There's More to a Dog Guide than Meets the Eye

A Mixed Methods Investigation into the Self-reported Benefits of Having a Dog Guide.

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Candidate's Declaration

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

Candidate's Name: Geraldine Lane

Date: 11th April 2014

Supervisor's Declaration

This is to certify that the research carried out for the doctoral thesis 'There's More to a Dog Guide than Meets the Eye: An Investigation into the World of the Dog Guide Handler. The Potential Benefits to Health of Living and Working with a Dog Guide', was completed by Geraldine Lane in the Disability and Community Inclusion Unit, Flinders University, Adelaide Australia. The thesis material has not been used in part or in full for any other qualification, and I confirm that the candidate has pursued this course of study in accordance with the requirements of Flinders University regulations.

Supervisor's Name: Dr Brian Matthews

Date: 11th April 2014

Certificate of Regulatory Compliance

This is to certify that the research carried out in the doctoral thesis 'There's More to a Dog Guide than Meets the Eye: An Investigation into the World of the Dog Guide Handler. The Potential Benefits to Health of Living and Working with a Dog Guide', in the Disability and Community Inclusion Unit, Flinders University, Adelaide Australia is the original work of the candidate, except as indicated by appropriate attribution in the text and/or in the acknowledgements; that the text excluding appendices/annexes, does not exceed 100,000 words; all ethical requirements applicable to the study have been complied with as required by Flinders University of South Australia, other organisations and/or committees which had a particular association with this study, and relevant legislation.

Ethical authorisation code: 5169
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Acknowledgements

This thesis emanates from an intense interest in the area of disability and disability-related issues. My interest in this area increased when I began losing my eyesight at the age of 35 years due to a neurological illness. Undertaking the research required in writing this thesis, has given me the opportunity to meet many people who are blind or vision impaired and it has also allowed me to work with agencies that provide services to people who are blind or vision impaired. I have been inspired by the many wonderful people that I have met while I have been on this PhD journey.

I wish to thank the organisations who agreed to support this research project, specifically Seeing Eye Dogs Australia (SEDA), Blind Citizens of Western Australia (BCWA) and Blind Citizens Australia (BCA), who supported me so well in this research endeavour. I also acknowledge Leigh Garwood (General Manager SEDA), Ian Cox and Greer Gerson (Dog Guide Instructors) from SEDA, Erika Webb and Greg Madsen of BCWA and the various participants, both dog guide handlers (DGH) and non-dog guide handlers (NDGH), who generously gave up their time to assist me in this study.

My thanks goes to all the interviewees who participated in this research and who shared their feelings so readily. I also acknowledge the many wonderful people I met during the course of this project. In order to respect their privacy I do not thank all my participants by name, yet it is my hope that some, directly or indirectly, will recognise themselves in this work. I wanted this thesis to be about them. I wanted it to tell their feelings, aspirations and hopes. My wish is to portray the life they experience and the contributions to quality of life that they receive from working with their dog guides. I want to capture the challenges they face, their resilience and optimism and the impact that having a dog guide may make on their overall health and quality of life.

It is my deep contention that this research depicts a side of the story that is rarely told, though very much in need of telling. This thesis could also not have been written without the help and support of my supervisors from Flinders University, Dr Brian Matthews, Dr Caroline Ellison and Dr Carolyn Palmer, all who have supported my research. From them, I have learned so

much about research methodologies and about academic writing. I met Dr Matthews when I first returned to study in 2007 in order to undertake a Graduate Certificate in Disability Studies. Upon completion of the Graduate Certificate, Dr Matthews inspired me to complete my Masters Degree in Disability Studies. I then went on to complete three more Masters Degrees, one in Education (Special Ed), another in Applied Gerontology and a fourth Masters degree in Palliative Care for (Aged Persons). Without the encouragement of Dr Matthews and his belief in me and my abilities, I do not believe I would ever have continued in higher education. With the help and support of these highly respected academics, I have been able to learn how to bring raw ideas and experiences to fruition and to develop them into a coherent work; I deeply appreciate their expertise, professionalism and encouragement. I also thank the staff of the Disability and Community Inclusion Unit at Flinders University who supported me by answering my many questions while on this journey. I also acknowledge my friend Fiona Redgrove, who was completing her doctoral thesis at the same time as myself. Fiona provided me with considerable support and encouragement on this learning journey, even when the going was tough, she was there to support me. I also acknowledge the staff of the School of Education and the School of Information Systems at Curtin University who have supported and encouraged me during the writing of this thesis.

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Throughout the time of writing my thesis I also had the support of my friends Vicki, Sue, Karen and Rachel who put up with my lack of contact during the period of the writing of my thesis but who were always at the end of the phone when I needed them.

I would also like to acknowledge my wonderful dog guides and the contribution they have made to my life. To my dog guides who have passed on, Greta and Molly, and to my retired dog guide Topaz, thank you for your devotion. To my current dog guide Iris, thank you for enhancing my life and your unconditional love; you spent many hours listening to me running ideas past you regarding my research and you were uncomplaining. To all those too numerous to mention who have been instrumental in helping me in this study, a big thank you, I could not have done it without your help and encouragement.

I love you all deeply and thank you for supporting me during this amazing journey.

Notes on the Text

1. Explanations of key terms used throughout this thesis, which were current at the time of writing, can be found in the Glossary of Terms

2. Job titles cited in personal communications were current at the time of writing this thesis.

3. The style of the content and the software used to write this thesis is compatible with screen reading software used by people who are blind or vision impaired.

4. Pseudonyms have been used for personal communications in all instances to protect the privacy of respondents. If any name used is the same as a person currently living this is purely coincidental. Pseudonyms were also used for dog guide names, so that no links to persons either living or dead could be made.

5. In this thesis the term "dog guide" is used to refer to a dog that is trained to guide a person who is blind or vision impaired. This term is the accepted term for dogs undertaking this role as it is an umbrella term that covers dog guide training schools world wide and is not linked to a proprietary name such as "Guide Dogs" used by an agency that trains dog guides.

Glossary of Terms

The following explanations and descriptions are provided for the purposes of this research:

Accidents to the eye resulting in loss of vision

Damage to the eye or visual system resulting in loss of vision or blindness (Seimon, 2005).

Age-related Macular Degeneration (ARMD)

A disease caused by the degeneration of retinal photoreceptors and pigment epithelium in the area of the macula, resulting in a gradual loss of central vision. Peripheral vision is usually retained. Also called age-related maculopathy (Corn & Erin, 2010, p. 921).

Blindness

See Vision Impairment

Congenital Cataracts

Congenital cataracts result in a clouding of the lens of the eye which is present at birth. Not all forms of congenital cataracts can be successfully treated and this can result in blindness that remains in adulthood (Santana & Waiswo, 2011).

Dog Guide (also referred to as Guide Dog or Seeing Eye Dog)

See also Service Animals/Dogs.

In Australia a dog guide may be defined as a service dog that has been trained and certified by the members of Guide Dog schools for the purpose of guiding people who are blind or vision impaired. The term dog guide has been used in order to avoid links being made to individual dog guide schools, except where specified and acknowledged by a reference.

Dog Guide Handler (DGH)

A dog guide handler (DGH) is a person with a vision disability who uses an accredited dog guide from an Australian dog guide training school. In Australia, Guide Dog Associations in each state train dog guides and a national dog guide training agency – Seeing Eye Dogs Australia (SEDA) – is the national provider of dog guides. All are

members of the International Federation of Guide Dog Training Schools. Dog guides in Australia are bred, purchased or received as donations and are trained by the various guide dog schools (Lawrenson, 2003) Note: For the purposes of this research, all persons who use dog guides are referred to as dog guide handler(s) (DGH) or simply handler(s).

Non-Dog Guide Handler (NDGH)

This is a comparative term and refers, in the context of this study, to a person or persons who choose to use an alternate mobility aid to a dog guide such as a long mobility cane or electronic mobility aid, i.e. the non-dog guide handler(s) (NDGH) has chosen not to use a dog guide as a mobility aid.

Dog Guide Trainer

A person who is qualified to train dogs to become certified dog guides (Lloyd, 2004).

Long Cane

Often referred to as a white cane. It is used by people who are blind or vision impaired to help detect obstacles. It also identifies the user as having vision impairment (Vision Australia, 2011). "The long cane is a long, white or silver-grey cane that allows the pedestrian with a [vision] disability to determine the nature of his or her immediate surroundings through physical contact with the environment. Long canes may be rigid, folding, or telescopic," (Lloyd, 2004, p. 28).

Optic Atrophy

Optic atrophy is also referred to as optic neuropathy: damage to the fibres of the optic nerve from any cause (Carelli, Ross-Cisneros & Sadun, 2004).

Orientation and Mobility (O&M)

Orientation (O), Mobility (M), often used jointly as O&M. Maintaining orientation is the way in which we remain aware of our environment and our position in space in relation to the environment. Mobility refers to the act of moving safely and the use of tools to help navigate the

environment, e.g. the use of a long cane, electronic aid or dog guide. "O&M refers to the process of travelling through the environment safely and efficiently," (Lloyd, 2004 p. 25) adapted from La Grow and Weessies (1994); Lloyd, (2004) definitions of orientation and mobility).

Pets as Therapy Animals/Dogs

Provide affection and comfort to residents of nursing homes and hostels, and patients in hospitals etc. Specially trained and have the same rights of access as service dogs (Therapy Dogs United, n.d.)

Retinitis Pigmentosa

A group of progressive, often hereditary, retinal degenerative diseases that are charactised by decreasing peripheral vision; some progress to tunnel vision, whereas others result in total blindness if the macula also becomes involved (Corn & Erin, 2010, p. 931).

Retired Dog Guides

Dog guides that cease working in a guiding capacity, generally after the age of 10. Generally these dogs remain with their handlers as companion dogs.

Service Animals/Dogs, Therapy Animals/Dogs and other Working Dogs

Service animals, including the service dog (or assistance dog) are trained to meet the disability-related needs of their handlers. The law protects the rights of individuals with disabilities to be accompanied by their service animals in public places. Service animals are not considered pets (Westcott & Queensland Parliamentary Library, 2005). Examples include dog guides (see Dog Guide), hearing dogs who work with people who are deaf or have significant hearing impairment, mobility assistance dogs for people who have physical disabilities, companion dogs and seizure-alert dogs. Pets as therapy animals work with people who are elderly or who live in nursing homes or hospitals or people with disabilities with much needed companionship with animals. Other working dogs in Australia include dogs who work in the area of search and rescue, herding dogs who work on farms, customs and police dogs, defense services dogs, drug detection dogs,

cadaver dogs and arson dogs (Sachs-Erricson, Hansen & Fitzgerald, 2002).

Trainer

See Dog Guide Trainer

Vision Impairment - Blindness (total vision loss), Legal Blindness and Vision Impaired (partial vision)

"Blindness refers to having no useful vision or extremely limited levels such as the ability to distinguish between light perception and projection only" (Lloyd, 2004 p. 24). In Australia, persons are considered legally blind if their visual acuity is less than 6/60 in the better eye after correction, or their visual field does not subtend 20 degrees at its widest angle [or a combination of both] (Taylor et. al, 2005). A person who is vision impaired has loss of vision to the degree of being eligible to receive services from blindness agencies around Australia. Persons are eligible if their visual acuity is less than, or equal to 6/18, or who has a remaining visual field of ten degrees or less from the point of fixation (Centre for Eye Research Australia, 2007).

Dedication

This thesis is firstly dedicated to my family who have been my greatest support and who have been my greatest teachers along life's incredible journey. This thesis is also dedicated to people who are blind or vision impaired and to their dog guides. I wanted to tell the world about this group of people, their health, aspirations, optimism and determination to overcome challenges. I also want to acknowledge the devotion of dog guides and of the people who train them to be a support to people with loss of vision. I dedicate this work to all those involved in supporting people who are blind or vision impaired.

Dedication to People who are Blind or Vision Impaired

When deciding to write a dedication to people who are blind or vision impaired, I could not think of a more appropriate person to inspire this dedication than Helen Keller. Helen was born in 1880 and became deaf/blind after a childhood illness. Helen became a well-known political activist who worked tirelessly for people who were deaf/blind and she was also an inspirational speaker and a prolific author. Helen loved dogs and attained her first Akita dog (named Kamikaze-go) after a visit to Japan in 1937. Helen is noted for introducing the Akita breed to the United States (Keller, 1937). Helen spoke about Kamikaze saying:

> If ever there was an angel in fur, it was Kamikaze. I know I shall never feel quite the same tenderness for any other pet. The Akita dog has all the qualities that appeal to me — he is gentle, companionable and trusty, (Keller, 1937).

Helen exemplifies the tremendous contributions made by people who are blind or vision impaired and remains an inspiration to many people even these many years after her death. Helen left us with many sayings, however the one I have added here from Helen, exemplifies her life and highlights the feelings of many people who live with blindness or vision impairment.

"The best and most beautiful things in the world cannot be seen nor even touched, but just felt in the heart," (Helen Keller, 1905).

This thesis is dedicated to all the wonderful people who are blind or vision impaired who contributed to this research project and to all those living with blindness or vision impairment.

Prologue

Before the age of 35 years, I was a person who did not have a disability. I was married and a working mother who trained originally as a nurse. I completed my nursing training at Royal Newcastle Hospital in New South Wales and gained my nursing registration in 1973. I worked as a nurse for 16 years, during which time I became a mother to my twin sons. I had never given much thought to the fact that one day I may develop a disability. At the age of 30 years, however, I began to experience problems with my vision and also began to have difficulties with walking. After a number of months I was diagnosed with Multiple Sclerosis and another neurological condition known as Idiopathic Intracranial Hypertension (also referred to as pseudotumour cerebri) (Dhungana, Sharrack, & Woodroofe, 2009). By the age of 35 the combination of these conditions had caused me to lose my vision, becoming legally blind. I have no vision in my left eye and light perception only in my right eye.

Dealing with the loss of one's vision is obviously very confronting. In the initial stages of my loss of vision, I was thrown into a deep depression. I received considerable rehabilitative support from the Association for the Blind of Western Australia and I had significant support from my family. In the 1990s, I was referred to the Association for the Blind of Western Australia and it was there that I was able to undertake training in orientation and mobility in order to acquire safe mobility. This mobility training was initially with the use of a long cane. Later, I learned to use an electronic mobility aid which I used in conjunction with my long cane and I began to further regain some of my independence. At about this time, I also began training in the use of computers which used specialist software to allow my computer to 'talk' and I also began to learn Braille. Learning both these skills helped me in my journey to find work again. My first job after losing my sight was as a receptionist in an office setting (as I could no longer work in my chosen profession as a nurse). I worked in this position for two years after my initial loss of sight and, although I was regaining my independence, I found my confidence was still low and I was still encountering depression. It was at that time that I asked to be assessed to train with a dog guide. After being on a waiting list for 14 months, I received my first dog guide through Guide Dogs Victoria. My first dog guide, Greta, a yellow Labrador, came into my

life and changed it for the better; she made a significant impression and I have never looked back. Greta helped me to regain my confidence, to explore new areas and to feel more able to cope with the daily challenges encountered due to vision loss. I was no longer experiencing depression and was living with a considerable boost to my confidence and self-esteem. Since this time I have had three other dog guides, Molly and Topaz from the Association for the Blind of Western Australia/Guide Dogs WA and Iris (my current dog guide), who was provided to me by Seeing Eye Dogs Australia (SEDA), a national provider of dog guides.

The boost in confidence that my dog guides have provided me with has contributed to my motivation to study. I now work full time teaching undergraduate and Masters level students at several universities in Australia in both internal and external modes. Undertaking my PhD was the next logical step in my academic career. To be recognised as a researcher is a personal goal and I believe it is the last obstacle for me to overcome to finally feel that I have achieved total rehabilitation. In order to complete my PhD studies, I have undertaken my academic research in Australia, travelling throughout Australia to get a good sampling of participants for interviews and focus groups and to gather the research data. It has been an interesting but challenging journey, but a journey I have enjoyed as I have met some wonderful people and it has been very valuable to learn of and report their unique stories.

A major reason for embarking on this journey was that concern for the lives of people who are blind or vision impaired. They need to be able to make informed choices about their preferred mobility aid, whether their choice is to use a long cane or a dog guide. I have a dedication to this research which is enhanced, but not influenced, by my own experiences. It is my hope that this research will enlighten stakeholders and bring greater understanding and awareness amongst both the blind and the sighted communities. I further hope that this research will enhance the lives of people who are blind or vision impaired and that it will provide new knowledge to those who provide services to people who are blind or vision impaired.

Geraldine Lane - April, 2014

Abstract

The choice of mobility aid is a very important aspect of ensuring safe mobility for people who are blind or vision impaired. The most commonly used mobility aids are the long cane and the dog guide. The role of the dog guide is well known; dog guides are well recognised as being effective mobility aids for people who are blind or vision impaired. There has, however, been a paucity of research exploring potential health benefits that may be associated with working with a dog guide. This study goes some way in redressing this lack of research and explores self-reported benefits, from individuals using dog guides as their preferred mobility aid.

The issues examined in this thesis, consider whether working with a dog guide has an impact on the physical and psychosocial health of dog guide handlers (DGH). The research examines issues such as general health, emotional wellbeing and exercise potential. The researcher believes that the research will have positive implications for service provision and will improve the available information regarding dog guide mobility for potential DGH. The research examines any potential for diverse benefit beyond mobility and it will assist individuals to consider the advantages and disadvantages of working with a dog guide, especially issues surrounding health.

This descriptive study took place in Australia during the years 2010-2013 and canvassed the opinion of 161 participants who are blind or vision impaired from across the country who use a dog guide as their primary mobility aid. The study is based on a mixed methods approach, using quantitative and qualitative methodology. This thesis is the first study of this scale undertaken in Australia (over 19 per cent of the total number of dog guide users in Australia were involved in the research) and provides valuable and current information regarding the potential impact on health that may be obtained from working with a dog guide.

Chapter 1
General Introduction

1.0 Introduction

Blindness and severe vision impairment restrict an individual's ability to travel safely and independently in both the physical and social environment (Griffen-Shirley, Trusty, & Rickard, 2000). Blindness and vision impairment can also cause difficulty in moving about familiar and unfamiliar environments (Sánchez & Sáenz, 2010) and in exercising control over situations that could be hazardous (Griffen-Shirley et al., 2000). Wiggett-Barnard and Steel (2008) point out that individuals who are blind or severely vision impaired face, "a myriad of social and physical challenges," (p. 1014) and they argue the need to identify tools that will enable safe and independent travel and to identify and minimise the social and environmental barriers that may impact on their lives. To ensure safety and to foster independence, people who are blind or vision impaired can use assistive devices or mobility aids in order to facilitate their safe mobility in the range of contexts in which they travel (Sánchez & Sáenz, 2010).

Mobility aids, as used by people who are blind or vision impaired, come in a variety of forms, from the long cane, to electronic devices such as the UltraCane, the Miniguide, or the Trekker (a GPS navigational system) (Ball, 2008). The UltraCane is an electronic mobility device which emits ultrasonic waves; these help the user to be able to calculate the distance to specific objects (UltraCane, n.d.). The Miniguide is a hand held device which also uses ultrasonic waves to detect objects. The Miniguide is referred to as a secondary mobility aid and is designed to be used in conjunction with a primary mobility aid, e.g. the dog guide or long cane (Smith & Penrod, 2010). Dog guides assist their handlers to avoid obstacles, to cross roads in a safe manner and to ensure that their handler is protected in most foreseeable and unforeseeable situations (Lloyd, 2004; Muldoon, 2001). Few research studies, however, have investigated the effects of working with a dog guide in relation to potential health benefits, above and beyond issues such as increased mobility and independence. Therefore, the paucity of research in this area prompted the focus of this study.

This study will explore the impact that working with a dog guide has on the lives of people who are blind or vision impaired, from the lived experiences of dog guide handlers (DGH) in the Australian setting. It further examines the potential of the dog guide to provide benefits beyond mobility to individuals who are blind or vision impaired. It will confirm if the DGH perceptions of the effect that working with a dog guide has on their health and overall quality of life, are actually met when they work with a dog.

This chapter introduces the study which was undertaken between the years of 2010 and 2013. The study was conducted in Australia and is the first comprehensive study of its kind in the Australian setting. The study involved 161 participants and examined potential health implications of working with a dog guide. Concepts that will be examined in this thesis are presented and the chapter provides an outline and background which provide a clear rationale for the study. Many of the terms used in the writing of this thesis, e.g. dog guide handler, dog guide and related terminology can be found explained in the Glossary of Terms included in the preamble to this thesis.

1.1 Background

Loss of independence is a potentially catastrophic outcome after loss of vision and it may bring with it a number of emotional and physical health issues for the person affected (Garrity & Stallones, 1998). Loss of independence due to loss of vision, may limit the ability to exercise, with subsequent deterioration in physical wellbeing. It may also result in a loss of confidence and declining emotional health (Ball, 2008). Regaining independence and developing the ability to move safely around the community, therefore, is a key objective for people who lose their sight (Oxley, 2001). By regaining independence, people who are blind or vision impaired are likely to increase exercise levels, move about more, and to have a subsequent increase in levels of self-esteem and self-confidence (Oxley, 2001).

For a person who is blind or vision impaired, moving about their environment can prove daunting, however developing good orientation and mobility skills can assist in overcoming difficulties with mobility (Ball, 2008;

Garrity & Stallones, 1998). When beginning any orientation and mobility program, a person who is blind or vision impaired needs to decide which type of mobility aid they will use. Choice of mobility aid includes a selection of long canes, electronic aids or a dog guide (Ball, 2008).

Dog guides are a reasonable choice of mobility aid for many, however, while a range of literature exists regarding companion animals and their role in improving the health of their owners, little literature surrounds potential health implications of dog guide mobility. Early studies by Garrity and Stallones (1998) investigated emotional wellbeing obtained as a result of owning a companion animal. Similar work was undertaken by Freidman, Thomas, and Eddy (2000) who explored the potential emotional and physical benefits to health that may be associated with owning a companion animal and how these influences can benefit the cardiovascular health of their owner. Very few studies, however, have examined potential health gains that may be attributed to working with a service dog and, more specifically, working with a dog guide.

While some researchers have examined potential benefits obtained from working with a dog guide, most of the studies undertaken have not explored potential benefits to the health of the human handler. More especially, no comprehensive studies, in the Australian setting, have examined this aspect of working with a dog guide. Lloyd (2004) undertook a study in New Zealand, which explored the matching process between dog guides and their handlers; however, Lloyd did not primarily consider health issues in her study. Whitmarsh (2005) undertook a substantial study in the United Kingdom exploring potential benefits obtained by DGH, however, again, the influence on health was not widely examined. Therefore, as the researcher has been unable to reveal a current study in the modern Australian setting that has examined potential health gains associated from working with a dog guide, the researcher considered this an important issue to consider and decided to move towards a remedy to this deficit.

1.1.1 Service Dogs and Dog Guides: A Perspective

Service or assistance dogs come in a variety of breeds, colours and sizes and they are well recognised in the literature for the positive contributions to mobility and independence that they may provide to their handlers (Oxley,

2001). Service dogs are used by people with a variety of disabilities (Ball, 2008). Service dogs are used to perform tasks for people with physical disabilities, such as fetching dropped items, operating light switches and pulling open doors in order to allow for fluid mobility for a wheelchair. Hearing dogs are used by people who experience hearing loss and they alert their handlers to noises such as door bells, telephones, fire alarms and similar noises. Seizure alert dogs alert their handler when they are about to experience a seizure and, therefore, the person with seizures has time to sit or lie down so they do not fall (Oxley, 2001). Finally, the most recognised role for a service dog is as a dog guide (Lloyd, 2004). The dog guide assists a person who is blind or vision impaired to experience safe mobility (Lloyd, 2004).

The role of the dog guide has developed considerably from its early evolution, with an increase in numbers occurring after the First World War, when dogs were trained as guides for people who lost their sight due to war injuries. From this early beginning in the modern day context, dog guides have become a popular choice of mobility aid for many people who are blind or vision impaired (Rosenblum, Hong, & Harris, 2009). A dog guide is described by Rosenblum et al. (2009) as a primary mobility aid. The dog guide is trained to support his/her handler in order to allow the handler to experience freer and more independent travel (Oxley 2001; Rosenblum et al., 2009). Oxley (2001) explains that dog guides are trained to undertake a number of tasks such as guiding their handler to specific places; leading him/her safely around obstacles (both moving and overhead); alerting him/her to steps, curbs and stairs; responding to the handler's directional cues, disobeying instructions (intelligent disobedience) if too risky to comply (Oxley 2001), and finding post boxes, bus stops, seats, elevators, exits and other important locations (Franck, Haneline, Brooks, & Whitstock, 2010). Dog guides provide their human handlers with a form of free and independent mobility and the companionship of a faithful dog (Rosenblum et al., 2009).

1.2 Rationale and Aims of the Study

Assistance Dogs Australia (2011) assert that the potential for support and camaraderie when working with an animal cannot be underestimated. Pet

ownership, for whatever reason, and in particular, the ownership of dogs, has been found to have a number of benefits for the people who own them (Lloyd, 2004). These benefits, as explored by Johnson (2012) include possible increases in social interactions, companionship, reduction in blood pressure and levels of anxiety, and possibly potential benefits to human health (Johnson, 2012). While society generally recognises the relationship that exists between a person and their companion animal, the diversity of experience of working with a service dog, and in particular, a dog guide and handler relationship, has not been thoroughly investigated (Ball, 2008). For example Wiggett-Barnard and Steel (2008), claim that limited scientific studies have been carried out regarding the psychology of dog guide ownership. Although dog guides fit into the role of service dog, dog guides are a specific category of service dog that is specifically trained to assist a blind or vision impaired handler to maintain safe and dignified mobility (Fogg, 2007). While the potential gains that may be achieved by working with a dog guide may seem obvious, the researcher acknowledges that these benefits are not universally embraced by people who are blind or vision impaired and, indeed, some people have reported a negative reaction to working with a dog guide. Subsequently, considering if there are potential health benefits associated with working with a dog guide will be an integral aspect of the research processes used in this study.

Notably, as the researcher was unable to locate detailed studies conducted in the Australian setting that examined the potential benefits to health arising from the use of dog guides, it seemed pertinent to undertake a comprehensive descriptive study to investigate and potentially disseminate new knowledge. The knowledge outcomes from this study could be beneficial as they will address the gap in the literature and aid persons who are blind or vision impaired in their decision as to whether or not to apply to train with a dog guide. The knowledge gained will also help service providers to have current literature available to them regarding the use of dogs as guides and to have up-to-date knowledge of any potential health benefits that dog guides may contribute to their handler.

1.3 Statement of the Problem

People who are blind or vision impaired can experience problems in their

lives that they need to overcome, such as the need to achieve safe, independent and purposeful movement throughout the environment. They also need to be armed with knowledge that will allow them to make important decisions about their choice of mobility aid. This knowledge would include understanding the impact of choice of mobility aid on health, quality of life, feelings of wellbeing and independence for an individual who is blind or severely vision impaired. One of the more commonly reported problems is that of the difficulty of regaining mobility and independence after loss of vision (Fogg, 2007). When a person experiences severe vision loss, there are a number of consequences associated with this; these include, loss of confidence, depression, and a need to undertake orientation and mobility training to regain independence (Fogg, 2007). Orientation is described by La Grow (2010) as an awareness of the environment and one's place within that environment and their relationship to objects within the environment. Mobility is reflected in a set of skills that a person who is blind or vision impaired uses to aid them in their travels (Kim, Emerson, & Curtis, 2009).

Blindness agencies have professionally qualified employees called Orientation and Mobility Instructors who assist people who are blind or vision impaired to learn an essential set of skills to enable them to move about their environment safely and to regain independence (Fogg, 2007). According to Ball (2008), however, many people who experience loss of vision experience depression and low self-esteem as a direct result of the loss of independence associated with loss of sight. Accordingly, regaining independence and choice of mobility aid to enhance independence is a worthy goal to enhance success.

While using a long cane to assist with mobility issues is reported by many people who are blind or vision impaired as being an effective and practical way to promote independent travel, it has been reported by some, that this mobility aid has limitations (Fogg, 2007). The long cane will only provide tactile information regarding obstacles within the immediate reach of the cane and this leaves the user with only a couple of steps in which to respond if they detect an obstacle ahead of them (Kim et al., 2009). In addition, according to Johnson (2012), long canes are not particularly useful when they

are used on uneven surfaces such as in rural landscapes and in wet or muddy conditions, as the feedback received is inadequate in these situations. Johnson (2012) is an advocate of the use of echolocation by people who are blind or vision impaired. Johnson describes echolocation as the, "ability to 'see' objects using sound instead of sight," (2012, p. 3). Teng, Puri, and Whitney (2012) propose that echolocation helps people who are blind or vision impaired, to receive an image in their brain using "reflected auditory information from emitted vocalisations" (p. 143). Teng et al., explain that echolocation assists people who are blind to make spatial reflections which allow the person in question to "generate a visual representation of the environment" (2012, p. 486). Echolocation is used in a similar way that dolphins use sonar to navigate their ocean environment, however it takes considerable time and training to master this skill (Thomas, Moss, & Vater, 2004). Presently very few people who are blind or vision impaired have training in the use of echolocation as a potential mobility option, however, echolocation may be a viable option for some people who have severe loss of vision (Teng et. al, 2012).

The choice of mobility aid requires careful consideration; the most commonly used mobility aid is the long cane (Kim et al., 2009). Dog guides provide an alternative mobility aid to the long cane and electronic mobility aids, however, they are not the mobility solution of choice for all people who are blind or vision impaired, as working with a dog guide has its own set of advantages and disadvantages (Fogg, 2007). Having up-to-date and reliable research-based information about the potential benefits a DGH might expect from working with a dog guide, will assist people who are blind or vision impaired in making an appropriate choice of mobility aid (Fogg, 2007). By undertaking this study, the researcher hopes to reveal if there are other inherent advantages other than mobility that are associated with using a dog guide. The information gained from the completion of this study will also assist blindness agencies who supply mobility aids and dog guides. If it is shown that a health benefit can be attained by working with a dog guide, this will help the clients of blindness agencies to make an informed choice regarding which mobility aid they wish to use.

This study will also provide a useful resource to the scholarly community as it will redress the lack of detailed information regarding potential health benefits associated with using a dog guide and it will address the gap that is highlighted in the literature.

1.4 Research Aims and Objectives

The aim of this study is to explore the self-reported impact that working with a dog guide has on the lives of people who are blind or vision impaired and the potential benefit to health that may arise from the use of a dog guide. The analysis used in this thesis will consider any benefits or drawbacks of working with a dog guide as perceived by DGH, and it will consider if perceptions held prior to experience with a dog guide, match the experiences gained through working with a dog. The research undertaken will confirm or add to the previously given information for prospective dog guide users, and it will help potential handlers to make a more informed choice about the use of mobility aids.

This study is driven by the following aims:

1. To explore the potential of a dog guide to provide benefits beyond mobility, to individuals who are blind or vision impaired

2. To ascertain DGH perceptions about the effect of working with a dog guide, on their own health

3. To consider whether DGH believe that working with a dog guide improves or impacts on their overall quality of life

4. To determine if there are self-reported differences regarding health and wellbeing for people who are blind or vision impaired who use a dog guide

5. To consider whether any differences are reported to exist in the general health and wellbeing of people who are blind or vision impaired which might be directly attributable to working with a dog guide

6. To describe and comment on the lived experiences of DGH in the Australian setting.

This study uses mixed methods research and involves the unique perspectives of an insider researcher, i.e. someone who identifies with the participants (Costley, Elliot, & Gibbs, 2010). The study was conducted via focus group meetings, questionnaires and individual interviews.

1.5 Significance of the Study

Rehabilitation after a loss of vision is a fundamental objective as it allows the person who is blind or vision impaired to potentially recover varying degrees of control over their life (World Health Organisation (WHO), 2011). One of the critical decisions that people who are blind or vision impaired have to make, relates to their choice of mobility aid. People who are blind or vision impaired need to be able to access information that allows them to make an informed decision as to whether to apply to train with a dog guide. The information gained will help people who are blind or vision impaired to determine if using a dog guide is the optimal choice for them, or whether another mobility option is a better choice. This decision needs to be considered in the overall rehabilitation processes for all people who are blind or vision impaired.

This investigation considers evidence on the range of criteria and examines the critical elements that persons who are blind or vision impaired should consider when deciding on the type of mobility aid to select. It allows the reader to have research-based evidence in the Australian context, providing pivotal information on which to base decisions regarding the choice of mobility alternatives.

1.6 The Potential Contribution of this Thesis

This study is important as it will contribute valuable knowledge in a number of areas.

This study will contribute demographic information about people who are blind or vision impaired in Australia who choose to use dog guides.

This study will examine the health of DGH and will present self-reported health considerations of all participants involved. This information may also

be useful to stakeholders in their endeavours to attract funding for further research on potential health benefits.

The study will provide valuable information about health and dog guide mobility which will assist people who are blind or vision impaired to make an informed choice regarding their choice of mobility aid.

Finally, this study is the first comprehensive study of its kind in the Australian context and it will be instrumental in raising awareness about dog guide mobility and health in order to better inform people who are blind or vision impaired.

1.7 Conclusion

The health and disability literature identifies health and general wellbeing outcomes related to under-exercise and loss/lack of social networks. This study explores the notion that any task, activity, or aid, that promotes more exercise and increased social engagement will be beneficial. This study will, therefore, examine the notion that dog guides provide benefits to the health of their human handlers.

This chapter has introduced the study by outlining the nature, purpose, objectives, premises and significance of this study. It has also presented some background to the role of the dog guide and other mobility options that can be used by people who are blind or vision impaired. Chapter 2 will provide a review of the available literature that will help to uncover current gaps in the literature.

1.8 Thesis Structure

This thesis is organised into eight chapters.

Chapter 1 introduces the study, presents the rationale and aims, the problems underpinning the study, the research objectives, the research questions and the significance of the research. It also defines key terms and details the study's limitations and delimitations.

Chapter 2 provides a comprehensive review of the relevant available literature, highlighting recent studies that have investigated dog guides and their work with their human handlers. This review of the literature revealed

gaps in the understanding of the potential benefits of working with a dog guide and has allowed the researcher to identify areas of specific need that require further investigation. One of the areas requiring further research is the need for a detailed study focusing on issues related to the health of DGH particularly in Australia today.

Chapter 3 outlines the methodology choices as used in this research project. The researcher has chosen to use a predominantly qualitative approach to the collection of data but limited quantitative data were also collected in order to clarify demographic information and to add further depth to the quality of the study.

Chapters 4-6 report the results of the focus group meetings, questionnaire and individual interviews.

Chapter 7 provides a discussion on the findings from all research modes used and the implications that the findings may have, for future DGH and dog guide training schools.

Chapter 8, in which considerations for possible future research are proposed, concludes the thesis.

Chapter 2
Review of the Literature

2.0 Introduction

Chapter 1, gave an overview of this thesis, it also outlined the background to the study and briefly discussed the role of service animals. More specifically Chapter 1 introduced dog guides and it provided some initial thoughts on their potential effect on mobility, companionship and on the general health and wellbeing of their human handler. Chapter 2 will examine in more depth what is already known in the current literature about the dog guide/handler relationship. This chapter will also consider issues such as health, disability and blindness within the Australian and the wider global context.

2.1 Defining Health

Before considering potential health influences that may arise from working with a dog guide, it is useful to understand the contemporary meaning of the term health. Health is much more than just feeling well; it is a lack of sickness and a state of mental, emotional and physical wellbeing (Willis, Reynolds, & Kelleher, 2009). Every individual, at any point in time, is likely to be experiencing a combination of health and illness (Willis et al., 2009). People also maintain a place on a continuum of both ability and of disability (Lund, Labriola, Christensen, Bultmann, & Villadsen, 2006). Lund et al. (2006) argue that health is a balanced state, a state in which we have emotional, physical and social equilibrium. Health, they explain, requires that the individual exhibits an optimal state of chemical, structural and mental wellbeing (Lund et al., 2006). Maintenance of good health is perceived as an important goal for all people as, apart from the adverse effects of ill-health or disability on daily living and independence, there can be associated social costs (Rohregger, 2011). Social costs may reduce the ability of a person experiencing ill-health or disability to cope with the issues they may encounter. Promoting good health, therefore, is important as it allows individuals who are experiencing adverse health or a disability to be more productive members of society and to be able to reach their full potential (Rohregger, 2011). According to Rohregger (2011) a healthy society is assumed to be one that is able to be, "productive." Healthy individuals are less dependent and more productive, as they rely less on supports such as

welfare benefits. They also generally have the necessary tools to be able to contribute to the wider community (Rohregger, 2011). Direct health interventions to support individuals who have a disability could assist them to be able to meet their full potential. Consequently, support of individuals who experience health issues or who have a disability is imperative for the success of a modern and cohesive society (Rohregger, 2011).

