocial Correlates of Men's Help-Seeking for Cancer Symptoms

Together, the studies in this thesis identified important cognitive processes that are involved in Australian men's help-seeking for cancer symptoms, which may be usefully targeted in future interventions. First, as outlined above, perceived behavioural control was found to be consistently related to men's medical help-seeking in the research in this thesis.

Perceived behavioural control has been defined as an individual's perception of the extent to which they have control over performing a behaviour (Fishbein & Ajzen, 2010), such as seeking professional medical advice. The construct captures the abilities and opportunities of individuals, as well as the difficulties they perceive themselves to face, when performing the behaviour. It also includes two appraisal processes: *perceived capacity* (e.g., how easy it is to perform behaviour) and *perceived autonomy* (e.g., how much control one has over performing a behaviour). Both of these factors were assessed in Studies 3 and 4 (Chapters 4 and 5) of this thesis, and were incorporated into a measure of perceived behavioural control[23]. Increases in perceived behavioural control were associated with increases in intention to seek help and anticipating timely help-seeking behaviour for more symptoms. The broader significance of these findings could be strengthened with further prospective or experimental studies to establish causal relationships, but nonetheless, the findings suggest that future cancer prevention interventions may usefully target control beliefs in order to improve help-seeking behaviour. Interventions designed to increase perceived behavioural control may attempt to change existing control beliefs (e.g., "work commitments would make it difficult for me to visit a doctor") or introduce new salient beliefs (e.g., "after hours clinic appointments would enable me to visit a doctor"; Conner & Sparks, 2005).

A second important relationship identified was the link between symptom appraisal processes and men's actual and anticipated help-seeking for cancer symptoms. Interviews with Australian men, as described in Study 2 (Chapter 3; Fish et al., 2019), highlighted the importance of symptom perception and attribution, as well as unrealistic optimism about symptoms. Moreover, the 'Minimising problem and resignation' subscale of the BHSS (Mansfield et al., 2005), which measured symptom minimisation, worry about overreacting to

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[23] The two appraisal processes were not tested separately due to the small number of items included in the survey and concerns about content validity. Future research could usefully examine the two appraisal processes in more detail by using multi-item measures.

a symptom, and unrealistic optimism, was a strong predictor of the outcome in Study 4 (Chapter 5). Standardised regression coefficients were comparable between perceived behavioural control and ‘Minimising problem and resignation’ when controlling for other socio-demographic and psychosocial variables.

Evidence for the combined relevance of these variables extends current understanding of the psychological processes underlying men’s help-seeking for cancer symptoms. The systematic review reported in Chapter 2 (Fish et al., 2015) found strong observational evidence for the importance of symptom appraisal factors, however, very few studies directly identified perceived personal control factors as influencing men’s help-seeking for cancer symptoms. Within the qualitative literature, perceived lack of access to a healthcare professional (Connolly et al., 2011) and long wait times to see a GP (Scanlon et al., 2006) were reportedly barriers to men’s timely help-seeking in the UK. Additionally, perceptions of an inadequate referral system (Taghipour et al., 2011) was identified as a barrier among Iranian men. A population-based survey study in the UK also found that perceived difficulty making an appointment was the most frequently endorsed barrier to anticipated help-seeking for cancer symptoms (Robb et al., 2009). Of these studies, none considered these aspects of perceived personal control in-depth, nor statistically compared the relative importance of the barriers, thus limiting the strength of evidence. Consequently, the results of this thesis question and extend the current thinking about men’s help-seeking, and suggest that perceived personal control factors are significantly involved in men’s decisions to seek help for cancer symptoms.

One possible explanation for the combined relevance of perceived behavioural control with the symptom appraisal factors (e.g., minimising symptoms, unrealistic optimism) observed in this thesis could be that perceptions of the healthcare system and social responsibility play an important role in decisions about seeking medical advice for cancer symptoms. As outlined in Study 4 (Chapter 5), perceived behavioural control and 'Minimising problem and resignation' were not only significant predictors of anticipated time to consultation in the final regression models for Australian and British men, but the variables were also significantly negatively associated with each other. As perceived behavioural control decreased, 'Minimising problem and resignation' increased. It is possible that individuals who perceive less control over visiting a doctor, potentially due to a stretched healthcare system, may worry about overreacting to a symptom and resign themselves to the health problem or minimise its importance, thus putting off consultation with a GP. This explanation may be most relevant in countries where publicly funded healthcare services are predominantly used. Although a public model of healthcare is designed to improve access to healthcare by avoiding service charges (Willis & Parry, 2012), this may not be the case if patients perceive the system to be "overburdened", are aware they should be responsible with using scarce healthcare resources, and feel ambivalence about help-seeking (Ziebland, Rasmussen, MacArtney, Hajdarevic, & Sand Andersen, 2019).

This explanation is in accordance with qualitative research primarily conducted in the UK (Llanwarne et al., 2017; MacArtney et al., 2017; MacLean et al., 2017; Tookey, Renzi, Waller, von Wagner, & Whitaker, 2018) and a recent European commentary (Ziebland et al., 2019) that highlights medical help-seeking behaviour as a moral process. For example, MacLean et al. (2017) found that men and women in the UK attempted to protect their "moral identities" during interviews about help-seeking for lung cancer symptoms, and presented themselves as "responsible" healthcare service users. Participants believed that GP services were struggling to meet demand and worried about accessing medical services unnecessarily. Similarly, MacArtney et al. (2017) found men and women diagnosed with lung or bowel cancer in the UK and Denmark described difficulties with accessing stretched healthcare services and a reluctance to place further burden on the system if the illness was potentially “minor”. This is in line with general medical help-seeking research, which found individuals accessing primary care also worry about the legitimacy of their help-seeking behaviour (Llanwarne et al., 2017).

One recent interview study conducted by Tookey et al. (2018) sampled 62 men and women aged over 50 years who had experienced a range of cancer warning signs in the UK. The study attempted to explore the moral dimension of help-seeking for cancer symptoms using the Candidacy framework (Dixon-Woods et al., 2006). This framework proposes that individuals consider their eligibility for, and the appropriateness of, accessing healthcare services, which is established in negotiation between the individual and their healthcare service provider over time. The framework includes several concepts or stages that simultaneously consider individual- and system level barriers to help-seeking, essentially describing a process whereby individuals attempt to legitimise their need for help and assert *candidacy*. Thus, the framework complements previous person-centred models (Tookey et al., 2018), such as the Model of Pathways to Treatment (Scott et al., 2013).

Overall, Tookey et al. (2018) found support for the Candidacy framework; participants described difficulties accessing medical advice and anticipated time-limited consultations. In addition to this, participants worried that their concerns would not be taken seriously, and that healthcare professionals may blame them for their illness (e.g., symptoms or illness caused by smoking). This highlights the important nature of doctor-patient and health system-patient relationships because these impact the help-seeking process. Where consumers see health systems as overtaxed or stressed they may be less likely to access health services. This study also importantly sampled participants experiencing a range of cancer warning signs beyond that of lung cancer symptoms, providing preliminary evidence for the wider relevance of this framework. The combined relevance of perceived behavioural control with symptom appraisal factors observed in this thesis may provide further evidence for the impact of healthcare systems and social responsibility on men's help-seeking. This finding extends that of qualitative research based in the UK to an Australian context, and increases the strength of evidence by statistically testing the predictive strength of variables. It should be noted, however, that this line of investigation about responsible healthcare use is still in the early theory-building stage.

Another possible explanation for the combined relevance of perceived behavioural control with symptom appraisal factors could be the underlying influence of fatalism. It is possible that individuals who perceive little control over visiting a doctor, or little confidence about a positive outcome from the visit, may resign themselves to poor cancer outcomes, thus postponing seeking medical advice. This interpretation is in accordance with previous research that has identified fatalism as a barrier to men's timely help-seeking for cancer symptoms (Buckley & Ó Tuama, 2010; Chapple et al., 2004; Chojnacka-Szawłowska et al., 2013; Eadie & MacAskill, 2008). For example, Buckley and Ó Tuama (2010) conducted three focus groups with men aged over 50 years in Ireland. Many participants believed that cancer was a fatal illness and held negative views of healthcare professionals and the availability of healthcare, which influenced responses to health issues. Further longitudinal or experimental research specifically designed to understand the impact of social responsibility, specifically notions of "overburdening" of the system, as well as fatalism, on men's help-seeking behaviour is required to confirm or refute these interpretations and to establish causal relationships.

What does this early evidence suggest for practice? Ziebland et al. (2019) recently suggested several changes to healthcare practice to encourage appropriate help-seeking behaviour. For example, a responsive healthcare system is needed when people do seek help, providing guidance and individualised support, as opposed to an unresponsive, standardised system. Therefore, resource allocation within the healthcare system, which is a fundamental issue with many systems around the world, may need to be addressed to improve access to healthcare professionals and length of consultation times. This could potentially reduce fatalism, as well as increase candidacy and perceived behavioural control over time. Tookey et al. (2018) have also suggested that interventions with both patients and GPs may be required. For example, GP training in effective communication, as well as public cancer awareness campaigns that target health and behavioural beliefs.

The Role of Perceived Norms and Masculinity in Men's Help-Seeking Behaviour

Numerous social science theories have suggested that behaviour is significantly influenced by social norms. For example, the TPB (Ajzen, 1991; Fishbein & Ajzen, 2010) as described in Study 3 (Chapter 4), proposes that perceived norms are an important determinant of behavioural intentions. Moreover, it has been theorised that traditional masculine ideals influence men's health behaviours (Courtenay, 2000), including medical help-seeking (Addis & Mahalik, 2003). This has been supported by qualitative literature in the area, which has indicated that the endorsement of masculine norms can inhibit help-seeking (Buckley & Ó Tuama, 2010; Carpentier et al., 2011; Chapple & Ziebland, 2002; Chapple et al., 2004; Emery et al., 2013; Fish et al., 2019; Gascoigne et al., 1999; George & Fleming, 2004; Hale et al., 2007; Mason & Strauss, 2004b; O'Brien et al., 2005; Scanlon et al., 2006; Tod et al., 2008; Willams et al., 2003). However, to the best of our knowledge, the strength of the relationship between social norms and men's help-seeking for cancer symptoms has not been tested using quantitative research methods.

The collective findings of this thesis call into question widespread assumptions highlighted in previous qualitative research that traditional gender norms play a key role in men's help-seeking behaviour. The qualitative research described in Chapter 3 (Fish et al., 2019) suggested that beliefs about traditional masculinity were potentially an important aspect in Australian men's help-seeking for cancer symptoms. However, not all participants recognised the influence of masculinity on help-seeking, and many participants discussed societal shifts in relation to masculinity. They indicated that traditional masculine norms were more influential in their fathers' generation, and that pressure to follow these norms was reduced for younger men. This potential shift in masculine norms may be due to campaigns run by organisations, such as the Movember Foundation, which aim to empower men to take care of their health (Movember Foundation, 2019). It is also one possible explanation for the findings of Study 4 (Chapter 5), in which differences were observed between the male sub-groups on two of the BHSS subscales (Mansfield et al., 2005). The 'Privacy' and 'Emotional Self-Reliance' subscales were significantly correlated with anticipated time to consultation for Australian men only, and the Australian sample was also, on average, older than the British sample (43.85 years vs 54.25 years). This suggests that traditional masculine norms measured in this study (i.e., a preference for privacy and emotional self-reliance) may not be as relevant to younger populations or men residing in the UK.

Correlational research reported in Studies 3 (Chapter 4) and 4 (Chapter 5) further indicated that although perceived norms about help-seeking (i.e., perceptions about help-seeking behaviour within their social network and sensed social pressure to seek help) and traditional masculine ideals ('Privacy' and 'Emotional Self-Reliance') were significantly associated with Australian men's help-seeking intentions and anticipated time to consultation, the most important psychosocial predictors of men's anticipated help-seeking were perceived behavioural control and 'Minimising problem and resignation'. Mansfield et al. (2005) suggested that the 'Minimising problem and resignation' subscale was linked with masculine ideals, such as wanting to appear powerful and successful, which could be perceived as inconsistent with seeking help for ambiguous symptoms. However, the results of this thesis question whether this factor (minimising problem and resignation) is a function of masculinity. The factor was found to be an important correlate of anticipated time to consultation for both men and women in Chapter 5. Moreover, the results are in line with qualitative research that has identified similarities between men and women in regards to stoicism or resignation to symptoms, and which has questioned whether gender is of importance in this context (MacLean et al., 2017). This challenges the notion that symptom minimisation and worry about overreacting to a symptom are primarily driven by masculine ideals. It also provides more support for the proposal that help-seeking may be a process based on health system context, however, further gender comparative research is required to confirm this interpretation.

As a final point, Study 4 (Chapter 5) tested the impact of changing the definition of prompt help-seeking from within 2 weeks to within 4 weeks, and results suggested that one traditional masculine norm, 'Emotional self-reliance', was an important predictor of Australian men's medical help-seeking when the definition of prompt was extended. Emotional self-reliance has been described as a masculine ideal in which men are encouraged to be stoic, restrain their emotions, and rely primarily on themselves (Chambers et al., 2016). The association between 'Emotional self-reliance' and help-seeking was unique to Australian men and was not observed for the other sub-groups in this thesis. One possible explanation for this finding is that traditional masculine norms are most relevant for men who postpone help-seeking for longer periods or to a lack of help-seeking among Australian men than UK men. This suggests that while campaigns run by men's health organisations (e.g., the Movember Foundation) may have had some impact, further intervention is required to reduce the negative influence of emotional self-reliance on medical help-seeking behaviour among Australian men. However, perceived behavioural control was still the strongest predictor of anticipated time to consultation as indicated by the beta-values in the sensitivity analyses, thus it is likely that efforts to improve medical help-seeking behaviour would be most successful if they target control beliefs, as opposed to traditional masculine norms.

Consequently, these results highlight the importance of gathering evidence that distinguishes the relative contribution to variance of different predictors.

A Gender Neutral Approach to Improving Help-Seeking

The findings in this thesis also call into question the widespread belief that men are significantly different from women in their responses to potential cancer symptoms. In line with recent qualitative research (MacLean et al., 2017), and a literature review of gender and help-seeking (Hunt et al., 2012), the findings of this thesis highlight the importance of gender-comparative research and challenge gendered assumptions about help-seeking behaviour. Thus, an ideal use of limited healthcare system resources may be to find universal strategies for encouraging timely help-seeking for cancer symptoms.

Within Australia, evidence regarding gender differences in help-seeking for cancer symptoms is scarce, mixed, narrowly explores help-seeking for colorectal cancer, and is largely outdated (Cockburn et al., 2003; Dent et al., 1990; McDermott et al., 1981; Young et al., 2000). Therefore, evidence about men’s help-seeking for cancer symptoms is insufficient within Australia, which has resulted in some difficulty in understanding the nature of the problem and the development of possible solutions. Chapter 5 of this thesis aimed to assess whether men and women were alike or different in their anticipated help-seeking for common cancer symptoms. Notably, scores on the outcome variable, anticipated time to consultation, were found to be comparable across genders and locations. This finding is in accordance with other international research studies that have found men and women to be similar in their help-seeking for colorectal cancer symptoms (Mitchell et al., 2008). This implies some concordance in help-seeking decision-making across genders. However, longitudinal research that observes actual help-seeking behaviour is required to verify that help-seeking for generic cancer symptoms is truly invariant across genders.

An examination of the literature in Chapter 2 (Fish et al., 2015) also suggested that psychosocial barriers to help-seeking were similar across genders. For example, strong emotions have been associated with delayed help-seeking for cancer symptoms among research sampling men and women (Macleod et al., 2009; L. K. Smith et al., 2005; Yousaf et al., 2015). However, an empirical comparison was required to investigate the potential generalisability of these factors. The survey study reported in Chapter 5 highlighted that the main psychosocial correlates of anticipated time to consultation were comparable across sub-groups. Both perceived behavioural control and symptom appraisal factors were significant predictors of the outcome across sub-groups, with the exception of British women, for which only 'Minimising problem and resignation' was significant. This suggests that a broad gender neutral approach to improving help-seeking behaviour could have potential, especially within Australia.

The finding that perceived behavioural control was less important for British women was an interesting result that is in contrast to previous research. Hunter et al. (2003) found that attitudes and perceived behavioural control were both significant predictors of women's intentions to seek help for breast cancer symptoms in the UK. Differences in results may be due to the small sample size and underpowered analyses for British sub-groups in this thesis, and therefore findings should be considered preliminary. Further investigation is required to determine whether perceived behavioural control may be less important for British women overall and why this might be the case.

Definition and Measurement of Timely Help-Seeking

Many researchers have endeavoured to increase understanding of men's medical help-seeking, however, it has been a challenge to identify key socio-demographic and psychosocial determinants due to inconsistent definitions and measurement tools (Weller et al., 2012). It is also difficult to reach a consensus on the best ways to improve help-seeking behaviour when research studies are not comparable and there is a lack of clinical recommendations for optimal help-seeking behaviour. The findings of this thesis highlight the importance of the definitions, measurement tools, and underlying theories used in help-seeking research studies intended to inform behavioural interventions.

The primary and sensitivity analyses reported in Study 4 (Chapter 5) revealed some important variations in predictors of anticipated help-seeking when using different outcome definitions. This divergence in results highlights that the importance of psychosocial correlates can differ depending on the definition of "prompt" help-seeking. Consequently, one way to improve our understanding of help-seeking behaviour among men is to develop evidence-based international clinical recommendations for optimal time for help-seeking initiation for different cancer symptoms and to disseminate these widely to health providers and the general community**.** There are currently no standardised clinical guidelines for when an individual should seek help for common cancer symptoms (Pedersen et al., 2018). Moreover, non-government cancer organisations generally provide generic advice that people should seek medical advice "promptly" for a cancer warning sign (e.g., Cancer Council Australia, 2017; Cancer Research UK, 2017), without defining what "prompt" signifies. Although some guidelines have been suggested in the UK for certain symptoms or types of cancer, such as seeking help for changes in bowel habits or a cough when experienced for 3 weeks (e.g., Athey et al., 2012; Ironmonger et al., 2014; Moffat et al., 2015), further research is required to inform suitable thresholds for definitions and measurement, and to inform clinical guidelines on help-seeking for other common cancer symptoms.

Another way to improve our understanding of men's help-seeking behaviour is to consistently include theoretical grounding in research (Scott & Walter, 2010; Weller et al., 2012). The variation in results found between the primary and sensitivity analyses in Study 4 (Chapter 5) provided some confirmation of the usefulness of the Model of Pathways to

Treatment (Scott et al., 2013), suggesting that different cognitive and affective predictors are associated with appraisal and help-seeking intervals. Using a consistent theoretical basis (such as Scott et al.'s [2013] the Model of Pathways to Treatment) in future help-seeking research would importantly allow for the identification of when factors have an impact on the pathway to cancer treatment, as well as whether factors influence multiple stages of the diagnostic pathway (Scott & Walter, 2010). Moreover, having a consistent theoretical grounding in research studies would increase the comparability of studies and the ability to reach a consensus on how to improve early diagnosis behaviours.

Strengths and Limitations of the Research Program

The conclusions that can be drawn from the studies included in this thesis are limited by the research methods employed. The following section will review the limitations of the studies reported in this thesis, specifically relating to research design, sampling, and the measurement tools utilised that restricted the strength of evidence and generalisability of the findings. Specific limitations associated with each research study are discussed in detail in the respective chapters.

Research Design and Scope

A key limitation of the research studies included in this thesis was the reliance on cross-sectional, retrospective, and hypothetical help-seeking research designs. Retrospective research designs are appropriate in the investigation of past help-seeking behaviour among people who have already been diagnosed with cancer, but this design can result in contamination from recall errors (Scott & Walter, 2010). Issues with inaccurate recall may be exacerbated by long patient intervals, highly emotional or traumatic diagnostic experiences, and the mild experience or gradual development of symptoms. Moreover, people may experience a change in their worldview or identity following a diagnosis, leading to a reinterpretation of their experience that could influence their recollection of events.