Maintenance of good health is considered to be an admirable goal and many researchers are keen to determine how to achieve and maintain good health (Rohregger, 2011). Lund et al. (2006) undertook a mixed methods investigation in order to examine the health of employees in Denmark. This study followed 5357 employees over an 18-month period. The investigation was designed to help employees identify issues which may impose a negative influence on health e.g. carrying loads that are too heavy, or having incorrect posture. Psychological stressors were also considered and the employees were encouraged to develop strategies which would help to promote wellbeing. Some of the areas that were examined in the study by Lund et al. (2006) included behaviours that promote positive health, such as getting sufficient exercise and maintaining ideal weight. They also examined issues that have a negative influence on health e.g. the effects of smoking and excessive consumption of alcohol (Lund et al., 2006). The results of the Lund et al. (2006) study highlighted the positive impact on health of allowing employees to take frequent breaks, discouraging smoking, maintaining optimal nutrition, getting adequate levels of sleep and working within workplace health and safety guidelines.

Van der Klink, Blonk, Schene, and van Dijk (2003), investigated factors that cause serious ill health or disability in a group of 192 employees in the Netherlands who had mental illnesses. Their study involved a randomised control trial and was conducted in order to highlight strategies which would minimise absenteeism within the workplace. The study identified similar issues to those revealed in the study by Lund et al. (2006). The Van der Klink et al. study however, delved more deeply into health issues by also examining the effect that animals have on human health. Van der Klink et al. (2003) described the role that animals play in promoting emotional wellbeing and in generating optimal health. Van der Klink et al. observed that the

participants in their study who had a companion animal experienced less depression and were more active than those without a companion animal. The participants in the Van der Klink et al. (2003) study who had a pet also had a greater ability to cope with the challenges they encountered if they experienced physical illness. Henderson (2005) explains that it is not only serious ill-health that impacts on individuals; chronic ill-health or disability, can also be problematic. Poor health, has a negative impact on every aspect of a person's life (Henderson, 2005). Good health, therefore, requires an optimal state of physical, psychological and social wellbeing, and it is not just a state defined by an absence of illness (Wass, 2000). Attaining and maintaining health is, therefore, in the best interests of society generally and for individual members of that society, more specifically. Maintaining good health requires a number of factors and needs to be promoted at various levels, including at the individual, family, community and political level (Henderson, 2005; Roe, 1995). Health promotion, as defined by Naidoo and Wills (2009) includes empowerment of the individual, inclusive practices, respect for individuals and for their culture. It also includes social justice, equity and the provision of the services that provide support for people who have a disability (Naidoo & Wills, 2009).

Promoting inclusive practices that embrace people who have a disability is an important aspect of a modern and cohesive society and part of this practice involves the provision of the necessary supports that promote the independence of individuals who have a disability. The supports needed vary between disability groups, however, Lahav and Mioduser (2004) argue that the provision of mobility training and the supply of an appropriate mobility aid is an essential aspect of service provision for people who are blind or vision impaired. Lahav and Mioduser (2004) conducted a study in the United States that involved 34 people who were legally blind and they compared and contrasted various methods of effectively teaching orientation and mobility skills. Despite various opinions on the optimal way in which to teach orientation and mobility skills, Lahav and Mioduser were united in their belief that good mobility skills are an essential skill for people who are blind or vision impaired to learn. Lahav and Mioduser (2004) claim that having good mobility skills is vital, as it allows people who are blind or vision impaired to achieve independence and to become more active and

more contributing members of society. Provision of these necessary supports, therefore, is a fundamental means of optimising health and minimising the effects of disability and it helps to create productive members of society (Lund et al., 2006).

Optimising health, quality of life and independence for people who are blind or vision impaired is important; part of maintaining independence for people who live with vision loss has required making the appropriate choice of mobility aid. This choice could mean the decision to use a long cane or the option to work with a dog guide. Henderson (2005) promotes the use of animals to individuals who are coping with ill-health or disability. Henderson asserts that animals have a positive influence on people who are experiencing ill health or disability and suggests that they are valuable health promoters. A dog guide, therefore, may provide individuals who are blind or vision impaired with the required tool to help them to maintain their independence and provide valuable companionship (Henderson, 2005; Lahav & Mioduser, 2004) (the role of animals in the promotion of health is discussed further in sections 2.1.1 & 2.4.1).

2.1.1 The Continuum of Health Promotion Approaches

Health promotion occurs in a continuum and it can occur at any stage along that continuum (see Figure 1 below).

Figure 1 A Continuum of Health Promotion Example

(Courtesy of the Government of South Australia -Centre for Health Promotion Centre, n.d.)

Health promotion requires the implementation of interventions that promote the health of either an individual or a community of people (Baum, 2002). Baum (2002) is an advocate for the promotion of health and asserts that animals, especially dogs, have long been recognised for their ability to promote health in their human owners. St Ledger (2003) maintains the need to respect nature and to recognise the benefit of animals as worthy health enhancers. Promotion of health and minimising the effects of disability are overriding goals in producing the cohesive management of our society, thus

anything that will promote good health is a worthy goal to aspire towards (Henderson, 2005).

Wilson (2001) explains that there is overwhelming evidence of the positive influences that animals are able to offer to the health of human beings and he cites studies by Heerwagen and Orians (1993), Suzuki (1997) and Frumkin (2001), who claim a number of positive effects from the human-animal affiliation. Looking to nature provides many answers to the power that animals have on the advancement of human health (Heerwagen & Orians 1993; Suzuki 1997 & Frumkin, 2001 as cited in Wilson, 2001). Maller, Townsend, Brown, and St Ledger (2002) support the role of animals as health enhancers, noting that people who own animals typically report experiencing better health when compared to people who do not have animals. Maller et al. (2002) propose that owning an animal, not only lowers blood pressure and levels of stress, but may enhance healing after surgery. In an earlier study undertaken in the United States by Baun, Bergstrom, Langston and Thoma (1984), the researchers observed a group of 24 patients post surgery. Twelve of the group had access to a therapy dog post surgery and the other 12 patients did not. The patients who were allowed to pat the therapy dog during their recuperation, healed more quickly from their surgery and had better control of their blood pressure than those who did not have access to the therapy dog (Baun et al.,1984). These studies suggest that animals may have a notable influence on the health of people who own, or who are exposed to them.

Despite the widely accepted positive influence that animals have on human health, not all researchers advocate for the role of animals in promoting human health (Henderson, 2005). The Royal Australian College of General Practitioners (2012) explain that sometimes animals can cause zoonotic diseases (diseases that can be transmitted to humans), or animal bites and allergies. Pearce, Douwes, and Beasley (2000) suggest that when pre-existing conditions such as asthma exist, especially if the person in question is allergic to the animal dander that pets may produce, this can have a negative influence on health in that allergic reactions to animal dander can produce asthma or allergic rhinitis (Pearce et al., 2000). Some researchers suggest that early exposure to pet allergens can have a negative influence on human

health and produce asthma and allergic rhinitis (Pearce et al., 2000). Lodrup-Carlsen et al. (2013) conducted a large-scale study in the United States in the 1990s. This quantitative study involved over 22,000 participants and was undertaken in order to test the potential significance of owning a pet during the early childhood years and the subsequent development of asthma or other allergic conditions later in life. The study measured the vital lung capacity of those who had owned pets in early childhood and then compared the results with those who had not owned pets in their early childhood years. The results of the Lodrup-Carlsen, et al. study showed that there was no evidence that keeping a pet in the early childhood years had any influence on the subsequent development of asthma or other allergies (Lodrup-Carlsen et al., 2013).

2.2 Defining Disability

The Australian Institute of Health and Welfare (2006) recognise that the context in which a person with a disability lives, is crucial when considering if they can function effectively within their community. This conclusion was based on the International Classification of Functioning, Disability and Health (Kostanjsek, 2011). Disability, as referred to by Mpagi (2002), refers to limitations in activity away from what is considered the norm. Disability results in various levels of deficit that can affect the functional capacity of the individual. Disability can range from a mild temporary condition, to a permanent, more debilitating one and it may be self-limiting, or irreversible (Abdi, 2009). A permanent disability, as described by the Australian Bureau of Statistics (ABS, 2010), occurs when there is an impairment that has been in evidence for longer than six months, or, (the disability may be likely to last longer than six months). It is estimated that in Australia slightly over 20 per cent of the population has some form of disability (ABS, 2010).

Mpagi (2002) and Douglas, Windsor, and Wallin (2008) explain that having a disability can create a powerful physical and emotional toll. Paulson, Danielson, and Soderberg (2002) conducted a study surrounding the emotional impact that having a disability may cause at an individual level and they found that the greater the functional deficit the person with a disability experiences, the poorer their experience of emotional health. Paulson et al. conclude that people who have a significant shortfall in what

they are able to do, typically report greater levels of depression and lower self-esteem (Paulson et al., 2002). Disability, therefore, is a highly relevant global concern which has implications on quality of life and on the need for care and support.

Disability is expected to increase in Australia over the coming years due directly to the ageing and longer life expectancy of the population (ABS, 2010). Other developed countries face similar statistics, e.g. in the United States, around 20 per cent of the population experiences permanent disability (US Census Bureau, 2010). In the European Union (EU), the statistics are similar, showing that over 15 per cent of people between the ages of 16 and 65 years of age have some sort of permanent disability (European Commission, 2013). Subsequently, the prevalence of disability is a very topical international issue that has a profound effect on people from all corners of the globe.

2.3 Defining Blindness and Vision Impairment

The terms blindness and vision impairment cover a wide range, degree and type of visual deficit (Blind Citizens Australia (BCA), 2006). A person who is blind or vision impaired may have functional vision that can range from no useful vision (such as complete loss of vision or light perception only) to useful, practical, vision. The term visual acuity refers to the ability to perceive detail (BCA, 2006; Webster & Roe, 1998). Defining when a person is legally blind is required for the purposes of social security registration and for the payment of disability benefits in many parts of the world, including Australia (Hollier, 2006; Maller et al., 2002).

The term legally blind, is used to describe a number of visual deficits, ranging from no light perception, up to 6/60 level of vision as measured against the ophthalmic Snellen chart (Holbrook, 2006). The Snellen chart is used to measure visual acuity and it uses a scale to measure differences in vision, with both eyes being measured separately (Holbrook, 2006). The Snellen chart gives numerically represented measures of visual acuity. The description of 6/60 vision means that what the person with legal blindness is seeing at 6m, the person with normal vision would see at 60m; normal vision being 6/6 in metres, or 20/20 in feet (Holbrook, 2006). People who have 6/6

vision, or normal vision, can correctly identify letters on the Snellen Chart when standing 6m away from the chart (Bowe, 2000). The term partial sight signifies that people have between 3/60 and 6/60 vision (Royal National Institute for Blind (RNIB), 2001). Legal blindness can also be determined by loss of part or all of the visual field. Bearing in mind that a normal field of vision is 180 degrees, a person who has less than 20 degrees of their visual field remaining, is also classified as being legally blind (Holbrook, 2006). Legal blindness thus, can be determined by loss of visual acuity, defects in the field of vision, or a combination of these determinants (BCA, 2006) (see Appendix 11, A guide to Australian Eye Health Data, n.d.). It is also important to consider, that legal blindness is not able to be corrected using eye glasses or contact lenses (Bowe, 2000).

The projected number of persons in Australia who are blind or vision impaired is expected to increase over the next century and, therefore, it is necessary to consider supports that will be required for this cohort (Hollier, 2006). Taylor et al. (2005) conducted large scale studies to determine potential causes of vision loss in order to evaluate the impact that loss of vision would have on those who experienced it. These studies were conducted in Australia and involved 8376 community-based individuals living with blindness or vision impairment and another 533 people who were residents of a nursing home. These studies are known as the Melbourne Visual Impairment Project and the Blue Mountains Eye Study (see Appendix 12) and they were conducted between the years of 1992-1996. These studies provide valuable information on the causes of vision loss in Australia. Their results revealed that in (2004), 480,300 persons had low vision and an additional 50,600 persons, were blind (Taylor et al., 2005). Taylor et al. (2005) also revealed that the leading causes of blindness and vision impairment were cataracts, age-related macular degeneration, diabetic retinopathy and uncorrected refractive errors. Taylor et al. further explain that the numbers of people who experience vision loss is expected to almost double by the end of 2024 (Taylor et al., 2005).

2.3.1 International Experience of Blindness

In order to understand blindness and vision impairment, it is essential to gain a greater understanding of the challenges that face a person who is

blind or vision impaired. Before doing this, however, it is essential to consider the particulars of this disability in a more global context. The World Health Organisation (2012) reports a number of statistics on people who are living with blindness or vision impairment worldwide. These statistics include:

- The number of people who are vision impaired is 285 million
- The number of people who are blind is 39 million
- 246 million people have low vision (WHO, 2012).

WHO (2012) also report that approximately 90 per cent of people who are blind or vision impaired are from the developing countries and the major cause of vision impairment is uncorrected refractive errors. Cataracts are also a major cause of vision loss in many people and many causes of blindness are preventable or, with appropriate interventions, up to 80 per cent may be able to be cured. WHO (2012) claim that more women are blind or vision impaired than men and the majority of these women are living in developing nations. They also explain that 12 million children under the age of 15 years are blind (WHO, 2012). Furthermore, blindness and vision impairment are more common in older populations with approximately 65 per cent of people who are blind or vision impaired being over the age of 50. As the elderly population of the world increases, more people will be at risk of age-related causes of vision loss (WHO, 2012).

2.3.2 Blindness in Australia

The total population of Australia reached 23,156,583 persons at 31 March 2013, with people with disabilities accounting for approximately four million (Australian Bureau of Statistics (ABS), 2013). Additionally the Australian Bureau of Statistics (2013) reports the number of people who are blind or vision impaired as being approximately 292,700 and this is expected to increase to around 422,000 in the next 15 to 20 years (these figures reflect people who are blind or vision impaired) (ABS, 2013). In research undertaken by Blind Citizens Australia (BCA, 2008) they found that approximately 50,000 Australians are classified as being legally or totally

blind (note: the levels of vision cited reflect loss of vision registered in both eyes).

Vernon et al. (2003) conducted a retrospective study of blindness certificates issued by the Association for the Blind of Western Australia over a 19 year period. They sought to establish community-based prevalence of blindness registration between 1984-2002 within the Western Australian setting. Vernon et al. considered only bilateral blindness and examined a total of 3852 certificates of blindness. The results of their study showed that over a ten-year period (1984-1994), the annual percentage of persons with registered bilateral blindness increased at an average rate of 4.1 per cent per year (Vernon et al., 2003). These statistics indicate blindness statistics as registered by the Association for the Blind of Western Australia, however they do not show blindness statistics in people who do not register with this Association. It is also pertinent to recall that the Australian population is aging and as blindness is more prevalent as people age, this may also contribute to the increase in registered blindness as reflected in the Vernon et al. (2003) study. Other factors may also contribute to the increase in registered blindness, e.g. the desire to register with the Association for the Blind in order to obtain additional support or funding. It is also applicable to consider research undertaken by the Centre for Eye Research Australia (2006) that indicates the extent of age-related macular degeneration, a leading cause of blindness and vision impairment, will double in the next 30 years (Vision Australia, 2011).

Dimitrov, Mukesh, McCarty, and Taylor (2003) undertook similar studies to those of Vernon et al. (2003), but their studies examined the prevalence of age-related bilateral blindness in Melbourne, Australia. Dimitrov et al. (2003) explained that the average age of participants in their study was 59 years and 54 per cent of the participants were female. The researchers conducted a two-year baseline study from 1992-1994 and then undertook a five-year incidence study. They found that 98 per cent of their participants could provide reliable data and that 85 per cent of those who could assist in their research, agreed to do so. The major cause of vision impairment reported by the participants in their study was uncorrected refractive error (Dimitrov et al., 2003). These findings indicate that if sufficient formal education was delivered to the participants, the incidence of bilateral vision impairment would perhaps be

less. Furthermore, the researchers found that 37 per cent of severe vision impairment was caused by age-related macular degeneration, which agrees with the results for the studies undertaken in Western Australia, by the Centre for Eye Research (Dimitrov et al., 2003).

2.3.3 Living with Blindness and Vision Impairment

Hollier (2006) asserts that experiencing blindness and vision impairment can present the individual with a number of daily struggles. "Outside of the comfort zone of the home, a blind or vision impaired person meets navigational and comprehension challenges which include the location and the interpretation of objects," (Hollier, 2006. p. 38). Blindness or vision impairment has a profound effect on the life of the people who live with the condition (Pagliano, 2012) causing physical limitations that may affect the safety of the individual and their ability to move confidently and freely within their environment (Wiggett, 2006).

A survey conducted by Imrie (1996) in the United States, collated a number of difficulties that can impact on the daily living of people who are blind or vision impaired, including difficulties in accessing public transport, or increased feelings of frustration. People who are blind or vision impaired can experience frustration when trying to decipher non-visual stimuli (Imrie, 1996). Wiggett (2006) explains that trying to understand non-visual stimuli in the surrounding environment for the person who is blind or vision impaired can be exhausting. Imrie (1996) and Wiggett (2006) observed that there were frustrations in regaining independence after loss of vision in cases of acquired blindness. In a study by Wiggett (2006) which was undertaken in South Africa, Wiggett argues that people who are blind or vision impaired often report that they feel "different." Wiggett notes that, "feeling different has implications for body image and self evaluation," (p. 49). In an earlier study by Steffens and Bergler (1998) they mention key issues facing people who live with vision loss, including dependence on other people, communication difficulties and social problems. These difficulties are also recognised as being important causes of increased stress in people who are blind or vision impaired (Sirkkola & Pagliano, 2009).

Blindness or vision impairment can also produce other problems. Meads and Hyde (2003) undertook a study in the United Kingdom that examined the

high economic costs associated with blindness and vision impairment. Meads and Hyde conducted a needs/analysis study, which focused primarily on people living with Age Related Macular Degeneration (AMD), however, other causes of vision loss were also considered. Their research investigated the financial impact of living with a vision disability. The data that was collected during this study provided valuable information on the costs associated with loss of vision. The results of the study revealed that having a disability such as blindness can have a notable financial cost to the individual. Meads and Hyde (2003) also explained that the costs involved cannot be measured by monetary value alone, as there are also emotional and social costs. These additional costs have an impact on the quality of life of people living with blindness or vision impairment (Meads & Hyde, 2003).

Societal perceptions also may have an influence on the lives of people living with vision loss, with the media often portraying people who are blind or vision impaired in the light of tragedy or loss. This perception does not benefit the person who is blind or vision impaired, nor does it facilitate their acceptance as an equal within society (Coloridge, 1993; Hollier, 2006). Hollier (2006) argues that the person who is blind or vision impaired is well aware of the consequences of their absent sense of vision and they are also aware of some of the negative attitudes that are sometimes associated with this form of disability. Hollier explains that the supports associated with blindness, such as long cane or dog guide, "reinforce the differences between the individual who is blind and the rest of society," (Hollier, 2006, p. 38). Negative perceptions only serve to potentiate difference and they are not helpful to people who are blind or vision impaired. It is easy, however, to understand how difficult it is for people in the sighted community to realise what it genuinely means to live with blindness or vision impairment. A person would need to live with loss of vision to understand what it means to have this type of disability (Hollier, 2006). Hollier explains that people with normal vision live in a world that understands the importance of beauty and they often believe that, "visual cues and visual interaction are a fundamental requirement of our humanity, whether on a physical or metaphorical level," (Hollier, 2006, p. 39). Thus, although all impairments present obstacles to the people who experience them, blindness and vision impairment present challenges that produce unique and specific lived experiences (Hollier, 2006).

2.3.4 Depression and Blindness and Vision Impairment

Depression is common among people with disabilities and also within the general population (Dimitrov et al., 2003). The World Health Organisation (WHO) (2011) defines depression as altered mood, with feelings of low self-worth, lack of interest in what is going on around an individual, and, it is often accompanied by feelings of guilt (WHO, 2011). Depression can cause poor concentration, problems in sleeping, low energy and low, or excessive appetite (Bruce, 2002). Depression is noted to be a leading cause of disability and affects approximately 121 million individuals globally (WHO, 2011). Bruce (2002) notes:

> In some lights, the connection between depression and disability seems almost commonsensical and obvious. But empirical data on the nature of this relationship suggest that the links between the two are surprisingly subtle and complex. (p. 1)

WHO (2011) explains that depression has a major impact on people who have a disability. People with depression are at greater likelihood of participating in behaviours that have additional negative effects on health, such as smoking, drinking, being sedentary and overeating. People who are depressed also tend to avoid taking care of themselves, i.e. not visiting their General Medical Practitioner (GP), not eating well, or not getting enough exercise, and this can result in further health decline (Pennix, Leveille, Ferrucci, van Eikk, & Guralnik, 1999). Pennix et al. (1999) undertook a comprehensive study in the United States involving 6247 people who were all over the age of 65. This group was initially free from any form of disability, however some of this group experienced depression. Pennix et al. (1999) followed this group of people over a six-year period, initially taking baseline measurements and then observing activities such as activities of daily living and mobility issues over time. Pennix et al. found that people who did not have a disability but who experienced depression, were at greater risk of developing a disability than those people without depression. They also observed that people who had minimal social supports and who undertook limited physical activity were at greater risk of experiencing depression (Pennix et al., 1999). These findings reveal an increased risk of disability in this group of people. Although the study was undertaken

amongst older people, WHO (2011) argues similar findings are also observable in some younger people with disabilities. WHO (2011) explains that when people with disabilities experience depression, this can have a negative influence on their quality of life, which can result in increased levels of disability being experienced by individuals.

Depression has also been found to affect neurological and endocrine function and this can cause a person to become immune-suppressed and, therefore, this can increase their susceptibility to disease (Ader, Cohen, & Felten, 1997: Gallo, Rabins, Lyketos, & Tein, 1997; Stein, Miller, & Trestman, 1991). The British Psychological Society (2011) indicates that at least one-third of people who are blind or vision impaired have problems with depression. Koenes and Karshmer (2000) undertook a comparative study, which reviewed 22 adolescents who were legally blind and an additional 29 who had normal vision. The participants were between the ages of 12 and 18 years of age and the researchers used the Beck Depression Inventory Scale to measure the levels of depression they manifested (McCartney & Brown, 1998). The study revealed that the adolescents in the study who were blind or vision impaired experienced greater levels of depression than the adolescents who had normal vision (Koenes & Karshmer, 2000). According to WHO (2011) these findings are also reflected in subsequent studies which show higher levels of depression among individuals who are blind or vision impaired when compared with their sighted peers (WHO, 2011).

Part of the processes involved in coming to terms with loss of vision and subsequently overcoming or minimising depressive illnesses, is rehabilitation. Rehabilitation helps people who are blind or vision impaired to develop the skills they need to improve quality of life and to minimise the impact of their disability (Hollier, 2006). Rehabilitation after loss of vision is a critical element in improving quality of life. Rehabilitation after loss of vision is discussed further in the following section.

2.3.5 Rehabilitation after Loss of Vision

People who encounter loss of vision, may become frustrated when undertaking day-to-day activities that they have previously taken for granted; this can result in loss of self-esteem, reduced independence, feelings of isolation and difficulties in obtaining employment (Stelmack, Moran,

Dean, & Massof, 2005). After experiencing acquired vision loss, people who are blind or vision impaired need to learn a number of new skills in order to regain their independence (Stelmack et al, 2005; US Dept, Health & Human Services, 2003). Rehabilitation after loss of vision requires restoration of functional ability and regaining self-confidence. It also requires learning new ways to become independent in activities of daily living and in learning how to move safely and smoothly about the environment (Stelmack et al, 2005). Orientation refers to knowing where it is you wish to go and in knowing how to get there, and mobility refers to the ability to move smoothly and safely through the environment (Sauberger, 2013). Learning to regain confident movement and independent travel can be enhanced by undertaking training in orientation and mobility education (Sauberger, 2013). Becoming blind or vision impaired requires a major adjustment and a significant lifestyle change due to the limitations that blindness naturally imposes. Learning how to regain independence requires restoration of functional abilities e.g. regaining the confidence to be able look after oneself and to manage daily activities within the home and further afield (Stelmack et al, 2005). Daily activities include but are not limited to, learning how to maintain personal hygiene and grooming, for women this would include learning how to apply makeup and groom hair without sight or with limited vision, and for men, this would include learning how to shave. Learning how to manage in the home is also a skill that needs to be relearned, e.g. skills such as learning how to cook without burning oneself and managing to use regular household equipment safely, are important elements to master. Coping in the wider community requires learning how to do complete day-to-day tasks such as using money, doing banking, shopping and using public transport (Stelmack et al, 2005).

Return to an independent life also includes the ability to re-enter the workforce, whether paid or voluntary, if so desired (Hollier, 2006). Hollier (2006) notes, however, that many people with disabilities are still experiencing greater rates of unemployment than people in the general community; they also lack educational opportunities and many still live in poverty (Hollier, 2006). According to Vision Australia (2012) 58 per cent of people who are blind or vision impaired are unemployed. This highlights a much greater incidence of unemployment in the blind community, when

compared with unemployment rates experienced by people who are sighted; a rate that was estimated at 5.6 per cent in 2013 (ABS, 2013). Hollier (2006) emphasises the importance of rehabilitation after loss of vision, explaining that rehabilitation is a critical aspect of adapting to loss of vision and in allowing the transition into employment. Rehabilitation allows the person who is blind or vision impaired to develop the necessary skills they need in order to compete in a highly competitive world (Hollier, 2006).

As many people who have disabilities can experience negative perceptions from people who do not have a disability, these perceptions may have an adverse effect on their rehabilitative endeavours (Hollier, 2006). Hollier has observed that people who are blind or vision impaired are often perceived, "differently," and in a potentially more negative manner than people who have other forms of disability. Hollier claims, however, that working with a dog guide seems to overcome some of the negativity associated with being blind or vision impaired. Hollier suggests that much of the negativity expressed due to loss of vision is due to fear: "losing one's vision seems to be one of the most feared forms of disability," (Hollier, 2006, p. 21). In a recent study undertaken in Europe, 12,000 people were questioned regarding what they felt would be the worst disability that they could experience; 91 per cent stated that they feared losing their sight more than they feared experiencing other disabilities (Giridhar, Dandona, Prasad, Koval, & Dandona, 2002; Hollier, 2006). Giridhar et al. (2002) suggest that the main reason that there is such a fear of blindness, is that blindness is associated with loss of independence and with associated helplessness. For as long as these fears and misconceptions abound, rehabilitation for people who are blind or vision impaired may be limited (Hollier, 2006).

Overcoming the negative impact of blindness for people who have this disability requires a period of coming to terms with their loss of vision, both during and beyond the process of rehabilitation (Giridhar et al. 2002; Wass, 2000). Part of the decision-making processes that need to be developed during the rehabilitation process for people who are blind or vision impaired involves the selection of preferred mobility aid (Corn & Koenig, 2004). The choice of mobility aid, including the option of training with a dog guide, is explored in depth later in this chapter. Before discussing

mobility aids further, however, it is important to consider how companion animals may impact on the quality of life of their human owners. The human-animal relationship appears to have a pivotal role in health and overall quality of life in the human species; for this reason having a companion animal has become a popular choice for many.

2.4 The Companion Animal

Animals have evolved over time from working partners, to the more typical present day companion animal. The Australian Bureau of Statistics (ABS) shows that 63 per cent of Australian households own a pet (ABS, 2005, as cited in Hollier, 2006). They also explain that 2.8 million Australian households (38 per cent of the total number of pet owners) have a dog, and 1.9 million households have a cat, therefore, the impact that companion animals have on the lives of all Australians is significant (ABS, 2005, as cited in Hollier, 2006). The role of the companion animal has received significant attention from a number of researchers (Banks & Banks, 2002). Shore, Douglas, and Riley (2005) suggest that having a companion animal can be beneficial for individuals who experience depression or who have a disability. People have reported seeking the companionship of pets for many reasons, citing benefits such as having fellowship with a pet and the provision of emotional security that pets are reported to provide to their owners (Hart, 2000). A number of researchers have noted a positive influence from owning a companion animal. Gorczyca, Fine, and Spain (2000) argue that pets provide their owners with life enhancement, which includes a reduction in depression and a decrease in levels of loneliness. Chandler (2005) asserts that the companionship of an animal is often preferred to the companionship of other humans, in that they provide unconditional love and support; a friendship that is unquestioning. Fine (2010) argues that companion animals provide social and emotional support, especially for people who have few family associations. Companion animals are often seen as integral and important family members (Butler, 2004).

Fine (2010) suggests that positive benefits can be achieved when the relationship between the human and their companion animal is a positive one. Graham (2000) commends the importance of companion animals and asserts that dogs especially are well recognised as being faithful companions

and that they may have a positive influence on the health of their owners. In an early study conducted in the United States by Siegel (1990), Siegel investigated the role of pets in a group of 1872 male patients with Acquired Immune Deficiency Syndrome (AIDS). Siegel found that there was a significant reduction in depression noted by patients with AIDS who owned a cat or dog and it also appeared that the stronger the relationship between the patient and their pet, the more emotional support the patient received. Siegel cited some of the reported benefits, such as an increased ability to cope with illness and a rise in feelings of wellbeing (Siegel, 1990). This phenomenon was also noted by Butler (2004), who conducted a study over a period of 12 months, which observed a group of older people who lived in a nursing home. Butler's analysis revealed that when a companion dog was introduced to the residents of the nursing home, the residents reported a decrease in levels of depression, and in depression-related symptoms such as fatigue, loss of concentration and general unhappiness (Butler, 2004).

Wells (2007) claims that pets have been shown to offer, "therapeutic value to humans," (p. 145). This support is also mentioned in an earlier study by Lane, McNicholas, and Collis (1998) when they state:

> Many pet owners regard their pet as valued members of the family and may seek them out as a source of comfort at times of stress. The relationship can involve confiding and talking to the pet, a feeling of empathy and a sense of loving and being loved which can combat loneliness and depression, particularly in individuals who feel socially isolated. Pets can also meet an esteem function in providing a 'need to be needed.' These aspects of pet ownership mirror elements of supportive human relationships that are believed to have important implications for health. (p. 52)

Graham (2000) decided to see if the human and animal relationship was always positive or if sometimes negative effects could be observed. Graham (2000) decided to take a different approach to examining the human-companion animal bond, by considering if the human-animal relationship could actually *cause* stress. He compared his findings regarding human-human relationships with relationships surrounding humans and

companion animals. Graham (2000) found that in human-human relationships, where the relationship studied was that of the role of the 'best friend', in fact, the best friend was often found to be a person who caused stress. Graham then decided to compare the participants in his study who owned a companion animal with those who did not and found that the participants who owned a companion animal reported that their companion animal actually reduced their feelings of stress. Graham explains, however, that owning a companion animal does not always replace human social support systems or necessarily always result in a reduction of depression and associated anxiety (Graham, 2000). Graham's study suggests that much of the obvious benefit achieved by humans who own a companion animal depends largely on the quality of the relationship between the human and the animal (Graham, 2000).

The role of companion animals is not limited to companionship alone, companion animals often become a point of dialogue, providing their human owners with entertainment and promoting collegiality (Hart, 2000). Companion animals, especially dogs, have been reported to provide their owners with an increased sense of social confidence and some owners of companion animals have even reported improvement in their personal relationships as a result of their relationship with their pet (Fine, 2010). Fine (2010) also asserts that companion dogs can even be perceived by some people as status symbols. In a study involving 175 College students, which was conducted by Geries-Johnson and Kennedy (1995) in the United States, Geries-Johnson and Kennedy attempted to measure "...likeability of pet owners" (p. 432). The results of the study by Geries-Johnson and Kennedy found that people were usually, "perceived as more likeable when accompanied by a dog, than when they were accompanied by another animal or by no animal," (p. 9). Wells (2007) agrees and notes that people who are accompanied by a companion dog are seen as more approachable and that the dog acts as a sort of, "social lubricant," (p. 149).

Some researchers have found that owning a dog can help to provide a sense of increased health and wellbeing (Whitmarsh, 2005). Owning a dog has even been found to reduce recovery time after illnesses (Graham, 2000; Herrald, Tomaka, & Medina, 2002). Serpell (2012) explored the relationship

between people and their companion animals and found that many of the participants in his study who owned dogs, observed improved general health and less incidence of minor health issues since owning their dog. This conclusion was supported in earlier research by Siegel (1993) who studied a sample of 1000 people who were undergoing surgery or other stressful medical treatments. This research revealed that owning a dog reduces anxiety and distress in patients undergoing traumatic health treatments and reduces the recovery time in patients, post-surgery. Siegel (1993) observed, that many of the patients who owned a dog, reported that they felt less stressed when having traumatic treatments and that their recovery time after surgery was shorter than those who did not own a dog. Siegel also noted that this group of patients needed to see their family doctor far less frequently since owning their dog (Siegel, 1993). Siegel's research was affirmed in a work undertaken by Wells (2007) where Wells found that owning a dog can, "ameliorate the effects of potentially stressful life events," (2007, p. 149). Consequently the current academic literature appears to indicate that owning a dog and the corresponding companionship that dogs and other pets can provide, can reduce anxiety and stress and it can lead to increased feelings of wellbeing in the humans who own them.

Reduction of levels of stress in humans can also have flow-on consequences to other areas of health, including cardiovascular health (Graham, 2000; Siegel, 1990; Dembicki & Anderson, 1996; Hecht, McMillin, & Silverman, 2001). Daly and Morton (2009) found that having a companion animal can result in a decrease in blood pressure and heart rate. Owning a dog, for example, can result in the owner undertaking more exercise and this may produce positive benefits to cardiovascular and emotional health (Hecht et al., 2001). Whitmarsh (2005) promotes the use of companion dogs for people with disabilities and suggests that companion dogs have been found to enhance levels of self-esteem and cause a decrease in levels of depression. Whitmarsh asserts that having a dog, or another companion animal, can provide a positive benefit to people who have a disability or who have a chronic illness (Whitmarsh, 2005).

Animals can provide companionship and support to their owners, however, the reasons people decide to obtain a specific type of companion animal,

vary. It is notable, however, that having a pre-existing physical or psychological health condition may reveal why people initially desire to obtain a companion animal (Sachs-Ericsson, Hansen, & Fitzgerald, 2002). Hart (2000, p. 63) argues, "people who seek out animal companionship may be more skilled in making choices that maintain their own wellbeing." This finding was supported in earlier research by Veevers (1985) who notes:

> Given their persistence in the face of serious disincentives [cost, time, responsibility etcetera], we can only conclude that companion animals must do something, which their owners believe to be beneficial. Moreover, those benefits must be believed to be substantial. (p. 27)

Wells (2007) agrees and asserts that companion animals and, more specifically, dogs, play a sort of therapy role, where they bolster the psychosocial wellbeing of the people who own and love them (Wells, 2007).

2.4.1 Pets as Health Enhancers

Pets provide companionship and caring and give their owners a reason to get out of their chair and exercise (Beck & Katcher, 2003). Lloyd (2004) argues that pets can act as social facilitators, reducing feelings of loneliness, and, she explains, owning a pet, especially a dog, gives the owner a reason to exercise and provides valuable companionship (Lloyd, 2004).

Apart from the general feeling of warmth and wellbeing that pet ownership is perceived to return to the owner, it has been repeatedly reported that stroking an animal can decrease blood pressure and reduce heart rate (Lloyd, 2004). Levine et al. (2013) agree and assert that there is unequivocal evidence in a large number of studies that shows that pet ownership has a positive influence on the lowering of blood pressure. Levine et al. (2013) describe an Australian study which was conducted by Anderson, Reid, and Jennings (1992) which reviewed 5741 participants who attended a free blood pressure monitoring clinic. The participants who attended the clinic were screened for hypertension, and they were asked if they owned a pet or did not own a pet. Overwhelmingly the pet owners who attended the clinic had lower "...systolic blood pressures than non-pet owners despite similar body mass index (BMI) and socio-economic profiles" (p. 1). This finding was further supported by Allen, Blascovich, and Mendes (2002) who undertook research

with a group of 240 married couples (pet owners and non-pet owners) to consider the potential influence that pets may have on levels of blood pressure. As a result of their research, Allen et al, (2002) found that the couples who owned pets, had lower blood pressure when compared with the couples who did not own a pet.