Two tactics were used in the retrospective study in this thesis to address and minimise potential recall errors. First, a calendar land-marking technique was used to increase the accuracy of recall (Mills et al., 2014). This involved the interviewer noting down participants' experiences on a paper calendar during interviews and asking about events that occurred during the period of interest. Discussing personal and public events that occurred on the pathway to cancer treatment was intended to assist with refining participants' recollections. Second, participants' partners were recruited to verify participants' accounts.

Data derived from hypothetical help-seeking behaviour measurement were also used in this thesis (Chapters 4 and 5). Similar to retrospective studies, issues with accuracy may occur when using this research design, and intentions may not reflect actual behaviour when cancer warning signs are experienced. This approach may fail to take into account a variety of unforeseen personal and contextual factors (Scott & Walter, 2010). Although investigating the psychosocial predictors of anticipated help-seeking was considered an important first step in theory building, performing a longitudinal study with a measure of actual help-seeking behaviour would have been a valuable extension of the research program.

Despite the important limitations of the methods employed in this thesis, they were primarily chosen because of limited resources and time during candidature. There are also some ethical concerns associated with longitudinal designs. For instance, it has been argued that for an illness like cancer, it may be unethical to observe behaviour in individuals who may experience cancer warning signs and not intervene to suggest they seek medical advice (Scott & Walter, 2010). It should be acknowledged, however, that most patients who seek medical advice for a potential cancer symptom receive a non-cancer diagnosis (Renzi, Whitaker, Winstanley, Cromme, & Wardle, 2016), which reduces the risk of harm. Furthermore, prospective research designs are possible with careful planning and adequate resources. One large scale study surveyed patients from four healthcare practices in the UK inquiring about experiences of cancer warning signs (Whitaker, Cromme, Winstanley, Renzi, & Wardle, 2016). A number of participants who reported experiencing a cancer warning sign at baseline and 3 month follow-up were promptly interviewed about their symptom experience. This research method allowed greater insight into emotional responses to symptoms and the help-seeking process during the event, and participants could also be advised to seek medical advice for a persistent cancer warning sign.

Finally, the use of a multi-method research design was considered a strength of this thesis, using both qualitative and quantitative methods to explore the psychological processes underlying Australian men's help-seeking for cancer symptoms. The qualitative approach allowed for an in-depth exploration of men's experiences of seeking help, as well as the associated contextual influences, whereas the quantitative approach allowed for statistical tests of potentially important relationships. It is acknowledged, however, that the strength of evidence would have been increased by using longitudinal or experimental research designs, which are capable of establishing causal relationships that are necessary for informing intervention design.

The Sample

Men are typically underrepresented and challenging to recruit into health and psychological research, participating at lower levels in survey studies (e.g., Korkeila et al., 2001; Søgaard, Selmer, Bjertness, & Thelle, 2004; Tolonen et al., 2006). The research included in this thesis was no exception, with a small sample limiting the conclusions that can be made based on the results of this thesis**.** This was despite the use of several targeted promotional methods to increase the number of male participants across studies. For example, organisations providing male-focused products or services were approached for assistance with recruitment, advertising materials promoted prize draws that may be more relevant to men (e.g., gift cards for hardware stores in Australia), and direct recruitment methods were used when possible (e.g., information sharing through oncology social workers). Despite efforts, the participant numbers were small, which reduces the validity and reliability of the results.

Difficulty with participant recruitment may be attributable to a number of aspects of the studies. These include the sensitive nature of the research topic, offering either no participant reimbursement (Study 2) or small-scale reimbursement (Studies 3 and 4) for research participation, and the notable time commitment required to complete an interview or survey. Each of these has been described in prior research as significants barrier to study participation (Saleh & Bista, 2017). Future research with greater allocated time and monetary resources may achieve larger sample sizes utilising methods that require shorter time commitment (e.g., using a shorter, online survey) and more appropriate reimbursement for time within the study (e.g., reimbursing each participant for their time).

Although small scale studies can diminish confidence in research findings, the consistency of results across studies and samples increases the strength of evidence in this thesis. For example, the significance of perceived behavioural control and symptom appraisal factors as psychological processes influencing medical help-seeking was consistently found across the studies included in this thesis, as well as across diverse groups differing by gender and location. This important theme was also highlighted using a multi-method approach, involving both retrospective and hypothetical research designs, thus increasing the strength of evidence.

Another related limitation was the representativeness of samples. In spite of efforts to recruit a representative male population (e.g., data collection in universities and within the community, targeting minority groups), non-probability self-selection sampling was used and the samples in this thesis were not representative of the population of men in Australia. For example, male participants in this thesis were predominantly White, highly educated, heterosexual, and largely in relationships. Findings may not generalise to men from other ethnic backgrounds, single men from lower socio-economic backgrounds, or men from various sexual- or gender-diverse backgrounds, who might experience greater barriers to help-seeking because of lower social support or attitudinal differences. Future research may use more representative sampling to explore the psychological processes underlying maladaptive help-seeking behaviour and reduce potential bias in findings. For example, sampling from patient lists in healthcare settings that vary according to location or level of disadvantage (e.g., Whitaker et al., 2014).

Measurement Tools

Each of the studies included in this thesis relied on self-report measures, which can lead to some respondent bias (i.e., providing inaccurate responses). In particular, due to the sensitive nature of the research subject in this thesis and the topics assessed, the studies are likely to have been impacted by social desirability bias (Krumpal, 2013). Participants may have altered their interview or survey responses for impression management via socially desirable responding (Paulhus & Reid, 1991). The decision to use self-report measures of help-seeking, as opposed to more objective measures of behaviour (e.g., records of healthcare utilisation), was largely in consideration of the resources required and ethical concerns, as previously outlined. Future research should include an additional objective measure of help-seeking behaviour in a longitudinal study, while keeping ethical considerations in mind.

A variety of strategies were used in Studies 2 (Fish et al., 2019), 3 (Chapter 4), and 4 (Chapter 5) in this thesis to reduce the likelihood of respondent bias. In the interview study reported in Chapter 3 (Fish et al., 2019), it was anticipated that the female gender and young age of the interviewer would influence participant responses (i.e., participants may become uncomfortable discussing their bodily changes or their beliefs about gender and masculinity therefore providing inaccurate responses). Strategies to reduce respondent bias included: the use of open-ended questions, active demonstration of empathy and sensitivity (Elmir et al., 2011), and the discussion of gender at the end of the interview. An attempt was also made to validate participant recollections by interviewing the partners of a sub-sample of participants in order to compare responses (Scott & Walter, 2010). These interviews validated recollections of patient intervals in four couple dyads, but two patient intervals were not confirmed. For these two couple dyads, the lack of disclosure between partners about symptoms or help-seeking appeared to influence recollections, which limited the usefulness of the behavioural confirmation method.

In the survey studies reported in Chapters 4 and 5, it was anticipated that the participants would likely identify the purpose of the study and may be influenced by traditional gender ideals when answering survey questions. Several strategies were used to minimise the potential impact of social desirability bias. Survey items were carefully worded to reduce the impact of traditional gender ideals on participant responses, multiple items were used to measure almost all constructs, and surveys were anonymous. The order of the survey questions was also randomised when possible to reduce the likelihood of participants identifying the constructs being assessed.

The two self-report help-seeking outcome measures used in Studies 3 (Chapter 4) and 4 (Chapter 5) also focused on generic cancer symptoms, rather than specific forms of cancer and the associated symptoms. In order to maximise relevancy and generalisability, reactions to all common cancer symptoms were included. This is a problem because past research suggests the nature of the symptom is a likely important influence in deferrals of help-seeking. For example, the systematic review reported in Chapter 2 (Fish et al., 2015) noted that embarrassment and shame were barriers to men’s help-seeking primarily in male-specific cancers, including testicular and prostate cancer. Consequently, it is likely that anticipated help-seeking intervals would have been greater for specific symptoms associated with these cancers (e.g., swelling of the scrotum, a weak urine stream), and that the psychosocial variables associated with longer intervals may have differed for these symptoms. Additionally, combining responses across symptoms obscured within-individual differences in reactions to different bodily symptoms. This was demonstrated by the supplementary analyses of Study 3 (Chapter 4), which revealed variation in the importance of social cognitive predictors according to symptom type. Nonetheless, combining responses across symptoms is a commonly used approach used in help-seeking research (e.g., de Nooijer et al., 2003; Robb et al., 2009; van Osch et al., 2007), and was considered necessary to reduce the likelihood of Type I error occurring by conducting multiple statistical tests.

There were also some shortcomings with the ‘Minimising problem and resignation’ subscale of the BHSS (Mansfield et al., 2005) in Study 4 (Chapter 5). This subscale was found to be an important predictor of anticipated time to consultation, however, the results are to some extent difficult to interpret because the subscale measures a cluster of different barriers. For example, the short subscale was chosen because it measured problem minimisation, unrealistic optimism, as well as worry about overreacting to a symptom. Items were retained in the proposed subscale because they are conceptually related (Mansfield et al., 2005), but these barriers may influence appraisal and help-seeking intervals differently. It is difficult to understand the individual impact of barriers without re-running the analyses using more in-depth measures of each with a larger sample size. Future research may further examine this scale or investigate these constructs separately using a multi-item measure to assess each barrier.

Finally, although it has been argued that the results of Study 4 (Chapter 5) challenge widespread assumptions that masculine gender norms are a key determinant of men’s help-seeking behaviour, it should be noted that the subscales chosen are not exhaustive and therefore may not be reflective of all aspects that currently define masculinity in Western cultures like Australia and the UK. Although subscales were carefully chosen to encompass the wide range of masculine norms that were identified as relevant to help-seeking for cancer symptoms in Study 1 (Chapter 2; Fish et al., 2015), it is possible that relevant masculine norms not assessed in this research are significantly associated with men's help-seeking for cancer symptoms. For example, within-gender differences were observed in Study 4 (Chapter 5), whereby a potential masculine preference for privacy to avoid embarrassment, and emotional self-reliance were both significant correlates of Australian men's anticipated help-seeking, but were not found to be relevant for British men. This suggests that characteristics that define masculinity may vary between countries and cultures.