Norton (2000) conducted research in the United Kingdom involving 30 patients who had high blood pressure, this study contrasted pet owners with non-pet owners, and found that those who did not own a pet had higher blood pressure than the pet owner group. In an earlier study conducted in the United States by Friedmann, Katcher, Lynch, and Thomas (1980) it was reported that people who had severe coronary heart disease lived longer if they owned a pet when compared with patients who did not own a pet. These findings were further supported in more recent work by Beetz, Uvnäs-Moberg, Julius, and Kotrschal (2012) who reviewed a sampling of studies examining the role of pets in supporting human health. Beetz et al. found that there was considerable evidence supporting lowering of blood pressure when stroking an animal, and that the body also experiences an increase in the release of the 'feel good' hormone, oxytocin. Oxytocin has been found to provide a calming action on the body and a subsequent positive influence on cardiac and emotional health (Daly & Morton, 2009) (further information on oxytocin is presented in section 2.5). Beetz et al. (2012) also noted that, "oxytocin effects may be triggered in response to single meetings with animals, but stable relationships with animals such as pet ownership will be linked to more potent and long lasting effects," (p. 234). These findings suggest that pet ownership may be a reliable predictor of increased life expectancy in patients with coronary heart disease (Lloyd, 2004). Daly and Morton (2009) argue, however, that other issues including the family situation of the pet owner and the strength of their available social support systems may also have an impact on health. They further posit that reduction of fear, increase in exercise and effective fellowship, are important issues to consider (Daly & Morton, 2009).

According to Daly and Morton (2009) many people who live alone experience anxiety or fear at some point in their life. Serpell (1996) revealed results of studies that indicate that people who own pets are less afraid of

living alone or in walking independently. Serpell asserts that owners of dogs appear to be more outgoing and less afraid of moving about their community on their own (Serpell, 1996). Irvine (2013) cites narratives from homeless persons in interviews that were undertaken in the United States. These narratives show the supportive role of animals in people who are homeless and who own dogs. Irvine (2013) describes one homeless person 'Donna', who had previously been addicted to illicit drugs. Donna's story shows the potential for emotional support and life change that may be encountered by many homeless people who own a companion animal. Donna, who has a dog called 'Athena', said, "My dog comes first in my life. Would I rather use drugs, or feed my dog? I fell in love with Athena, so I gave up the needle. Gave up the pipe. I gave up liquor. Everything," (Irvine, 2013, p. 10). Another homeless person interviewed by Irvine (2013) who had a dog called Monty stated that Monty, "acts as best friend and serves as 'social facilitator', initiating interactions with other people," (Irvine, 2013, p. 13). These findings reveal that owning a dog can potentially engender feelings of support, and reduce feelings of loneliness in this vulnerable group of people.

Not only are pets assumed to reduce loneliness and have other positive effects on health and wellbeing, they have also been found to increase nurturing behaviours among their owners (Budge, Spicer, Jones, & St George 1998). Nurturing behaviours were also observed by Lloyd (2004) who reported on a New Zealand project as undertaken by Fifield and Forsyth (1999). This study was conducted with 312 primary school children between the ages of 8-12 and their families who had obtained a pet. A questionnaire was sent to the families and the parents of the children reported that the main reason they had acquired a pet for their child was to provide companionship, develop leadership and to promote nurturing behaviour. The parents reported a definite increase in nurturing behaviours exhibited by the children who had received a pet. These findings were also observed by Irvine (2013) who found similar nurturing behaviours in the homeless persons he interviewed. Irvine (2013) stated that the homeless persons observed, often put their dog's welfare before their own welfare and they enjoyed the friendship they felt from their dogs.

Ownership of a pet appears to have a number of far reaching and often unexpected effects. There has, for example, been research undertaken examining the potential positive influences that pet ownership may have on people who have allergies. Hesselmar, Aberg, Aberg, Eriksson, & Bjtrksten, (1999) reported on a study they had conducted in Sweden during 1991, where they sent a questionnaire to 2481 families who had children between the ages of 7-9 who owned pets. The survey explored the relationship between owning pets in early life and the potential development of allergies . In 1992, the questionnaire was followed up and a:

> ...validation interview and a skin prick test (SPT) were performed in a stratified sub-sample of 412 children. In 1996 this subgroup was followed up with identical questions about physical symptoms as in 1991; detailed questions about early pet exposure were added and SPT again performed. (p. 611)

As a result of this study Hesselmar et al. (1999) argue that it, "appears that school-age children who are exposed to pets during the first year of life have fewer episodes of allergic rhinitis and asthma," (p. 38). Hesselmar et al., however, did not propose a reason for this finding. Pet ownership also appears to provide much needed companionship and many people develop a very strong bond and a close relationship with their pets. Lloyd (2004, p. 59) notes, "just under half (48 per cent) of families with pets consider their pet to be a member of the family." Lloyd argues, that pets work as an icebreaker, reducing tensions and causing us to laugh as a result of their amusing behaviour. Hesselmar et al. (1999) claim that having a close relationship with a dog can make humans feel more relaxed and this relaxation can have a positive impact on their health (Hesselmar et al., 1999). Researchers continue to strive to highlight reasons for the positive influence that pets have on the humans who own them. One of the potential reasons suggested for this positive effect is that stroking pets influences hormone production in humans. This phenomenon is described in section 2.5.1.

2.5 The Feel Good Hormones

2.5.1 The Link Between Oxytocin and Serotonin and Animal Ownership

Stroking a pet has long been recognised as making people feel more relaxed (Hesselmar et al., 1999). The reason discovered for this effect is that humans produce specific hormones when they stroke an animal (Miller et al., 2009). One of the hormones secreted by humans is oxytocin which is widely acclaimed as having a pivotal role in controlling stress in humans. Oxytocin is an essential component in the bonding process and it assists in reducing levels of stress (Lloyd, 2004). Oxytocin produces similar effects to opioid medications such as morphine and it can cause a person to feel more relaxed (Uvnäs-Moberg et al., 2007). It has also been noted that oxytocin release causes an anti-depressant effect (Frasch, Zetzsche, Steiger, & Jirikowski, 1995). Increased levels of oxytocin create a sense of wellbeing and may also promote healing (Anderberg & Uvnäs-Moberg, 2000: Frasch et al., 1995).

To further understand the impact of pet ownership and hormone production, Miller et al. (2009) undertook a study involving a group of individuals who owned dogs (10 men and 10 women). This group of people were separated from their dogs while they were at work during the day. Miller et al. checked the oxytocin levels of the participants involved, when they arrived home after their day's work and were reunited with their dogs. The end of the workday was the time of day chosen, with work attributed as causing stress (Miller et al., 2009). In the study, the participants had their levels of oxytocin measured via blood samples before leaving for the workplace. When participants arrived home from work, they were allowed a full 25 minute period of interaction with their dog for before having blood samples taken again in order to ascertain their levels of oxytocin. A control group in this study, also undertook testing. This group, however, was allowed to relax and read a book for the same *25* minute period rather than interact with a dog upon arrival home. When the participants who interacted with their dogs had their oxytocin levels again measured using a blood sample, their oxytocin levels were then found to be much higher than in the group who had just come home and were allowed to read a book. In the female participants, the oxytocin levels were also found to be significantly higher in those who interacted with their dog when contrasted with those

who had been reading for the same period of time. The blood sample results were not as notable in the male participants, however their levels of oxytocin were still increased but were not as significantly as in the female group (Miller et al., 2009).

Serotonin is another hormone that is produced when humans stroke an animal. Serotonin is a hormone produced in the brain, which has been found to have a role in reducing levels of depression (Lloyd, 2004). Knight (2008) observed that serotonin levels increase when humans stroke an animal. Knight undertook a study that investigated the role of serotonin in reducing levels of depression in human subjects and took blood samples from the participants who were interacting with dogs, both prior to, and after patting a dog. The levels of serotonin increased dramatically in the participants after patting a dog. Knight also observed that in addition to serotonin increase, the participants also produced higher levels of prolactin and oxytocin (Knight, 2008).

The significant role that hormones play in enhancing health is becoming more apparent over time. Weaver (2004) explains that the strong influence of serotonin and oxytocin produced in humans when stroking an animal, is gaining recognition and support from the scientific community. Weaver (2004) reported on a study undertaken by the State University of New York (Buffalo) where 24 stock brokers with high blood pressure were followed for a period of two years. In the first year, the participants did not have an animal and were receiving medication for high blood pressure. This same group obtained a dog in the second year of the study and their blood pressure lowered and they were able to reduce their levels of medication (Weaver, 2004). In an earlier study conducted in the United States, by Friedmann (1990), 392 people were studied who had experienced a myocardial infarction. Friedmann found that overwhelmingly the patients who had dogs, were far more likely to have a 12 month or more survival rate post myocardial infarction, when compared with their peers who did not own dogs. The role of animals in enhancing human health thus appears to be plausible (Weaver, 2004).

2.6 Pet Ownership, Social Interactions and Self-Esteem

Owning a pet has long been recognised as being linked with an increase in social interaction; people are much more inclined to approach a person who is accompanied by a companion animal (Lloyd, 2006). This increase in social interactions can cause an increase in the confidence and self-esteem of the human owner (Lloyd, 2006). The American Psychological Association (2011) argue, that owning a pet boosts self-esteem. McConnell, Brown, Stayton, and Martin (2011) undertook a study who examined the effects that pets have on morale and wellbeing. The results of the research undertaken by McConnell et al. showed that people who owned pets, experienced more social interactions, reported fewer feelings of loneliness and higher levels of confidence when compared with the people who did not own a pet (McConnell et al., 2011).

Beck (2002, p. 4) notes that dog owners often report an increase in confidence when being accompanied by their dog. Beck (2002) explains that dog owners also note that having a dog with them when they are out and about in the community, helps to encourage social interactions with other people and also seems to minimise any feelings of stress or anxiety (Beck, 2002). The Pets for Therapy, Gold Coast, Australia, (2011) program has highlighted research that reveals that owning a pet lowers blood pressure, relaxes respiration, stimulates social interactions, helps to increase self-esteem and helps the owner experience unconditional love (Pets for Therapy, 2011).

Mugford (1995) noted that owning a dog encouraged increased levels of confidence and thus the ability to interact with others was increased. Mugford suggests that this boost to confidence and self-esteem, results in the potential for persons to function more effectively within society than they may otherwise have done. This is consistent with an earlier study by Messent (1983) who observed groups of people in a London park. Messent noted that there were far more social interactions between people and strangers when they were accompanied by a dog. The people who walked in the park without being accompanied by a dog were largely ignored by other people (Messent, 1983). Messent interpreted these findings as suggesting a potential for growth in confidence in people who owned dogs and a projection to others of being more approachable (Messent, 1983). Beetz et al. (2012) agree

and suggest that human beings who own animals project a more confident and outgoing demeanour and may, therefore, seem to be more approachable.

People who walk with their dogs often report that they also talk to their dogs and that they tend to regard their dog as both a partner and friend (Lloyd, 2004). Peretti (1990) argues that when people talk to their dog, they will often report having an imaginary question and answer session with the dog, in a similar way to a conversation one would have with a friend (Peretti, 1990). Peretti found that people who talk to their dogs in this way, report that they generally feel overall satisfaction with their physical and emotional health. Peretti posits that owning a dog can have far reaching effects on the lives of people who are elderly, isolated, or who have a disability (Peretti, 1990). These findings were further supported by Beetz et al. (2012) who explain that having a companion dog has a calming influence which can increase feelings of contentment. Melson (2002) explains that enjoying the company of a companion dog can provide a number of benefits, including a rise in emotional wellbeing. The satisfying relationship that can occur as a result of collegiality with a pet, has led to more animals being used as 'pets as therapy' animal; mainly dogs are used (Melson, 2002) This is discussed in section 2.7.

2.7 Pets As Therapy Animals

Martindale (2008) supports the role of animals in enhancing human health. Martindale asserts that a therapy animal (most commonly a dog) is a specially trained animal who is used to provide affection and comfort to people in stressful or difficult situations and that this therapeutic effect can enhance human health. Morrison (2007) argues that the relationship between animals and healing has a long history and explains that there is overwhelming evidence to suggest that animals help to lower blood pressure and boost the immune system. Morrison believes, however, that the mechanisms involved in this phenomenon still remain unclear. Brodie, Biley, and Shewring (2002) conducted a review of the literature surrounding the use of pets as therapy dogs in residential aged care settings urban areas of Europe and the United States. Their investigation explored the importance of therapy dogs; found positive reported benefits by residents who enjoyed the camaraderie of the therapy dogs. Brodie et al. (2002) also explored the role of

'hearing dogs', as used by people who are deaf, in similar residential settings. The hearing dog handlers stated that their hearing dog provided them with a valuable service, but more than that, the hearing dog handlers viewed their dogs as both a valued companion and a friend (Brodie et al., 2002). Morrison (2007) explains that pets as therapy animals are now widely recognised as providing a valuable service to people in residential aged care facilities, other health care settings and in the wider community.

Pets as therapy dogs are widely used in a diverse number of settings including residential aged care settings, care and group homes for people who have a disability, in hospitals and children's centres. Pets as therapy dogs have even been used to visit on campus students undergoing examinations; acting as a destressor (Martindale, 2002). The Pets as Therapy program has grown substantially over the past 20 years primarily due to the many positive reports that have been noted by the many researchers working in the field (Morrison, 2007).

2.8 Potential Negative Effects of the Human-Companion Animal Relationship

Despite mostly positive feelings of increased wellbeing being reported in regard to pet ownership (Gillum & Obisesan, 2010). Bergler (1988), argues that potential negative effects that may be associated with owning a pet. Bergler cited issues such as financial constraints associated with owning a pet, including feeding and grooming the pet and the high cost of veterinary care. Bergler also reported other negative issues associated with the human-animal relationship and these include, small back yards with limited space for the animal, limited time to exercise an animal, hygiene issues such as having to clean up animal waste, noise associated with barking dogs, or animals wandering and causing disgruntled neighbours (Bergler, 1988). Lloyd, (2004) claims that pet owners may also worry about their pets welfare if they were to become ill or die and this can lead to undue stress, especially if the pet owner lives alone.

Fifield and Forsyth (1999), undertook a study which showed that pet owners sometimes report negative implications of pet ownership, such as difficulties with arranging boarding for their pets when they wish to go on holidays and having to clean up after pets. Another negative effect cited by some pet

owners is when the human-companion animal bond breaks down (Lloyd, 2004). Lloyd (2004) cited studies by (Miller, Staats, Partlo, & Rada, 1996; Olson & Moulton, 1993) where they suggested that the elements that may affect the success of the human-companion animal relationship, include the gender and the nature of the owner and their overall life experiences. Reasons for choosing a pet were also examined in early research by Salmon and Salmon (1983). Salmon and Salmon found that, while most people were satisfied with their decision to have a pet, a small number of people were not. In a similar study by Kidd, Kidd, and George (1992) that explored the human-animal association with animals adopted from animal shelters it was found that if an animal-human relationship was not successful it was often due to unrealistic expectations on behalf of the pet adopter. These expectations included the amount of time the pet owner would need to spend in order to care for a pet and a lack of understanding of what to expect from pet behaviour (Kidd et al., 1992). Lloyd (2004) mentioned a study by Stafford, Erceg, Kyono, Lloyd, and Phipps (2003, p. 13), which shows the unfortunate side of a lack of knowledge regarding the requirements of owning a pet. Lloyd noted that when people adopt a pet from an animal shelter, if there is a disparity between the expectations of the adopter and the behaviour of the companion animal, this can result in as many as 16 per cent of the pets being returned to the animal shelter. Ledger and Baxter (1997) suggest, however, that what is inappropriate behaviour for one owner may not be problematic or may even be desirable behaviour for another. These findings would seem to indicate that, if the appropriate bond does not exist, it is difficult to obtain any potential health benefit from owning a companion animal (Ledger & Baxter, 1997).

Owning a pet appears to have a reciprocal relationship between the human and the pet (Gillum & Obisesan, 2010). A study on the influence of the pet owner on their companion animal was explored by O'Parrel (1997). O'Parrel's study suggested a link between the behaviours manifested by humans and the subsequent impact of those behaviours on their canine companions. O'Parrel found an adverse influence on the, "companion animal," if the animal's owner is agitated or anxious. Podberscek and Serpell (1997) also revealed a reciprocal effect between dogs and humans. They explained that owners of dogs that are not aggressive are generally more

relaxed and report better health than the owners of dogs who are aggressive. They suggest that the potential reason for this is that having a non-aggressive companion animal could reduce stress in the animal owner and thus improve health. Conversely, it would appear that having an aggressive animal could lead to rise in tension in the human owner, resulting in a subsequent negative influence on their health (Podberscek & Serpell, 1997). Podberscek and Serpell (1997) assert:

> The cause and effect are far from clear and, as with any study that relies on subjective assessment of animal behaviour, the associations may be due to the owner's perceptions of their pet's behaviours rather than to any real differences in the animal's behaviour. (p. 46)

One of the most difficult aspects of pet ownership is when the owner has to say goodbye to their pet when the pet dies; this end of the relationship can have a significant negative impact on the health of the human pet owner (Lloyd, 2004). Chur-Hansen, Winefield, and Beckwith (2008) agree and note that one of the more significant reasons given by older persons for not having a pet, is the inability to cope when the pet dies.

Owning a pet has a number of potentially positive effects, but in certain circumstances these positive influences may be minimised, dependent on the relationship between the person and their pet. Generally, however, a strong bond exists between a person and their pet, and this is particularly notable when the pet is a dog (Levine et al., 2013). The partnership between a handler and their service dog is a particularly unique relationship, and this will be discussed in the following section (Lloyd, 2004).

2.9 The Service or Assistance Dog

(Not including dog guides, which are discussed separately)

The relationships that people have with their working animals have been widely explored (Lloyd, 2004). Dogs are often reported as providing needed support to their human handlers, however other animals have also been reported to provide such support. Zabel, Rislow, Mangan, and Cherian (2007) discuss the relationship between horses and humans and they explain that riding horses can be helpful to people with a number of

disabilities/health conditions. These conditions include, but are not limited to, cerebral palsy, multiple sclerosis, developmental disorders and brain injury (Zabel et al., 2007). Animals can promote positive interactions with people who have various forms of impairment (Zabel et al., 2007). For this reason, the service animal, most commonly a dog, has become a popular form of support for people with disabilities, as working with a service dog appears to enhance the quality of life of the handler (Lloyd, 2006).

Service or assistance dogs are highly trained dogs who are accredited in Australia by various assistance and dog guide training schools (Assistance Dogs Australia, 2012). Service or assistance dogs include dogs trained to work with people with physical impairments, mental illness, seizure disorders, diabetes, hearing loss and people who are blind or vision impaired who work with a specific service dog; the dog guide (Whitmarsh, 2005). (The role of the dog guide will be discussed further in section 2.10). Service dogs allow their handlers to move confidently around their environment and it is essential to note, "it is unlawful to discriminate against a person who is accompanied by their assistance dog," (Human Rights and Equal Opportunities Commission (HREOC), 2011, n.p.).

Apart from the obvious advantage of support for independent mobility associated with working with a service animal, other advantages from various studies have also been noted (Whitmarsh, 2005). Some studies have shown that a number of people with disabilities report feeling socially isolated and that this feeling of isolation can result in withdrawing from life activities (Lane et al., 1998; McAlpine & Moore, 1995). Whitmarsh (2005) suggests that service dogs have a multi-factorial benefit to their human handlers as they offer a number of social and psychological supports which can help to reduce feelings of isolation. Whitmarsh asserts that the support of a service dog can assist the person with a disability to increase, or to maintain their independence, therefore providing a subsequent rise in their self-esteem (Whitmarsh, 2005).

In a review of 57 service dog users undertaken in the United Kingdom by Lane et al. (1998), the participants describe a number of benefits associated with working with a service dog. These benefits include, an increase in

emotional wellbeing and more effective social interactions with other people when a person with a disability is accompanied by their service dog. Lane et al. (1998) explain, that owners of service dogs generally have more people stopping to talk to them when they are accompanied by their service dog than when they are using other disability mobility aids. In the same study by Lane et al. the participants also noted that social interactions were more positive and polite when handlers were accompanied by their service dog. This tends to indicate a moving away from the focus on the person's disability, to a respect for the individual and their work with their service dog. Most owners of the service dogs in the Lane et al. study suggest that the dog is an integral part of the family, with 93 per cent noting that their dog was also a valued companion (Lane et al., 1998). The participants in the Lane et al. study also reported that they felt that their health had improved since having a service dog: they felt less lonely, more independent, safer and generally more content (Lane et al., 1998). Brown (2011) supports the Lane et al. findings by observing that the handler relationship with their service dog provides a number of benefits that can enhance and improve overall quality of life. In an earlier study by Valentine, Kiddoo, and LaFleur (1993) which was conducted via surveying service dog handlers who had physical disabilities; they explained that they had experienced less depression, had improved interactions with the general public and increased levels of confidence since working with their service dog. Whitmarsh (2005) agrees, noting that participants in her study widely acknowledged the contribution of their service dog in relation to emotional support, noting this support often exceeded any of the more practical benefits that they had obtained (Whitmarsh, 2005). In a similar study by Hart et al. (1996), the social benefits of ownership of a service dog were reported, with service dog handlers noting an increase in social interactions. In a more recent evidence based review of the literature by Winkle, Crowe, and Hendrix (2012), Winkle et al. examined the role of service dogs working with 12 groups of people with physical disabilities. Winkle et al, found an increase in activities outside of the home, in levels of socialisation, and in feelings of wellbeing among the service dog handlers they reviewed. Whitmarsh (2005) argues that working with a service dog of any type, tends to break down barriers that may exist between a person with a disability and with people who do not have a

disability (Whitmarsh, 2005). Hart et al. (1996) suggest that being accompanied by a service animal allows people who do not have a disability to feel comfortable when approaching and talking to the person with a disability (Whitmarsh, 2006; Hart et al, 1996, p. 8; cf. Steffens & Bergler, 1998).

In another earlier study by Hart et al. (1987) involving 38 hearing dog handlers, Hart et al, found that some of the handlers reported a potentially negative aspect of working with their service dog. These handlers noted that at times they felt, "somewhat invisible," with the focus being primarily on the dog and not on them. Brown (2011) asserts, however, that a person who has a disability who is accompanied by their service dog, generally tends to feel more confident in moving about their community.

In a two year randomised control trial conducted by Allen and Blascovich (1996) in the United States, it was noted that many people with disabilities who have a service dog, report reduced demand for carer or government support. Rintala, Sachs-Ericcson, and Hart (2002) undertook similar research to that of Allen and Blascovich when they investigated the impact of owning a service dog on the lives of people who had mobility impairments. The service dogs in the Rintala et al. study, undertook a number of tasks for their handlers, such as turning on lights, opening doors and picking up things that were dropped on the floor. The service dog handlers reported an enhancement to quality of life, improved ability to self-care and increases in feelings of independence since working with their service dog. Rintala et al. (2002) concluded that the benefits gained by the people with physical disabilities who use a service dog also include improvements in emotional wellbeing, reduction in blood pressure, increased exercise levels and improved mobility and functional capacity. Improvements in social and employment opportunities, increases in social interactions, less isolation and lessening of feelings of depression were also observed (Rintala et al., 2002). The participants noted:

> positive benefits from obtaining an assistance dog. These included organising their daily routine, cleaning, grooming, dressing, physical

> mobility, transportation, completion of tasks, employment, and leisure interests. (Rintala et al. 2002, p. 80)

Other findings from this research reveal that the participants were less reliant on care givers and used service agencies less frequently (Rintala et al., 2002).

Other researchers have shown interest in benefits that may be associated with working with a service dog, e.g. Sachs-Erricsson et al. (2002) wrote an article examining the role of the service dog which was based on a study undertaken by Camp (2001). Camp's study was conducted over a period of nine months in the United States and it followed five people who had physical disabilities who owned a service dog. Camp (2001) found that the service dog handlers were unanimously positive about the enhancement to their quality of life that they had found since working with a service dog. While these studies provide valuable information regarding service dogs for people with various disabilities they did not, however, "primarily focus," on the effects on social, physical and emotional health and wellbeing when working with a service dog.

2.9.1 Service Dogs and Health

Service dogs give vital support to people with many forms of disabilities. Valentine et al. (1993) conducted a survey of 24 service dog owners and seven service dog trainers in the United States in order to study the implications of owning a service dog and the effect it may have on the health and safety of handlers. Valentine et al. (1993) reveal anecdotal evidence suggesting that for people who have hearing impairments or physical disabilities, the service dog has a positive effect on lowering reported levels of stress. Participants in the Valentine et al. (1993) study reported that they felt their emotional and psychosocial wellbeing had improved since they had worked with a service dog. In the Valentine et al. study, the people who had a service dog generally noted that they experienced a number of health and other benefits, including increased feelings of pleasure and wellbeing. They also reported negative issues associated with having a service dog such as having to deal with dog hair, having to clean up after their dog and having to exercise their dog (Valentine et al., 1993; Lloyd, 2002).

Hart et al. (1995) report that often, prospective service dog owners appear to have unrealistic expectations of owning a service dog. Results of a study by (Lane et al., 1998), however, show that people using a service dog are generally pleased with the relationship they have with their dog if it had been their own decision to obtain the dog. The reverse was also revealed, showing that if people are pressured into obtaining a service dog by family, friends or peers, the relationship with their service dog was not always successful (Whitmarsh, 2005). Brown (2011) reports that the service dog/handler relationship generally provides needed support and, therefore, results in positive outcomes for their handlers.

Barak, Savorai, Mavashev, and Beni (2001) indicate a positive value gained by people with mental health issues when working with a service dog. Barak et al. (2001) conducted a study in the United States with 10 people with schizophrenia. The service dogs used by the participants with schizophrenia, were used to help the person discern whether what they were experiencing was real, or whether what they were experiencing was a delusion. Barak et al. (2001) observed that the service dog had a reassuring effect on the people who used a dog and that they appeared to be more orientated to what was happening around them than those who did not have a service dog. Barak et al. also noted, that service dogs can be used for people with major depressive disorders. In this context, the dog was trained to cuddle and stay close to their handler, with this closeness then producing a calming and soothing influence on the handler (Barak et al., 2001). Gillum and Obisesan (2010) agree and explain that the service dog has been found to be helpful for people who have a depressive illness and it is thought to provide a supportive and calming influence on their handler.

Young Diggers (2011) is an Australian-based organisation that has introduced the, "Dog Squad." The Dog Squad trains service dogs for returning war veterans who experience stress related to war service. They define this combat-related stress, as a form of post traumatic stress syndrome which causes withdrawal from social situations and difficulty in coping with day-to-day life (Young Diggers, 2011). The Young Diggers supply service dogs to service men and women affected by combat stress in order to help them to, "bridge difficulties," and provide support (van Heesbeen, 2011).

According to the Young Diggers (2011, para. 4), "18.5 per cent of military personnel returning from war zones to 'normal' civilian life suffer mental health issues, which can lead to family breakdown, homelessness and other problems." The service dog for this cohort would seem to alleviate some of these problems.

The literature suggests that service dogs may cause a decrease in levels of stress, trigger an alert for seizures, comfort their handlers and may have a positive influence on the lives of their handlers. The specific impact on health, in the most widely recognised service dog, the dog guide, however, remains relatively unexplored in specific and formal research studies.

2.10 The Dog Guide

The dog guide is a service dog and companion who is perceived as having the potential to increase levels of self-esteem, allow freer mobility and to provide a greater sense of security for his/her handler. Whitmarsh (2005) suggests that more research needs to be undertaken in order to understand the previously unknown possibilities of health benefits that may be attained by working with a dog guide. Whitmarsh clearly emphasises the need to fill this vacuum: "In particular, there is a need for greater empirical and theoretical research into the social and psychological support afforded to [vision] impaired people by all assistance dogs," (2005, p. 22).

Dog guides offer their handlers safe and dignified mobility (Whitmarsh, 2005). Naderi, Miklosi, Doka, and Csanyi (2001) suggest that in order to achieve successful mobility, the dog guide and their handler need to take a collaborative approach; in this approach, there is a synchronisation of movement. The successful dog guide-handler partnership is one in which neither dominates; this is important as neither the dog nor their handler has all the required information needed to create safe mobility choices (Lloyd, 2004). The handler is restricted in what they are able to see through the sense of vision and the dog is unaware of the planned actions undertaken by their handler. The subsequent actions involve the handler giving a command to their dog, with the dog responding to the direction and leading the handler safely to where they wish to go. The relationship between a dog guide and

their handler is a partnership based on mutual trust and respect (Lloyd, 2004).

2.10.1 Dog Guides: An Historical Perspective

Dog guides have been helping people for as long as 2000 years (Lloyd, 2004). A mural has been found in the ruins of the Roman-built city of Herculaneum, dating to the 1st Century AD, depicting a man who is blind being led by a dog (Lloyd, 2004). Formal dog guide training as we see in the many dog guide training centres around the world today, is a much more recent phenomenon. Formal dog guide training began around 1780 at a hospital in Paris which was specifically available to patients who were blind or vision impaired. This hospital was called *Les Quinze-Vingts hôpital* (Lloyd, 2004). The modern day dog guide movement as we know it today, however, came into its own during and after the First World War (WW1). During WW1 many soldiers, sailors and airmen were blinded during the course of their war service by the effects of mustard gas (Stewart, 2006). At about this same time, the German Ambulance Service, in cooperation with the German Police Service and the German War Dog Institute, began to use dogs to assist people who were blinded in the war (Brodie et al., 2002). Brodie et al. explain that, the beginning of the dog guide movement began in earnest in Germany in the 1920s and it quickly spread throughout Europe to the United States in the late 1920s and later to many countries throughout the world. Today dog guides are widely used around the globe and they provide valuable assistance to people who are blind or vision impaired.

2.10.2 Dog Guides in Australia

Dog guides are trained in Australia by guide and seeing eye dog schools who are accredited through the International Guide Dog Federation, which is a world wide accrediting body formed in 1989 (International Guide Dog Federation, n.d.). Dog guide mobility is described as a smooth and stately form of mobility providing the handler with confidence in everyday situations, such as when catching a bus, navigating through crowded city streets, avoiding obstacles and in navigating their way through new, existing and known areas (Lloyd, 2004). In the Australian setting, Rita Solomon (nee Pringle) received a dog guide called Chief in 1945. Solomon was thought to be one of the first people to work with a dog guide in Australia (Accessible

Arts & Disability, NSW, 2009). In 1950, Arnold Cook, a Professor of Economics at the University of Western Australia who lost his sight at the age of 18, travelled to the United Kingdom and obtained a dog guide called Dreena. Upon his return to Western Australia, Cook began to promote the training of dog guides and helped to establish the first national dog guide training centre in Perth (Accessible Arts & Disability, NSW, 2009; Hasluck, 1966). The first dog guide that was trained at the Perth training centre was provided to a client named Elsie Mead in 1952 (Gration, 1998). This was the beginning of many such matches in Australia and heralded the beginning of the dog guide movement in Australia. In 1962, the national training centre for dog guides moved to Kew, a suburb of Melbourne. Other dog guide organisations now operate independently within each state of Australia (Gration, 1998). Seeing Eye Dogs Australia (SEDA), formerly known as the Lady Nell Seeing Eye Dog School, was established in 1960 by Phyllis Gration, who was herself blind (Gration, 1998).

Vision Australia (2012) states:

> In 2004 Vision Australia became Australia's first national blindness agency. Vision Australia was formed following the merger of the Royal Blind Society (RBS), the Royal Victorian Institute for the Blind (RVIB), Vision Australia Foundation (VAF), and the National Information Library Services (NILS) in July 2004.
>
> [Vision Australia] was further expanded in December 2006 through the amalgamation of Royal Blind Foundation Queensland and [in] November 2007, Hear a Book, a Tasmanian producer of audio books, also joined [Vision Australia.]
>
> In July 2008 Seeing Eye Dogs Australia (SEDA) merged with Vision Australia. This made Vision Australia the only national provider of dog guide services. (Vision Australia, 2012)

Dog guides have evolved as a popular choice of mobility aid for people who are blind or vision impaired with over 800 people in Australia choosing a dog guide as their preferred mobility aid (Guide Dogs Australia, 2011; Howie, 2008). Not all people who are blind or vision impaired however,

choose to use a dog guide with many opting for inanimate mobility aids such as the long cane (Howie, 2008).

2.10.3 Training with a Dog Guide

The processes used to train a dog guide are complex. Dog guides take between 18 months to two years to learn to guide a human handler (Lloyd, 2006; SEDA, 2012). According to Franck et al. (2010), dog guides have a number of duties to learn before they can be placed with a human handler. These duties include the need to stop when they come to a roadside kerb and wait until their handler instructs them to move forward in order to cross the road. They also learn to disobey this command to move forward, if it is dangerous to do so (intelligent disobedience) (Froling, 2009). Dog guides are also trained to indicate the top or the bottom of a staircase, avoid obstacles that are at the handler's head height, such as overhanging branches, indicate confined spaces which the dog and handler cannot move through and to board and depart public transport, including aircraft (Fogg, 2007). Wiggett-Barnard and Steel (2008) note that dog guides will also locate items for their handler, such as an elevator, a seat, a phone or post box or an automatic teller machine and they will lie quietly in work or social situations as required.

At the conclusion of the dog guide's formal training period, the graduate dog guide is matched with a prospective handler (Lloyd, 2004). Matching is a significant part of the process as it is integral to the success of the dog guide-handler relationship (Lloyd, 2006). Issues such as the lifestyle of the handler, health, hearing, walking style, work setting and the personality of the handler and the dog are paramount in successful matching (Wiggett, 2006). The human handler has to demonstrate skills such as the ability to be consistent, to accommodate the dog in a safe environment and to have sufficient purposeful work to justify using a dog (Fogg, 2007). The handler also needs to be able to provide leadership, have reasonable balance and be a person who already knows how to use a long cane and who is confident using their current routes (Fogg, 2007). Having good hearing is also an important aspect of safe mobility as the dog guide and their handler are a working partnership. Howie (2008) asserts that significant hearing loss can prove to be a detriment to safe mobility when working with a dog guide.

Howie (2008) explains that although the dog guide and handler relationship is a working partnership, it is the handler who makes the final decisions in this partnership, e.g. it is the handler who tells the dog when to cross the road. When a dog guide and their handler cross a road, therefore, the dog uses its senses of vision and hearing to determine when it is safe to go forward and the handler uses their residual vision, if any, and their hearing, in order to determine when it is safe to cross. Therefore, if the handler has poor hearing and limited or no vision, instructing the dog when to cross the road may be prove to be an unsafe procedure (Wiggett, 2006).

After a dog guide and their new handler are matched, they go through a training process that usually lasts between four to six weeks. This period may be longer or shorter, depending on the experience of the DGH (Lloyd, 2004). The dog guide and their handler work closely together in conjunction with the dog guide instructor where they learn to manage all the skills that they will need to master in order to maintain their working relationship (Fogg, 2007). After the initial training period the dog guide and their handler are monitored every three months during their first year together and then monitored annually thereafter, although the handler can ask for and receive support at any time (Lloyd, 2004). Lloyd, La Grow, Stafford, and Budge (2008a) argue that the more successful the match between a dog guide and their handler; the higher the level of satisfaction reported and the more satisfied the DGH appears to be with their travel performance.

2.10.4 The Role of a Dog Guide – Benefits, Drawbacks and Societal Perceptions

Before a person can decide whether or not training with a dog guide is a desirable goal for them, it is essential that they understand the role of the dog guide with its limitations as well as its positive elements (Howie, 2008). Raised and trained to be a guide, all dog guides go through an extensive training process before they are qualified and matched with their handler (Howie, 2008). Dog guides are highly intelligent animals and work as a team with their handler to provide safe and fluid mobility (Howie, 2008). Franck et al, (2010), explain that the role of a dog guide includes, but is not limited to, enhancing straight line travel; this is particularly important when crossing roads and locating the opposite curb. Dog guides also help the handler avoid

overhanging branches or other obstacles, and protect the handler from drop-offs; they also help the handler to locate doorways, find entrances, lifts, seats and regular locations such as bus stops. Dog guides will stop at stairs to ensure the handler is aware that they are there before ascending or descending. Dog guides will also exercise 'intelligent disobedience' i.e. when a handler is crossing the road with a dog guide, the handler tells the dog when to cross, however if the handler has not heard an oncoming car, the dog will refuse the command and only cross the road when it is safe to do so (Franck et. al., 2010).

In a research study by Howie (2008) which was undertaken in the United States, Howie found mostly positive effects of working with a dog guide were reported by the participants. The participants mentioned that they felt they were treated more positively when they were accompanied by their dog guide (Howie, 2008). They also said that people reacted to them in a more relaxed manner and that they were generally more willing to offer assistance when they were with their dog guide. Lloyd (2004) suggests that the benefits of working with a dog guide include a growth in confidence, positive mobility experiences, more social interactions and a greater sense of security.

When accompanied by their dog guide, many DGH describe an emotional advantage and an increase in social interactions similar to those previously reported by companion dog owners (Howie, 2008). The benefits of working with a dog guide were highlighted in a study of DGH in the United Kingdom by Nicholson Kemp-Wheeler, and Griffiths (1995). Nicholson et al. reported a positive emotional reward for people who are blind or vision impaired who work with a dog guide (Nicholson et al., 1995). The Nicholson et al. (1995) study involved a representation of 15 dog guide handlers (DGH) and 15 long cane or alternate mobility aid users i.e. non-dog guide handlers (NDGH). The NDGH in the Nicholson et al, study confirmed that they believed an emotional and social benefit is obtained from working with a dog guide (Nicholson et al., 1995). The Nicholson et al. study noted that the DGH reported experiencing a feeling of closeness with their dog and that this was a positive aspect of working with a dog guide. Nicholson et al. explained, however, that companionship was not often cited as an initial reason for a potential handler to apply for a dog guide. Nicholson et al.

suggested that it might seem to dog guide applicants to be inappropriate to cite companionship as a reason to apply to work with a dog guide due to the high costs associated with training a dog guide. Obviously, due to the high costs involved, a dog guide would not be provided to give companionship alone, however companionship appears to be one of the potential flow-on benefits of working with a dog guide (Nicholson et al., 1995). Although the aim of the Nicholson et al. (1995) study was not to make a comparison between the use of a dog guide and other mobility aids such as the long cane, many advantages and disadvantages of utilising a dog guide were highlighted in the findings. Whitmarsh (2005) argues that dog guides are commonly believed to be a better mobility aid than a long cane, with one handler in her study referring to the dog guide as the "Rolls Royce" of mobility aids (Whitmarsh, 2005, p. 17). Nzegwu and Whitmarsh (2003) claim that DGH are often viewed by people who do not have a disability as being from a group of people who are from a higher echelon of society and, thus, they hold more status.

While having the companionship of a dog is one aspect of working with a dog guide, it is pertinent to remember that a dog guide can have certain limitations. These limitations are not necessarily obvious when compared with other mobility aids such as a long cane. People who are blind or vision impaired cite potential drawbacks to dog guide ownership such as the responsibility of looking after a dog, inconvenience of a dog, e.g. dog fur in the house and on clothing and having to clean up after the dog (Whitmarsh, 2005). Wiggett-Barnard and Steel (2008) argue that dog guides are "...not perfect beings capable of single handedly giving a person life" (p. 1026). Wiggett-Barnard and Steel explain that when working with a dog guide, handlers can encounter access issues when trying to enter some premises, and they may also inhibit social interactions with other people who may be afraid of dogs (2008). King (2007) suggests that working with a dog guide is not considered the appropriate option for all, noting that a person who is blind needs to have sufficient purposeful work and the ability to care for and to exercise a dog guide (King, 2007). Although the literature suggests several reasons people who are blind or vision impaired mention for either applying, or for not applying for a dog guide, there appears to be a number of people

(approximately four in 10) who, though not using a dog guide currently, may consider applying for a dog guide in the future (Whitmarsh, 2005).

Choice of mobility aid is something that can change throughout a person's life. King (2007) suggests that for people who are blind or vision impaired who experience lack of social skills or problems in communicating, using a dog guide can help to overcome some of the barriers that may exist. The importance of the development of appropriate social skills for people who are blind or vision impaired cannot be underestimated. If these skills are limited or absent, this may have an adverse affect on personal, academic and work-related outcomes for a person who is blind or vision impaired (Pagliano & Gillies, 2012). Deficits in communication and social skills are sometimes seen in individuals who have been blind since birth or who have lost their sight at an early age (Powell & Simple, 1996). Lloyd (2004) posits that using a dog guide as a mobility aid appears to have a positive influence on society's perceptions of a person who is blind or vision impaired and that this can help to overcome any communicative problems the person who is living with vision loss may be encountering. Overcoming communicative deficits can assist a person who is blind or vision impaired to become more confident and outgoing. Wiggett (2006) claims that having a dog guide can ameliorate lack of social competence and encourage communicative endeavours, as dogs are often considered a point of discourse and encourage communication.

Hart et al. (1995) reviewed the association between the role of dog guide and the breaking down of barriers between people who are blind or vision impaired and the general public. They described this influence as a, "breaking of the ice," (p. 10) and noted that a person who is blind who is accompanied by their dog guide may appear more approachable and, therefore, members of the public are more likely to start conversations with them. Many people who are blind or vision impaired explain that when accompanied by their dog guide more people approach them to initiate conversations. Muldoon (2001) suggests that dog guides promote social interactions by allowing sighted members of the public to feel more comfortable about talking to the person who is blind or vision impaired. Whitmarsh (2005, p. 8) found that a dog guide, "works as a catalyst for those

[sighted] members of social groups who have little experience interacting with someone who has a vision impairment," (Whitmarsh, 2005, p. 8).

This was further demonstrated in research by Lane et al. (1998) who undertook a study in the United States involving 57 dog guide owners. The DGH in the Lane et al. study reported an increase in social interactions with the general public when they were accompanied by their dog guide. Similar results have been noted in the United Kingdom by Whitmarsh (2005):

> Almost all owners (92 per cent) report that people frequently stop and talk with them while out with their dog; and three-quarters have made new friends since having their dog. Over a third, feel they have a better social life – and that social interaction has often qualitatively changed, towards a less condescending and more respectful attitude. This seems to be due to a "shift in focus of attention away from the recipient's disability toward their competence in handling a highly trained dog. (p. 5)

Breaking down of social barriers can sometimes, however, be a cause of problems for the DGH and their dog, with members of the public feeling free to touch or otherwise distract a dog guide working with their handler (Hart et al., 1995). This can occur due to misinterpretation of the integral role that the dog guide has in the handler-guide relationship and the need for the handler and the dog guide to focus on the job at hand (Harland, 1992; Lloyd, 2002; Ulrey, 1994). Some DGH explain that they would prefer to remain a little less conspicuous and that they would prefer not to receive disproportionate attention from members of the public when they are out and about with their dog guide (Muldoon, 2001; Sanders, 2000). Most DGH, however, claim that they, "generally," enjoy their interactions with the public and that they like meeting diverse groups of people. The breaking down of barriers that tends to occur when working with a dog guide can be beneficial as people who are blind or vision impaired often find that they have reduced opportunities for social interactions and that this can engender feelings of loneliness (Lane et al., 1998; McAlpine & Moore, 1995).

Some people who use a dog guide have reported that using a dog as a mobility aid 'advertises' their blindness and that this is a feature of dog

guide mobility that they do not enjoy (Allen & Blascovich 1996). Sanders (2000) promotes the benefits of being accompanied by a dog guide as it appears to change the way in which others perceive the person who is blind or vision impaired. Edwards and Beck (2002) note that acquiring a dog guide allows people to be recognised as a person who is blind, a sort of 'coming out' with respect to vision loss. Edwards and Beck explain that this experience is different from when using a long cane, when some people do not recognise loss of vision. Having a dog guide may result in others seeing the person who is blind or vision impaired in a more favourable light (Sanders, 2000). This finding was also observed by Wiggett (2006) who note that the general public tends to see a person who is blind or vision impaired in a more positive way when they are working with a dog guide rather than using a long cane. These findings would seem to indicate that interactions with the public are changed for the better when a person who is blind or vision impaired uses a dog guide as their mobility aid (Sanders, 2000). In a statement by Lambert (1990), the following is noted:

> ... I was a man who had reluctantly become ready to display blindness prominently at the end of a leash; and at 24 [years of age] my reluctance demanded a psychological compromise with my readiness. (Lambert, 1990, p. 152)

In studies reported by Lloyd et al. (2000) it is argued that a number of DGH, report a significant decrease in loneliness since obtaining a dog guide. This finding was supported by Steffens and Bergler in their (1998) study which involved 30 DGH from Germany. Steffens and Bergler found that the handlers often reported the benefits of working with their dog guide, such as increased feelings of liberty and freedom and fewer feelings of loneliness (Steffens & Bergler, 1998). These findings were supported by Miner (2001) who reported on research by Whitmarsh and Nzegwu (2001). Whitmarsh and Nzegwu conducted a qualitative study, which involved eight people from the United States who owned dog guides. This study found that the DGH reported greater confidence and feelings of independence when working with their dog guide as opposed to when they used a long cane. In a similar study in the United States by Sanders (2000) involving 12 DGH, Sanders reports that the DGH noted a greater sense of control over their lives

and increases in confidence and independence (Sanders, 2000). Wiggett (2006) agrees and reports a definitive increase in self-confidence among the DGH they have observed. Lloyd et al. (2000) explain that the role of the dog guide has often been shown to be one of transformation in the life of their human handler.

Kinney and Coyle (1992) explain that people who are blind or vision impaired often lack self-esteem and self-confidence and they suggest that this may cause problems associated with depression and feelings of isolation (Kinney & Coyle, 1992). Kinney and Coyle (1992) also report statements by people who are blind or vision impaired who indicate that they have been stigmatised due to their disability. Wiggett (2006) suggests that working with a dog guide provides a number of benefits and that these benefits may include a reduction of feelings of being stigmatised due to loss of vision. Benefits could also include an improvement in emotional health and in quality of life for people who use a dog guide as their preferred mobility aid. This assumption, however, has not been thoroughly investigated (Wiggett, 2006).

Steffens and Bergler (1998) conducted an empirical study in Germany interviewing 40 DGH and 40 NDGH in order to investigate the impact working with a dog guide. Steffens and Bergler noted that the DGH in their study reported issues such as greater autonomy when using a dog guide in comparison to using other mobility measures. They also reported less stress and greater self-esteem and confidence since working with a dog guide. This is supported in research by Whitmarsh and Nzegwu (2003) where they noted that dog guide owners reported increases in confidence and in levels of independence since working with their dog guide. DGH often claim that they prefer to use their dog guide in purely social settings as well as in traditional work settings as they generally enjoy the increased social interactions they experience when being accompanied by their dog (Sanders, 2000). They also observe enhancement of their independence in social environments when accompanied by their dog, which allows them to feel confident and more accepted by other people (Lloyd, 2006).

Careful matching of a dog guide with a prospective handler is a critical component of a successful handler-dog guide relationship (Lloyd, 2004). Zapf and Rough (2002) reiterate the importance of the matching process when placing a dog guide. More specifically, they designed guidelines to help those involved in the matching process to make relevant decisions surrounding the type of dog guide that is selected for a specific handler, i.e. personality of the dog and handler, work and social requirements and the health and specific needs of the potential handler. They also examined the client's mobility and exercise needs, the care and emotional needs of the dog and the emotional and lifestyle needs of the handler. They also considered the personality of the handler and the dog guide in order to ensure a perfect match. Zapf and Rough (2002) concluded that more research needs to be conducted in order to further consider the matching process between a dog guide and their handler. The literature seems to indicate however, that most people who are blind or vision impaired who use a dog guide, report generally positive aspects of their relationship with their dog and the independence associated with using a dog guide as a mobility aid (Guide Dogs for the Blind Association, 2001; Miner, 2001).

The findings as presented in this section support much of the available literature on the implications of working with a dog guide. While the available literature provides valuable insights, the studies cited have failed to examine potential health benefits that may be achieved from working with a dog guide. This current study aims to specifically address this gap in the research.

2.10.5 Long Canes, Dog Guides and Alternate Mobility Aids – Empowering the Choice of Mobility Aid: Dog Guides versus Long Canes

According to Lloyd (2004) some people who are blind or vision impaired have reported feeling embarrassed when they are using a long cane or using sighted guide techniques for their mobility (Lloyd, 2004). Sighted guide techniques are used where a sighted individual guides the person who is blind or vision impaired (Rosenblum et al., 2009). Weir (1998) notes that when using sighted guide techniques, the traveller is identified as having an obvious disability. Rosenblum et al. (2009) explain that some people have even reported that the tapping sound made by the long cane can also prove

to be quite embarrassing. These elements aside, the long cane is a widely used mobility aid for people who are blind or vision impaired (Davis & Bunnell, 2007). Lloyd (2004) describes one of the limitations of using a long cane, in that a person using a cane only has around a metre of clearance in front of them in which to respond to obstacles. The long cane is also limited as it only protects the lower half of the body, whereas when a person is working with a dog guide, the handler moves smoothly around obstacles and their upper and lower body is protected (La Grow, 2010) as the dog guide makes adjustments for overhanging obstacles and for the height and width of the handler (La Grow & Weessies, 1994). Lloyd (2004) reported on a study by La Grow and Craig (2000) who described an initiative by Blasch, De l'Aune, and La Grow (1995). In the Blasch et al. (1995) study, the researchers were able to show how, "limited subjects felt travel was, before they began training with a dog guide," (p. 50). Their study showed that the participants felt an increase in their level of confidence after they had begun working with a dog guide. Although the long cane is a widely accepted and widely used mobility aid, La Grow and Craig (2000) argue that the use of a dog guide may help handlers in their adjustment to their disability. This adjustment includes increases in self-esteem and confidence, decreases in depression and a vital adjustment to their visual disability when they are working with a dog guide (La Grow & Craig, 2000).

A number of studies have been undertaken surrounding the use of long canes and dog guides as mobility aids. These studies have investigated the lifestyles of long cane and dog guide users. Lloyd (2004) cited a PhD thesis by Delafield (1974) that found that people who were blind or vision impaired who used dog guides as their primary mobility aid, commonly reported freer mobility and better orientation skills than did long cane users (Lloyd, 2004; Gosling, 1994). Delafield (1974) explains that the studies undertaken, did not, take into consideration the type of person who applied to train with a dog guide or who chose to use a long cane. Lloyd (2004) felt that by not looking at the type of person who applied to train with a dog guide, it was difficult to ascertain whether the person, was already well adjusted, well educated, and employed, or whether having a dog guide helped them to achieve these things (Lloyd, 2004). Other researchers have considered the impact of working with a dog guide. Muldoon (2000), for example,

undertook research that explored the potential impact of the dog guide on feelings of social acceptance. The study involved a 17-point questionnaire that was sent to DGH in Adelaide, Australia. Muldoon also conducted face-to-face interviews with DGH. A total of 17 participants from South Australia completed the questionnaire and 10 completed interviews, with the participants revealing a self-reported increase in feelings of social acceptance when they were working with their dog guide (Muldoon, 2000). Steffens and Bergler (1998) suggest that working with a dog guide may assist in adjustment to loss of vision, including promotion of self-esteem and confidence.

Mangione et al. (1998) claim that as many as 50 per cent of people who lose effective vision, may experience adverse effects on their mental health. Lane et al. (1998) recommends the use of a dog guide for people who are blind or vision impaired and suggest that there can be a positive psychological benefit achieved by the DGH/dog guide association. This assertion is also supported by Lloyd et al. (2008b) who claim that DGH may obtain a benefit to their physical and mental health (Koda, Kubo, Ishigami, & Furuhashi, 2011; Lloyd, et al., 2008b; Research Committee on Guide Dogs, 2000; Steffens & Bergler, 1998).

Dugatkin (2009) argues that working with a dog guide may help to offset some of the negative aspects caused by loss of vision and promote the development of emotional and physical wellbeing. Dugatkin suggests that organisations that provide services to people who are blind or vision impaired should consider the holistic effect that dog guides have in supporting people who are blind or vision impaired (Dugatkin, 2009). In an earlier study by Finestone, Lukoff and Whiteman (1960) it was noted that DGH commonly self-reported less emotional illnesses such as depression and they were mainly from a higher social class when compared with long cane users. These findings were supported by Wiggett (2006) who found that DGH were generally content with their decision to use a dog guide as their preferred mobility aid.

Earlier research by Steffens and Bergler (1998), undertaken in the United Kingdom examined the mobility needs of people who are blind or vision

impaired and how successful their mobility aid was in helping them to be independent. The study highlighted both positive and negative implications of long canes and dog guides as mobility aids and investigated possible reasons why users may choose to use one form of mobility aid in preference to another. Steffens and Bergler found that DGH were generally more relaxed and confident about their mobility when compared with the long cane users. This has been supported by more recent research by Lloyd (2004). Lloyd, et al. (2004a) explain, however, that although dog guides offer freer mobility, they do have some drawbacks. One of the more frequently cited drawbacks being that the DGH have to toilet and feed their dog, whereas a long cane can be folded away and forgotten (Lloyd, 2004). Lloyd (2004) also reported negative implications of dog guide mobility for handlers, such as fear of injury if the handlers encounter aggressive dogs running loose who attack their dog guide. Lloyd (2004) explains that DGH can be made to feel uncomfortable where the dog guide is not welcomed by others, such as sometimes occurs in public settings where other people may not like dogs.

Oatley, Keltner, and Jenkins (2006) explain that many people who are blind or vision impaired experience depression at some time in their life and that this can present emotional challenges for them. Oatley et al. revealed that emotional challenges can potentially negatively affect personal interactions and social relationships with other people (Oatley et al. 2006). Studies undertaken in the United Kingdom by Madge and Nzegwu (2003) reported benefits of using a dog guide in social settings. They explained that in social environments dog guides tend to effectively limit barriers between persons. The DGH in their study, reported a difference in the way that people approached and reacted to them when they were accompanied by their dog guide rather than when they were using a long cane. When questioned about negative aspects of dog guide mobility Madge and Nzegwu (2003) mentioned that the DGH in their study cited the worst aspect of owning and working with a dog guide was the grief that was experienced by the handler when the dog guide dies. This was supported by Howie (2008) who noted that the DGH in his study observed that the loss of a dog guide was analogous to losing a family member. Other researchers such as Friedman (2000) and Fritz, Farver, Kass, and Hart (1995) reported some of the benefits of dog guide ownership. These benefits included, improvements in socio-

economic status, the ability to live independently and increased freedom (Friedmann, 2000; Fritz et al., 1995).

Howie (2008) argues that the most successful handler-dog guide partnerships are where the handler has prior experience as a dog owner, this, however, does not preclude inexperienced dog handlers from creating a successful partnership with a dog guide (Howie, 2008). One reason why a person who is blind or vision impaired may decide not to pursue dog guide mobility is where the person, or perhaps a member of their family, has an allergy to dogs (Baun & McCabe, 2000; Miner, 2001). This possibility has been reduced over the past few years, however, with the introduction of the labradoodle, which is a labrador crossed with standard poodle. The labradoodle has wool instead of fur and, therefore, produces less dander so is low allergenic (Howie, 2008). Howie also highlighted other issues that may impact on a decision to pursue dog guide mobility, with issues such as housing choice, mobility needs, financial and lifestyle considerations being revealed. The decision to choose dog guide mobility may depend on, "the person's previous life experiences with animals, the person's current health and responsibilities and the species and breeds of animals ... one size does not fit all," (Hart, 2000, p. 74).

Regular DGH indicate that at times they still use a long cane in certain settings, including, when attending noisy concerts, in specific social settings or where toileting facilities for a dog are restricted or unavailable (Muldoon, 2001). Dog guide owners also report choosing not to use a dog guide in settings where it is not well received or accepted, such as in specific cultural environments or where people are afraid of dogs (Howie, 2008; Muldoon, 2001; Rosenblum et al., 2009). The consensus appears to be that in certain settings, the use of a dog guide can have an adverse effect on the acceptance of a person who is blind or vision impaired (Beck, 2002) regardless of the fact that it is illegal to discriminate against the person's use of a dog in public settings (Australian Government Disability Discrimination Act, 1992; HREOC, 2011).

In research undertaken by Lloyd (2004), Lloyd discovered that the benefits of working with a dog guide were not dependent on the length of time that a

person had been blind or vision impaired. Lloyd also argues that whether the handler has congenital or acquired blindness does not seem to have an effect on the success of the human and dog guide association. Lloyd (2004) reported on a study conducted in Scotland, by Refson, Jackson, Dusoir, and Archer (1998; 1999) that found that the level of visual acuity also did not seem to influence lifestyle gains in the DGH who they reviewed. Refson et al. explained, "eighty-nine per cent of those who used dogs perceived their quality of life to be substantially improved," (p. 64). This group of people had many diverse levels of visual acuity, although all were legally blind. The participants of this study who used a dog guide, reported that they found their fitness levels enhanced; they felt younger and frequently reported better emotional wellbeing since they had used their dog (Refson et al., 1999). Lloyd (2004) cited an earlier study conducted in Northern Ireland by Jackson (1991) that supported the findings made by Refson et al. (1999). In Jackson's research, he noted that the people who used dog guides were generally fitter and reported feeling happier than the participants who used a long cane (Jackson, 1991). Lloyd (2004) also noted that the participants in her study who used a dog guide, self-reported significant improvements in their physical and mental wellbeing. Lloyd's study, however, did not primarily focus on the potential health gains of handlers, but rather the matching process between potential handlers and their dog guides.

2.10.6 Awareness, Perceptions and Decision-making Processes

While awareness of the role of a dog guide is widespread, in research undertaken by Whitmarsh (2005), it is suggested that there are a number of misconceptions surrounding dog guide mobility. Issues where misconceptions have occurred include the required level of vision deficit needed in order to apply for a dog guide and beliefs surrounding age limitations for potential DGH. In the study by Whitmarsh (2005) it was found that approximately four per cent of study participants, believed that they had to have no remaining vision in order to apply to train with a dog guide. Canadian researchers LaFrance, Garcia, and LaBreche (2007) noted similar results in their research. LaFrance et al. also observed that some participants did not believe they were able to have a dog guide if they were older than *60* years of age (LaFrance et al., 2007).

Whitmarsh (2005) explains that some people are influenced by their families or friends into applying, or into not applying, for a dog guide. Families can influence the decision-making process by discouraging the person who is blind or vision impaired from applying for a dog guide due to their own dislike of dogs (Whitmarsh, 2005). The opposite can also occur, where families may encourage their family member to apply for a dog guide when perhaps the family member who is blind is reticent to do so (Whitmarsh, 2005). According to Whitmarsh (2005) many women and older individuals stated that security was a worthy reason for applying for a dog guide. People of a younger age group cited an increase in social opportunity as a reason to apply, noting that the dog guide increases the likelihood that people will approach them (Whitmarsh, 2005). Lane et al. (2007) note that people who live alone are more likely to mention companionship as a prime reason to apply for a dog guide. Lane et al. argue that more males than females who decide not to have a dog guide, cite inconvenience and too much responsibility as reasons for making the decision not to apply for a dog guide. The female participants in the Lane et al. (2007) study were more likely to cite ongoing financial costs as a reason for not applying to obtain a dog guide.

Accurate and timely information is needed to ensure clients of blindness agencies are armed with the facts they need, in order to make critical decisions regarding the appropriate choice of mobility aid. Having up-to-date information in the Australian setting as a result of the current thesis will, therefore, provide helpful literature to assist prospective DGH in their decision as to whether or not to pursue the option of dog guide mobility.

2.10.7 Expectations of the Role of a Dog Guide

While dog guides make valuable contributions to independent mobility, sometimes people are unaware of how the dog guide can help them in their mobility endeavours. Misguided expectations of the role of the dog guide may cause potential handlers to avoid applying for a dog guide, or alternatively, to feel disappointed when they receive their dog due to unawareness of what the dog is able to do (LaFrance et al., 2007). Whitmarsh (2005) found that a number of prospective DGH were not aware of the limitations of dog guide mobility. This finding was also noted in research by

LaFrance et al. (2007) who observed that a number of participants in their study had unrealistic expectations of dog guide mobility. LaFrance et al. explain that upon learning of the realities of dog guide mobility from dog guide training agencies, some of the participants decided not to go ahead with their previous decision to apply to train with a dog guide. This is discussed further in the next section. Dog guide agencies, therefore, need to ensure that their dog guide instructors are well versed in both positive and negative aspects of dog guide mobility and need to inform their clients of the benefits and the limitations of this mobility choice (LaFrance et al., 2007).

Some people in the community may be unaware of the rights that people who are blind or vision impaired have to equitable access when they are using a dog guide (Whitmarsh, 2005). This lack of awareness may result in the person who is blind or vision impaired being refused a service or entry to premises due to being accompanied by their dog guide. Under the Disability Discrimination Act (1992) (*Section 23*) it is unlawful to:

> refuse to allow a person with a disability to enter premises or use facilities that the public is entitled or allowed to enter or use. For example, refusing to allow a blind person accompanied by a guide dog to enter a restaurant. (Australian Human Rights Commission, 2011, n.p).

Although denial of service or entry to public premises is against the law, having to confront these issues can cause stress for DGH who have to deal with the refusal (Lloyd, 2004). Some people who are blind or vision impaired claim that they would prefer not to work with a dog guide as they do not want to be confronted with dealing with any potential refusal of service or entry to premises (LaFrance et al., 2007).

2.10.8 Reasons Why People May Not Apply for a Dog Guide

Various reasons are cited for not applying for a dog guide and these include, lack of suitable work, dislike of dogs, not being able to provide enough care for a dog, or the costs involved in maintaining a dog (Whitmarsh, 2005). In research conducted in the United Kingdom by Lane et al. (1998) a number of persons who were considering dog guide mobility were interviewed. Of the potential handlers (a total of 20) four mentioned ongoing expense as a reason

for not applying for a dog guide, (costs considered in this study were related to veterinary treatment and food) (Lane et al. 1998). Whitmarsh (2005) cited other reasons why people who are blind or vision impaired may decide not to obtain a dog guide. The reasons given varied, but included the work or home environment not being conducive (7 per cent), opposing spouse views (4 per cent), inadequate time or facilities for a dog (1 per cent) or, having children who are very young (2 per cent) (Whitmarsh, 2005). Approximately a third of participants in the Whitmarsh study noted that the responsibility involved in caring for a dog guide would be detrimental to their lifestyle (33 per cent men and 26 per cent women). Various other reasons given for not wanting a dog guide included, dog hairs (8 per cent), cleaning up after the dog (5 per cent) and limitations when travelling with a dog guide (8 per cent) (Whitmarsh, 2005). Whitmarsh examined other areas of concern that had been reported and decided to examine DGH when they were going about their day-to-day business. Whitmarsh questioned dog guide owners about their experiences when attending local doctors' surgeries and hospitals. Whitmarsh noted that three per cent of men and six per cent of women had been refused entry, or had been made to feel unwelcome when they were attending their local doctor's surgery with their dog guide. Whitmarsh reported that only 29 per cent used their dog guide when they were inpatients in hospitals as they believed they were not allowed to take the dog guide with them (11 per cent). Other handlers, however, preferred to use a sighted guide rather than their dog, when in these circumstances (36 per cent of men, 26 per cent of women). This group reported the reason for this preference was that they did not have to depend on others to take the dog out to the toilet or exercise the dog if they were unwell (Whitmarsh, 2005). This study also noted, "of those visiting someone else in hospital, the majority (91 per cent) felt comfortable bringing their dog," (Whitmarsh, 2005, p. 16).

Whitmarsh (2005) noted a number of other possible reasons for not applying for a dog guide; these included a stigma surrounding ownership of a dog guide as it brought attention to their disability. Some participants also mentioned that they lacked confidence or had difficulties accepting the fact that they were blind. Other reasons that were highlighted were concern about caring for a dog, inconvenience of owning a dog, e.g. having to clean

up after or feeding and watering the dog (16 per cent), or lack of experience in dog ownership (14 per cent). Dislike or fear of dogs was also cited with (4 per cent) of those surveyed noting that this had been the prime reason they had not applied to train with a dog guide. Similar issues were reported in research by LaFrance et al. (2007) with five per cent of their study participants citing dislike of dogs as a reason not to apply for a dog guide and 15 per cent stating that they would prefer not to have a dog guide as they did not want to have to clean up after or exercise a dog. Whitmarsh (2005) noted that almost one quarter of the participants in her study who had not applied for a dog guide remarked that they felt they, "could not be bothered to have a dog." One participant explained that having a dog guide had never been something of interest for him; this was despite the fact that he had been blind since early childhood. A number of others in the Whitmarsh study reported that they did not believe they needed a dog guide as they were able to get around without one; 35 per cent of those interviewed who said this however, did not rule out this option at some future date (Whitmarsh, 2005). Some people believed that they could not receive an appropriate dog guide that would meet their needs due to additional health issues they experienced, apart from their vision loss (Whitmarsh, 2005). One participant suggested that he had not applied for a dog guide due to having other health issues as he felt the dog may be too strong for him and that this may cause him to lose his balance and fall (Whitmarsh, 2005). Some participants in the Whitmarsh (2005) study who had considered dog guide mobility in the past seven years, mentioned that they had decided not to go ahead with applying for a dog guide as, on balance, they felt that owning a dog guide was too much responsibility (Whitmarsh, 2005).

Physical limitations can also be a reason why some people may not apply to work with a dog guide (Wiggett-Barnard & Steel, 2008). Gitlin, Mount, Lucas, Weirich, and Gramberg (1997) conducted a study with 12 people between the ages of 27-68 years with various physical disabilities; most had arthritis, however a number had neuromuscular disorders and these conditions affected the muscle strength of the participants involved in their research. A number of the participants reported not using a dog guide because they felt they did not have enough physical strength to do so. They also noted that they felt their physical limitations ruled out the possibility of

using a dog guide and that they felt that using a dog guide, may aggravate these conditions, especially if the dog began to pull them (Gitlin et al. 1997). Poor balance was another complaint mentioned by some participants who felt that due to having a pre-existing condition that affected their balance, a dog guide would be an inappropriate option for them. This group mentioned, however, that if they could overcome their physical limitations, a dog guide would probably benefit them in becoming more independent (Gitlin et al. 1997). Physical limitations were also mentioned as a reason not to apply for a dog guide in the LaFrance et al. (2007) study and in research by Lloyd, (2006). Grief when a dog guide dies is another reason that some people who are blind or vision impaired gave for not working with a dog guide (WiggettBarnard & Steel, 2008). Emotional distress that might be felt when the dog guide dies was a major concern for many people who are blind or vision impaired (Wiggett-Barnard & Steel, 2008). Whitmarsh (2005) reports that as many as five per cent of the participants in her study, said they would prefer not to get a dog guide as they felt they would not be able to cope with the grief incurred if the dog was to die. Kwong and Bartholomew (2011) undertook a review of 25 people who worked with service dogs noting, "when confronted with the loss of their dog, almost all participants experienced intense grief. Most grief responses; were consistent with the loss of a care-giving relationship," (Kwong & Bartholomew, 2011, p. 1). When a dog guide dies the handler is faced with separation from a companion and from a working partner and this is something that many people have difficulties in coming to terms with, so they may prefer not to use a dog guide (Kwong & Bartholomew, 2011).

2.10.9 Cultural or Religious Considerations

In contrast to the situation in most Western countries where dogs are generally well accepted and the right of service dogs and their handlers to go anywhere is protected in law, many cultures are less in favour of keeping dogs as the dog is often seen as being unclean (Deshen, 1996; HREOC, 2011). Members of some religions will not keep dogs in their homes and as dog guide agencies request that dog guides should be with their handlers at all times, this can be problematic for people in this cohort (Deshen, 1996). Deshen and Deshen undertook a study in 1989 that explored the use of dog guides and social issues in Israel, this study examined the opinions of 120

DGH and 70 NDGH. Deshen and Deshen (1989) found that the majority of Israeli NDGH had decided not to use a dog guide due to various socio-cultural reasons and they reported that those who chose to use a dog guide, were mainly from the upper classes. Deshen and Deshen (1989) argued that of those who chose not to use a dog guide, the main reason given was that they felt that the dog guide was an unclean animal (Deshen & Deshen, 1989). Findings from this study by Deshen and Deshen were further supported by Spencer and Bostrom (2005) who also note that most Muslims view dogs as being unclean animals and that they would, therefore, not wish to be associated with, or to keep a dog. Despite the fact that religious beliefs are sometimes cited by people who are blind or vision impaired as a reason not to apply to work with a dog guide, Deshen (1996) explains that people of the Muslim faith do not intrinsically dislike dogs but the reason for not wanting a dog is because the saliva of the dog is considered unclean. Deshen (1996), therefore, suggests that each person of the Muslim faith should examine their own conscience and make an informed choice when considering whether or not to use a dog guide.

2.10.10 Increased Mobility and Independence

In the study by Whitmarsh (2005), Whitmarsh found that feelings of increased mobility and confidence were highlighted as being positive benefits associated with dog guide ownership (81 per cent of respondents). Many of the participants in the Whitmarsh study felt that they had achieved a marked improvement in their exercise tolerance since working with a dog guide and they felt this was mainly due to improved confidence achieved since working with their dog (Whitmarsh, 2005). This increased confidence had allowed them to feel happy to use their dog for both recreational and working walks and had encouraged them to exercise more. Lloyd et al. (2004a) and LaFrance et al. (2007) support these findings and suggest that a handler working with their dog guide is a remarkable partnership that allows the handler to feel confident when moving about their community. As dog guides have a right to go to all public places, independence is not hindered due to limitations as to where the handler and their dog guide can, or cannot, go (Lloyd, 2004). Wiggett (2006) asserts that dog guides help to overcome a number of limitations that can be experienced by people who are

blind or vision impaired and they may help them to regain some of their lost independence.

2.10.11 Social and Psychological Benefits

The Whitmarsh (2005) study found a number of participants who reported an improvement in their social and psychological wellbeing when they work with a dog guide. In a similar study by Lloyd (2006) it was found that the participants, "reported improved mobility, social interactions and companionship. As for 'fitness' those who did not state an increase in health status were mainly people who were 'good at' or 'used to' being blind," (p. 185).

Another reported value that appeared to have an impact on emotional wellbeing was an increase in feelings of security when working with a dog guide which was reported by six per cent of male and 10 per cent of female participants. Motivation to exercise and go to work was another area that was highlighted (Lloyd, 2006). In research undertaken by LaFrance et al. (2007) there were observed increased feelings of security, more frequent and positive interactions and increased feelings of wellbeing when participants were accompanied by their dog guide. Katz (2003) claims that dog guides and other types of service dogs provide much needed emotional support to their handlers and that the friendship they provide brings a needed boost to confidence. McNicholas and Collis (2006) agree and observe that dog guides engender feelings of support in their handlers and that this provides a positive benefit to confidence and self-esteem.

2.11 Implications for Service Providers

Service providers need to adapt their services to the individual requirements of their end users and they are encouraged to examine their client's needs and individual circumstances (Whitmarsh & Nzegwu, 2001). Whitmarsh and Nzegwu (2001) explain, that in order to make an informed decision it is necessary for clients to carefully consider their mobility options. Whitmarsh and Nzegwu (2001) argue that a number of issues should be considered when exploring mobility choices, including the possibility of training with a dog guide. Factors to consider include emotional issues, family circumstances and personal preference (Hart, 2000; Butler, 2004).

Sanders (2000) explains that in order for the dog guide-handler relationship to be successful the person who is blind or vision impaired needs to be psychologically prepared and that a close relationship needs to be forged between the handler and their dog guide. Lloyd (2004) asserts that the matching process between the handler and their dog guide is an integral component of a successful partnership. Dugatkin (2009) argues that a strong bond between the DGH and their dog guide is imperative in order to ensure the success of the handler-dog relationship. Howie (2008) proposes that the DGH needs to maintain a strong attachment to their dog in order to have a successful working partnership. Nicholson et al. (1995) and Howie (2008) promote the need for service providers to provide quality support for their clients in order to minimise any negative aspects that could be associated with working with a dog guide. Potential drawbacks of dog guide mobility could include over-dependence on the dog to the exclusion of other mobility aids and over attachment to the dog in place of human relationships. It is important for service providers to be cognisant of all potential benefits or drawbacks of dog guides or other mobility options in order to provide optimal advice to their client base (Kwong & Bartholomew, 2011).

The review of the literature has revealed a significant lack of information regarding potential health benefits that may be associated with using a dog guide, specifically in the Australian setting. The literature review has also allowed the researcher to design the research questions that would guide this project. Section 2.12 examines the research questions that were developed, which further highlighted the important issues that needed to be further examined. The development of appropriate research questions, allowed the researcher to delve for the information that would be required in order to successfully complete this research project.

2.12 Research Questions

According to Creswell (2009) research questions are the first and integral component required in order to obtain a coherent methodological framework that will allow the successful completion of any research project. The research questions allow the researcher to discover what type of information they are endeavouring to find and to determine the research objectives (Creswell, 2009). Creswell further suggests, that in order to be successful in

undertaking a research project, the researcher needs to determine the 'why and how' of the project in mind (Creswell, 2009). In completing this research project, the research questions have allowed the researcher to disseminate the purpose of the research, i.e. to undertake a study that highlights new knowledge. The research questions also allowed the researcher to determine the optimal method to use in order to successfully manage the collection and interpretation of data. In this case, the researcher has used a descriptive study using mixed methods; primarily qualitative but with some limited demographic quantitative data. Therefore, the research questions have enabled the researcher to be able to examine issues surrounding potential self-reported positive and negative experiences surrounding ownership of a dog guide. A number of questions were created and developed. Wherever possible, the questions were developed in a manner that would not encourage a particular answer, but would allow the researcher to expand on the knowledge gained in the literature review.

The main research questions guiding this research are:

1. If any, what are the self-reported benefits associated with dog guide ownership in relation to the physical, psychological and psychosocial aspects of life?