Future Research Directions

Investigating Correlates of Help-Seeking Among Men Who *Do Not* Seek Medical Advice

Generally, the participants included in this thesis intended to seek help for most of the assessed cancer symptoms, and anticipated prompt help-seeking. This pattern of results may be because participants' recognition of bodily changes as cancer warning signs was very high, as reported in Study 4 (Chapter 5), which could suggest this sample was particularly knowledgeable about cancer. However, it should be noted that a recognition-based measure may also overestimate knowledge of cancer symptoms (Robb et al., 2009). Alternatively, results may be because participants were overly optimistic about their future behaviour or the sample may have been predominantly comprised of people who usually seek help for health issues. It would be useful for future research to purposively recruit men who usually seek medical help promptly, as well as men who do not seek help (e.g., Facione & Facione, 2006; Whitaker et al., 2015). This type of design would allow for a comparison in responses to potential cancer symptoms and determine any variance in the correlates of men's help-seeking for cancer symptoms.

Longitudinal or Experimental Research to Determine Causal Relationships

Although the results of this thesis imply that potentially important cognitive processes, perceived behavioural control and symptom appraisal factors, are associated with men's help-seeking for cancer symptoms, whether these factors directly influence or cause maladaptive help-seeking for cancer symptoms among men has yet to be established. Future experimental and longitudinal studies could establish causal relationships and investigate the effectiveness of interventions targeting personal control beliefs on the outcome of timely help-seeking behaviour (Scott & Walter, 2010), assuming this can be validly defined. The studies could investigate symptom appraisal and help-seeking decisions in real time. For example, Stoller and Forster (1994) asked elderly participants to complete a daily diary over 3 weeks to examine their experience of and responses to 26 symptoms (including some cancer warning signs, such as cough, swelling, rectal bleeding), as well as any formal (i.e., with a healthcare professional) or informal (i.e., with a partner, family members, or friend) help-seeking. As previously discussed, there are potential ethical issues associated with a study of this design when investigating potential cancer symptoms. The design of future longitudinal or experimental studies would require careful ethical consideration and planning (Scott & Walter, 2010).

In addition to this, a useful avenue for future longitudinal or experimental research would be to investigate the impact of "social responsibility" on help-seeking for cancer symptoms. It was proposed that individuals who report ambivalence about visiting a doctor, potentially due to concern about a stretched healthcare system, may worry about overreacting to a symptom and consequently resign themselves to the health problem, thus putting off consultation with a GP. This concern was not a focus of the research in this thesis, and further research is required to confirm this interpretation and to establish causal relationships. Future research should also be theoretically-driven to guide hypotheses and intervention design

(Scott & Walter, 2010), and it may be beneficial to test the usefulness of the Candidacy framework (Dixon-Woods et al., 2006) further.

Additional Gender Comparative Research

The findings of Study 4 (Chapter 5) suggested that men and women are alike in their responses to common cancer symptoms. However, one limitation of the study was the hypothetical nature of the research; it was unclear whether men were overly optimistic about their future help-seeking behaviour. Furthermore, it remains unclear whether men and women are alike in their responses to more specific symptoms (e.g., a lump in the breast) in comparison to generic symptoms (e.g., unexplained lump or swelling), as assessed in this thesis. To increase the strength of evidence and better understand the potential influence of gender on help-seeking, further longitudinal research is required to observe and compare patterns of actual help-seeking behaviour (Hunt et al., 2012), and assess responses to different types of cancer and symptoms. It would also be useful to comparatively test the effectiveness of interventions designed to improve help-seeking behaviour across genders and different types of cancer symptoms to establish whether a gender neutral approach is warranted.

Final Comments

Research on Australian men’s help-seeking for cancer symptoms has been limited. This has resulted in inadequate knowledge about whether delayed help-seeking is truly a problem for Australian men, and the best ways to improve help-seeking behaviour. The present thesis has provided important evidence about Australian men’s actual and anticipated help-seeking for common cancer symptoms, as well as the relative importance of potentially influential correlates of their help-seeking.

Australian men most commonly anticipated prompt help-seeking for common cancer symptoms, but qualitative evidence for actual help-seeking behaviour indicated that some men postponed seeking medical advice. At the very least this puts forward evidence that postponing help-seeking is a problem for some Australian men, but it may also be speculated that a gap exists between intentions and actual medical help-seeking behaviour.

Important cognitive processes were associated with Australian men's help-seeking for common cancer symptoms, which might be usefully targeted in future interventions. The research highlighted the combined relevance of perceived behavioural control and symptom appraisal factors, and challenged widespread assumptions regarding the key roles of masculinity and perceived norms as determinants of men's help-seeking for common cancer symptoms. Thus, questioning and expanding the current philosophy of Australian men's help-seeking, and informing future experimental research designed to pilot test interventions.

The research reported in this thesis also investigated the potential generalisability of a psychosocial model of help-seeking developed to explain the behaviour of Australian men, to Australian women, as well as to women and men in another Western, English speaking country, the UK. Perceived behavioural control and 'Minimising problem and resignation' were consistently strong predictors of the outcome for both Australian men and women, as well as for British men. Thus, an optimal use of limited and valuable healthcare system resources may be to take a gender neutral approach to improving help-seeking for common cancer symptoms, particularly within Australia. However, considering the significant amounts of unexplained variance across sub-groups, further gender comparative research is required to inform intervention design.

Taken as a whole, the findings of this thesis highlight ways for improving Australian men's timely help-seeking for cancer symptoms. The results also have relevance for future research design: highlighting the strengths of taking a multi-method approach, the importance of gathering evidence for the relative effect size of potentially important psychosocial factors, and the importance of our definitions and measurements on research findings. The next step is for experimental or longitudinal research to establish causal relationships and investigate the effectiveness of interventions targeting perceived personal control and behavioural beliefs. From this, interventions may be able to reduce the cancer burden on Australian men, increasing quality of life and wellbeing for men and their families.

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Appendix A: Advertisements for Studies 3 and 4

Australian Research Study Advertisements: Social Media and Flyer

Research study on seeking medical advice

Researchers from Flinders University are calling out for participants for a research study on seeking medical advice for bodily changes. They are looking for a broad range of participants who are over 18 years of age. **You do NOT need to have had any health issues** to participate in this research.

Participants will be asked to fill out an online survey about health, going to the doctor, attitudes, social networks, and cancer. The survey will take approximately 45 minutes to complete, and you can go into the draw to win one of ten shopping vouchers (Bunnings Warehouse gift card or Coles Group & Myer gift card) valued at AU$25 should you wish.

For more information about the study, or to take part, please click on the link here:

https://qau1.au1.qualtrics.com/SE/?SID=SV_6qZ00xoks2QIdDv

For further information please contact Jennifer Fish at jennifer.fish@flinders.edu.au

Flinders
UNIVERSITY

Research study on seeking medical advice

We are looking for participants for a research study on seeking medical advice for bodily changes. We are looking for a broad range of participants who are over 18 years of age. **You do NOT need to have had any health issues** to participate in this research.

This study aims to investigate how seeking professional medical advice for various symptoms and cancer warning signs might be different for men and women.

Participants will fill out an online survey. You will be asked a number of questions about health, going to the doctor, attitudes, social networks, and cancer. This can be completed at any computer with an internet connection.

The survey will take approximately 45 minutes to complete, and you can go into the draw to win one of ten shopping vouchers (Bunnings Warehouse gift card or Coles Group & Myer gift card) valued at AU$25 should you wish.

For more information about the study and/or to participate visit: http://tinyurl.com/helpseekingAU

For further information, contact Jennifer Fish at jennifer.fish@flinders.edu.au

Ms Jennifer Fish
PhD student
School of Medicine
Flinders University

British Research Study Advertisements: Social Media and Flyer

Research study on seeking medical advice

Researchers from Coventry University are calling out for participants for a research study on seeking medical advice for bodily changes. They are looking for a broad range of participants who are over 18 years of age.

This study aims to investigate how seeking professional medical advice for various symptoms and cancer warning signs might be different for men and women.

You do NOT need to have had any health issues to participate in this research.