2. What do handlers perceive about working with a dog guide that could be facilitating improvement in their physical, psychological and psychosocial health?

3. What do DGH self-report as the impact of working with a dog guide on their overall quality of life?

4. What do handlers perceive about working with a dog guide that could be facilitating improvement in their physical, psychological and psychosocial health

5. Does working with a dog guide have any negative impact on the health of the DGH who use them? If so what are the negative influences?

In order to answer these questions, it was first necessary to record the responses from the DGH who attended a focus group meeting, completed a questionnaire, or who attended an individual interview. This study involved 161 participants and provided a good sampling of responses. The researcher then examined and analysed the responses received from the participants in order to assess any potential health benefit that may occur as a result of owning a dog guide. (Price & Shildrick, 2002).

The research questions assisted the researcher to consider what, if anything, there may be about working with a dog guide that may cause a potential benefit or otherwise to the health of their human handler.

2.13 Conclusion

The literature review has presented the key elements from a range of studies surrounding health, disability and the role of animals. The role of dog guides and how they contribute to mobility, independence and social inclusion for individuals who are blind or vision impaired was examined. In this chapter, a number of studies revealed positive and negative perceptions of working with a dog guide, these included issues such as positive public perceptions when working with a dog guide, improved exercise tolerance and the benefits of companionship as reported by researchers such as Whitmarsh (2005), Lloyd, (2002; 2004; 2006) and Sanders (2000). In addition, a range of negative perceptions such as the need to clean up after the dog and inconvenience of using a dog were reported by researchers such as Whitmarsh and Nzegwu (2001) and Howie (2008).

The literature also presented a range of studies outlining the role of the dog guide and their work with their human handlers. While some issues may tend to blend together with that of the companion animals, the role of the dog guide has many unique aspects. The existing evidence of the influence on the health of human handlers who work with a service or dog guide was explored. The range of the studies and the literature examined have exposed a range of gaps in our understanding. These gaps include a clear understanding, from a range of individuals in the Australian context, around the potential for benefits in general health and wellbeing that could be associated with working with a dog guide. For individuals who are blind or

vision impaired, the issues surrounding dog guide use need to be explored in more depth and they need to consider more than just mobility issues. These considerations allowed the researcher to formulate the research questions as presented. Chapter 3 describes the methodology used to conduct this research.

Chapter 3
Methodology

3.0 Introduction

Methodology, as promoted by Fitzgerald and Buchanan (2003) involves the practices applied to specific scientific research methods and/or techniques. This chapter will highlight the methodology as applied to this study. This study has a number of components including field work and the conceptual aspects as revealed in the library search and the literature review. The conceptual component enabled issues to be identified and allowed the researcher to define problems in order to verify and articulate the objectives surrounding this project. The field work involved collection of primary data from participants who are blind or vision impaired from around Australia. The participants were people who use a dog guide as their primary mobility aid.

A descriptive approach using qualitative research methods were primarily used in the data collection and in the analysis processes, however some quantitative demographic data was also used in order to support evidence gained. The social aspects involved with this study, enabled the researcher to position herself as insider-researcher and this allowed the researcher to understand the lived experiences of the participants. Costley et al. (2010) highlight the unique position of the insider researcher; they reiterate the value of having specific knowledge of a topic and easy access to appropriate participants.

The culmination of this thesis sees a representation or snapshot of opinion of persons who are blind or vision impaired in the Australian setting. Dog guide handlers' (DGH) experiences are examined and the data is comprised of the contributions of the participants. This chapter outlines research processes used for data collection and analysis, and it begins by highlighting the relationship between qualitative and quantitative research methods which are used in social research.

This chapter presents the rationale for the selection of the varying methods employed in this study and provides insight into the way in which

experiences evolved. It also discusses the validity and overall soundness of the research methods used in the completion of this research project.

This chapter also explains how the researcher collected and processed raw data and explores whether there is a potential that owning a dog guide may increase the likelihood that a person who is blind or vision impaired, may self-report experiencing better physical, psychological and psychosocial health.

3.1 Goal Definition

The premier purpose in undertaking this research is to highlight the relationship between working with a dog guide and any potential benefits to health that this may provide to the handler. As there was extremely limited previous research in this area, a key objective was to determine what, if any, changes working with a dog guide may have on the health of their handler.

Identification of, and quantification of factors that may be contributing to any potential health benefit is also examined. Based on the current literature and the themes that were revealed during the questioning processes, a number of related areas are highlighted as requiring further consideration. These areas include:

a. demographic information regarding the participants

b. vision status of participants

c. success or otherwise of dog guide-handler relationship

d. reasons for choosing to use a dog guide

e. effect of dog guide mobility on depression and overall quality of life

f. other potential benefits apart from mobility that may be obtained from working with a dog guide.

3.2 Initial Research Process

A questionnaire was developed after examination of the literature, with the researcher then conversing with DGH participants at an initial focus group meeting. This allowed the researcher to collect feedback on the questions to

be asked in the main study and to obtain some initial participant opinion (see Chapter 4). The participants at the initial focus group meeting were able to consider the suitability of the proposed questions and to make suggestions to the researcher if questions were deemed to be ambiguous. The participants were also asked to suggest additional questions that could be added to the questionnaire. After the final questions were determined, the questions were then presented to the researcher's university supervisors and following discussion, were developed and incorporated into the final questionnaire (see Appendix 6). The questionnaire was later distributed via email to participants. A second focus group meeting was then arranged followed by a third focus group meeting and individual interviews. The method of data collection will be discussed in depth in section 3.5.

3.3 Ethical Considerations

Qualitative (self-reporting) and quantitative (combination) research methods or (mixed methods) were employed in order to collect data through the use of focus group meetings, questionnaire and interviews.

In projects where a researcher is collecting data from groups of people who have a disability such as blindness or vision impairment, an issue to consider is how the researcher can overcome the 'disability division' between people who are blind or vision impaired and researchers with normal vision. Such gaps are often perceived as barriers, however, in this study, where the researcher is legally blind, this possibility is avoided. The researcher was therefore in a position to have an insider understanding of the research participants and subsequently minimise any potential disability divide (Harry, 1996; Pugach, 2001). The researcher has a knowledge of the community involved and is in a unique position as 'insider researcher' (see section 3.5.) (Unluer, 2012).

Harry (1996) argues that the identity of the researcher needs to be a factor when conducting this type of research and suggests that where a researcher shares characteristics of the population being analysed, there is the opportunity to present a demeanour of empathy and understanding to participants. Having a demeanour that indicates empathy, allows the participants to have positive feelings about being involved in this type of

research study (Harry, 1996; Pugach, 2001). While qualitative research methods may allow for the construction of trust and rapport between the people involved, there is a possibility of a tension in such relationships when compared to that of a researcher whose sole position requires collecting, interpreting, and conveying information. This issue, therefore, needs to be acknowledged (Denzin & Lincoln, 2005).

Harry (1996) encourages the researcher to recognise the need to consider making conscious and impartial decisions in order to accept any potential ethical dilemmas, such as, ensuring that any barriers to participation and privacy are considered. There is a need to draw boundaries between research and therapy roles and for the researcher to use discretion in making judgments about participant experiences. It is also necessary to recognise that increasing intimacy, may lead to participants' unanticipated self-disclosure (Delamont & Atkinson, 2010). Once a researcher assumes a highly person-centered perspective, it is possible that some role transformation may occur and it is important to be aware of this possibility when undertaking a project of this type (Delamont & Atkinson, 2010; Harry, 1996).

This study is guided by ethical principles as recommended by Nkwi, Nyamongo, and Ryan (2001) and Denzin and Lincoln (2005); these include issues as outlined in the following sections.

3.3.1 Respect for the Individual

The researcher was cognisant of respecting the dignity and autonomy of all participants involved in this study and, as a consequence, all the participants were able to legally give informed consent and participated in the study on a voluntary basis. Participants self-determined which questions they wished to answer and the way in which they answered each question. The confidentiality of each participant was respected and all information collected was gathered in a manner which could not identify a participant with a response. Written consent was also obtained for each individual who participated in this study. Participants were advised that they could withdraw their consent to participate at any time, without giving a reason for doing so, however, none of the participants availed themselves of this option.

3.3.2 Transparency

The researcher sought consent from participants who wished to be involved in this project and explained the purpose of the research in an initial letter outlining what they were expected to do (see Appendix 1). The researcher also provided the participants with further information via Skype, face-to-face, or telephone contact, regarding the potential risk of re-living stress related to their sensory deprivation that could be associated with participation in this study. As a consequence of this possibility, the researcher ensured that all participants would have access to free counselling through the blindness agencies involved in the study; no participants, however, availed themselves of this option. The potential benefit of participating in this research was also explained to participants during the initial contact from the researcher. The potential benefits that were suggested, included enhanced awareness about vision impairment and the exploration of issues surrounding the use of dog guides and their potential to provide a health benefit. The researcher explained that the results of this research may make it possible to develop appropriate suggestions and advice to dog guide providers and to potential handlers in the future. The aims and possible outcomes of the study were clearly highlighted to the participants and the researcher undertook to share the findings of the study with all stakeholders involved in this research project at the completion of the study.

3.3.3 Adherence to University Research Ethics Guidelines

The research process began with the submission of an application for ethics approval to the Flinders University Human Research Ethics committee, who approved this research project; the ethics approval number for this project is 5169. The researcher worked in accordance with ethical principles and these were observed throughout the processes involved in the researching and writing of this thesis. The researcher followed ethical reasoning principles as suggested by Denzin and Lincoln (2005). These principles include, according to Denzin & Lincoln (2005):

a. the need to obtain informed consent

b. ensuring confidentiality of all information

c. doing no harm

d. being sensitive to participant needs.

During the initial design and planning of this research project, the researcher consulted the works of Nicholson (1993) who notes the importance of considering, "methodological issues when designing a study for vulnerable people," (p. 102). As this study involved participants who were blind or vision impaired who may, therefore, be considered to be vulnerable, a counsellor was organised. As noted in section 3.4.2, this was done through the relevant blindness agencies involved in order to support the participants of the study in case the research questions brought up any unwanted or unpleasant memories. Participants were informed of this support when attending a focus group meeting or prior to completing the questionnaire or individual interview.

The researcher has carefully adhered to all the research ethics guidelines of Flinders University and has signed the Ethics Approval form (see Appendix 10). Specifically, the following procedure was followed:

Consent Forms were signed by all participants. These forms were transcribed into relevant and preferred formats including electronic documents, large print documents and Braille formats. The provision of documents in preferred formats was undertaken by the researcher and these forms contained clear statements about anonymity and the right to terminate involvement at any time without being required to give a reason for doing so (see Appendix 2).

- The researcher sent a letter of introduction outlining the project to Seeing Eye Dogs Australia, Blind Citizens Australia and Blind Citizens of Western Australia. Permission was obtained from these agencies verifying their support and providing a written permit for contacting clients of these agencies (see Appendix 1).

- The time frame of interviews and focus groups was mutually negotiated by the researcher and participants.

- The researcher was aware of sensitivities regarding disability issues and was courteous and respectful towards all those involved.

- All participants were offered the option of accessing the findings of the research and these findings will be made available to participants through Seeing Eye Dogs Australia, Blind Citizens Australia and Blind Citizens of Western Australia at the conclusion of the project.

The researcher has at all times complied with the Code of Ethics when working with human participants (Flinders University, 2010).

3.3.4 Confidentiality and Anonymity of Participants and Information

The researcher was able to assure the participants of their anonymity and was able reassure them that all of the data that was collected would remain totally confidential. The researcher was solely responsible for conducting all interviews and development of the questionnaire and for the coding of all data. These data were collected using audio taping (where agreed) and then transcribing the information gained into electronic Braille format. The information was, therefore, only accessible to the researcher. The researcher password protected this information, which was stored on a BrailleNote Apex *Braille note taker* (HumanWare, 2011). By the very nature of data collection the identity of each participant in a study such as this is not kept from the researcher. Participants at the focus group meetings were made aware that the interviewer was not employed by any blindness agency and that all information gained would be non-identifying in nature. In order to protect the privacy of the participants in this study, the researcher has ensured that where personal communications have been used in the thesis pseudonyms have been employed. Pseudonyms were used for all participants and for all the dog guides named in this thesis. The researcher also assured participants that all information gained would not be used in any manner that could potentially match a response with any particular individual.

3.3.5 Data Entry, Storage and Disposal

As noted in section 3.3.4, the researcher collected data using a BrailleNote Apex (HumanWare, 2011). In the early focus group meetings some participants expressed reservations about being audio recorded so, where

this was an issue, the researcher took notes solely in Braille. The Braille note taker used for the collection of data is password protected and is not linked to any computer network. Data was also backed up using an SD card and USB flash drive connected to the researcher's BrailleNote Apex. The USB flash drive, SD card and the BrailleNote Apex were stored in a locked filing cabinet in the researcher's home. The researcher's home has a full security system which is activated any time the researcher is absent from the home, or at any time the property is otherwise unattended. All data will be stored securely for the required period following successful completion of the thesis and subsequently destroyed.

3.4 Methodology

The literature review in Chapter 2 provided background information and facilitated the attaining of information about the dog guide and handler association. This information helped to inspire and form the research and interview questions. This chapter describes the methodology employed in this study, which had both a conceptual and a field element. The conceptual element involved a library search which yielded the literature review as documented in Chapter 2 and the conceptual element, enabled the researcher to clarify issues and articulate the objectives of this study. The field component involved the collection of primary data from the participants involved in the study. The participants were from around Australia. The data set was primarily collected electronically, although face-to-face, telephone and Skype interviews were also used.

In this thesis a number of research methods are discussed and outlined. Methods, according to MacKenzie (2006) are the techniques we use to conduct research, whereas methodology, is the discipline or body of knowledge, that utilises these methods. According to Fitzgerald and Buchanan (2003), methodology is the principles underlying the use of specific techniques or methods of research. Mixed methods (primarily qualitative) were used, however, some quantitative data were also collected in order to provide demographic and contextual support for the qualitative data obtained.

An exploratory and explanatory nature of this research study was used in order to obtain responses that would help to help reveal answers to the research questions. An explanatory model, as noted by Wenger (1998) is designed to identify issues and provide answers in qualitative research studies. The characteristics of this research design, such as the contribution of subjective opinions involved in qualitative research, would suggest that this method would be useful as it yields effective results (Wenger, 1998). The researcher has however also collected quantitative data in the completion of this project. The quantitative data collected, used a cross sectional survey using a forced choice questionnaire. The data collected included information such as, the category and level of vision loss, the age and gender of participants; number of DGH. Also included was the number of participants with other health issues or disabilities, marital status, educational and employment data and information about place of residence. The next section (3.4.1) explains the use of quantitative research methods and is followed in section (3.4.2) by an explanation of the qualitative methods used. Section (3.4.3) then explains the use of both methods (mixed methods) as used to conduct this research project.

3.4.1 A Quantitative Approach

A quantitative approach to research aims at prediction and control of the causes and effects of human behaviour and is inherently validated by an assumption of an enduring truth and a reality that has an explicit order. This truth assumes an order in which facts do not change, i.e. they have a solid reality (Mugenda & Mugenda, 1999). This form of theorem values an objective historical approach and focuses on specific, selected, and predefined variables (Abdi, 2009). Pierce (2007) explains that quantitative research is systematic and empirical and it uses a number of approaches, which fit into four distinct phases. These phases begin with the development of a concept, the planning phase, followed by an operational phase; then dissemination of the data that is obtained (Pierce, 2007).

When using quantitative research methods; after the collection of the required information, measurements are assessed and they are then represented numerically (Mugenda & Mugenda, 1999). The data analysis is conducted using software packages that organise statistical information and

this allows the generation of descriptive and inferential statistics (Morgan, 2002). In the analysis of the quantitative data collected for this research project, the software package SPSS (SPSS Inc, 2005) was used to interpret the data. The researcher, however, only collected a limited amount of quantitative data, in order to provide support for the qualitative data that were collected.

In highlighting the strengths of using quantitative methods, the following aspects of this research method are considered. Quantitative methods produce research that is reliable, objective, valid and importantly reproducible (Pierce, 2007). The relatively small amount of quantitative data utilised in this study, involves generated tabulations and percentages, which are used to develop a demonstration of relationships within the qualitative data. Section 3.4.2 reveals the qualitative approach used.

3.4.2 A Qualitative Approach

Mack, Woodsong, MacQueen, Guest, and Namey (2005) argue that qualitative research has a number of important advantages in a study such as this, in which self-reported perceptions of people who have vision impairment are examined. Qualitative self-reported data is appropriate in this type of study, as this form of data yields diversity-specific and subject-specific information. As this study focuses on people who are blind and vision impaired who share a common cultural and social context, qualitative methods were also deemed to be appropriate. Mack et al. (2005) explain the dynamics of socio-behavioural factors such as self, gender norms, health and socioeconomic status; these factors are critical in disability matters and are, therefore, uniquely suited to a qualitative approach (Mack et al., 2005). Seale, Gobo, Gubrium, and Silverman (2004) argue that qualitative studies facilitate the development of relevant and appropriate recommendations, whose formulation evolves from the contributions of the participants in the research. This study develops recommendations for interventions based on the findings that are revealed by Seale et al. (2004).

Qualitative research assists in the investigating and understanding of the interpretations and perceptions of individuals and, "assumes that reality is both dynamic and socially constructed," (Abdi, 2009, p. 33). Socially constructed qualitative research, relies on perceptions held by people based

on their conception of reality and makes those perceptions worthwhile (Morgan, 2002). These perceptions are pivotal to reliable, qualitative research. Qualitative research informs and develops a focus of a comprehensive and holistic model of reality.

According to Key (1997) qualitative research results in the dissemination of specific information and considers its variables and thus offers a wider understanding of various situations. Denzin and Lincoln (2005) explain, that qualitative research provides a framework that allows people to respond in a variety of ways that accurately represent their own perspectives and experiences of a particular phenomenon. Denzin and Lincoln also discuss interpretive research methods and further suggest that they see the researcher as an overall observer in the research project (Denzin & Lincoln, 2005). Key (1997) argues that qualitative research provides a naturalistic approach to the universe as it uses the skills of the researcher in a natural environment where the researcher is able to communicate the meaning of the information that is provided to them. Greenhalgh and Taylor (1997) suggest that qualitative methods help to reveal a deeper truth as it enables the researcher to, "study things in their natural setting, attempting to make sense of, or interpret phenomena in terms of the meanings people bring to them," (Greenhalgh & Taylor, 1997, p. 740). Further, qualitative research provides a, "holistic perspective which preserves the complexities of human behaviour," (Stevens, Lord, Proctor, Nagy, & O'Riordan, 2010, p. 496).

Abdi (2009) notes that qualitative social research looks at the individual, including their perceptions of the environment in which they live. As value relates to consciousness and an individual's perceptions, it becomes pivotal to qualitative research; it helps to discover a whole and workable theory from which generalisations can be extracted (Abdi, 2009). Qualitative research enables the researcher to interact on a personal level with research participants while delving deeply into the self-reported reality of those they interview. Therefore, qualitative research allows the researcher to highlight and reflect on rational and practical experiences, as observed by the participants who are involved in their studies (Slevin, 2010).

Each individual life experience is comparable with that of others and the impact of individual experiences is explored in this thesis. The qualitative research used, provides important information from the private lives of those studied and delves behind the scenes (Denzin & Lincoln, 2005). As qualitative research is appropriate for a number of disciplines and has varied approaches, it allows the researcher to discover fundamental information that is related to the participants who are involved in the study. A qualitative approach, also allows the revealing of individual behaviours that relate to health matters, so it is particularly pertinent to this research project (Malterud, 2001). Polkinghorne (2005) explains:

> There are three major sources of qualitative data: interviews, observations, and documents. Interviews produce first-person accounts of the experience; observations record or memo a researcher's encounters in the presence of those undergoing an experience; and documents are written sources (although they can include oral or visual documents) about an experience. (p. 141)

The qualitative research used, enables the researcher to describe phenomena of interest, such as issues concerning people who are blind or vision impaired who either use, or do not use, a dog guide (Mack et al., 2005). NVivo 9 was the software utilised to analyse the qualitative data gained in this study (QRS, International, 2011). As this study used a combination of quantitative and qualitative research methods, the following section (3.4.2) will discuss the mixed methods approach.

3.4.3 Mixed Methods

In undertaking this research project the researcher has used both qualitative and quantitative (mixed) research methods as they compliment and enhance each other (Denzin & Lincoln, 2005). Mugenda and Mugenda (1999) consider the advantage of using varying approaches to social research. Their opinion is supported by (Abdi, 2009), who highlights the need to, "contrast quantitative and qualitative approaches to research," (p. 33). As the researcher has used a mixed methods approach in order to complete this project with the major component involving the use of qualitative social research methods, this method is also explained.

The choice of using mixed methods, primarily qualitative, is useful as the study is not trying to prove, or to refute, any particular position, rather the initial imperative is the gathering and analysing of data. The researcher aims to interpret and explain the findings that evolve as a result of participants' self-reported life experiences. The use of quantitative data provided support and it enhances the qualitative information that is revealed. Pierce (2007) argues that quantitative research methods can be combined with qualitative methods to produce a 'mixed methods' study. Robson (2011) advocates for using a mixed methods approach to research design, highlighting the importance of both, in supporting various research philosophies and/or paradigms. Ruane (2005) suggests that a mixed methods approach provides a more holistic approach to research design. Slevin (2010) argues that by using a mixed methods approach, the researcher involves the best aspects of both methods. The quantitative data used is objective and factual and compliments well with the qualitative impressions which reveal the subjective interpretations of the participants involved (Slevin, 2010). In the development of this research project, by using a mixed methods approach from an insider researcher perspective, the researcher has been able to eliminate the need to test a specific hypothesis.

Using a comprehensive approach using mixed methods, the researcher proposes the following academic assumptions:

- Social reality is a dynamic process based on time, situation and circumstances
- As human beings, we are complex beings, who are set apart from material objects
- The major goal of social research is to examine, evaluate and to clarify human behaviours
- Humans are social beings and, as such, the use of social knowledge, is inherently different from the use of the other technical data. As complex beings, humans reveal thoughts, emotions, intentions and actions

- As humans, we tend to make our own reality and interpret meanings. Humans evaluate in a goal oriented way their own reality. Humans are usually self-determining and unpredictable and function and respond to external stimuli

- Due to the complexity of quantitative measurements, its use in the collection and evaluation of social information is difficult. It does however support much of the data gained. Social intelligence is also intuitive and, therefore, reliability and validity is difficult to achieve since determinants and results of human activity are varied and dynamic (Morgan, 2002).

Although quantitative and qualitative approaches differ one from the other, they are very compatible. "Quantitative approaches can sometimes produce qualitative data and vice-versa depending on the objectives of the study, data collection procedures and the nature of questions asked," (Mugenda & Mugenda, 1999, p. 202). As suggested by Silverman (2006), it is appropriate for qualitative researchers to also utilise quantitative instruments. Kirk and Miller (1986) agree and assert, "by our pragmatic approach, qualitative research does indicate a commitment to field activities. It does not require a commitment to numeracy," (p. 10). When discussing research methods, the importance of using 'triangulation' of data must also be considered. This is discussed in the following section 3.4.3.

3.4.4 Triangulation

Thomas (2000) explains that appropriate qualitative evidence can be enhanced by the process of triangulation. Triangulation results when researchers compare findings from a number of sources (at least two or more). Fotheringham (2012) explains that triangulation begins from a point of certainty and requires that the researcher looks at phenomena from a variety of positions, thus ensuring a complete picture is revealed.

Triangulation relates to theoretical method, whereby the researcher is able to test validity. Triangulation also uses a sub-method or multiple research methods, as in the case of a research project, using mixed or multiple methods (Fotheringham, 2012). Triangulation in this study involved multiple methods of collecting data, i.e. focus groups, questionnaire and individual

interview (Fotheringham, 2012). Triangulation helps researchers to reveal emerging themes and allows these themes to be tested for consistency, or indeed for any inconsistencies, from the multiple sources of the information gathered (Thomas, 2000).

3.4.5 Process

Individuals who are to participate in research projects are selected carefully. Polkinghorne (2005) explains that the researcher needs to use discretion when selecting participants for a mixed methods study and that participant selection should be purposeful and should provide a variety of participants from diverse backgrounds and experiences. This is necessary in order to promote an understanding of the topic of enquiry (Polkinghorne, 2005). In undertaking this research, the researcher has carefully considered participant selection and has drawn on the works of Piantanida and Garman (2009) who developed a tool which is based on Maxwell's Framework for Reflexive Responding, as modified by Smith (1988). This tool involves a list of essential criteria for use when assessing the quality of research data and it is suggested for use when undertaking a qualitative or mixed methods research study. Piantanida and Garman suggest a number of criteria for evaluating qualitative research; they explain, that qualitative research needs to ensure that data is collected from a variety of sources, using a diverse range of participants and, further, it needs to fill in any gaps in current knowledge.

A valuable research project will also contain a substantial review of the literature and will reveal new knowledge (Piantanida & Garman, 2009). In the current study, the researcher has provided new knowledge and a significant review of the available literature, including the involvement of a diverse range of participants from various ethnic, geographic and socio-economic backgrounds. This was achieved by promoting the opportunity to participate in this study, using the internet and with assistance from blindness agencies across Australia. All participants who met the criteria to participate were included and this study used multiple data collection methods including focus group meetings, questionnaires and interviews.

Piantanida and Garman (2009) explain that research needs to demonstrate integrity and to produce work that is structurally sound, logical, appropriate and identifiable within an enquiry tradition. In the current study the

researcher has followed known traditions, providing an exploration into the world of DGH in the contemporary Australian setting. Janesick (2003) suggests that the research should be rigorous, i.e. that it should be in sufficient depth in order to provide rich data. In order to provide quality data for the current study, the researcher involved a large number of participants and included participants from diverse backgrounds and varying interests. This was done to ensure that clients of dog guide agencies will have the required decision-making information to allow them to make an informed choice regarding whether or not to pursue using a dog guide.

It is the researcher's determination, to do more with this research than to, "describe things in their appearing," (Langridge, 2007, p. 135). This study offers the opportunity to observe and interpret the significance of the participant responses obtained, by putting them through a critical lens. This is done through listening, learning and thinking about what people are saying within a given context and acting upon the knowledge gained in order to facilitate change.

The research design utilised in this study, includes perspectives which show how the individual views their own circumstances. It includes reactions to events and provides a theoretical framework, in order to reveal the themes that evolve from the research findings (Piantanida & Garman, 2009 ; Strauss & Corbin, 1998). The researcher has been guided by suggestions from Piantanida and Garman (2009) in order to provide a study that is enriching, collected ethically, recognises the privacy and dignity of participants and is conducted in an honest manner. The researcher has provided verisimilitude, using conceivable and valuable experiences in order to present research that targets a professional audience (Piantanida & Garman, 2009). As such, the results of this study should be of interest to policy makers, funders, dog guide and blindness agencies, as well as to potential dog guide users.

Denzin and Lincoln (2005) explain that they see the researcher as an overall observer in the research project. In this instance however, the researcher is more than an observer, as she is also an 'insider researcher'. Breen (2007) explains that insider researchers are people who "...choose to study a group to which they belong" (p. 164). Insider researcher perspectives and

advantages and disadvantages of this method, will be discussed further in the following section (3.6).

3.5 Insider-Researcher Perspectives

Qualitative methods have been adopted by various disciplines as an appropriate means of exploring research questions. Insider research is a form of qualitative research which according to Symth and Holian (2008) provide a unique knowledge and understanding of the individuals studied. This insider knowledge helps researchers in determining appropriate research questions. Other researchers, such as Rouney (2005), have argued that research questions such as those proposed in this study, are enhanced when using an insider researcher approach. Use of an insider researcher perspective, allows researchers to have a greater understanding of the participants involved (Smyth & Holian, 2008). Eisner (1998) suggests that an insider researcher becomes a type of 'connoisseur'. According to Eisner (1998) connoisseurship "...involves the ability to see, not merely to look" (p. 6). Eisner (1998) suggests that the connoisseur has the ability to consider the different components within individual situations in order to make use of a diverse array of information. This is not to say that the connoisseur is not critical, the connoisseur builds in an element of criticism in order to add balance to their study. Hence, according to Eisner (1985)

> … connoisseurship provides criticism with its subject matter. Connoisseurship is private, but criticism is public. Connoisseurs simply need to appreciate what they encounter. Critics, however, must render these qualities vivid by the artful use of critical disclosure. (p. 92)

The concept of connoisseurship therefore compliments and enhances the role of the insider researcher (Eisner, 1985).

Insider research has a number of inherent advantages; these include, an insider understanding of the group being studied, familiarity with the community participants, thus allowing for a natural flow of interactions and an "...established intimacy which promotes both the telling and judging of truth" (Bonner & Tolhurst, 2002, p. 8). Other advantages include the

knowledge of insider language, values and historical understandings (Coghlan, 2003; Herrmann, 1989; Rouney, 2005; Tedlock, 2000; Unluer, 2012).

The researcher has utilised the advantages of being an 'insider' in understanding of the challenges associated with being blind or vision impaired, as the researcher experienced severe loss of vision when an adult. This has provided a unique understanding of participant experiences and the challenges encountered in living with vision loss on a day to day basis. Being an insider researcher also influenced many participants into wanting to be a part of this research project, as they believe the research to be important to their community. Cohen (2012) describes 'community' as a sense of belonging to a particular cultural identity; hence in this project a community of people would suggest, people who live with vision loss and identify as being blind or vision impaired.

Insider research also has disadvantages which researchers need to consider in order to minimise potential bias. These disadvantages include, but are not limited to, the assumption that the participants may consider that the researcher already understands their views, or the reverse, where the researcher makes assumptions based on their knowledge of participants (Unluer, 2012). Participants may also find it difficult to provide sensitive information to an insider researcher and therefore they may withhold pertinent information. Participants may also find it difficult to understand the role duality which is a natural consequence of being an insider researcher (Unluer, 2012). In order "...to conduct credible insider research, insider-researchers must constitute an explicit awareness of the possible effects of perceived bias on data collection and analysis" (Unluer, 2012, p. 1).

The researcher has endeavoured to minimise any potential biases and limitations associated with being an insider in the research process by understanding the inherent advantages and disadvantages associated with this form of research. The researcher has ensured that she fully understands her role as a researcher, keeps in mind the research questions that are asked, is careful in the collection of and reporting of data and uses an ethical approach to all information obtained (Unluer, 2012).

3.6 Qualitative Research Undertaken via Self-reporting

Polkinghorne (2005) intimates that the benefit of self-reporting is that it is a valuable method of data collection as it, "clarifies the human experience" (p. 137). Self-reported data can be collected via various methods, including the use of the written word, or through recording, of or note taking, of spoken word or other modes of communication such as signing. Such methods would also include the use of focus groups, questionnaires and individual interviews (Denzin & Lincoln, 2005). The self-reported data collection methods used in this study are valuable, as they reveal the individual experiences of the participants involved.

Qualitative inquiry, "deals with human lived experience. It is the life-world as it is lived, felt, undergone, made sense of and accomplished by human-beings that is the object of study," (Schwandt, 2001, p. 84). Self-reported qualitative data collection is described by Polkinghorne (2005) as being an, "umbrella term under which a variety of research methods that are language data are clustered," (p. 137). The primary purpose of undertaking a self-reported approach to qualitative data collection is to ensure that the researcher can explore the lived experiences of the participants (Polkinghorne, 2005, p. 138).

The self-reported data collection methods used in this study, such as the focus group meetings, questionnaire and individual interviews, are designed to pose questions and to attain a pertinent response to the question that is proposed. These methods allow the researcher to collect vast amounts of data in a way that is both cost effective and quick; they are, however, not without their limitations (Mays, 2000). Denzin and Lincoln (2005) suggest a potential for a 'colouring of memory', where people tend to forget the negatives and reflect on positives. They note:

> Any gaze is always filtered through the lens of language, gender, social class, race and ethnicity... Subjects or individuals are seldom able to give full explanations of their actions or intentions; all they can offer are accounts, or stories about what they did and why. (p. 12)

Polkinghorne (2005) explains that, although self-reported research may have its limitations due to human fallibility associated with memory, it is,

however, a viable research method that allows for the collection of important data. Self-reported methodology also supports current theories in human service provision and the rights of people living with a disability and provides a person centered approach to supports and services (United Nations General Assembly, 2006). Therefore, undertaking research that details the self-reported lived experiences of participants, can influence service development and service provision and it is deemed to be an appropriate method for a primarily qualitative research study.

3.7 Research Design

The research was conducted in stages. The initial focus group meeting was held followed by two further focus group meetings and subsequently, the questionnaire was distributed and interviews were undertaken. An initial call for volunteer participants to take part in all three modalities, i.e. focus group, questionnaire and interview, was made via three agencies, namely, Seeing Eye Dogs Australia (SEDA), Blind Citizens Australia (BCA) and Blind Citizens Western Australia (BCWA). All three agencies agreed to be involved and after having been provided with formal ethics approval from the Flinders University Social and Behavioural Research Ethics Committee, they agreed to advertise the researcher's study to the clients of their agencies. All three agencies work with people who are blind or vision impaired including those who use dog guides and those who choose not to use a dog guide. Further details of the processes used are highlighted in point 3.7.1, which describes the preliminary research that was undertaken.

3.7.1 Research Overview

In an attempt to recruit suitable participants for this study the researcher followed guidelines as suggested by Polkinghorne (2005). Polkinghorne asserts that there is a need to recruit participants who will aptly fill the needs which are highlighted within the study. These potential participants were identified via the blindness agencies who advertised the study. A pool of people who responded to a call to participate were asked if they knew others who may also be interested in participating in the research study; this caused a snowball effect. The list of participants was left open until the researcher had a broad cross section of participants who were willing to be involved in the study. Questionnaires were distributed on request to participants who

heard of the study through the blindness agencies involved and also via various social networking lists that are used by people who are blind or vision impaired. After contact from a potential participant, the blindness agencies involved then sent the requisite information about how to contact the researcher regarding the study. After initial contact from a prospective participant, the researcher then forwarded further information to the participant via email. The researcher did not distribute any questionnaires without a formal request being made to do so.

In the early stages of this research project, the researcher conducted the initial focus group meeting with participants solely from Western Australia. This group reviewed the proposed questionnaire and made suggestions for inclusion, addition, or exclusion of specific questions from the questionnaire or other interview methods. Thereafter, subsequent focus groups were held with participants from NSW and Queensland. The people who attended a focus group meeting were current DGH. The participants were informed that the findings highlighted at the focus group meetings would be transcribed into electronic Braille format and they would have the opportunity to comment on, or clarify any points raised. Participants were also told that no identifying information would be used in this study and that all information gathered would be confidential. Participants were selected at random until a maximum of seven participants were selected in one and another seven participants in another group were determined. An additional focus group meeting was then organised at a later date in order to discuss issues as highlighted at the first two meetings and eight participants attended the final group meeting. All participants were asked to complete and sign a consent form. Some respondents who answered a call for focus group participation were not selected to attend a meeting due to the number of participants having reached the researcher-defined maximum and they were thanked for their response. These respondents were also assured that they would be able to see the final results of this study, they were also advised of the need to employ random sampling in order to increase the validity and reliability of the study. All potential participants who could not attend a focus group meeting, however, were asked to complete the survey questionnaire.

The researcher also conducted 16 individual interviews for DGH who wanted to participate, but who preferred this option.

The summary of the research modes includes:

- Three focus groups with a total of 22 persons attending
- 145 questionnaires sent out to potential participants, and 123 were returned from the DGH surveyed
- The researcher also personally interviewed 16 individual participants

Note: The participants in all research modes, i.e. focus group meetings, participants who returned the questionnaire and those who attended an individual interview, were all separate individuals and they did not participate in more than one research mode.

There were some limiting factors on how many participants could be involved in the study. The researcher restricted the study to participants between the ages of 31 and 62, as this is the most common age group to use a dog guide (Vision Australia, 2011). Another limiting factor was the number of interviews and focus groups that could be conducted based on travel cost and time investment for the researcher. As the questionnaire was able to reach a large number of people from around Australia, these limiting factors were somewhat minimised

With an overall total of 161 DGH being questioned in this study regarding their choice to use a dog guide, the researcher has provided a valuable sampling of opinion. Currently there are approximately 800 DGH Australia-wide (Guide Dogs Australia, 2011) and therefore the researcher has surveyed over 19 per cent of the Australian population of DGH for this research project.