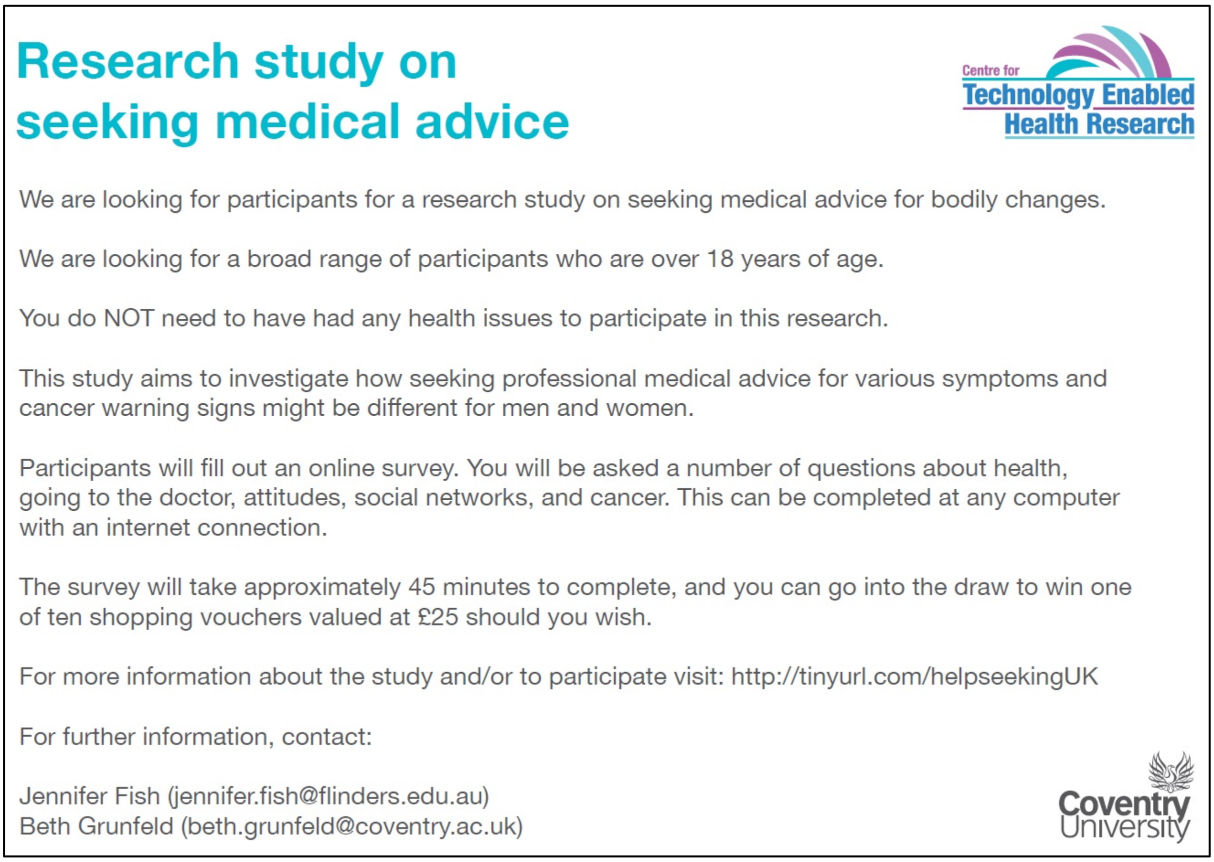
Participants will be asked to fill out an online survey about health, going to the doctor, attitudes, social networks, and cancer. The survey will take approximately 30-45 minutes to complete, and you can go into the draw to win one of ten shopping vouchers valued at £25 should you wish.

For more information about the study and/or to participate visit:

https://qau1.au1.qualtrics.com/SE/?SID=SV_2lsGK69YXz5G2VL

For further information please contact Jennifer Fish (jennifer.fish@flinders.edu.au) or Beth Grunfeld (beth.grunfeld@coventry.ac.uk).

This evaluation has ethical approval from Coventry University (P41023) and will close 16 September 2016.



Research study on seeking medical advice

We are looking for participants for a research study on seeking medical advice for bodily changes.

We are looking for a broad range of participants who are over 18 years of age.

You do NOT need to have had any health issues to participate in this research.

This study aims to investigate how seeking professional medical advice for various symptoms and cancer warning signs might be different for men and women.

Participants will fill out an online survey. You will be asked a number of questions about health, going to the doctor, attitudes, social networks, and cancer. This can be completed at any computer with an internet connection.

The survey will take approximately 45 minutes to complete, and you can go into the draw to win one of ten shopping vouchers valued at £25 should you wish.

For more information about the study and/or to participate visit: http://tinyurl.com/helpseekingUK

For further information, contact:

Jennifer Fish (jennifer.fish@flinders.edu.au)
Beth Grunfeld (beth.grunfeld@coventry.ac.uk)

Appendix B: List of Recruiting Organisations and Councils

Table B.1.

Organisations and councils in Australia and the UK that assisted with participant recruitment for Studies 3 and 4

Source of recruitment assistance	Australia	UK
Organisations:	Apex Clubs of SA	All Saints Church
	Bear Men of Adelaide	Birmingham LGBT
	Freemasons SA/NT	Britain-Australia Society
	Lions Clubs of SA	BT
	Australian Men's Sheds Association	Coventry and North Warwickshire Cricket Club
	SA Power Networks	Lions and Rotary Clubs
	Soroptimist International South Australia	Senior Citizen Forum
	Southern Football League	Voluntary Organisations (SCVO, BVSC, Sustain)
	West End Brewery	
Councils:	City of Charles Sturt Council	Birmingham City Council
	City of Playford Council	Coventry City Council
	Salisbury Council	Warwickshire County Council

Appendix C: Information Sheet

INFORMATION SHEET

Title: ‘*Medical help-seeking behaviour*’

Investigator:
Ms Jennifer Fish
Flinders Centre for Innovation in Cancer
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Description of the study:
This project investigates intentions to seek medical advice for various medical symptoms and cancer warning signs. This project is supported by Flinders Centre for Innovation of Cancer, Flinders University.

Purpose of the study:
The specific aims of the project include:

- Investigating the characteristics that might be related to seeking help for various symptoms and cancer warning signs, and
- Investigating how seeking professional medical advice might be different for men and women.

What will I be asked to do?

You are invited to complete an online questionnaire, which will take about 45 minutes. You will be prompted to answer a number of questions about health, going to the doctor, attitudes, social networks, and cancer. There are **no right or wrong answers** and you do not need to have had any health issues to complete the survey.

Be assured that any information provided will be treated in the strictest confidence and your responses will be anonymous. The questionnaire is configured to not collect respondent IP addresses or email addresses.

What benefit will I gain from being involved in this study?

While you may not gain any direct benefit, your responses may inform future health promotion interventions and social marketing campaigns, which may benefit the wider community.

Will I be identifiable by being involved in this study?

We do not need your name and you will be anonymous. At the end of the questionnaire, you will be directed to a second online form in which you can choose to volunteer for future related research and/or go into the draw to win one of ten shopping vouchers valued at $25. This form will NOT be linked to the questionnaire you originally completed. The principal researcher will download all questionnaire responses, which will be kept confidential and secure on a single password-protected computer.

Are there any risks or discomforts if I am involved?

You may experience mild discomfort due to answering personal questions and questions about cancer. If you require mental health support as a result of your involvement in this study, it is recommended that you contact Lifeline Australia (13 11 14) or Cancer Council (13 11 20) for free counselling. If you have any concerns regarding anticipated or actual risks or discomforts, please raise them with the investigator.

How do I agree to participate?

Participation is voluntary and you are under no obligation to participate. You may withdraw from the questionnaire at any time without effect or consequences. To participate in the research, please continue with the survey. Completion of the questionnaire will be taken as evidence of informed consent.

How will I receive feedback?

Outcomes from the project will be summarised and given to you by the investigator if you indicate that you would like to see them.

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 7078). For more information regarding ethical approval of the project the Executive Officer of the Flinders Committee can be contacted by telephone on +618 8201 3116, by fax on +618 8201 2035 or by email human.researchethics@flinders.edu.au.

Appendix D: Survey used in Studies 3 and 4

SECTION 1: About you

Thank you for taking the time to help us with our research. Please note the progress bar above for your convenience.

Please answer the following questions about you.

Gender:

☐ Male

☐ Female

☐ Prefer not to say

What was your age on your last birthday? ________________

What is your postcode? (Australian question only) ________________

In which town do you live? (UK question only) ________________

What is your current marital status?

☐ Single

☐ Married, registered or defacto relationship (Australian response option only)

☐ Married, in a civil partnership or relationship (UK response option only)

☐ Widowed

☐ Divorced

☐ Separated

Which of the following do you identify most closely with?

☐ Straight or heterosexual

☐ Lesbian, gay or homosexual

☐ Bisexual

☐ Don’t know

☐ Other (please specify ________________)

☐ Prefer not to say

What is your highest level of education completed?

☐ Primary school

☐ Secondary school

☐ Tertiary education (includes all further education after secondary school)

What is your current work status?

☐ Full-time employment

☐ Part-time or casual employment

☐ Unemployed

☐ Retired

☐ Other (please specify ________________)

What is the main language spoken at home? ________________

How would you describe your ethnic origin? (Australian response options)

☐ Aboriginal and/or Torres Strait Islander

☐ Asian

☐ Black/African/Caribbean

☐ European

☐ Middle Eastern

☐ Pacific Islander

☐ White

☐ Mixed/multiple ethnic group (please specify ________________)

☐ Other (please specify ________________)

☐ Prefer not to say

How would you describe your ethnic origin? (UK response options)

- ☐ Asian/ Asian British
- ☐ Black/African/Caribbean/Black British
- ☐ European
- ☐ Middle Eastern
- ☐ White
- ☐ Mixed/multiple ethnic group (please specify ________________)
- ☐ Other (please specify ________________)
- ☐ Prefer not to say

SECTION 2: Lifestyle values

Please be aware that there are no right or wrong answers in this research. As such, you should not spend too long on any one question; your initial opinion or gut feeling is all we need. Please make sure you answer every question.

Please rate ALL of the following according to how important they are in your life at the present time.

	Not very important	Not important	Neutral	Important	Very important
My relationships with family/relatives	☐	☐	☐	☐	☐
My relationships with other people	☐	☐	☐	☐	☐
My own health	☐	☐	☐	☐	☐
The health of other people that I am close to or am responsible for	☐	☐	☐	☐	☐
My finances and standard of living	☐	☐	☐	☐	☐
The environment	☐	☐	☐	☐	☐
My ability to work, or find work	☐	☐	☐	☐	☐
Having an active social life	☐	☐	☐	☐	☐
Religion and spirituality	☐	☐	☐	☐	☐
My education	☐	☐	☐	☐	☐

SECTION 3: Your views about health and various symptoms

Please answer the following questions in relation to health and cancer.

In general, would you rate your health today as…:

☐ Very poor

☐ Poor

☐ Fair

☐ Good

☐ Very good

There are many warning signs and symptoms of cancer. Please name as many as you can think of.

____

____

____

The following may or may not be warning signs for cancer. We are interested in your opinion.

	Yes	No	Don't know
Do you think **persistent unexplained fatigue** could be a sign of cancer?	☐	☐	☐
Do you think **unexplained hair loss** could be a sign of cancer?	☐	☐	☐
Do you think an **unexplained lump or swelling** could be a sign of cancer?	☐	☐	☐
Do you think **persistent unexplained pain** could be a sign of cancer?	☐	☐	☐
Do you think **unexplained bleeding** could be a sign of cancer?	☐	☐	☐
Do you think a **persistent unexplained cough or hoarseness** could be a sign of cancer?	☐	☐	☐
Do you think a **persistent change in bowel habits** could be a sign of cancer?	☐	☐	☐
Do you think **unexplained weight gain** could be a sign of cancer?	☐	☐	☐
Do you think **a persistent change in bladder habits** could be a sign of cancer?	☐	☐	☐
Do you think **persistent difficulty swallowing** could be a sign of cancer?	☐	☐	☐
Do you think a **change in the appearance of a mole** could be a sign of cancer?	☐	☐	☐
Do you think a **sore that does not heal** could be a sign of cancer?	☐	☐	☐
Do you think **unexplained weight loss** could be a sign of cancer?	☐	☐	☐

Please consider each symptom and answer the following questions in relation to visiting a doctor.

How likely would you be to visit a doctor if you felt persistent unexplained fatigue?

☐ Very unlikely ☐ Somewhat unlikely ☐ Neither ☐ Somewhat likely ☐ Very likely

After what period of time would you visit a doctor if you felt persistent unexplained fatigue?

☐ Within 24 hours

☐ Within 1 week

☐ Over 1 up to 2 weeks

☐ Over 2 up to 3 weeks

☐ Over 3 up to 4 weeks

☐ More than a month

☐ I would not contact my doctor

How likely would you be to visit a doctor if you noticed unexplained hair loss?

☐ Very unlikely ☐ Somewhat unlikely ☐ Neither ☐ Somewhat likely ☐ Very likely

After what period of time would you visit a doctor if you noticed unexplained hair loss?

☐ Within 24 hours

☐ Within 1 week

☐ Over 1 up to 2 weeks

☐ Over 2 up to 3 weeks

☐ Over 3 up to 4 weeks

☐ More than a month

☐ I would not contact my doctor

How likely would you be to visit a doctor if you noticed an unexplained lump or swelling?

☐ Very unlikely ☐ Somewhat unlikely ☐ Neither ☐ Somewhat likely ☐ Very likely

After what period of time would you visit a doctor if you noticed an unexplained lump or swelling?

☐ Within 24 hours

☐ Within 1 week

☐ Over 1 up to 2 weeks

☐ Over 2 up to 3 weeks

☐ Over 3 up to 4 weeks

☐ More than a month

☐ I would not contact my doctor

How likely would you be to visit a doctor if you noticed a persistent unexplained pain?

☐ Very unlikely ☐ Somewhat unlikely ☐ Neither ☐ Somewhat likely ☐ Very likely

After what period of time would visit a doctor if you noticed a persistent unexplained pain?

☐ Within 24 hours

☐ Within 1 week

☐ Over 1 up to 2 weeks

☐ Over 2 up to 3 weeks

☐ Over 3 up to 4 weeks

☐ More than a month

☐ I would not contact my doctor

How likely would you be to visit a doctor if you noticed unexplained bleeding?

☐ Very unlikely ☐ Somewhat unikely ☐ Neither ☐ Somewhat likely ☐ Very likely

After what period of time would you visit a doctor if you noticed unexplained bleeding?

- ☐ Within 24 hours
- ☐ Within 1 week
- ☐ Over 1 up to 2 weeks
- ☐ Over 2 up to 3 weeks
- ☐ Over 3 up to 4 weeks
- ☐ More than a month
- ☐ I would not contact my doctor

How likely would you be to visit a doctor if you noticed a persistent cough or hoarseness?

☐ Very unlikely ☐ Somewhat unlikely ☐ Neither ☐ Somewhat likely ☐ Very likely

After what period of time would you visit a doctor if you noticed a persistent cough or hoarseness?

- ☐ Within 24 hours
- ☐ Within 1 week
- ☐ Over 1 up to 2 weeks
- ☐ Over 2 up to 3 weeks
- ☐ Over 3 up to 4 weeks
- ☐ More than a month
- ☐ I would not contact my doctor

How likely would you be to visit a doctor if you noticed a persistent change in bowel habits (e.g., blood in your stool, blood after a bowel motion, loose and frequent bowel motions, straining)?

☐	☐	☐	☐	☐
Very unlikely	Somewhat unlikely	Neither	Somewhat likely	Very likely

After what period of time would you visit a doctor if you noticed a persistent change in bowel habits?

☐ Within 24 hours

☐ Within 1 week

☐ Over 1 up to 2 weeks

☐ Over 2 up to 3 weeks

☐ Over 3 up to 4 weeks

☐ More than a month

☐ I would not contact my doctor

How likely would you be to visit a doctor if you noticed unexplained weight gain?

☐	☐	☐	☐	☐
Very unlikely	Somewhat unlikely	Neither	Somewhat likely	Very likely

After what period of time would you visit a doctor if you noticed unexplained weight gain?

☐ Within 24 hours

☐ Within 1 week

☐ Over 1 up to 2 weeks

☐ Over 2 up to 3 weeks

☐ Over 3 up to 4 weeks

☐ More than a month

☐ I would not contact my doctor

How likely would you be to visit a doctor if you noticed a persistent change in bladder habits (e.g., blood in your urine, needing to urinate urgently, needing to urinate more frequently, unable to urinate when you want to)?

☐	☐	☐	☐	☐
Very unlikely	Somewhat unlikely	Neither	Somewhat likely	Very likely

After what period of time would you visit a doctor if you noticed a persistent change in bladder habits?

☐ Within 24 hours

☐ Within 1 week

☐ Over 1 up to 2 weeks

☐ Over 2 up to 3 weeks

☐ Over 3 up to 4 weeks

☐ More than a month

☐ I would not contact my doctor

How likely would you be to visit a doctor if you noticed a persistent difficulty swallowing?

☐	☐	☐	☐	☐
Very unlikely	Somewhat unlikely	Neither	Somewhat likely	Very likely

After what period of time would you visit a doctor if you noticed a persistent difficulty swallowing?

☐ Within 24 hours

☐ Within 1 week

☐ Over 1 up to 2 weeks

☐ Over 2 up to 3 weeks

☐ Over 3 up to 4 weeks

☐ More than a month

☐ I would not contact my doctor

How likely would you be to visit a doctor if you noticed a change in the appearance of a mole (e.g., size, shape, colour, became crusty or bled)?

☐ Very unlikely ☐ Somewhat unlikely ☐ Neither ☐ Somewhat likely ☐ Very likely

After what period of time would you visit a doctor if you noticed a change in the appearance of a mole?

☐ Within 24 hours

☐ Within 1 week

☐ Over 1 up to 2 weeks

☐ Over 2 up to 3 weeks

☐ Over 3 up to 4 weeks

☐ More than a month

☐ I would not contact my doctor

How likely would you be to visit a doctor if you noticed a sore that does not heal?

☐ Very unlikely ☐ Somewhat unlikely ☐ Neither ☐ Somewhat likely ☐ Very likely

After what period of time would you visit a doctor if you noticed a sore that does not heal?

☐ Within 24 hours

☐ Within 1 week

☐ Over 1 up to 2 weeks

☐ Over 2 up to 3 weeks

☐ Over 3 up to 4 weeks

☐ More than a month

☐ I would not contact my doctor

How likely would you be to visit a doctor if you noticed unexplained weight loss?

☐	☐	☐	☐	☐
Very unlikely	Somewhat unlikely	Neither	Somewhat likely	Very likely

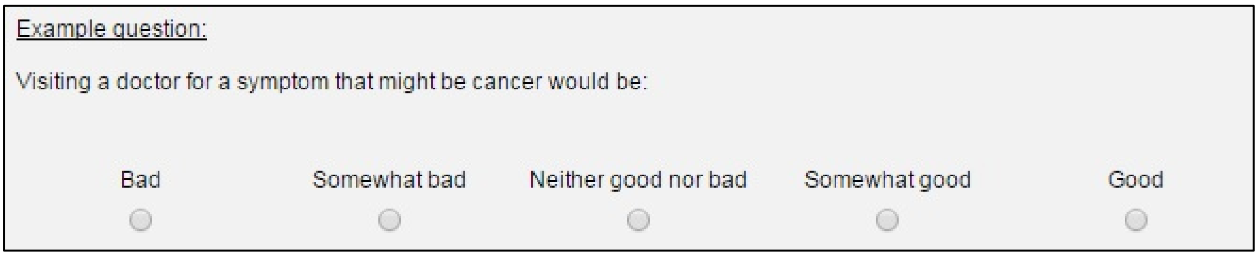
After what period of time would you visit a doctor if you noticed unexplained weight loss?

- ☐ Within 24 hours
- ☐ Within 1 week
- ☐ Over 1 up to 2 weeks
- ☐ Over 2 up to 3 weeks
- ☐ Over 3 up to 4 weeks
- ☐ More than a month
- ☐ I would not contact my doctor

SECTION 4: Your views about visiting a doctor for symptoms

Please answer the following questions in relation to visiting a doctor for symptoms. Please remember that there are no right or wrong answers in this research. As such, you should not spend too long on any one question; your initial opinion or gut feeling is all we need.

Many questions make use of rating scales with five options; please choose the option that best describes your opinion. An example of how the five options should be interpreted is below:



Example question:

Visiting a doctor for a symptom that might be cancer would be:

Bad	Somewhat bad	Neither good nor bad	Somewhat good	Good
○	○	○	○	○

Visiting a doctor for a symptom that might be cancer would be:

☐ Good	☐	☐	☐	☐ Bad
☐ Unpleasant	☐	☐	☐	☐ Pleasant
☐ Beneficial	☐	☐	☐	☐ Harmful
☐ Interesting	☐	☐	☐	☐ Boring
☐ Unenjoyable	☐	☐	☐	☐ Enjoyable
☐ Foolish	☐	☐	☐	☐ Wise

Please indicate the extent to which you agree with the following statements. Please read each statement carefully.

Visiting a doctor for a symptom that might be cancer would be a waste of time.

☐ Strongly disagree	☐ Somewhat disagree	☐ Neither	☐ Somewhat agree	☐ Strongly agree

Visiting a doctor for a symptom that might be cancer would restore my health.