3.8 Preliminary Research and Focus Group Meetings

Bloor, Franklin, Thomas, and Robson (2001) and Krueger and Casey (2000) determine a focus group as the gathering together of a small group of up to 22 participants, in order to evaluate a clearly defined topic. They also suggest that the participants of the focus group should have similar characteristics or

interests. Kreuger and Casey (2009) propose that the researcher or facilitator, should guide the discussion, preferably with the aid of a moderator, who ensures the subject stays within the focus of discussion. Focus groups are a practical data collection method to use in group settings, especially when they divulge the opinion of at least 6-10 people (Kreuger & Casey, 2009; Morgan, 2002). At the focus group meeting, the questions are put to the group and discussion occurs. It is essential to ensure that all participants have an opportunity to express their opinion, therefore the facilitator leads, but does not dominate, the discussion. Participation in this type of focus group meeting allows the researcher to collect detailed responses to the questions that are proposed (Silverman, 2006). Focus groups assist in the production of qualitative data that gives insights into the perceptions and opinions of those taking part (Krueger, 1998; Patton, 2002). Focus groups supplement and expand on data obtained through interview processes, as they allow participants the opportunity to discuss responses and consider individual opinions. Focus groups concentrate on topics of interest, with sharing by participants who have particular interests in common (Brodie et al,. 2004; Hawe, Degeling, & Hall, 1990; Piantanida & Garman, 2009). Information elicited at focus group meetings, differs from that which is gained in individual interviews as the information obtained during these meetings, reflects collective ideas, as shared with and discussed by the group (Berg, 1995; Piantanida & Garman, 2009).

The initial focus group meeting proved useful as it enabled the researcher to find out any terms of reference required by stakeholders before the main research began and to determine the level of support for the topic from members of the blind community. This initial meeting also allowed the testing of the suitability of the questions to ask participants in all the research modalities that were to be used throughout the research project.

After approval from the Social and Behavioural Research Ethics Committee of Flinders University and after obtaining the support of various blindness agencies within Australia, the researcher collected preliminary data during a twelve-week period between the beginning of June and the end of August 2011. The researcher felt that an initial focus group meeting to commence the research would be a viable method to test the questions and to highlight

further potential areas to research (Berg, 1995: Denzin & Lincoln, 2005). The initial focus group meeting also allowed the researcher to determine:

- How the use of a BrailleNote (HumanWare, 2011) note taker (used in the collection of data), would enhance data collection. The interviewer can take notes at speed on this quiet device and, therefore, the use of the device does not disturb the flow of the interviews

- If two focus group meetings, with a selection of cohorts from throughout Australia would be appropriate for the main research by providing an appropriate range of opinion. After the initial two focus group meetings, it was decided to hold a third focus group meeting to discuss issues that were highlighted as a result of the first two meetings

- The feasibility of using other research modes in addition to focus group meetings, such as individual interviews and questionnaires

- The suitability of questions to be asked in all research modalities.

During the discussions, the researcher moderated the group interactions and facilitated the smooth running of the sessions (Brodie et al., 2004). At the beginning of the meetings, the researcher identified the objectives for each session, developed guidelines for the participants and provided the participants with a copy of the questions to be asked (in preferred format), i.e. large print, audio, electronic or Braille. This was done so the participants could peruse the questions before the meeting began, in order to consider the objectives. At each session, the participants were given the necessary consent forms to sign and the guidelines for the session were provided. The researcher asked each person at the focus group meeting to introduce themselves to other members of the group using a first name alias, in order to maintain privacy. Note: As the participants were all legally or totally blind, the use of pseudonyms, ensured a viable method of maintaining confidentiality and enabling the participants to feel comfortable giving their answers. In this case, confidentiality was ensured as the participants were generally unable to see each other clearly and the participants involved were

unknown to each other. After the meeting, participants were free to share their real name with others if they so wished.

All participants were allowed sufficient time to answer questions and ample time was provided for discussion. The researcher provided guidance to participants and used a round table approach, to ensure that no particular participant dominated the discussion. A final focus group meeting was held where participants discussed issues which were revealed at the first two focus group meetings. Extensive consultation was held with the blindness agencies involved, i.e. Blind Citizens Australia (BCA), Blind Citizens Western Australia (BCWA) and Seeing Eye Dogs Australia (SEDA), during this research process.

3.8.1 Advantages of Focus Groups

According to Silverman (2006), focus group discussions are useful as they offer group support. Group support allows respondents to participate in a relaxed manner, as the participants provide their answers in a setting where they are supported by the other members of the group. Some people feel more at ease providing answers in group situations rather than on an individual basis. Silverman (2006) argues that focus group meetings are useful, as participants are able to provide detailed responses, which support their beliefs and they allow the researcher to be able to demonstrate a diverse cross section of views and to compare and contrast those views. Focus group meetings supplement other methodologies such as personal interviews or questionnaires and they are a valuable tool, as at these meetings any issues or concerns that are revealed, can be addressed (Silverman, 2006).

3.8.2 Disadvantages of Focus Groups

As with any research method there are potential advantages and also potential disadvantages. Focus group meetings can be expensive, since the researcher needs to travel to meet participants and they can be difficult to organise as they involve a number of people being able to meet at the one time and place (Silverman, 2006). Silverman suggests, that the researcher also needs to have good communication skills as facilitating a focus group meeting requires good communication and interpersonal skills and the researcher needs to be able to keep the group on task. Denzin and Lincoln (2005) claim that there is the potential for researchers to reveal their own bias

when conducting a focus group meeting, therefore, it is crucial that researchers who facilitate focus group meetings avoid reflecting any potential bias.

3.9 The Questionnaire

3.9.1 Potential Advantages and Disadvantages and the Questionnaire Design

Denzin and Lincoln (2005) suggest that questionnaires are a useful tool for researchers. In conducting qualitative research studies, questionnaires provide, an easy and practical way to collect data. The questionnaire used for this research study, contained five sections, and a summary of these sections is described in this chapter. These sections are comprised of questions relating to the following aspects (see Appendix 6), these sections were as follows:

Section A: General information

Section B: Demographics

Section C: Medical and mobility issues Section D: Social aspects

Section E: Comment and close.

Potential advantages and disadvantages of questionnaires are discussed below.

3.9.2 Advantages of Using Questionnaires

According to Piantanida and Garman (2009) questionnaires allow valuable amounts of data to be collected over a short period and they ensure that the reliability and validity of the findings are not influenced by the researcher. Questionnaires are easy to distribute via electronic means and questionnaire results can be quantified by the use of software packages. Questionnaires also allow the data to be measured (contrasted and compared) to other research and the results can then be used to measure change (Piantanida & Garman, 2009; Wood, 1998). Following these processes ensures that the data gained is easily analysed and can be used to develop theories or to underpin and develop research questions (Denzin & Lincoln, 2005).

3.9.3 Disadvantages of Using Questionnaires

Denzin and Lincoln (2005) suggest that, although questionnaires can contribute a number of advantages, they also have limitations as they do not reflect emotion or feelings, and they may, therefore, mislead the researcher. It is impossible to know if the answers given by respondents using questionnaires are truthful thus, when using questionnaires, researchers need to consider the type of questions to ask and what are the important issues to consider (Denzin & Lincoln, 2005).

Despite the advantages and disadvantages of questionnaires Piantanida and Garman (2009) argue that questionnaires allow the researcher to collect data from a wide sample of participants. The questionnaire design used in this study is based on the examination of the established study goals and designed to elicit an optimal level of response from the respondents and to meet the study objectives (Denzin & Lincoln, 2005).

3.9.4 Distribution of the Questionnaire

The researcher worked with four sighted volunteers in order to review and proof read the email questionnaires which were to be used. This was done in order to ensure the clarity of the questionnaire before it was delivered to participants. The researcher also approached a small contingent of participants who had attended the first focus group meeting, in order to ask them to review the questionnaire before it was distributed to other participants. Suggestions given by this group were incorporated into the questionnaire and the researcher also asked for comment on additional or revised questions to include in the final questionnaire. In order to provide access to all, multiple survey formats, utilising a variety of research methods were developed. This allowed people with varying degrees of vision loss to participate equally in the study. These methods included emailing the questionnaire, completing the questionnaire via telephone or via a Skype meeting or sending a copy in an alternate format such as Braille. With the full support of the blindness organisations involved, the questionnaires were distributed.

Participants who responded to the initial call for participants contacted the relevant blindness agencies who had advertised the opportunity to participate. These agencies gave prospective participants the contact details

of the researcher. After the initial contact with the researcher, which was generally made via email, the researcher then emailed the cover letter, consent form to participate and a copy of the questionnaire to participants (see Appendices 1-6). The questionnaire was administered in the preferred manner and took approximately 30 minutes to complete. The participants completing the questionnaire were informed that they could withdraw or refuse to participate at any time without giving a reason. Several participants who completed the questionnaire, contacted the researcher on a number of occasions in order to discuss specific aspects of the questionnaire and to provide extra input.

All participants who were sent the questionnaire were also sent an information sheet that contained relevant information regarding the title of the project and details of ethics approval. Participants were assured that they could contact the researcher or her supervisors at any time if they wished to ask any questions or had any concerns they wished to discuss and all contact details were provided. The form asking for consent, asked the participants if they understood the purpose of the research and noted that they could refuse to answer specific questions and they could withdraw from the study at any time without giving a reason. The complete details of the information sheet, consent form and questionnaire are available in Appendices 1-3.

Participants involved in the study were asked to consider issues that pertained to their health retrospectively, i.e. to describe their health status both before and after receiving a dog guide. The survey instrument utilised, involved a questionnaire (see Appendix 6). Email was considered to be the most realistic appraisal method. Many of the participants utilised screen reading computer technology (37 per cent), or text magnification computer programs (62 per cent), and, therefore, concerns regarding the accessibility of information and economic or convenience costs were eliminated or at least minimised. Undertaking of a postal survey was discounted for a variety of reasons. These included, prohibitive costs, difficulties associated with access to printed text and transcription issues, which would require that the information provided, would need to be transcribed into alternate formats. Two participants, however, asked the researcher to provide a Braille copy of the survey instrument and this was done. It is not surprising that more

Braille copies were not requested, as few people, approximately five per cent of people who are blind or vision impaired within Australia, read Braille (Vision Australia, 2011).

3.10 Individual Interviews

Boyce and Neale (2006) explain that the choice of study design needs to be justified. The researcher found that individual in-depth interviews reveal significant information and were a useful research method to use in this type of research project. This choice of methodology enabled the researcher to assess findings and to probe any inconsistencies that may have been revealed (Mays, 2000). Individual interviews allowed the researcher to provide context to issues that needed to be discussed and gave an opportunity to engage participants who may otherwise feel unable, or unwilling, to attend a more public forum such as a focus group meeting. Sometimes persons can feel unwilling to share feelings in an open forum, but they are willing and comfortable to share their feelings at an individual interview (Boyce & Neale, 2006).

In-depth interviews provide a comprehensive interaction between the researcher and the participants involved in the study. They allow for a deeper exploration of each individual's perceptions, thoughts and experiences. In-depth interviews foster a bond between the researcher and the respondents and allow participants to be more open and sharing (Patton, 2002). The conducting of individual interviews allows participants to clarify concepts which may not have been considered by the researcher. Individual interviews provide an interactive dialogue between the researcher and the participants involved (Miller & Crabtree, 1999; Denzin & Lincoln, 2005).

In the current study, content validity for the questions to be asked at an individual interview was established by providing copies of the interview guide to the researcher's academic supervisors and debating the questions that had been formulated.

3.10.1 Advantages of Individual Interviews

Denzin and Lincoln (2005) suggest that there are a number of advantages of individual interviews and they note that interviews provide more personal insights than using questionnaires exclusively. Interviews are generally well

received by participants and they allow the researcher to ask other questions and to clarify specific points that are made. McNamara (1999) agrees and argues that, when the researcher conducts an individual interview, the interviewer is able to gain valuable insights into the participant's lived experiences. They also allow some personal interaction between the researcher and the participant and provide social cues such as the inflection of the voice and the use of body language (McNamara, 1999). According to Rubin and Rubin (2005) individual in-depth interviews give participants the opportunity to reveal their stories in a manner that recognises the meaning of their experiences (Rubin & Rubin, 2005).

3.10.2 Disadvantages of Individual Interviews

Denzin and Lincoln (2005) explain that all research methods, including individual interviews, have pros and cons. Rubin and Rubin (2005) suggest that in order to conduct a successful interview, the researcher needs to have good communication and interpersonal skills, which are specific to the interview setting. Rubin and Rubin also reveal the negative aspects of interviews, noting that conducting interviews can be time consuming and that the responses to the researcher's questions may be influenced by the participant's attitude towards the interviewer (Rubin & Rubin, 2005). Denzin and Lincoln (2005) suggest that other disadvantages of interviews include the expense involved with travel costs which can be can be prohibitive for those on a disability pension, or other similar pecuniary constraints. Travel time to participants' homes can also incur additional costs for the researcher. Kvale (2006) asserts that individual interviews can be time consuming and difficult for interviewers who are not trained in interview techniques. Interviewers also need to be aware that they should not ask leading questions and they need to keep their personal opinions to themselves and use caution with the body language that they may portray (Kvale, 2006). Beale (2001) stresses the need for interviewers to use care in using generalisations when interviewing. Individual in-depth interviews, however, provide rich data and they are a worthy adjunct to other methods of data collection (Beale, 2001).

When undertaking individual interviews, the interviewer needs to be mindful of the skills required in order to produce valid results (Kvale, 2006).

Kvale argues that interviewers need to be familiar with the topic and to ensure they use clear and unambiguous language and keep the interview on track (Kvale, 2006). Denzin and Lincoln (2005) explain that interviewers need to be critical in order to test the reliability and validity of the study and to ensure that they correctly interpret the data they have gained. Interviews can be conducted either face-to-face, or by telephone or VOIP (voice over internet protocol) means such as Skype. Easterby-Smith, Thorpe and Lowe (2002) and Abdi (2009) suggest that individual interviews reveal robust data. Easterby-Smith et al. (2002) and Abdi (2009) claim that reality is a combination of the experiences, values and beliefs of the respondents which is influenced by perceptions of reality. Individual interviews, therefore, provide unique perspectives that include a number of advantages and disadvantages (Easterby-Smith et al., 2002).

Although all interviews for the current study were originally planned to be recorded and then transcribed, some participants preferred not to be recorded so, in this case, all notes taken by the researcher using a computerised Braille note taker by the researcher using a BrailleNote Apex (HumanWare, 2011). This method of data collection ensured that there was confidentiality and it allowed the researcher to probe for more information if an ambiguous answer was given.

3.11 Organisation and Coding of Data

Upon completion of the data collection process from all research modes, the responses were collated. They were carefully studied in order to determine trends, relationships and patterns in line with the objectives of the study. The responses to the questions in the questionnaire were categorised according to the general characteristics and patterns as observed. The researcher and her supervisors discussed responses to each question individually until agreement was reached about how each answer should be categorised. There was almost unanimous agreement on the assignment of categories, so, therefore, the responses were placed in the agreed categories. Upon completion of the placement into categories, the researcher assigned each category with a number or code. As suggested by Abdi (2009), "effort was made to ensure that code categories were as exhaustive and mutually exclusive as possible," (p. 45).

The researcher prepared a codebook (see Appendix 9) that describes in detail, the coding scheme to be followed. In the codebook, the code assignment for each response category (for each item in the interview schedule) is described. The codebook was used to convey information to a code sheet. In the code sheet, a number was entered which represented the participant in the first column. A numerical value, representing each individual response to specific questions, was entered (as shown in the table 'An Example of How Data was Recorded', Appendix 9). Data representation is included in Appendix 9 with categorisation of responses discussed in the following section 3.11.1.

3.11.1 Categorisation of Responses

The categories in part one of the questionnaire schedule (personal information) were structured by the researcher and guided by the profiling measures of the various blindness agencies involved. These categories were structured and considered the following variables: marital status (Mstatus), how vision loss occurred, i.e. congenital reasons or acquired reasons, (ConVislos or AcqVislos).

1. Disability category (disabcat)
2. Social competency (coccomp);
3. Employment Status (emstatus) (see Appendix 9).

Table 3.1 Codebook Examples

	Question 1 Marital status	Question 2 Congenital or Acquired Vision loss	Question 3 Disability category	Question 4 Employment status
Participant 1	Coded answer	Coded answer	Coded answer	Coded answer

Question 1. Mstatus (Marital status)

1. Single 2. Married 3. Widowed 4. Divorced 5. Other

Question 2. ConVislos or AcqVislos (Congenital or Acquired Vision loss)

1. Congenital 2. Acquired.

Question 3. Disabcat (Category of disability)

1. Physical 2.Sensory 3.Intellectual 4. Mental Illness 5. Chronic medical conditions 6. Multiple disabilities.

Question 4. Emstatus (Employment Status)

1. Unemployed 2. Permanently employed 3. Employed on contract 4. Self-employed

Response categories for open-ended questions, e.g. Section 4, Question 1 to 9, were formulated after studying the trends and patterns in the various responses collected. The researcher evaluated each question and its response and agreed on the categories that best distinguished the responses provided. Thereafter, the researcher gave every type of response a numerical value. The numerical value given was neutral, in order to identify and to set apart a, "certain category of responses," (Abdi, 2009, p. 46). For Question 5, for example, Value 1 was given to all responses where the vision diagnosis revealed partial field loss. Value 2 was given to all responses that attributed the vision loss as being light perception with projection (LPP). Value 3 was given to responses that revealed central field loss. Value 4 was given to responses that showed peripheral field loss, while Value 6 was given to situations where the respondent declined to provide a response (prefer not to say), as was their stated right according to the briefing they were given (see Appendix 2 for briefing outline). Negative responses were those revealed in Section 4, Question 8, where some participants explained that the negative aspects of working with a dog guide were outweighed by positive aspects. For instance, responses for Section 4, positive responses (value=3) were: distinguished mobility method, smooth and confident manner in getting around, better exercise tolerance. Indifferent responses (value=2) portrayed neither positive nor negative characteristics, e.g. the respondent noting that working their dog guide was neither a positive or negative experience; it was a realistic mobility choice.

Responses categorised as other (e.g. Section 3, Question 9 (q), Value = 5) seemed to deviate from the patterns and trends apparent in most of the responses. They were categorised as such in order to protect their uniqueness. The researcher undertook the organisation and coding of

responses manually by the development of the codebook (see Appendix 9), using the responses obtained from the questionnaires, individual interviews and the focus group discussions. After collection of all responses, the information collected was transferred to the SPSS data editor where the responses were then analysed, queries run and the data checked for accuracy (SPSS Inc, 2005). The editor also allowed for the generation of tables and percentages (SPSS Inc, 2005)

3.12 Data Analysis

According to Mack et al. (2005), qualitative research reveals a number of scientific beliefs including descriptions of variations, description and explanation of relationships among the data, descriptions of personal experiences and type of group norms. The principles of this study were guided by these beliefs. This study used tables and percentages to determine the characteristics of the participants and to examine the specific relationships of the responses they presented. After collection of the qualitative and quantitative research data for this study, the researcher analysed the data using the following steps as suggested in Mugenda and Mugenda (1999, p. 203):

- Data organisation – this involved transcribing the recorded data and notes from the focus group meetings and interviews and collecting and coding the data revealed in the questionnaires. The researcher was guided by, but not limited to, the questions and objectives of the study. The categories used, revealed themes and patterns which were categorised on a relationship basis (Abdi, 2009)

- Codes were then determined and used to represent categories. Thereafter, themes were identified in the data and, by use of an SPSS (SPSS Inc, 2005) text editor, tables and percentages were generated

- The codes used are words or letters that represent a link between raw data from interview transcripts and the researcher's theoretical framework

- NVivo 9 (QRS International, 2011) software was used to analyse qualitative data that were revealed in the collection of evidence.

3.13 Reliability and Validity

The focus group, questionnaire and interview techniques, as described above, were designed to provide a stable, consistent and reliable mechanism for the collection of data. Every effort has been taken to ensure the results of the focus group meetings, questionnaire and interviews are an accurate representation of the experiences and opinions of participants involved. It is reasonable to assume that the data collected is a viable sample of the population of persons who are blind or vision impaired in the Australian setting. Additionally, the validity and reliability of this study can be verified when compared with data collected by the Australian Bureau of Statistics (ABS). Considerations, however, need to be taken into account when exploring issues such as validity and reliability. For example, there were difficulties reaching every person who is blind or vision impaired, largely as a result of the number of organisations involved in the research throughout Australia and also due to the varying levels of cooperation from these agencies. This uneven distribution of the questionnaire should be considered when examining the data. Researchers also need to be aware of any potential bias that can be related to self selection of participants (Collier & Mahoney, 1996; Piantanida & Garman, 2009). The researcher also acknowledges, that some people are more familiar with computer use and so it is possible, therefore, that people who had more expertise in this area, were more likely to participate, despite the fact, that other modalities were available. The researcher feels that his aspect, however, did not detract from validity, mainly due to the high volume of responses that were obtained.

3.14 Conclusion

This chapter has introduced the research methodologies used in this study by outlining the nature, purpose, objectives, premises and significance of the study. It has also presented the theoretical framework that guided the research and revealed the data collection methods and evaluation procedures used. The research undertaken utilised almost exclusively qualitative research methods. This method of data collection was enhanced also by the 12 months that the insider-researcher was able to spend in the field. This resulted in a detailed account of the insights provided by DGH within Australia.

Demographic data were also collected to ensure that the data pool was comparable to the general community of people with severe vision impairment. This chapter described the basis for the information that is further revealed and explained in the following chapters. Chapter 4 provides a description of the research findings as a result of the focus group meetings. Later chapters will discus the findings from the questionnaires and individual interviews.

Chapter 4
Research Findings – Focus Group Meetings

4.0 Introduction

Chapter 3 discussed the methodology and the ethics approval processes that were used in this project. Chapter 3 also discussed the specific types of data collection methods that were used. Issues such as maintaining the validity and reliability of a study were reviewed, with discussion primarily surrounding the research methods used in the writing of this thesis. This chapter will examine the results obtained from the data collected from the three focus group meetings that were held.

Focus group meetings are a valuable way to reach out to participants and they provide an opportunity to gain valuable feedback and allow participants to comment. The focus group meetings allowed the researcher to gain participant opinion, to test assumptions, and to encourage discussion (Kervern & Webb, 2001). Participants were also able to review the questions to be asked, and to suggest the inclusion of additional questions that could be added to the final questionnaire.

People who are blind or vision impaired have had a voice in the design of all the survey instruments that have been used in this study. The three focus group meetings were held to ensure the face validity of the questions being used, and they also allowed the researcher to collect preliminary information on some of the themes that may be revealed by the subsequent more detailed individual questionnaire process. Some of the comments from participants who attended a focus group meeting, are included in this chapter to provide some personal insights into the potential benefits associated with dog guide ownership in relation to the physical, psychological and psychosocial aspects of life.

4.1 Focus Group Meetings – Background

A total of 22 separate persons attended a focus group meeting, with three focus group meetings being held. The initial focus group meeting was attended by seven participants, another seven participants attended focus group meeting number two and a further eight participants attended focus group meeting number three. The participants who attended these meetings

were comprised of dog guide handlers (DGH) from around Australia. With a total of 22 participants attending one of the three focus group meetings, a range of opinions were obtained and this provided a sound basis for the subsequent questionnaire and interview processes. As the DGH were all previous long cane users, both negative and positive responses about dog guide mobility were revealed. The participants also discussed their reasons for preferring to use a dog guide as their primary mobility aid.

Kevern and Webb (2001) explain that conducting focus group meetings is a valuable way to encourage discussion and to obtain valuable feedback. Kevern and Webb (2001) also argue that at focus group meetings, participants will often make statements which will spark off further comments which may otherwise have remained unsaid and add another dimension to the research processes. Considerable discussion surrounding choice of mobility aid, as well as patterns of exercise, types of health issues and the status of emotional wellbeing occurred at the focus group meetings, and this is outlined in the following sections.

4.1.1 Initial Focus Group Meeting

Fern (2001) suggests that no more than 16 participants should attend a focus group meeting. Fern also explains that limiting the numbers of participants to no more than the recommended levels allows for lively discussions and does not overwhelm the facilitator (Fern, 2001). The researcher was careful to invite an optimum recommended level of participants and, therefore, the initial focus group meeting was attended by seven participants.. The initial meeting was important as it allowed discussion about the relevance of the questions which were to be asked in all research modalities. This meeting was useful as it allowed the participants to discuss their perceptions of using dog guides as a mobility aid. The meetings also allowed the researcher to obtain preliminary information on potential health issues that may be associated with working with a dog guide.

The initial focus group meeting allowed the researcher to test ideas and to check for understanding surrounding the questions to be asked in the questionnaire which would be distributed at a later date. The participants were given copies of the proposed questions which would be asked in the questionnaire and at the individual interviews (in required formats) and they

were asked to provide feedback to the researcher regarding the suitability of the proposed questions. The participants consistently expressed views that the questions developed by the researcher were appropriate for their target audience. The only negative comment which was noted by one participant, was regarding some of the personal information that was asked in section A of the questionnaire (see Appendix 6). The participant who reported this concern, felt that there should be an option for a participant to avoid answering a question if they so desired. Therefore, in order to redress this concern, the questionnaire design was amended by adding a, "prefer not to answer," (pna) option. The participant who had commented on this issue, felt that a pna choice would help alleviate concerns and would also avoid the potential for participants to leave questions unanswered. This issue was also discussed with other members of the group and with the researcher's supervisors. All agreed that this was an appropriate method of addressing this concern and that this amendment to the questionnaire be made.

At the conclusion of the initial focus group meeting the researcher decided to reword some questions to allow for improvement to grammar and to enhance understanding, however the overall meaning of all questions to be included in the questionnaire remained unchanged in its final distribution. The following sections present findings from all three focus group meetings.

4.1.2 Demographic Information

Demographic information regarding the participants who attended a focus group meeting was collected in order to help categorise and clarify individual experiences, reveal trends and to provide some initial information on possible connections between age, gender, degree of vision loss, employment status or similar and the choice to use a dog guide. The demographic information that was collected is highlighted in the following sections (sections 4.1.3 - 4.1.4).

4.1.3 Participants According to Age

Participants at the focus group meetings were aged between 32 and 62 years of age (average age=41 years). Table 4.1 below shows the distribution of participants according to age.

Table 4.1 Distribution of Participants According to Age

Age Group (Years)	Frequency	Per cent
32-35	3	14%
35-39	4	18%
40-49	8	36%
50-59	6	27%
60 +	1	5%
Total	22	100%

4.1.4 Participants According to Level of Vision and Gender

Understanding the remaining level of vision of the participants attending a focus group meeting was useful to determine if people with specific levels of vision loss were more likely to apply to train with a dog guide or were more likely to prefer to use a long cane. The questions to be asked in the questionnaire and individual interviews would reveal more information regarding the use of dog guides and their potential, if any, for a health benefit to their handlers. Of the 22 participants attending the meetings 19 (86.46 per cent), were legally blind, three (13.63 per cent) were totally blind (one with light perception and the other with no light perception), and the other two (9.09 per cent) were totally blind.

Gender distribution was deemed to be an important aspect to consider when examining the available data collected at the focus group meetings. The researcher collected information regarding the participants involved and found a greater number of females represented in all groups (See Table 4.2).

Table 4.2 Gender Distribution of Focus Group Participants

Gender	**Number**	**Percentage**
Female	15	68%
Male	7	32%
TOTAL	22	100%

The researcher also collected data regarding the participant's State of residence from the three meetings which were held in the three Australian states involved, i.e. Western Australia (WA), New South Wales (NSW), and

Queensland (QLD). Having participants from across Australia provided opinion from a wide range of people from diverse backgrounds.

Table 4.3 Distribution of Participants according to State of Residence in Australia

State of Residence	Frequency n=22	Percent
WA	7	32%
QLD	8	36%
NSW	7	32%
Total	22	100

The tables presented above provide some general demographic information regarding participants who attended a focus group meeting. Further demographic information is presented in Appendix 6.1.

4.2 Results from Focus Group Meetings

4.2.1 Initial Focus Group Meeting held in Perth, Western Australia

The initial focus group was held in Perth, Western Australia with seven participants attending. All participants were made to feel welcome and the meeting was preceded by a welcome talk and explanation of the process to be followed. All participants signed a consent to participate form, which had been provided prior to the meeting with the information being presented in the participant's required format, i.e. Braille, large print or electronic, and participants were further briefed on confidentiality as described in Chapter 3, Methodology. The participants were informed that the researcher would facilitate the discussion and take notes on a Braille note taker.

The opening discussion began with a question regarding choice of mobility aid and, as this question seemed to get the conversation flowing, the researcher used this as an opening topic in the two subsequent focus group meetings which were held in New South Wales and Queensland. The focus

group guideline questions are listed below and discussion surrounded these guiding questions:

1. As you use a dog guide as your preferred mobility aid, why do you prefer this aid over other mobility aids?
2. What do you like about your preferred mobility aid?
3. What do you dislike about your preferred mobility aid?
4. How long have you been using a dog guide?
5. Have you noted any changes in your quality of life since you began using a dog guide? Explain.

The participants were then asked to freely discuss their impressions of dog guide mobility and any associated advantages or disadvantages to this form of mobility aid. They were also asked if they could determine if their chosen mobility aid provided additional advantages above and beyond mobility. A lively discussion followed in response to the guideline questions and allowed the researcher to obtain some initial impressions and to highlight areas to further examine at the later focus group meetings.

Although a guideline format and questioning process was used for the focus group meetings, the researcher was flexible in the questioning approach and if some relevant additional information was highlighted the researcher felt it imperative to further examine the issue/s raised. The researcher was also cognisant, however, of ensuring that the primary focus of the questioning was completed and that all of the guideline questions were asked and answered. Kreuger and Casey (2009) explain that the researcher has a difficult, but necessary task of ensuring that the focus group meeting stays on track.

This initial meeting was also helpful as it allowed the testing for clarity of the questions to be asked in the questionnaire and in the individual interviews. The questionnaire and interview questions are presented in their final form in Appendices 6 and 7. Each question that was to be asked in the questionnaire and at the individual interviews was reviewed by the

researcher and the group were able to comment if they felt the questions were relevant, clear and appropriate. After discussion, the group indicated clearly that the questions were appropriate and that they would generate the required information in order for the researcher to obtain the data that would be required to complete this research project. The initial focus group meetings provided valuable insights into why some people may choose to use a dog guide.

Useful themes emerged from the participant responses. These themes suggested a belief that there may be a potential improvement in quality of life obtained from working with a dog guide. This initial finding, however, needed to be further examined in a much wider manner in the following focus group meetings, questionnaire and individual interviews.

4.3 Follow-up Focus Group Meetings in NSW & Qld: Opening Discussion

There were seven participants who attended a focus group meeting in NSW and in QLD there were eight participants. Similar themes arose at each group meeting, the researcher has presented the results of the meetings together, in order to allow for ease of interpretation by the reader. Again, the meetings were opened with a welcome address and the researcher ensured that a convivial and social atmosphere was fostered which allowed the participants to feel relaxed.

4.3.1 Choice of Mobility Aid

As at the initial focus group meeting, the issue of, "why do you prefer to use a dog guide in preference to other potential mobility aids", was discussed as an opening question, and it was also used as an opening question at the subsequent focus group meetings. The results obtained and the themes that arose are presented.

The researcher had been keen to explore reasons why people choose one form of mobility aid over another, and therefore, questioned the DGH regarding their choice of using a dog guide rather than using other mobility aids, e.g. long cane. As the handlers in attendance were all previous long cane users, the researcher questioned them to see if they could identify any negative or positive aspects of using a long cane and why they then

preferred to use a dog guide as their choice of mobility aid. Based on their past experiences with using a long cane prior to obtaining a dog guide, the participants presented some of what they considered were the disadvantages of using a long cane. These were reported in the following order of importance: 1) a user has to tap into an object before knowing it is there 2) a long cane is a less elegant form of mobility aid; 3) People are more reticent to approach a person using a long cane when compared with those using a dog guide. The DGH also discussed the advantages they had found surrounding the use of a long cane as a primary mobility aid and these advantages were noted as being: 1) folds away when not in use, 2) no ongoing costs involved; 3) no need to feed or worry about the cane.

Despite acknowledging that there were some inherent advantages to using a long cane as a mobility aid however, the handlers unanimously agreed that they were happy using a dog guide in preference to a long cane.

In the ensuing discussions, all of the handlers indicated that since working with their dog guide, they had experienced less feelings of isolation, increased feelings of independence, increased levels of exercise and greater self-confidence. The DGH also uniformly reported improved mobility since working with their dogs. Improvement in mobility was the primary reason that most of the handlers cited for applying for a dog guide in the first instance. The DGH gave a number of other reasons that reflected why they preferred to use a dog guide rather than using a long cane, including camaraderie with their dog, more fluid mobility, increase in confidence and undertaking more exercise. The handlers also enjoyed the spontaneity they obtained from using a dog guide, with many of the handlers agreeing that they were now much more open to going out and about in an more unplanned way. Although having previous experience in navigating a specific area was considered to be very useful to independent mobility, the spontaneity obtained from working with a dog guide was widely applauded by the DGH participants. The handlers considered this one of the more fundamental underpinnings of positive dog guide mobility.

The handlers reported that they enjoyed going shopping with their dogs and on social outings with friends. Travel to and from work whether paid or

voluntary, was also a major consideration for many of the handlers, with most using their dog for work-related activities on a daily basis. Overwhelmingly the DGH were content with their decision to use a dog and this is reflected in the following snapshot of three participant responses. One handler, Bianca mentioned:

> I am a very content dog guide handler. I have always enjoyed the friendship that a person gets when they have a dog, so for me applying for my first dog was a logical step. I have not been disappointed in my decision as, since having dog guides, I have exercised more and been more outgoing. I am happy with my choice.

Another handler Francine, stated:

> Since working with my dog guides, my fear of going out alone has evaporated; I am far more confident and more outgoing. I exercise more and I have lost about 10kg. I can't imagine my life without my dog guide by my side. I love the independence I feel when I am accompanied by my dog. I feel happier now than I have ever been and I can't imagine going back to using a long cane.

Jake, a handler who has had three dog guides, noted:

> I have had dog guides now for more than twenty years. I grew up using a long cane as I have been blind since birth, however when I was eighteen I applied to get a dog guide. Getting my first dog guide was life changing, I was much freer in the way in which I was able to move around and I found that this gave me a lot of extra confidence. I have also benefitted from the companionship I get from my dogs, they are wonderful company and give me the motivation to keep active. I imagine I will have dog guides for the forseeable future.

Consideration of potential improvement to health, is a pivotal part of this research project and hence at the focus group meetings, health was also a topic of discussion. This discussion is disclosed in the next section (4.3.2.).

4.3.2 DGH and Health – Discussion

The discussions with the DGH involved the potential influence that using a dog guide as a mobility aid may have on levels of exercise, physical and psychosocial health, and emotional wellbeing. Due to the sensitive and very personal nature of health issues, an individual questioning approach was avoided (due to these being discussion forums), therefore, a more general form of questioning was used. The participants were, however, generally very forthcoming in providing input regarding discussions about health. Improvement to health and wellbeing was a major consideration for many of the DGH when they had applied for their first dog guide. All of the handlers acknowledged that they felt they would exercise more after obtaining a dog guide and reported that this assumption had been fulfilled upon receipt of their dog. These handlers all commented that they had exercised more since having a dog guide. The DGH also mentioned that they hoped to obtain a positive influence on their sense of wellbeing when working with a dog guide and that this ambition had also been fulfilled.

All of the handlers mentioned that they felt they had a more positive outlook on life since working with their dog guides with only two mentioning that they experienced depression. Both of these handlers, said they had been treated for depression prior to obtaining their dog guide and that they were hoping to obtain an emotional benefit upon receipt of their dog guide. Both handlers stated that they felt that they had obtained this benefit and that they were now more content since obtaining their dog guide.

The handlers were all hoping to obtain an emotional benefit upon receipt of their dog guide and all of the handlers felt that they had obtained this benefit. One of the handlers Felicity summed up her feelings when she said:

> Before getting my first dog guide I was very lonely. Since having dogs, I have got out and about more and I have joined a number of clubs, so loneliness is no longer an issue for me. All in all, I think the extra exercise and reduction in loneliness have helped to enhance my health and wellbeing.

Working with a dog guide appeared to be overwhelmingly linked by the DGH to improved fitness, improvement in emotional and physical health, enhanced levels of self-esteem and increased levels of social engagement.

4.4 General Discussion and Summary of the Focus Group Meetings

One of the essential considerations when conducting focus group meetings is to examine preliminary responses and develop areas for further consideration using other research methods; in this case the questionnaire and individual interviews (Krueger & Casey, 2009). The themes revealed as a result of the focus group meetings showed that the participants were extremely interested in discussing the advantages and disadvantages of using a dog guide, and they were also interested in disclosing lifestyle gains and improved health potential. All of the participants at the focus group meetings reported that they were happy with their involvement in this project and many expressed a willingness to participate further.

The information gained from the 22 DGH who attended a focus group meeting, allowed the researcher to see some of the fundamental changes that working with a dog guide had made to the life of the handlers involved. This information helped the researcher to formulate areas that needed to be further examined in regard to the questionnaire and individual interviews which were conducted later in the research process. In the discussions there appeared to be a tendency towards improved mobility and increases in independence since working with a dog guide. The handlers also seemed to be more pro-active when monitoring their health and the representative group also appeared to have obtained benefits above and beyond mobility since working with their dog guides. Potential health gains appeared to be notable and these included: increased exercise potential and self-confidence and a lowering of feelings of loneliness due to the camaraderie with their dogs.

Overall, the DGH provided valuable insights into their lived experiences as a result of their participation in the focus group meetings. The findings, as revealed in this chapter, will be discussed further in Chapter 7.

4.5 Conclusion

This chapter reported issues as revealed at three focus group meetings, which involved obtaining the opinions of 22 DGH about their choice of a dog guide as mobility aid, and their health status. At these meetings, a number of issues were explored and these included a critique of the questionnaire and individual interview questions. All participants were given the opportunity to voice their opinion on any of the questionnaire items and to provide suggestions for improvement.

This chapter also showed how initial discussion and collection of data transpired and it presented the themes obtained as a result of the focus group meetings. The focus group meetings provided a good representation of participants from around Australia and proved to be a valuable means of obtaining some initial themes from a cross section of participants. The information gained as a result of the focus group meetings has revealed that these meetings provide diverse opinions and were an effective method of collecting valid and sound research information. In addition, by allowing participants the opportunity to comment in a comfortable and safe environment, they added their voice to the study. The focus group meetings allowed the researcher to consider some of the essential aspects of the research study that would need further consideration using questionnaire responses or individual interviews. Chapter 5 reveals the results obtained from the questionnaire.

Chapter 5
Research Findings – Questionnaire

5.0 Introduction

In this chapter, the data collected from the questionnaire is presented. The intention of using a questionnaire was to uncover additional information following the focus groups regarding potential self-reported health benefits that may be experienced as a result of working with a dog guide. Data collected via questionnaire allowed the researcher to gain opinion from a wider cross section of participants from throughout Australia rather than solely from the focus groups. The findings presented provide further information that builds on the data presented in Chapter 4 and helps to identify key issues surrounding dog guide mobility for people who are blind or vision impaired.

This chapter sets out the processes used and the results achieved from using a questionnaire survey instrument. A copy of the questionnaire that was used is included in Appendix 6. The average age of the participants who responded to the questionnaire was 32 years. The questionnaire was aimed at further exploring the differences, if any, since the participants had obtained and worked with a dog guide. The questionnaire presented issues such as physical health, exercise levels and emotional and social wellbeing for consideration. Although many of the questions in the questionnaire were short answer, or yes/no type questions, participants were also able to make longer comments and many did so. Some of the comments that were made by respondents to the questionnaire are presented in this chapter. This chapter will set the scene for results gained from individual interviews as explored in Chapter 6 and for further discussions, which are provided in Chapters 7 and 8.

5.1 Response to the Questionnaire

The questionnaire was sent via email to a total of 145 volunteer participants: dog guide handlers (DGH). Questionnaires were completed and returned by 123 DGH; an 84.82 per cent return rate) and returned to the researcher via email. These questionnaires were returned with signed consent to participate slips. Each respondent answered at least 95 per cent of the questions. Full demographic information regarding questionnaire respondents is presented

in this chapter and in Appendix 6.1. Further information about the participants who returned the questionnaire is listed according to a number of criteria and is presented in this chapter.

Table 5.1 (below) shows a representation by gender of participants who returned the questionnaire.

Table 5.1 Participants by Gender – Questionnaire

Gender	Number	Percent
Male	33	26.83%
Female	90	73.17%
Total Participants	**123**	**100.00%**

Table 5.2 (below) shows a representation by age of participants who returned the questionnaire.

Table 5.2 Participants by Age - Questionnaire

Age Group (years)	Frequency	Average Age (years)
30-39	57	34.5
40-49	39	44.5
50-59	24	54.5
60 plus	3	60 plus
Total	**123**	

5.2 Data Obtained from Questionnaire

The questionnaire returned valuable data which allowed the researcher to obtain significant amounts of information. As the majority of the questionnaires were emailed to the researcher on completion, this proved to be a cost effective manner in which to collect information. Flick, (2014) advocates for the use of questionnaires as an effective way in which to provide speedy access to multiple participants. Flick (2014) suggests that researchers undertaking both large and small scale research studies consider using questionnaires when completing their research projects.

5.2.1 Characteristics of Participants (Demographics)

This section will describe the demographic profile of participants who answered the questionnaire. The participants were surveyed on issues including: age, gender, marital status, level of schooling, employment, health and State of residence. The participants were all volunteers who had answered a call for participants as advertised by the various blindness support agencies involved in this study (see Appendix 6.1, which provides additional demographic information regarding participants).

In this cohort, the participants, were also questioned about their overall health and wellbeing, over the preceding two-year period (2010-2012). Of the 123 participants who answered this questionnaire, there were 90 female and 33 male DGH. Demographic information collected included marital status of participants (see Appendix 6.1) and for vision status i.e. low vision, legal blindness and total blindness (see Table 5.3).

Table 5.3 Categories of Vision Loss – Questionnaire

Visual Status	Frequency	Per cent
Low Vision	1	0.81%
Legally Blind	112	91.06%
Totally Blind	10	8.13%
Prefer not to say	0	0.00%
Total	**123**	**100.00%**

Total Participants n = 123

The following section presents information as reported by the participants.

5.3 Results from the Questionnaire

Thirty of the 123 DGH had vision loss related to a congenital condition with the remainder 93 having acquired loss of vision. Vision loss occurred due to a number of conditions with the most commonly cited disorders being:

- progressive retinal disorders such as retinitis pigmentosa (39)
- age-related macular degeneration (29)
- congenital cataracts (4)
- optic atrophy of various causes (24)
- accidents (16)

- other medical reasons such as cerebral vascular accidents (stroke), glaucoma and tumours of the eye or brain (23).

Note: Some participants reported more than one cause of their loss of vision.

Various levels of visual function were reported within this group with approximately 112 of the handlers being legally blind (with 32 having central field loss, 29 having peripheral field loss, and another group of handlers 51, having nonspecific field loss or loss of visual acuity). Of the remainder of the DGH (11), one reported, having low vision, the remainder (10) reported :no useful vision in terms of their mobility", with 8 of this group having light perception and the rest (2) having no light perception.

The DGH were also asked about a range of issues such as, feelings of depression or sadness and the number of visits to the GP over the previous two year period. Of the 90 females, two had visited their GP more than six times over the past two years for depression. These two individuals had also both been diagnosed with clinical depression and were currently undergoing treatment for this condition. Both handlers also noted that they had been treated by their GP for depression prior to getting their dog; reporting that their mood had improved since having their dog and that the companionship of their dog had helped them to cope with stress. The remainder of the 88 female handlers said they had an average of one to two visits per year to their GP and reported that they generally experienced pleasant moods and positive feelings of self-esteem. Eighty of the remaining 88 handlers said that working with their dog had helped them to experience positive feelings of wellbeing and 77 of this group attributed the companionship they received from their dog as the reason for their good overall health. Of the 33 male handlers, one had visited a GP more than six times over the past two years for depression and he had received treatment for this condition prior to getting his dog guide. The remaining 32 male DGH reported visiting their GP once to twice a year during the previous two year period. All of the 33 male handlers reported a camaraderie with their dog and reported that the positive interaction they had with their dog had assisted them in having a generally optimistic outlook towards life.

Ninety per cent of the DGH who completed the questionnaire added comments under the 'additional comments section of the questionnaire' and all of the 123 DGH mentioned that they enjoyed the companionship associated with working with their dog. Some of the specific comments made under the additional comments section of the questionnaire are highlighted below.

Anna, a handler for two years, noted, "I have generally felt happier and better able to cope with life since working with my dog guide, for me, it's a no brainer."

Nancy, a handler for 20 years, said:

> For me, having the companionship of a dog guide has been instrumental in me gaining back my life, I lost my sight when I was 25 and thought my world had come to an end. I actually tried to commit suicide as I could not cope with my loss of independence. Five years later, I got my first dog guide and I have not looked back since.

Feelings of security and safety when working with a dog guide were raised by many participants as being a benefit of dog guide mobility. Sixty eight handlers specifically mentioned issues such as increased feelings of confidence and security of working with their dog. They stated that the increase in confidence they had experienced since working with their dog had added to their sense of self-esteem and had also increased feelings of contentment. One DGH Phillip noted, "I feel far more confident since working with my dog guide, I am really pleased that I finally made the switch from cane to dog."

Sue, a handler of 10 years, explained:

> When I first got a dog guide, I did so solely thinking that the dog would purely be a good mobility aid. I am pleased to say my dog has meant far more than that to me; she is my friend, she gets me to exercise and since having her, I am a far more confident and happy person. I must say, however, that I never expected this change in my demeanour when I first got my dog; if only I had known when I was younger, I would have applied for a dog guide long before I did.

Another 62 handlers mentioned that improved mobility since working with their dog guide had added to feelings of independence and that this had positively influenced their overall health and wellbeing. Alison a relatively new handler of three years standing explained:

> Since having my dog guide I have felt more secure; I used to worry when I went out alone, but now I have a big burly black friend with me, I'm not concerned anymore.

Breanna, a handler who is using her third dog guide mentioned:

> When I used my long cane, I was always self-conscious and concerned that I was very vulnerable. Since working with my dog guides, however, I feel secure; I know my dogs will look out for me. Even though the dogs are not trained to be aggressive, their relative size makes people think twice about giving us a hard time. I generally am a happier and more contented person since having my dogs and I don't feel insecure anymore.

The questionnaire results showed that in all areas the DGH appeared to self-report feeling more content since using a dog guide Cynthia, a handler for two years, stated that:

> Since I have had my dog guide I am exercising more, meeting more people and I am generally a much happier person. I was quite lonely before getting my dog and now I have a constant companion.

Victoria, who has had her first dog for a period of three years said, "I was a little unsure about working with a dog guide before getting Ellie, but since I have had her I have had loads more confidence and I generally feel more content."

5.4 Preference for a Dog

5.4.1 Advantages of Working with a Dog Guide

The opinion of most participants who used a dog guide was positive. The major advantages of working with a dog guide, as noted by the handlers include the following:

- increased independence (123)
- companionship (123)
- ability to go to new places (86)
- improved safety (113).

Note: A number of the participants gave multiple answers. Numbers are presented as given.

All of the 123 DGH reported increases in their feelings of independence and 86 stated that they felt more confident when going to new places since using a dog guide. This group also enjoyed the companionship they received from their dog and reported that they generally felt more secure when using a dog guide rather than when they were previously using a long cane. The handlers were also asked whether they enjoyed the extra attention they received from members of the public when being accompanied by their dog guide. Most participants (120), answered yes to this question In contrast, three of this group, stated that they felt that the time spent talking to strangers could become wearying and it also increased their travel time. All of the 123 participants suggested that members of the public should ask for permission before patting or otherwise interacting with their dog guide. They also mentioned that the people who approached them should also be polite and interested in the, "person who is blind," and not just show interest in his/her dog. Paula, a handler who has had three dog guides, noted:

> I generally enjoy it when people talk to me and my dog. What I don't like, though, is when people come up and talk to my dog and totally ignore me; I think that is very rude.

Tony, a handler of three years' experience, said:

> While I generally enjoy the extra attention I get when I am with my dog, it can get annoying at times. There are times when I would prefer to be anonymous and at times people can be a bit impolite; treating us like public property. Having said all that, I wouldn't go back to using a long cane as I find I am much more confident using a dog.

Of the 123 handlers, 122 expressed satisfaction with their choice to use a dog and stated that they would continue to use dog guides in the future. Only one current handler reported that he would not use a dog guide in the future. The reason given for this, was that the respondent was beginning to have hearing loss and felt that this loss was impacting on the respondent's level of confidence in going out without the assistance of a sighted human guide.

Although the DGH were generally positive regarding their decision to use a dog guide, they did concede that dog guide mobility also has disadvantages. These disadvantages are discussed in section 5.4.2.

5.4.2 Disadvantages of Working with a Dog Guide

The major perceived disadvantages considered by handlers were reported as being:

- sometimes cannot be bothered (13)
- do not like cleaning up after a dog (8)
- need to feed and care for a dog (17)
- high cost of veterinary treatment (108)
- too expensive to maintain (63)
- the death of the dog guide (22).

Note: some participants gave multiple answers. Numbers are presented as given.

When the participants were asked whether the disadvantages they had noted would stop them from using a dog guide in the future, only one participant answered, "yes".

Derrick, a handler who has had one dog and who is now losing his hearing, stated:

> Although I love my dog, I do not feel confident anymore as I can't hear when crossing roads. This has made me feel uncertain and

> worried as I know that working with a dog requires team work, and I feel like I am letting the team down now so I will go back to just going out with a sighted guide. I will keep my dog as a pet, however, as soon as I retire him from work.

Other comments on the negative side of working with a dog guide included this from Bonita, who has had four dog guides acknowledged:

> Yes there are times when having a dog guide creates issues and sometimes I prefer to leave my dog at home, especially in some social settings. Having said that, however, I would not like to be without a dog as I feel the benefits, for me at least, far outweigh any negative aspects that may occur.

Other considerations beyond the specific positive and negative impact of dog guide use were included in the questionnaire, with general health and wellbeing since working with a dog guide being a major focus of the data collected.

5.4.3 General Health and Wellbeing

Improvement in self-reported physical health and wellbeing was reported by 118 of the 123 DGH. When responding to questions as to why this may be the case, the handlers cited reasons such as, increased mobility, companionship of the dog making them feel less isolated, more social interactions and increased fitness as the main reasons. The remainder of the five handlers who did not indicate a change in overall health and wellbeing were either unhappy with their current dog (2) or they had not considered any potential changes in health status (2). The remaining (1) handler mentioned he felt he had no change in health status. This handler was previously a long term long cane user who mentioned that he did not get emotionally involved with his dogs although, he added, "they receive good care and plenty of attention."

The remainder of the participants noted a number of reasons for improvement in their quality of life and rated them as follows:

- companionship (118)

- freer mobility (81)
- increased independence (119)
- family are less worried about them travelling safely (7).

Note: some participants gave more than one answer. Numbers are presented as given.

All of the participants noted, however, that they felt more confident since working with their dog guide. Carol a handler who is working with her first dog guide said, "Since working with Spot, I have generally felt more confident when moving out and about."

Dolores, a handler who has had three dog guides said:

> I am confident when working with my dogs, and when between dogs, I find using a cane, makes me feel ill at ease, I will always want to work with dog guides.

5.4.4 Depression

Two of the 123 DGH who returned the questionnaire reported having depression. They were questioned regarding their feelings of sadness or depression over the preceding two year period immediately prior to answering the questionnaire. One of these participants had obtained her dog guide two years prior and was still taking daily medication for depression. The other participant, who was currently working with her second dog guide, had previously been taking anti-depressant medication but was now no longer doing so. These participants were asked:

How often do you feel sad?

- Daily
- Once or twice a week
- Occasionally
- Never.

The DGH who was no longer taking medication for depression reported feeling sad occasionally and the other handler, who was continuing to take medication for depression, reported feeling sad once or twice a week. Both handlers commented that they felt their level of depression or depressive symptoms, had improved, though, since they had begun working with their dog guides. The remainder of the DGH who returned the questionnaire did not report that they had depression.

5.4.5 Exercise and Weight

Of the 123 DGH participants who returned a questionnaire, 104 said that their exercise levels had increased since working with their dog guide. Of this group of 104 handlers, 100 reported that they now walked approximately 1.5-3km per day and the remaining four handlers advised they now walked approximately 5km per day. Prior to obtaining their dog guide this group reported that they had walked approximately 1km per day. They also mentioned that they generally felt fitter and experienced more robust health since they had begun working with their dog guides. The leading reason given for increased exercise in this group was that they now felt it easier to travel independently and, therefore, they were more confident to move about the community.

The remaining 19 of the 123 handlers, noted that their exercise levels had remained much the same, pre and post obtaining a dog guide. This group had all been blind for an extensive period of time before acquiring a dog guide, and had been particularly fit before getting their dog guide. One participant noted that her fitness had decreased since having a dog guide as she now undertook fewer workouts at her local gym and spent more time just exercising her dog guide. This participant said that prior to getting her dog guide she had worked out at her gym on a daily basis and now she only went to the gym once a week.

Excess weight is a health concern for many people. In the questionnaire (Section 1, Appendix 6), participants were asked if they had lost weight since working with their dog guide. Of the 123 handlers, 50 reported that they had lost weight since working with their dog guide, and of the remaining the remaining 73 handlers 68 answered no and five answered 'prefer not to say' or the (pna) option. Of the 68 handlers who answered no, 32 made a

comment in relation to this question, stating that they had been able to maintain their weight (no increase or loss) since working with their dog guide.

5.4.6 Participants with Other Health Conditions

DGH who had identified as having, "other," health conditions were asked about their health over the previous two year period. Of the 123 participants who returned a questionnaire, 71 reported having extra health issues in addition to loss of vision. The researcher asked this group if they had experienced any improvement in health since working with their dog guide. Of this group, 69 self-reported experiencing improved health, fewer visits to their GP, and higher perceived feelings of contentment. The remaining two participants noted little difference in their overall health since working with their dog guide. The following comments are representative of some of the comments made. Gwen, a handler working with her first dog noted that she, "felt more content with my lot in life over the preceding two years since working with a dog guide."

Mona, a handler for two years, said:

> Although I have epilepsy, I am generally more content since attaining my dog guide, it helps to have a friend by your side and somehow I just find it comforting.

Zelda, a handler with 10 years' experience, stated:

> I lost my sight due to having Multiple Sclerosis and my balance is a bit wonky. My dog helps me to feel less likely to fall over; she is quite tall so helps me to be more stable on my feet and hence I feel more confident.

Zoe, a handler who lost her sight and a leg due to a car accident when she was 21 years of age, stated:

> When I had my car accident, I thought my world had come to an end, but since I have had dog guides, I have realised it's not the end of the world. After my accident I got a prosthetic leg. I then had to learn how to get mobile again and, having lost my sight as well, I had lost a lot of

> confidence. Then I got my first dog guide, Crimson, and I started to come out of my shell and get my confidence back again, now, nothing stops me.

The DGH were also asked about their feelings of confidence since working with a dog guide. Forty nine of those who had reported having, "other," health conditions said that they felt more confident since working with their dog. They also stated that any increase in confidence was directly due to the working relationship and camaraderie they had with their dog guide. Two mentioned that the confidence and security they felt since working with their dog had enhanced their sense of self-esteem. Another two mentioned that their easier mobility had added to their feelings of independence. This entire group reported that they felt that improved mobility and the companionship of their dog guide was the prime reason for any improvement they had experienced in their overall health. Clarissa, a handler of four years' experience, who also had a brain tumour noted:

> When I was diagnosed with a brain tumour in 2001, I was overwhelmed. My first sign that anything was wrong was I was experiencing double vision; three months later I had lost all my sight and with my sight went my confidence. I applied to train with a dog guide in 2005 and, after getting my dog, I expected to have an increase in feelings of independence, however I have been truly amazed; I feel better, more confident and a generally stronger human being since working with my dog guide. I love dog guide mobility; I will not go back to using a long cane ever! My prognosis is guarded but my dog guide gives me a reason to keep fighting. I don't want to leave Boro; he's my best friend.

Of the participants who reported having multiple disabilities (2), one reported having mild Autism Spectrum Disorder in addition to vision loss. This handler, Leone said:

> Although I have autism, it does not adversely affect my ability to work with my dog guide. The dog guide helps me to interact with others and I now feel more socially acceptable, since working with my dog.

The other handler of this pair, had loss of hearing in conjunction with loss of vision.

A number of participants (27) who used dog guides also reported that they had diabetes mellitus. All 27 noted an improvement in their health and wellbeing since working with their dog guide. The following comments are representative of this cohort. Kelly, a handler who has diabetes, observed:

> Since working with my dog guide, Ashton, who I got over three years ago, I have exercised more, lost weight and I have found I have more energy now and better control of my blood sugar levels. I am very happy with my decision to work with a dog guide.

Bill, a handler of five years' experience, noted:

> I expected to lose loads of weight after getting Harry my dog guide. Well that hasn't panned out but I have noticed I generally feel better and have more energy. My blood sugar levels have remained stable and I feel fairly content.

Owen stated:

> I had fairly good control over my blood sugar levels before getting my dog; this hasn't changed either for the better or worse. I do feel I am generally fitter now though

Other health conditions were also noted. Two participants mentioned that they had Multiple Sclerosis, and both stated that they felt working with a dog guide helped to keep them mobile. One handler Felicity mentioned, "I have been matched with a tall, slow walking dog. The height helps me to maintain my balance and as he has been trained to walk at my slow pace".

Other specific health conditions were reported as outlined in Table 5.4:

Table 5.4 Questionnaire Respondents with Other Health Conditions

Disability Category	**Frequency** Total participants in questionnaire = 123
Depression	2
Diabetes	27
Multiple disabilities	2
Epilepsy	1
Other health conditions *not specified	39
Total	**71 or (57.72%)**

Of the 71 participants who said they had, 'other health conditions,' 39 put their condition as 'not specified' and no other categories of health conditions other than those listed in table 5.4 were specifically mentioned by the handlers who returned a questionnaire.

Section 5.4.7 reports on the responses obtained from DGH to questions surrounding adjustment to loss of vision.

5.4.7 Adjustment to Loss of Vision

Ninety-one of the DGH participants reported that having a dog guide had helped them to adjust to their loss of vision. The other 32 had not considered this aspect of dog guide mobility. Eight of the 32 reported that, as they had been blind or vision impaired since birth or since very early in their life, that they felt that there had been no requirement to adjust, or to come to terms with their blindness.

The group who reported that they believed the dog guide had helped them to cope with their vision loss; 91 stated that this was due to the improved mobility they had achieved. Most participants (104) felt that working with a dog guide helped them to feel more normal and that this had helped them to feel more accepted by other people. They also reported that this acceptance by others, had helped them in their adjustment to vision loss. One-hundred-and-twenty handlers reported that working with a dog guide helped to boost their confidence in moving about the community and that this had helped

them to adjust to loss of vision. The remaining three handlers who returned a questionnaire did not report this as a consideration.

All of the DGH stated that adjustment to loss of vision was harder when the loss was sudden rather than gradual and they suggested that working with a dog is immensely beneficial to people who experienced sudden loss of vision. Francoise, a handler of three years, lost her sight within a 48-hour period due to an accident and received a dog guide within eight weeks of the accident. She made comment that some of the negative impacts on health and wellbeing were negated by accessing a dog guide early in the adjustment process:

> Receiving my dog guide so quickly after losing my sight, really helped me in the adjustment period. Just having a friend to lean on and know I could depend on was crucial to coming to terms with my sudden loss of sight. I am very grateful that I received my dog so promptly; I would have been very scared to have to go out alone without a dog by my side.

All of the DGH who had experienced acquired loss of vision noted that losing one's sight takes a period of adjustment and all agreed that having a dog guide had a positive influence on adjusting to vision loss. They all agreed that having a dog guide had the potential to reduce some of the negative impacts on health and wellbeing.

5.4.8 Unexpected Benefits of Dog Guide Mobility

The majority of handlers (120) reported that they had received benefits that they had not expected since using their dog guides. They were asked to categorise the unexpected benefits they had experienced and these were ranked as improvements in the following areas:

a. social function (34)

b. mobility (42)

c. companionship (40)

d. were unsure (7).

These benefits were more pronounced in first time handlers when compared to experienced handlers. The handlers reported, however, that their dogs were all individuals with their own personalities and that, therefore, any unexpected benefits could vary from dog to dog.

Leone, a handler who has had seven dog guides, stated:

> I never cease to be amazed at what my dogs can do for me; they are all individuals and each have strengths and weaknesses, however, I find they all, have exceeded my expectations.

William, a first time handler, reported:

> The amount of companionship I would get from having a dog guide surprised me; I have always loved dogs but I now have a companion with me everywhere I go and, yes, I do feel more supported and less lonely"

The handlers who reported unexpected benefits from working with a dog guide were positive in their view of what their dog guides were able to help them achieve, with some handlers (32 per cent) commenting on their dog's apparent level of intelligence being an outcome that was not anticipated.

5.5 Conclusion

This chapter reported on the data obtained from the questionnaire as completed by the DGH. The questionnaire was related to mobility and health issues and the results will be discussed further in later chapters. Demographic information including additional disability or health issues were also collected. Data were obtained from a diverse range of people from around Australia.

Chapter 6 will explore the findings as revealed at individual interviews of participants who expressed a willingness to be involved in a more in-depth investigation of the issues affecting people with severe vision impairment.

Chapter 6
Research Findings – Individual Interviews

6.0 Introduction

In order to provide an opportunity for a richer exploration of participant opinion in a private setting, the researcher undertook a number of individual interviews with dog the guide handler (DGH) participants. Individual interviews provided an opportunity for participants to discuss issues in more depth and they were offered as an option for participants who preferred to voice their opinions privately. Legard, Keegan, and Ward (2003). acknowledge the benefits of conducting individual interviews as they allow for a deeper exploration of opinions in a setting, which is both structured and flexible. This chapter presents the findings as revealed from the personal interviews that were undertaken.

6.1 Individual Interviews

6.1.1 Participant Demographics – Individual Interviews

Sixteen individual interviews were undertaken with dog guide handler (DGH) participants. The average age of the participants attending an interview was 45 years. The participants answered questions about their overall health and wellbeing over the previous two-year period. The participants were a mixture of males and females, with eight males and eight females attending an interview.

6.1.2 Vision Details

Of the 16 DGH attending an interview, only three had vision loss related to a congenital condition, with the remaining 13 having acquired loss of vision. Vision loss occurred due to a number of conditions with the most commonly cited disorders being:

- progressive retinal disorders such as retinitis pigmentosa (3)
- age-related macular degeneration (3)
- congenital cataracts (3)
- optic atrophy of various causes (2)
- accidents (1)

- other medical reasons such as cerebral vascular accidents (stroke), diabetic retinopathy, glaucoma and tumours of the eye or brain (13).

Note: Some participants reported more than one cause of their vision loss.

Various levels of visual function were reported, with 13 participants being legally blind (with three having central field loss, three having peripheral field loss and the remainder of this group (seven) having non-specific field loss or loss of visual acuity and/or field deficits). Four of the seven who had non-specific field loss, or loss of visual acuity, had light perception only, with the remaining three noting they had no light perception in either eye, i.e. they were totally blind.

6.1.3 General Findings from the Individual Interviews

All 16 DGH who attended and individual interview reported higher levels of independence, self-confidence and freer mobility since working with their dog guide. These handlers provided considerable information regarding their mobility levels, level of satisfaction and perceived levels of self-esteem since working with their dog. Fourteen of the 16 handlers self-reported increased levels of self-esteem and improved feelings of wellbeing since working with their dog. The researcher then asked the 16 handlers why they felt their levels of self-esteem and perceived happiness had increased. Fourteen of the 16 handlers credited the improvement in these areas to the companionship and camaraderie they had with their dog. The remaining two handlers felt the reason for their improved self-esteem and feelings of wellbeing was more related to a rise in confidence and feelings of security when moving about the community when working with their dog guide. Other responses were also received and were noted in the following order of importance:

- companionship
- rise in confidence
- feeling more secure
- improved mobility.

Social reasons for working with a dog guide were highly valued. Fourteen of the 16 handlers noted that they felt that working with their dog had increased their social competence and had caused a subsequent improvement in their levels of self- esteem. Lina, a handler with 15 years' experience, explained:

> In my experience with dog guides and with the people who use them, I have observed a transformative process when people get their first dog guide. Not that it ends there; the transformation continues with subsequent dogs. The DGH get a new lease of life; they come out of their shells. It's a pleasure to observe; one can see the transformation occurring. The person who may have previously lacked confidence now blooms; it's amazing. That's not to say that I think dog guide mobility is for everyone but where it works, it's absolutely awe-inspiring.

While 14 of the 16 handlers enjoyed the social interactions they received when working with their dog, a negative response to this aspect of dog guide mobility was reported by two handlers. Both these handlers stated that they did not like it when they were ignored in favour of their dog by people who approached them when they were out and about. They noted that at times, people only wanted to talk to their dog and not to them.

Peta, a handler of 10 years, said:

> I find the only drawback of having a dog guide is that now people only see my dog and not me! They remember the dog's name but not mine. Having said that, I still prefer working with a dog guide; it's a much smoother method of getting around.

Muriel, a handler with over 20 years' experience, stated:

> I love my dog guides but I find it terribly frustrating when people come up and talk to my dog but totally ignore me. Come to think of it, I not only think it is frustrating, I think it is very rude; if only they knew how it makes you feel to be ignored in this way!

Twelve of the 16 handlers specifically mentioned that they felt they were more popular and were treated in a more positive manner since they had worked with a dog guide. Cynthia, a handler of three years, reported the positive impact of dog guide mobility and explained:

> I am really surprised by the difference in the way people treat me now since I have had my dog; it's amazing, now people talk to me. When I used a long cane, I felt quite isolated as no-one seemed to want to talk to me.

This feeling was corroborated by Mannen, a handler for 10 years, who said:

> One of the things I really like about working with a dog guide is that now people want to talk to me. People seem far more interested in chatting to me now than when I used a long cane. I love the extra attention I get being with my dog, and have met a lot of lovely people since I got my dog.

Happiness and contentment were widely reported among the DGH and these findings are reflected in the comments from Tanya a long term handler, who noted:

> I am a generally happier person since working with my dogs; my dogs are my best friends. The difference pre and post dog guide has been quite notable for me; I was quite depressed before getting my first dog guide; now, three dogs later, I am much happier.

Bob, a handler of two years, said, "Humphrey is my best mate. We go everywhere together. It's great having a friend by my side."

Reduction in levels of stress and increases in the ability to cope with day-to-day life, was an important issue that was discussed with all participants. Four of the 16 handlers reported having depression in addition to their loss of vision, but these handlers all self-reported decreased levels of stress post obtaining a dog guide. Two handlers who had previously been treated by their GP for depression before attaining a dog guide had been able to stop taking anti-depressant medication since working with their dog. The other

two handlers reported that they had been able to reduce their level of anti-depressant medication since working with their dog.

Reduction in the number of visits to GPs for feelings of depression was also notable, with an average one visit per year post dog guide and an average of four visits per year pre obtaining a dog guide. One of the female handlers with depression reported an average of one visit to her GP over the preceding two year period for feelings of depression or low mood. This handler had, prior to obtaining her dog guide, visited her GP at least four times per year for treatment of low mood. Another female handler who had been diagnosed with clinical depression, was currently undergoing treatment for this condition. All four handlers reported improvement to mood and feelings of contentment since working with their dog. Three of the four handlers who had reported depression prior to obtaining their dog, had been able to discontinue medication for depression (post dog guide). When questioned as to what they thought was the reason for the reduction in levels of depression, all four handlers felt it was camaraderie with the dog and a subsequent increase in their self-confidence and reduced loneliness. Hannah, a handler of 10 years' experience, said, "I love the freedom and companionship I get from working with a dog. Baron is my first dog guide but I intend to use them always."

Amy, a handler for four years, noted:

> Dancer is a great dog; he has helped me to feel much more confident about my life in general, he really has changed my life. Before I got Dancer, I was on anti-depressant medication, I am fortunate now that I have been able to discontinue the medicine.

Although most of the handlers (12), did not have depression in addition to their loss of vision, they all reported that their sense of wellbeing had increased since working with their dog. The researcher asked this group what they thought may be the reason for the improvement in their feelings of wellbeing since having their dog guide. Two of the handlers suggested it was due to the increased feelings of security they had experienced since working with their dog guide. Samantha, a handler of three years, mentioned:

> Since I have had my dog guide Flynn, I feel a lot more secure getting out and about. Flynn is a large dog and, although he is a Labrador, his size can be a little intimidating. As I work at a factory, and I have early morning starts, I feel much safer when I am getting on trains in the early mornings. Although Flynn is not aggressive, his size makes me feel safe.

Another handler mentioned that the confidence and security of working with the dog had added to his sense of self-esteem and happiness. Barry, a handler of four years, noted:

> My dog is my best friend. My marriage had broken up before I got Branson and I was lonely. Now Branson is my best mate and we go everywhere together. Branson makes me smile.

One of the handlers also mentioned that his easier and more fluid mobility had added to his feelings of independence and he felt that this was the reason behind his improvement in general wellbeing. This handler, Rupert mentioned:

> Since working with my dog, I have noticed that I am generally a happier person; I am more content and I think it is because I no longer feel lonely. My dog and I are always together. He's a great dog; he agrees with everything I say and never contradicts me.

Tara, a handler of eight years said, "I feel much less lonely since having a dog guide and I am more content."

The potential for a boost to overall health and wellbeing when working with a dog guide was a pivotal factor for consideration at the individual interviews. When questioning the 16 handlers (males and females), it was asked if they felt that over the preceding two years since working with a dog, if they had seen any improvement in their general health. In the male group all eight handlers reported experiencing improved health, less visits to their GP and higher perceived levels of contentment since working with their dog. In the female group, (a total of 8) most (7), reported improved health, higher exercise tolerance and improved feelings of contentment. The other handler

had not considered this aspect of dog guide mobility. Neve, a handler for four years, said:

> I have not noted much difference in my overall health, however, I do somehow feel happier with my lot in life since working with my dog guide, and I haven't really considered the potential reasons though.

Belinda, a handler of six years' experience, said:

> I hadn't thought about whether I had less visits to my doctor since having Sandy, but now you have asked me this question, and now as I reflect back on my time with Sandy, I realise that I have only been to see my GP for feelings of depression on rare occasions. Whereas, before I got Sandy, I tended to go quite frequently. I still check on my health but, yes, there has been a definite reduction in my visits due to low mood.

All of the eight male handlers mentioned they had experienced an improvement in their general health and sense of wellbeing over the previous two years. Tom, a handler with 20 years' experience, stated:

> I've always been a fairly happy sort of bloke but the last 20 years have been some of my happiest. Is it down to having a dog guide? Hmmm, I'm not sure, but it sure hasn't hurt as I haven't felt lonely in that time.

Tony, a handler of 16 years, stated:

> I am convinced that working with a dog guide has contributed to my sense of wellbeing. When I used a long cane, it felt awkward and I had no confidence. Since working with dog guides, I have given them my trust and in turn have reaped the rewards of smooth and fluid mobility.

Adjustment to loss of vision is an important aspect of maintaining optimum health. The issue of adjustment to loss of vision when working with a dog guide follows in section 6.1.4.

6.1.4 Adjustment to Vision Loss

Fifteen of the 16 DGH reported that having a dog had helped them to adjust to their loss of vision. The remaining person, said that, "this was probably the case," but that he had not seriously considered this aspect of working with a dog. This handler noted that as he had been blind since birth he felt that he had no comparison to make as he was already well adjusted to his loss of vision as being blind was, "normal," for him.

Acceptance of a person for who they are, is also a crucial aspect of increasing levels of self-esteem. All of the 16 handlers noted that working with a dog had helped them to feel more accepted by members of the general public. They also mentioned that increased acceptance of their disability by members of the public since having a dog guide, had helped them in their adjustment to loss of vision.

Glennys, a handler who had just got her first dog two years ago, stated:

> When I got my first dog guide, Clay, I felt far more accepted than when using a long cane. I like the way the dog helps people to feel confident when approaching me now, before I had my dog, people tended to avoid me, sad but true, as I am still the same person, but now I have a cute dog. I feel like working with Clay allows others to see me as a normal person, rather than a person with a disability and I like that.

Clara, a handler of 16 years, said:

> I have had two dog guides now, and from the very first day when I walked out with my first dog guide, I noticed that people treated me in a much more positive manner when compared to when I used a long cane. Before getting a dog guide, people I met seemed to treat me in a pitying manner. Now, the dog guide breaks the ice and the disability tends to fade into the background and that's all good by me.

This section presented the findings about adjustment to vision loss and is summarised by noting that all 16 handlers reported that since working with a dog they felt more confident in most settings. Fifteen of the handlers noted that increased self-confidence since working with a dog guide had helped

them to adjust to their loss of vision. The remaining handler had not considered this aspect of dog guide mobility due to having been, "blind since birth."

6.1.5 The Dog Guide and Travel Needs

The DGH unanimously noted that they would generally prefer to use a dog rather than other mobility aids such as a long cane. The participants noted, however, that they occasionally used a long cane when in some social settings. All 16 handlers said that, for their general mobility needs, they much preferred to use their dog rather than use a long cane.