☐ Strongly disagree	☐ Somewhat disagree	☐ Neither	☐ Somewhat agree	☐ Strongly agree

Visiting a doctor for a symptom that might be cancer would be embarrassing.

☐ Strongly disagree	☐ Somewhat disagree	☐ Neither	☐ Somewhat agree	☐ Strongly agree

Visiting a doctor for a symptom that might be cancer would give me peace of mind.

☐ Strongly disagree ☐ Somewhat disagree ☐ Neither ☐ Somewhat agree ☐ Strongly agree

When it comes to visiting my doctor:

It is important for me to do what my spouse/partner thinks I should do.

☐ Strongly disagree ☐ Somewhat disagree ☐ Neither ☐ Somewhat agree ☐ Strongly agree

It is important for me to do what my male friends think I should do.

☐ Strongly disagree ☐ Somewhat disagree ☐ Neither ☐ Somewhat agree ☐ Strongly agree

It is important for me to do what my family thinks I should do.

☐ Strongly disagree ☐ Somewhat disagree ☐ Neither ☐ Somewhat agree ☐ Strongly agree

It is important for me to do what my female friends think I should do.

☐ Strongly disagree ☐ Somewhat disagree ☐ Neither ☐ Somewhat agree ☐ Strongly agree

Having free time would enable me to visit my doctor if I noticed a symptom that might be cancer.

☐ Strongly disagree ☐ Somewhat disagree ☐ Neither ☐ Somewhat agree ☐ Strongly agree

Work commitments would make it difficult for me to visit my doctor if I noticed a symptom that might be cancer.

☐ Strongly disagree ☐ Somewhat disagree ☐ Neither ☐ Somewhat agree ☐ Strongly agree

Family commitments would make it difficult for me to visit my doctor if I noticed a symptom that might be cancer.

☐	☐	☐	☐	☐
Strongly disagree	Somewhat disagree	Neither	Somewhat agree	Strongly agree

Having support from family and friends would enable me to visit my doctor if I noticed a symptom that might be cancer.

☐	☐	☐	☐	☐
Strongly disagree	Somewhat disagree	Neither	Somewhat agree	Strongly agree

My spouse/partner would think that I should visit a doctor if I noticed a symptom that might be cancer.

☐	☐	☐	☐	☐
Definitely not		Maybe		Definitely

My male friends would think that I should visit a doctor if I noticed a symptom that might be cancer.

☐	☐	☐	☐	☐
Definitely not		Maybe		Definitely

My family would think that I should visit a doctor if I noticed a symptom that might be cancer.

☐	☐	☐	☐	☐
Definitely not		Maybe		Definitely

My female friends would think that I should visit a doctor if I noticed a symptom that might be cancer.

☐	☐	☐	☐	☐
Definitely not		Maybe		Definitely

My spouse/partner would visit a doctor if they noticed a symptom that might be cancer.

☐	☐	☐	☐	☐
Definitely not		Maybe		Definitely

My male friends would visit a doctor if they noticed a symptom that might be cancer.

☐	☐	☐	☐	☐
Definitely not		Maybe		Definitely

Members of my family would visit a doctor if they noticed a symptom that might be cancer.

☐	☐	☐	☐	☐
Definitely not		Maybe		Definitely

My female friends would visit a doctor if they noticed a symptom that might be cancer.

☐	☐	☐	☐	☐
Definitely not		Maybe		Definitely

Wasting time is...

☐	☐	☐
Very bad	Somewhat bad	Not at all bad

Being healthy is...

☐	☐	☐
Very good	Somewhat good	Not at all good

Feeling embarrassed is...

☐	☐	☐
Very bad	Somewhat bad	Not at all bad

Peace of mind is...

☐	☐	☐
Very good	Somewhat good	Not at all good

In regards to matters of health, how much do you want to be like your spouse/partner?

☐	☐	☐	☐	☐
Not at all		Somewhat		Very much

In regards to matters of health, how much do you want to be like your male friends?

☐	☐	☐	☐	☐
Not at all		Somewhat		Very much

In regards to matters of health, how much do you want to be like your family?

☐	☐	☐	☐	☐
Not at all		Somewhat		Very much

In regards to matters of health, how much do you want to be like your female friends?

☐	☐	☐	☐	☐
Not at all		Somewhat		Very much

I have free time:

☐	☐	☐	☐	☐
Never		Sometimes		Frequently

I have work commitments:

☐	☐	☐	☐	☐
Never		Sometimes		Frequently

I have family commitments:

☐	☐	☐	☐	☐
Never		Sometimes		Frequently

I receive support from family and friends:

☐	☐	☐	☐	☐
Never		Sometimes		Frequently

If I wanted to visit a doctor I could.

☐	☐	☐	☐	☐
Strongly disagree		Neither agree nor disagree		Strongly agree

Visiting a doctor would be:

☐	☐	☐	☐	☐
Very easy		Neither easy nor difficult		Very difficult

I feel in complete control over whether I could visit a doctor.

☐	☐	☐	☐	☐
Strongly disagree		Neither agree nor disagree		Strongly agree

SECTION 4: Beliefs about cancer

The next section is about your beliefs about cancer and seeking medical advice. For each of the statements shown, please indicate how much you agree or disagree with each item.

	Strongly disagree	Mildly disagree	Neither	Mildly agree	Strongly agree
Visiting a doctor after noticing a symptom of cancer would be a good idea	☐	☐	☐	☐	☐
In order for me to visit a doctor I have to give up quite a bit	☐	☐	☐	☐	☐
Visiting a doctor after noticing a symptom of cancer would increase my chances of surviving	☐	☐	☐	☐	☐
Visiting a doctor for a symptom that might be cancer would be a waste of my doctor's time	☐	☐	☐	☐	☐
I have a lot to gain by visiting a doctor if I notice a symptom of cancer	☐	☐	☐	☐	☐
It is embarrassing for me to seek medical advice from a doctor	☐	☐	☐	☐	☐
I would feel reassured about cancer if I visited my doctor after noticing a symptom of cancer	☐	☐	☐	☐	☐
Going to the doctor interferes with my other activities	☐	☐	☐	☐	☐
My friends would make fun of me if I visited a doctor	☐	☐	☐	☐	☐
Doctors are good at detecting cancer in its early stages	☐	☐	☐	☐	☐
Visiting a doctor is time consuming	☐	☐	☐	☐	☐
My chances of getting cancer are great	☐	☐	☐	☐	☐
My physical health makes it more likely that I will get cancer	☐	☐	☐	☐	☐
I feel that my chances of getting cancer in the future are good	☐	☐	☐	☐	☐
There is a good possibility that I will get cancer	☐	☐	☐	☐	☐
I worry a lot about getting cancer	☐	☐	☐	☐	☐
Within the next year I will get cancer	☐	☐	☐	☐	☐
If I had cancer, my career would be endangered	☐	☐	☐	☐	☐
When I think about cancer my heart beats faster	☐	☐	☐	☐	☐
Cancer would endanger my marriage/significant relationship	☐	☐	☐	☐	☐
My feelings about myself would change if I got cancer	☐	☐	☐	☐	☐

	Strongly disagree	Mildly disagree	Neither	Mildly agree	Strongly agree
I am afraid to even think about cancer	☐	☐	☐	☐	☐
Problems I would experience from cancer would last a long time	☐	☐	☐	☐	☐
If I got cancer, it would be more serious than other diseases	☐	☐	☐	☐	☐
If I had cancer, my whole life would change	☐	☐	☐	☐	☐

SECTION 5: Barriers to help-seeking

Below are some reasons why you might choose **NOT** to seek help for a health problem, such as unexplained persistent pain, change in bladder or bowel habits, or unexplained lump or swelling. Please indicate the extent to which you agree the following reasons would **keep you from** seeking help.

	Strongly disagree	Somewhat disagree	Neither	Somewhat agree	Strongly agree
I would think less of myself for needing help.	☐	☐	☐	☐	☐
I don’t like other people telling me what to do.	☐	☐	☐	☐	☐
Nobody knows more about my problems than I do.	☐	☐	☐	☐	☐
I’d feel better about myself knowing I didn’t need help from others.	☐	☐	☐	☐	☐
I don’t like feeling controlled by other people.	☐	☐	☐	☐	☐
It would seem weak to ask for help.	☐	☐	☐	☐	☐
I like to make my own decisions and not to be too influenced by others.	☐	☐	☐	☐	☐
I like to be in charge of everything in my life.	☐	☐	☐	☐	☐
Asking for help is like surrendering authority over my life.	☐	☐	☐	☐	☐
I do not want to appear weaker than my peers.	☐	☐	☐	☐	☐
The problem wouldn’t seem worth getting help for.	☐	☐	☐	☐	☐
The problem wouldn’t be a big deal; it would go away in time.	☐	☐	☐	☐	☐
I wouldn’t want to overreact to a problem that wasn’t serious.	☐	☐	☐	☐	☐
Problems like this are part of life; they’re just something you have to deal with.	☐	☐	☐	☐	☐

	Strongly disagree	Somewhat disagree	Neither	Somewhat agree	Strongly agree
I'd prefer just to suck it up rather than dwell on my problems.	☐	☐	☐	☐	☐
I would prefer to wait until I'm sure the health problem is a serious one.	☐	☐	☐	☐	☐
People typically expect something in return when they provide help.	☐	☐	☐	☐	☐
I would have real difficulty finding transportation to a place where I can get help.	☐	☐	☐	☐	☐
I wouldn't know what sort of help was available.	☐	☐	☐	☐	☐
Financial difficulties would be an obstacle to getting help.	☐	☐	☐	☐	☐
I don't trust doctors and other health professionals.	☐	☐	☐	☐	☐
A lack of health insurance would prevent me from asking for help.	☐	☐	☐	☐	☐
Privacy is important to me, and I don't want other people knowing about my problems.	☐	☐	☐	☐	☐
Seeking medical help for the problem would be embarrassing.	☐	☐	☐	☐	☐
I don't want some stranger touching me in ways I'm not comfortable with.	☐	☐	☐	☐	☐
I don't like taking off my clothes in front of other people.	☐	☐	☐	☐	☐
I wouldn't want someone of the same sex touching my body.	☐	☐	☐	☐	☐
I don't like to get emotional about things.	☐	☐	☐	☐	☐
I don't like to talk about feelings.	☐	☐	☐	☐	☐
I'd rather not show people what I'm feeling.	☐	☐	☐	☐	☐
I wouldn't want to look stupid for not knowing how to figure this problem out.	☐	☐	☐	☐	☐

SECTION 6: Actions, feelings and beliefs

The following is a series of statements about how men **('people' for female participants only)** might think or feel about themselves, and about what is important for men **(remove for female participants only).** Thinking about you personally, please indicate how true each statement is for you on a scale of "not at all true", "somewhat true" to "very true". There are not right or wrong answers. Please give the responses that most accurately describe your personal thoughts and feelings.

	Not at all true	A little true	Somewhat true	Mostly true	Very true
Being physically strong is important to me	☐	☐	☐	☐	☐
Being physically able to have sex is important to me	☐	☐	☐	☐	☐
I always look for the good in situations	☐	☐	☐	☐	☐
I keep my feelings to myself	☐	☐	☐	☐	☐
Being able to have an erection is important to me **(Item skipped for female participants)**	☐	☐	☐	☐	☐
I like to take action in the face of problems	☐	☐	☐	☐	☐
I like to know I am looking after my partner or family	☐	☐	☐	☐	☐
Having a good level of fitness is important to me	☐	☐	☐	☐	☐
I am a fighter	☐	☐	☐	☐	☐
If I want to achieve something I can	☐	☐	☐	☐	☐
I like to know I am capable of having sex	☐	☐	☐	☐	☐
I am a positive person	☐	☐	☐	☐	☐
I tend not to talk about my worries	☐	☐	☐	☐	☐
I need to provide financial security for my partner or family	☐	☐	☐	☐	☐
Being an active person is important to me	☐	☐	☐	☐	☐
I have a forward thinking mind set	☐	☐	☐	☐	☐
Being able to have sex is like being able to run	☐	☐	☐	☐	☐
Being able to provide for my partner or family is important to me	☐	☐	☐	☐	☐
I am optimistic about the future	☐	☐	☐	☐	☐
I am a competitive person	☐	☐	☐	☐	☐
My approach is to get on with things	☐	☐	☐	☐	☐
It is up to me to protect my partner or family	☐	☐	☐	☐	☐
I feel and think young	☐	☐	☐	☐	☐
I cope with personal worries on my own	☐	☐	☐	☐	☐
Being able to have sex makes me whole	☐	☐	☐	☐	☐

	Not at all true	A little true	Somewhat true	Mostly true	Very true
I like to plan ahead	☐	☐	☐	☐	☐
When I have a problem I do everything in my power to fix it	☐	☐	☐	☐	☐
I overdo things at times	☐	☐	☐	☐	☐
I like to know I can father/**'have' (female participants only)** a child if I want to	☐	☐	☐	☐	☐
I get frustrated when things progress slowly	☐	☐	☐	☐	☐
I am a carefree person	☐	☐	☐	☐	☐
I like to win	☐	☐	☐	☐	☐
I find it difficult to receive help from others	☐	☐	☐	☐	☐
I like to be in control	☐	☐	☐	☐	☐
I take care of personal concerns on my own	☐	☐	☐	☐	☐
I like to take risks	☐	☐	☐	☐	☐
Being able to rely on myself is important to me	☐	☐	☐	☐	☐

SECTION 7: Social support

We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

	Very strongly disagree	Strongly disagree	Mildly disagree	Neutral	Mildly agree	Strongly agree	Very strongly agree
There is a special person who is around when I am in need.	☐	☐	☐	☐	☐	☐	☐
There is a special person with whom I can share my joys and sorrows.	☐	☐	☐	☐	☐	☐	☐
My family really tries to help me.	☐	☐	☐	☐	☐	☐	☐
I get the emotional help and support I need from my family.	☐	☐	☐	☐	☐	☐	☐
I have a special person who is a real source of comfort to me.	☐	☐	☐	☐	☐	☐	☐
My friends really try to help me.	☐	☐	☐	☐	☐	☐	☐
I can count on my friends when things go wrong.	☐	☐	☐	☐	☐	☐	☐
I can talk about my problems with my family.	☐	☐	☐	☐	☐	☐	☐
I have friends with whom I can share my joys and sorrows.	☐	☐	☐	☐	☐	☐	☐
There is a special person in my life who cares about my feelings.	☐	☐	☐	☐	☐	☐	☐
My family is willing to help me make decisions.	☐	☐	☐	☐	☐	☐	☐
I can talk about my problems with my friends.	☐	☐	☐	☐	☐	☐	☐

SECTION 9: About your health

The next section is about your health history and background.

Thinking of the last time that you visited your doctor:

Did you think you had a health problem?

☐ No (skip to Q. Who made the appointment)

☐ Yes

Did you think you needed professional medical help with the problem?

☐ No

☐ Yes

☐ Not applicable

After what period of time did you visit your doctor after noticing the problem?

☐ Within 1 week

☐ Over 1 up to 2 weeks

☐ Over 2 up to 3 weeks

☐ Over 3 up to 4 weeks

☐ More than a month

☐ Not applicable

Who made the appointment?

☐ I made the appointment

☐ My spouse made the appointment

☐ A family member made the appointment

☐ It was a regular standing appointment

☐ Other (please specify _________________)

Have you ever been diagnosed with cancer?

☐ Yes

☐ No

If yes, how long ago were you first diagnosed with cancer?

____

What type of cancer were you diagnosed with?

____

Do you regularly visit the doctor for any pre-existing health conditions?

- ☐ Yes
- ☐ No

To your knowledge, have any of your family members that are close to you ever been diagnosed with cancer?

- ☐ Yes
- ☐ No

If yes, what type of cancer were they diagnosed with?

____

Do you currently have private health insurance?

- ☐ Yes, both extras and hospital cover
- ☐ Yes, hospital cover only
- ☐ Yes, extras cover only
- ☐ No

What is your height? ________________

What is your weight? ________________

Did you look up any symptoms online while completing this survey?

- ☐ No
- ☐ Yes

Appendix E: Flowchart of research

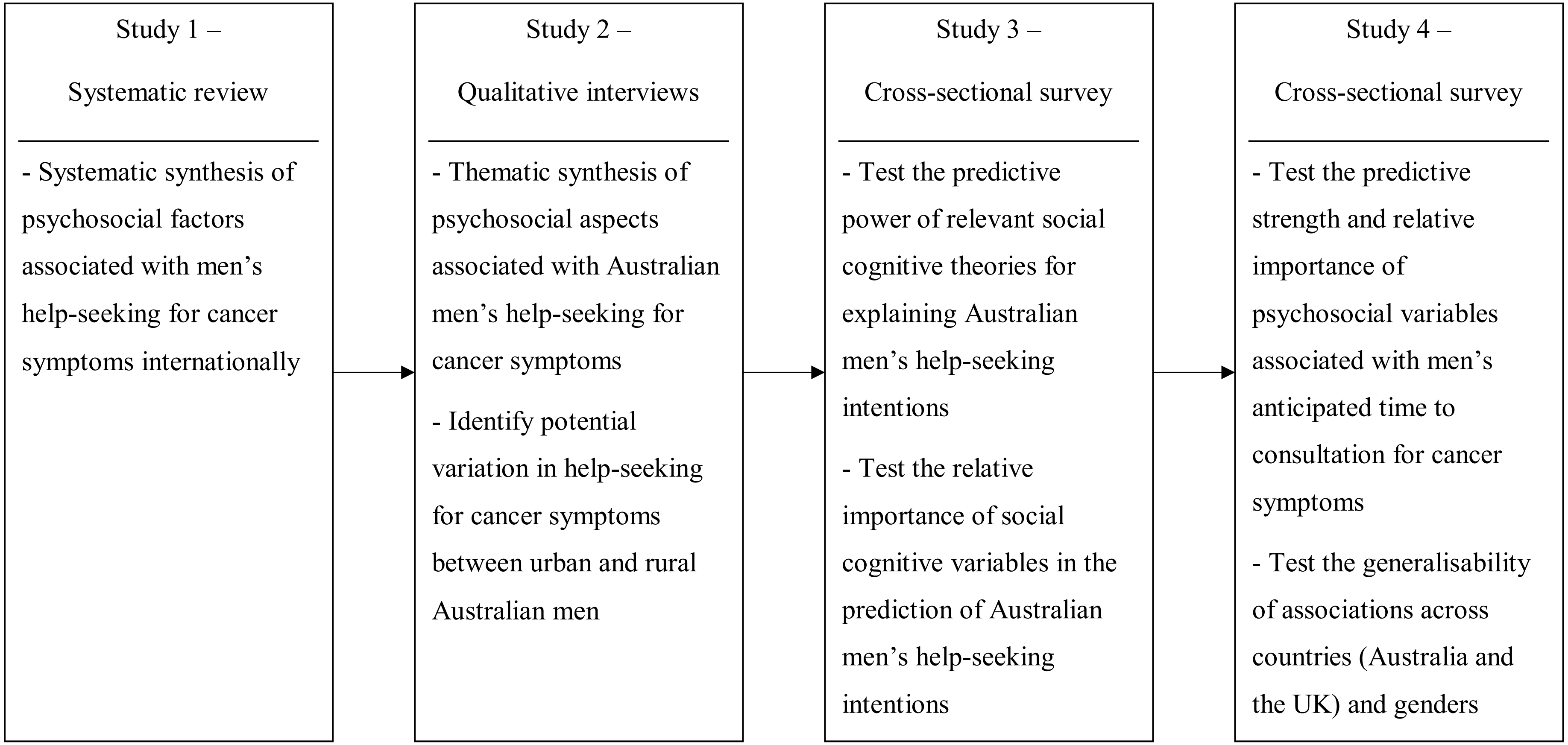


Figure E.1. Flowchart of research included in the thesis.