Karen, a relatively new handler of two years, explained:

> Since working with my dog guide, I have been delighted in the fact that I just glide around obstacles. When I was using a long cane, I would tap into obstacles, but now I just glide around them. It makes a big difference as I no longer have to concentrate so hard. It makes it really relaxing moving around. People don't realise that being able to relax just makes the whole process of mobility so much better. I am a much more relaxed and generally happier person these days.

The researcher asked the handlers what type of travel they undertook with their dog. The handlers responded that they travelled for pleasure as well as for essential travel. All of the handlers said that they moved about their community more and undertook more travel since having a dog guide. The handlers were then asked for potential reasons for their increased travel since working with their dog guide. They indicated issues such as increased confidence, enjoyment in having a companion to walk with, and having less need to actively concentrate, i.e. being more relaxed.

Nathan, a handler of 20 years' experience, commented:

> Since working with my dog guides, I have gained in confidence. Before I had dog guides I only liked to go out for the essentials, so that meant to and from work and up to the shops. Now you can't keep me home.

Natalie, a handler of five years, noted:

> Since working with my dog guide I have felt a lot more confident in getting out and about. I would prefer to use a dog guide than not to use a dog guide. I hear people saying dogs are too much trouble or they cost too much money to keep, they are too much effort but, for me, they're the best!

Relaxed mobility was an aspect of dog guide mobility notably reported by all of the 16 handlers. The handlers reported that they also walked more for pleasure nowadays when compared with their pre dog guide days. Of the 16 handlers, all commented that they regularly walked with their dog for pleasure and not just for essential travel.

Charlotte, a handler for four years, explained:

> Since getting Lily, I have never had so many walks just for pleasure. I used to go for a walk occasionally, but now that I have my best friend beside me, I am out and about every day; not just for work but for the pleasure I get in Lily's company. My mood is better; I feel generally happier and far more content and it's great having a loving companion with you everywhere you go.

Frank, a relatively new handler of 18 months' experience, noted that before obtaining his dog, he only walked for approximately .5km per day and now he walks anywhere from 3-5km per day. Frank said:

> I don't work anymore, but my wife died two years ago and I was lonely. I also wanted to have the freedom to get out and about safely. I have no remaining vision and had lost a lot of confidence. Well, I approached my local dog guide agency and they assessed me and put me on the waiting list. About five months later I got a call to say they had a dog for me. That is when Winston came into my life and we haven't looked back. Now I am out walking every day, just for the pleasure it brings me. Winston is my best friend!

Despite mostly positive comments being made, four handlers made a range of comments regarding the potential for dog guide mobility to be inconvenient at times. They cited issues such as when the weather is too wet or too hot, in crowded public transport and in some restaurants where,

although the dog was allowed by law, the handler was sometimes made to feel, "uncomfortable." This cohort added that, despite some drawbacks, they still preferred to use a dog for their mobility needs and that they would continue to do so in the future.

Allan, a long term handler mentioned:

> I find dog guide mobility to be problematic when going to some restaurants, especially if the restaurant owners don't know that the dog is allowed to be there. I guess you could say it's not the fault of the dog guide; it's more the fault of ignorance of the law by the restaurant owners.

The DGH were asked if they always used their dog for all their mobility needs. The handlers said that sometimes they prefer to use their long cane in preference to their dog guide in certain settings. Narelle, a handler who received her first dog guide, Chloe, three years ago, noted, "I love having a dog guide. The only time I find it inconvenient is when I am on crowded buses or trains, and then I worry about people stepping on Chloe."

Nigel a handler of seven years said:

> I sometimes use a long cane when I just want to go out to restaurant with friends. I know my dog is allowed, but if I have friends whom I can use as a sighted guide, sometimes it's just nice to not be immediately identifiable as being a blind person; I can just remain inconspicuous.

Oriel, a handler who has had three dog guides, noted:

> I prefer to use a dog guide at all times, however I do leave my dog at home if I am going to a noisy concert. I know Ferris would cope with the concert setting as he is a laid back sort of character but I don't want to inflict my heavy metal music taste on his sensitive ears.

Mainly positive statements were made about dog guide mobility from the handlers. These positives are reflected in the following comments from Tom, a handler of five years, who stated:

> My exercise levels and my fitness have improved in the five years since I got Willow, she has made a significant impact on my life. I hadn't really thought about this before, but thinking back over the last five years I can see that I have felt healthier and stronger too. The only real conclusion I can draw from this improvement in my health is [that it is due to having] Willow; she is such a great dog and has made me happy beyond measure!

Similarly, Anton, a handler for nine years, stated that:

> Since having Giddeon, I have been a generally happier person and I feel I most definitely have experienced better general health. Participating in this research study has really made me reflect on the last nine years with Giddeon and, yes, I am stronger and healthier and the only thing I can put it down to is Giddeon. I haven't made and amendments to my lifestyle apart from getting him but I am a happier man these days and I think feeling happier has made me keep better health.

Felicity added that she felt it was the combination of physical and emotional support she has obtained from working with dogs that provided her with the most benefits. Felicity, who has had three dogs, reported:

> I don't know if it is because I get more exercise since having had my dog guides, but I think it is a combination of exercise and wellbeing. Since having my three wonderful dogs, I have felt more confident, I am happier generally and more content. Do I think my overall wellbeing and better general health is related to working with my dogs? Yes I most definitely do!

Although all 16 handlers were extremely positive about dog guide mobility, there were some issues that were problematic. These issues included grief when their dog guide died or had to be retired for unforeseen reasons. These problems are considered in following section 6.1.6.

6.1.6 Post Dog Guide Issues and Quality of Life from Interviews

Participants were asked about their experiences when their dog guide had died, or they were between dogs (i.e. on the waiting list). Of the 16 handlers,

11 noted a major impact on their quality of life when they were between dogs. Four handlers said they had not been without a dog, so, therefore, they had not experienced the time between dogs. The remaining handler noted that he had not considered this issue. The participants were also asked to rate, in order of importance the major impact that being without a dog had had on their quality of life. They rated these issues in the following order of importance.

- Loss of mobility
- Loss of companion (All of the DGH commented that they valued the companionship they received from their dog guide and 10 commented that parting with their long time companion when the dog died, was extremely difficult to cope with).

All of the 16 participants who currently used a dog guide stated that they would like to use a dog for their future mobility needs as they believed that working with a dog guide had enhanced their overall quality of life. This was despite the fact that all found it extremely difficult when the dog died. Laura, a handler of 25 years, explained:

> Losing a dog is hard at the best of times but, when that dog is your guide as well as your best friend, it makes things doubly hard. I have just got my third dog. My first one lived till 12 years and my second one lived till 13; it broke my heart when I lost them both but, even so, I would not be without a dog. Not only have my dogs helped me with my mobility, they have been my companions through life. I always want to have a dog guide. I am a much happier human being since having a dog and I have noticed I have far less visits to the GP and have generally better emotional stability.

The general consensus was that, despite the difficulty of losing a dog, most people interviewed would prefer to use a dog guide as their preferred mobility aid despite the painful time of parting.

6.1.7 Preference for a Dog Guide

All 16 of the handlers noted that they intended to use a dog guide as their preferred mobility aid in the future. The advantages of working with a dog guide were reported by the handlers in the following numbers:

- increased independence (14)
- companionship (14)
- ability to go to new places (10)
- improved safety (12)
- improved confidence (14)
- More exercise (14)

Note: A number of the participants gave multiple answers to this question

All 16 handlers reported increased feelings of independence and confidence when working with their dog guide and all enjoyed the companionship they received from their dog. Safety and security were highly rated by 12, with the other four participants reporting that they generally felt more secure when using their dog rather than when using a long cane.

Fourteen of the 16 handlers noted that had they exercised more since working with their dog guide. Two of the 16 handlers said their levels of exercise had not increased, but that they walked approximately 2km pre and post working with a dog guide. Twelve of the group of handlers who exercised more reported that they walked approximately 3km per day, with the other two of the 14 handlers who reported walking more post getting a dog guide, walking on average approximately 5 km per day.

The researcher also asked the handlers if they enjoyed the attention they received when working with their dog. Ten of the 16 participants noted that they generally enjoyed the attention and four mentioned that they did not always enjoy the extra attention and the remaining two stated that this was one of the potential drawbacks of working with a dog. All of the handlers noted that they felt annoyed at certain times with members of the general

public who tended to treat them as if they were public property however, most (14) understood the fascination shown by members of the public towards their working dog. All of the handlers mentioned that any potential disadvantages associated with dog guide mobility were generally outweighed by the advantages.

6.1.8 Other Health Conditions

There were a variety of medical conditions reported by the handlers. One handler reported having cystic fibrosis and one reported having hearing loss in addition to being legally blind. Four handlers reported having depression although only one of these handlers was taking regular medication for this condition. Eight handlers had diabetes and one handler reported that diabetes had caused her to have renal failure. This participant, Gardenia, stated that she was undertaking renal dialysis three times weekly. Gardenia, a long term handler, stated that having her dog with her when she had to undertake renal dialysis was comforting as she enjoyed the camaraderie she shared with her:

> I would find it very difficult to undergo three full days every week as I currently do, without having the company of Trixie. She's a great dog and a wonderful comfort to me. Having Trixie by my side lessens some of the stressful feelings I encounter when I am hooked up to a dialysis machine.

One handler stated that she had multiple disabilities, which resulted in a combination of vision impairment, epilepsy and partial loss of hearing. This handler, Tenna, reported that she felt her loss of hearing, which was not complete, did not have an impact on her ability to work with a dog:

> Since having a dog guide, I have felt more confident. Although Knobbs is not trained as an epilepsy dog, I am confident that if I have a seizure, he will watch over me till help arrives. I thought that having multiple disabilities may preclude me from working with a dog guide but I was very pleased that this was not the case and now Knobbs and I have been working successfully together for three years.

A number of the handlers who reported having additional medical conditions reported that they had visited their GP less frequently since obtaining their dog guide. Albert, who has diabetes, is a relatively new handler of approximately two years. Albert observed that before getting his dog, he did not keep very good health and visited his GP quite frequently (> than eight times per year). Since getting his dog he has noted that he visits his GP less frequently (< twice per year) and he feels generally healthier:

> I am probably not the best person to ask about health and dog guides as I haven't had Noah for long. Thinking back over the last two years though, I actually haven't been to the doctor's much and before I got Noah I seemed to be there all the time. I now exercise more and my diabetes is more controlled.

All of the 16 DGH noted that they were generally more content since working with a dog guide. They were also generally positive about dog guide mobility and felt that working with a dog guide had enhanced their overall quality of life. The researcher asked the handlers if they intended to continue using dog guides into the future and all 16 said that they intended to do so.

Section 6.2, presents a short synopsis of the data collected from the DGH in all research modalities for this study.

6.2 General Summary of all Research Modalities

Before moving onto Chapter 7, which provides a discussion regarding the results of all research modes, it is pertinent to present an overall summary of findings from the data that has been collected thus far. This section, therefore, presents a summary of the major themes emerging from the data collected from all groups in all modalities i.e. focus groups, questionnaire and individual interviews. This is then followed by further discussion on the findings that are presented in Chapters 7 and 8.

To summarise, this research included:

- An initial pilot, focus group meeting was held with seven participants in attendance. Further focus group meetings were held with a total of

seven and eight participants respectively, attending. The findings from the focus group meetings were presented in Chapter 4.

- One hundred and forty-five people were sent a questionnaire, 123 responded (a response rate of 84.82 per cent. See Table 5.1). The findings from the questionnaire were presented in Chapter 5.

- Sixteen individual interviews were conducted in order to refine issues from other research modalities and to allow for a deeper exploration of issues relevant to this study. The findings from the individual interviews were presented in this chapter.

A representation of major themes emerging from all research modalities, both positive for dog guide mobility and negative towards dog guide mobility is included below.

6.2.1 Theme 1: Increase in Confidence since Working with a Dog Guide

DGH reported attaining a boost in their levels of confidence and self-esteem since working with a dog. Most of the handlers reported this as a major benefit of working with a dog.

Peter, a handler who attended an individual interview, made a comment reflective of most DGH opinion:

> Since working with my dog guide, my self-esteem has risen; I am physically in better condition, I exercise more, meet more people and get out and about more. For me, having a dog guide has been life changing.

6.2.2 Theme 2: More Exercise Since Working with a Dog Guide

DGH in all research modes undertook more exercise since working with a dog guide. The DGH walked an average of 2-5km per day. The DGH also mentioned that they seemed to maintain better control of their weight since working with their dog guide/s.

Jesse, a handler, noted, "I have been far more active since having a dog guide, I enjoy this form of mobility." This belief was reflected in the responses to the questionnaire, where 98 per cent of the DGH reported increased exercise levels since working with their dog guides. DGH at focus

group meetings and who attended individual interviews also reported this aspect of dog guide mobility.

6.2.3 Theme 3: Emotional Gain due to Working with a Dog Guide

The DGH uniformly reported an emotional benefit since working with a dog. They cited issues such as needing to see their GP less frequently, reduction in levels of medication for feelings of low mood or depression and generally feeling that they were more in control of their levels of stress since working with their dog guides. When questioned as to why this may be the case, 98 per cent of the handlers cited companionship, security and camaraderie obtained since working with their dog. Tory, a handler of five years' duration said: "I love having my best friend with me at all times."

Courtney, a handler of 2 years duration noted:

> I have felt much happier and far more confident since working with dog guides, I keep better general health, maintain better control of my weight and I like the security I feel when I have a dog guide by my side.

6.2.4 Theme 4: More Social Interactions since Working with a Dog Guide

Most of the DGH were positive about the increase in social interactions they received when working with their dog, however some found the increased attention to be tiresome; noting that at times they would prefer to remain inconspicuous. A snapshot of opinion is presented below.

Susan, a handler from the initial focus group meeting, explained:

> I have been much more popular since working with my dog guide; people now approach me far more readily and I have had a lessening of feelings of loneliness.

Phillipa, a handler who attended the second focus group meeting, noted:

> At times I would prefer to remain an anonymous face in the crowd but most of the time I don't mind people approaching me, even though I know the interest is more about the dog than about me.

6.2.5 Theme 5: Increased Freedom Associated with Working with a Dog Guide

Increased freedom was widely commented on as a perceived positive of dog guide mobility, with all handlers in all research modes stating that their independence and freedom had increased since they had begun working with their dog. Lynette, a handler who participated in an individual interview, commented, "I am so happy to have a dog guide; I'm always out and about and full of confidence."

All of the DGH in all research modes reported that they were more independent and enjoyed a more fluid method of travel since working with their dog guides.

6.2.6 Theme 6: On the Negative Side

Overall, 28 of the DGH questioned in all modalities, reported that since working with their dog, they had become somewhat invisible, explaining that now people tended to talk to their dog and not to them, this was reflected in the following comments from two handlers.

Alexis, a handler for 16 years, observed:

> I love working with dog guides; it gives me much more fluid and independent mobility. I just wish, however, that people would remember there is a handler behind the dog and not ignore me in favour of the dog. It's not everyone who does this but I must say it is annoying when I do get ignored.

Nola, a handler with five years' experience, mentioned:

> I know my dog is really cute and I do understand the fascination that people feel about dog guides in general, but I do find it really rude when people talk to my dog and ignore me. If I was a man I would say that sometimes I feel like the invisible man.

Other negative aspects of dog guide mobility were discussed, with the most commonly cited negative aspects of this form of mobility being, inconvenience, e.g. dog hair and cleaning up dog waste and the expense associated with maintaining a dog, e.g. veterinary bills and food. When current handlers were questioned as to whether or not, they would use a dog

guide in the future, 87 per cent of the handlers answered yes. Of those who remained who said no, 13 per cent, the main reason cited for this choice was that it would depend on if they had enough work in their lives at the time to justify the use of a dog.

A greater number of female participants were involved in all modes of research, e.g. of the 123 questionnaire respondents, 93 (75.60 per cent) were women. Most of the participants in all research modalities were legally blind (89.45 per cent) and the minority was totally blind (9.93 per cent) and one had low vision (0.62 per cent).

6.5 Conclusion

In this chapter, the results of the individual interviews associated with this project were described and a general summary of all research modes used in the study was presented. Individual interviews were an effective means of gaining a deeper understanding of the data collected from the focus groups and questionnaires. The interview process allowed the researcher to search for additional answers, reveal further trends and to clarify any issues that had arisen as a result of the focus group meetings or as a result of the questionnaires. The individual interviews allowed the researcher and the participants to have the time to delve further into issues and consider and expand on particular aspects of the research.

Chapter 7 provides an analysis and discussion of the research results attained as a result of this research project. Discussion is centered on the findings from all research modalities and the rich data are discussed and explored in depth. The implications and recommendations for further research will be presented in Chapter 8.

Chapter 7
Discussion

7.0 Introduction

Based on research undertaken in the field via focus group meetings, questionnaire and individual interviews, the implications of working with a dog guide in respect to health, have been examined. The objectives of this research were to understand if working with a dog guide provided a potential health benefit to dog guide handlers (DGH). It was also pivotal to discover what, if anything, working with a dog guide may provide in terms of a potential benefit to the health of a human handler. The implications to health for DGH that have been revealed as a result of this study include, an improvement to physical, emotional, psychological and psychosocial health. This research has revealed a trend towards a positive health benefit for people who choose to work with a dog guide.

This chapter will put into context the results of this study in relation to the research questions as discussed in Chapter 1 and will further discuss the combined results of the focus group meetings, questionnaire and individual interviews. Many of the themes that arose from the data obtained in all research modalities are discussed in this chapter. This chapter also discusses the possible implications arising from this study for dog guide agencies. The conclusion to this chapter will provide a discussion regarding the limitations of this study.

This study has allowed the researcher to provide a clear description of health issues surrounding the use of dogs as guides for people who are blind or vision impaired in Australia today. Exploration of the impact that having a dog guide may have on the health of their handlers has been examined and has provided qualitative data in an area that has been singularly under researched. This research also utilised some, although limited, quantitative data (numbers and percentages of people supporting particular themes) to add further support to the findings gained from the qualitative data that were collected and the implications of these data will be discussed below.

This chapter restates the findings from this study and discusses the outcomes of the research and, in particular, the relevance and significance of the data

that were collected. It also considers the outcomes of the research in relation to the literature that was reviewed in Chapter 2.

7.1 Addressing the Research Questions

The premier aim of this research study was to examine if working with a dog guide produces a potential benefit to the health of DGH. This study also aimed to discover what it may be about working with a dog guide that may provide any potential benefit to the health of DGH. Prior to this study very little research had been undertaken to consider this question. Service providers and people who are blind or vision impaired have largely remained unaware of any potential health benefit that may be obtained by working with a dog guide. This lack of awareness could provide a disservice to potential handlers who would benefit from being armed with knowledge of all potential benefits that they may be able to achieve as a result of working with a dog. While the answers to the research questions were not unanimous in all areas, the trend amongst participants towards a perceived positive health benefit when working with a dog guide was clear.

In this section, the researcher has briefly summarised some of the findings in relation to the research questions as posed in Chapter 2, section 2.1.2. The initial research questions which were generated and the findings resulting from this study are briefly addressed here, and they include:

1. If any, what are the self-reported benefits associated with dog guide ownership in relation to the physical, emotional and psychosocial aspects of life?

It has been demonstrated that participants in all modalities who use a dog receive far more than just a mobility aid. Potential benefits associated from working with a dog guide include: companionship, reduction of stress, reduced feelings of sadness, increase in physical exercise and increased potential for social interactions. These were all widely reported as benefits by DGH in all research modalities.

2. What do handlers perceive about working with a dog guide that could be facilitating improvement in their physical, psychological and psychosocial health?

DGH in all modalities typically reported that the companionship and security they received as a result of working with a dog guide helped them to feel more confident, developed self-esteem and increased the levels of exercise that were undertaken. The participants also explained that the main reason for any benefits they obtained above and beyond mobility was primarily related to the companionship and camaraderie they had with their dog, and they explained how this relationship had increased their feelings of self-esteem and overall wellbeing. Many participants suggested that having a dog guide made them get out and about in their community more frequently and that the dog gave them the impetus and motivation to do so.

The researcher was keen to also address any negative impact that may be associated with working with a dog guide and hence asked the question included in point three below.

3. Does working with a dog guide, have any negative impact on the health of the dog guide handlers who use them?

Although the handlers were genuinely pleased with working with their dog guide, at times some of the handlers stated that they preferred to leave their dog at home and use a sighted guide, or long cane. This was mainly notable in some social settings, e.g. if visiting a club or live show where the handler may worry about noise, or the dog being stepped on in a crowded area. No obvious detriment to health could be identified in relation to working with a dog guide, however some of the handlers stated that at times they felt stress if they were accompanied by their dog in these type of settings.

The overall consensus from the DGH in this study was reflected a generally positive opinion, notably in the area of enhancement in quality of life. A summary in respect of quality of life is outlined in point 4 below.

4. What do DGH self-report as the impact of working with a dog guide on their overall quality of life?

Quality of life (QOL) was widely discussed and it was revealed that the DGH reported a definite trend towards improvement in QOL since using a dog guide. This finding was reflected in comments by handlers which described

more social interactions, improved ability to cope with stress and a reduction in feelings of loneliness.

DGH were also generally more active and reported increased levels of exercise, lower feelings of depression and more social interactions since working they began working with a dog guide.

7.1.1 Findings from all Research Modes

People who work with dog guides are generally pleased with the benefits they receive when working with a dog. Lloyd (2004) explains that there are a number of studies citing the psychosocial benefits of having a loyal animal by one's side, however, limited studies have examined the potential for enhancement of quality of life when using a dog guide. This current study has revealed that the DGH in all research modes used herein, reported a number of benefits of using a dog guide, such as, reduced feelings of isolation, lessening of feelings of sadness or depression, companionship, more exercise and increased self-confidence. The data generated by this study discovered a number of themes that suggest that working with a dog guide can provide potential benefits to the health of DGH.

7.2 Limitations of the Study and how they were Addressed

The data collected have revealed positive implications associated with working with a dog guide however, as the data was self-reported, this may limit the meaningfulness of the information generated. When considering self-reported data, it is important to acknowledge limitations (Cone & Foster, 2006). Cone and Foster (2006) argue that self-reported data can be tenuous as participants tend to report positively on their strengths, minimising any negatives and providing the researcher with the information that they believe the researcher wishes to hear. When considering this potential, the researcher was, therefore, cognisant to ensure that participants who attended a focus group meeting or an individual interview, were made to feel relaxed and were reassured that the researcher could be trusted to handle any information that was offered in a balanced, respectful and sensitive manner. Trust was further enhanced, as, as discussed in chapter 3, (section 3.3), the researcher is an insider researcher, and this, according to Unluer, (2012) engenders a feeling of trust among the study participants, as they believe the researcher understands the community of people to which they belong. The

researcher however, was careful to ensure that she recorded findings exactly as they were reported by the participants in order to ensure she minimised any potential bias that may result from being an insider researcher (Unluer, 2012).

The researcher was also careful when designing the questionnaire to avoid asking leading questions that may precipitate a specific answer.

Every effort has been made in conducting the research for this study to ensure that the information collected was valid and reliable, as discussed in Chapter 3. This validity is critical to ensure that the study provides a true reflection of the opinion of all the participants involved. All care has been taken to ensure that all the information presented is accurate. In support of the validity of the research, it is important to note that the researcher had clearly reached data saturation level, with the data from the individual interviews supporting the data from the focus groups and the questionnaire.

There were limitations in the number of people who could be surveyed in this study, however, and, therefore, the researcher was mindful to consider the limiting factors or variables involved, some of which included:

- Most people who use dog guides are between the ages of 31 and 62 years of age (Vision Australia, 2011). The researcher has utilised the opinion of participants of this specific age group and, therefore, persons from outside of this age group were not studied.

- The study is meant to be a reflection or snapshot of health issues of DGH from around Australia. As the study is primarily a qualitative study, the generalisability of the information may be limited and further replication studies are required to ensure the external validity of the findings.

- A large number of questionnaires was distributed (145) and the response rate received was considered to be appropriate (123). The questionnaire was also deemed to provide a valid representative sample of DGH from around Australia. As noted previously, with only just over 800 DGH in Australia (Guide Dogs Australia, 2011),

the researcher has been successful in recruiting over 19 per cent of this population to participate in this study. The numbers involved in this research project were determined by the researcher's available time and available resources.

- Another issue that arose was in the distribution of the questionnaire. The blindness agencies involved in this project distributed information to their clients about this research via their relevant newsletters. The questionnaire, however, was only sent to a prospective participant after the researcher received a formal request to participate. This process of self-selection means that there is a possibility that those who did not wish to be involved in the research may have had different views from those who chose be involved. This is a necessary limitation of this type of research methodology (Denzin & Lincoln, 2005), but one that needs acknowledgement and careful consideration of the potential for unrepresentative data collection.

The researcher was careful to minimise potential bias in the development and implementation of this research project; it is important to note, however, that bias is present in all forms of research design (Sica, 2006). According to Sica (2006), "the goal in developing a study design is not necessarily to eliminate all types of bias as, in doing so, the effect may be to limit generalisability and render a study less useful," (p. 3). Sica (2006) also acknowledges that bias can occur when participants are not chosen from a broad cross section of the target population. The researcher has made every effort to minimise any potential bias by involving participants, from a diverse cross section of people who are blind or vision impaired from around Australia.

It is recognised that the interviewer's characteristics, sensitivity, empathy and other qualities, may have affected what was said in interactions with the participants of this study. Importance, therefore, was placed on understanding the participants' perceptions of their own life experiences from their relevant perspectives. The emphasis throughout the research process was on respecting the diversity of the lived experiences of persons

who are blind or vision impaired. The researcher was consciously aware at all times, of potential biases and, therefore, reflected on the possible impact of these biases during the research process. Every care has been taken to minimise bias in every aspect of its evolution by using a broad range of participants from most the States within Australia in this study. Denzin and Lincoln (2005) suggest the relevance of using participants that the researcher does not personally know in order to minimise any potential bias. The researcher was cognisant of this need. Most of the participants in this study (98 per cent), were unknown to the researcher prior to undertaking this research project.

7.3 General Discussion

Ensuring that people who are blind or vision impaired have the necessary information they need in order to make informed choices is an important part of rehabilitative processes. Rehabilitation and 'getting back into life' activities after loss of vision require a philosophy of inclusion support (Klein, Cook, & Richardson-Gibbs, 2001, p. 106). Inclusion support includes anything that facilitates the participation of persons with a disability in activities of daily living (Klein et al., 2001). Part of the concept of inclusion support includes the choice of mobility aid such as a dog guide or long cane (Holbrook, Caputo, Perry, Fuller, & Morgan, 2009). The research from this project has revealed a number of issues related to the choice of mobility aid for people who are blind or vision impaired. The findings from all research modalities, as discussed in Chapter 6, suggest a number of themes which were exposed through comments made by DGH. These themes highlighted the participants' experiences of working with a dog guide. These findings are discussed throughout this chapter.

When the DGH were asked about the impact of working with their dog guide, they almost unanimously self-reported increased freedom, more social interactions, improved emotional stability, increased exercise levels and general feelings of camaraderie with their dog. The negative issues associated with working with a dog guide were also cited and they included the need to exercise, feed and to cleanup after a dog. These findings were also frequently observed in studies by researchers such as Lloyd (2004) and

Whitmarsh (2005) who found that the participants in their studies cited similar issues, both positive and negative, of dog guide mobility.

Deshen (1996) and Lloyd (2004) found that improved mobility is a major aspect of why people who are blind or vision impaired initially apply to train with a dog guide. Most DGH reported that they were extremely satisfied with their commitment to work with a dog. They also argued that they felt more independent and they encountered more frequent social interactions with members of the public since working with a dog guide. DGH in this study also said that they had experienced increases in levels of self-esteem, exercise and a number of tangible benefits to overall health. The DGH also overwhelmingly reported an emotional benefit from working with their dog and noted increases in wellbeing associated with the camaraderie they had developed with their dog. The DGH were also almost unanimous in stating that any disadvantages associated with dog guide mobility were far outweighed by the rewards they achieved. Most of the handlers found that they enjoyed the increased social interactions that working with a dog guide had helped them to obtain. A number of handlers also suggested that they felt that when they were previously using a long cane they found it to be a more cumbersome method of mobility and that they now enjoyed the freer and more dignified mobility that came from working with a dog guide. Dignified mobility was a commonly reported benefit of dog guide mobility in most of the data that were revealed.

Although there is limited research about the physical activity levels of people who are blind or vision impaired, a US study by Campbell, Crews, Moriarty, Zack and Blackman (1999) reported that, generally, people who are blind or vision impaired who do not use dog guides exercise less than those who do use a dog. Campbell et al. (1999) also stated that people who are blind or vision impaired who do not use a dog guide are more often overweight when compared to persons within the general population. In other research conducted by Crews and Campbell (2001) they found that the same does not apply for people who are blind or vision impaired who use dog guides. The DGH reviewed, commonly reported walking for approximately 1.5km or more per day (and often more), and they were generally fitter and maintained healthier weight levels when compared with pre dog guide

experiences. Holbrook et al. (2009) explain that people who are blind or vision impaired who apply for a dog guide, have to show they are able to walk at least 1-2km per day before they can apply for a dog guide. This is similar in the Australian setting, where persons who wish to apply for a dog guide have to show that they are fit enough to work a dog guide when they apply (SEDA, 2011). This literature equates well with the findings observed from the DGH in this project who overwhelmingly reported that, when they obtained a dog guide, they tended to exercise more than they did prior to obtaining a dog. The level of exercise undertaken is a highly individual issue, however, and the researcher notes that one DGH reported exercising, "less," since starting working with her dog. This handler stated that prior to getting her dog guide she worked out at the gymnasium on a daily basis, and now since obtaining her dog, she only visits the gymnasium once or twice a week. This highlights that where someone has had a high level of activity prior to getting the dog, they need to be aware that just exercising with the dog may not meet all of their exercise needs.

The themes that have emerged as a result of this research project provide insights into the potential for an increased health benefit that may be achieved when people work with a dog guide. Issues discussed included, maintenance of weight, general increase in fitness and exercise tolerance, improved self-esteem, reduction in levels of depression, more confident mobility and improvement in general life satisfaction. These positive findings reflect and build on input as proposed by Refson et al. (1999) whose study revealed positive findings associated with dog guide mobility. Their findings, however, did not examine the area of health specifically.

The DGH in this study also discussed the negative aspects of dog guide mobility, noting issues such as having to clean up dog waste, dog hair in the house, and on clothes and finding some social limitations when using the dog. Generally, however, the positive findings reported by the handlers noted a definite benefit to overall quality of life since working with their dog.

The DGH also made several comments regarding the positive impact of the dog guide on levels of independence, feelings of camaraderie and a decrease in feelings of isolation, as discussed in Chapters 4-6. The handlers also stated

that the dog guide made them feel more confident and increased their feelings of security and safety.

7.4 Specific Issues

In discussions with the DGH in all research modes, the results indicate that most report that they feel more confident since using a dog guide. This cohort also believes that dog guide mobility encourages them to improve their current activity levels and increase the efficiency of their mobility. These findings equate well with the findings of Capella-McDonnall (2007) who investigated exercise levels in companion dog owners. Capella-McDonnall found that in most recent studies relating to companion animals, dog owners tended to be generally more physically active than people who did not own dogs (Capella-McDonnall, 2007). Of the DGH in the current study, 86 per cent reported that they walked an average of 1.5-3.5km per day with many (22 per cent in all groups) walking approximately 5km per day. The handlers also noted that their pre-dog exercise levels had increased after receiving a dog guide. These findings compare favourably with the findings from the Whitmarsh (2005) study, outlined in Appendix 15, which reveals that DGH get more exercise since they have worked with a dog guide.

Reducing levels of stress is an important aspect of maintenance of good health (Irvine, 2013). Capella-McDonnall (2007) and Levine et al. (2013) argue that there is a link between working with a dog guide and increased ability to cope with stress. The handlers in this research study self-reported an increased ability to cope with stress since they had obtained a dog guide. When questioned about the reason they believed they were better able to cope with stress, over 98 per cent stated that the emotional benefit they received from working with a dog guide, had made them more confident and more relaxed. Emotional reward when working with a dog guide was widely cited as a positive aspect of dog guide mobility. All of the DGH in all research modalities felt that they had achieved a profound emotional gain since working with their dog. When the handlers were further questioned regarding possible reasons for an emotional gain, they reported increased levels of companionship (31 per cent), rise in feelings of security (37 per cent) and increased mobility (32 per cent).

A commonly reported additional feature of working with a dog was that the general public treated DGH more positively when working with a dog guide, rather than when they were using a long cane. The handlers argued that people tended to treat them more like a, "real person," (80 per cent) and were more likely to approach them when their dog accompanied them. All of the handlers stated that they had received more offers of assistance since they had begun working with a dog. This would seem to indicate that people are more likely to feel comfortable when approaching a person who is accompanied by a dog guide rather than using a long cane.

The DGH uniformly self-reported more social interactions since working with their dog rather than when they were previously using a long cane. Over 95 per cent of the female handlers and 89 per cent of the male handlers stated that they had experienced more social interactions since working with their dog. Four per cent of the handlers noted that one of the reasons they had considered applying for a dog in the first place was to facilitate meeting other people. Two per cent of the handlers mentioned that they did not enjoy the extra attention that the dog exposed them to, but explained that they understood the public fascination towards a working dog guide. Most DGH (97 per cent) reported that they enjoyed the increased attention and social interactions they experienced when working with their dog.

These findings equate well with studies as explored in Chapter 2.

7.5 The Identification of Key Indicators

In order to assess the data in more detail, it was necessary to identify key indicators that had been obtained; this assisted in providing more information and in refining previously discovered data. The process of identifying key indicators and themes around potential health benefits, helps to highlight information collected as a result of all questioning processes.

The individual responses to questions posed at the focus group meetings, in the questionnaire and at the individual interviews reveal a generally positive response to experiencing an additional, and often unexpected health benefit when working with a dog guide. Through an analysis of responses, key indicators have shown that there are a range of self-reported, unexpected, positive impacts on health for participants who work with a dog guide. In

analysing responses the researcher attempted to establish causality for any reported benefits and continued to question participants about any potential changes to health status that they had observed. This questioning process then supported the notion that working with a dog guide facilitates a reported unexpected health benefit.

It is vital to undertake a comparative approach when reviewing the data revealed in this study and to compare and contrast that data with data from other studies. The researcher has used some of the information gained in the Whitmarsh (2005) study for comparative purposes (see Appendix 15). For example, participants in the study by Whitmarsh (2005) noted various reasons for applying for a dog guide. Some felt that it would increase their confidence in getting around safely (23 per cent). "Twice as many owners with residual vision than without (15 per cent versus seven per cent) applied for this reason," (Whitmarsh, 2005, p. 12).

The first key indicator that the researcher noted in this current research study showed that the findings compared favourably with findings from Whitmarsh's study. This current study however, delved further into 'health implications' of working with a dog guide. The researcher notes that of the DGH in this study all self-reported an increase in confidence since working with their dog. This finding was determined by combining the data from a number of questions which were asked in all research modes and then examining the results that were gained. These results were then compared and contrasted with previously known data to ensure validity. The findings indicate that the prospective DGH initial hopes when applying for a dog guide are generally realised when they start working with their dog.

The second key indicator was the level to which participants felt comfortable when working with a dog guide and whether their overall intention was to continue to use this form of mobility aid. This indicator helped to reveal the handler's positive feelings regarding working with a dog guide and is reflected in the results. Overwhelmingly, the DGH in this study indicated a positive improvement in quality of life since working with their dog guide and most intended to continue to use dog guides as their preferred mobility aid.

The third key indicator was determining the impact of dog guide mobility on health. As noted in this discussion chapter, the DGH reported undertaking more exercise, experiencing less depressive symptoms, improved emotional wellbeing and higher levels of satisfaction in all health aspects of their life since obtaining their dog guide.

The final key indicator was revealed when considering the exercise potential as reported by the handlers and exploring the data in relation to the health of the participants involved. All but one DGH reported increased exercise potential since working with a dog guide, with the handler in question saying that she now walked more, but that she had reduced her visits to the gymnasium since having a dog guide. The generally increased exercise potential as reported by the handlers had many flow-on effects which included increases in self-confidence and more fluid and confident mobility.

Companionship is a highly valued aspect of owning a dog, and when the dog is a dog guide, the relationship between dog and handler is very close (Levine et al, 2013). All of the handlers said they enjoyed the camaraderie and companionship they had with their dog and this was a very positive and enjoyable part of owning a dog guide.

Sections 7.6 to 7.9 provide a discussion of the findings from each research mode employed in this study.

7.6 Focus Group Meetings Discussion

The major reason behind conducting focus group meetings was to gain some initial impressions and to demonstrate some of the perceptions of those involved in a relaxed and welcoming group setting and to see if any initial trends could be uncovered (Denzin & Lincoln, 2005; Kitzinger, 1995). The focus group meetings also allowed the researcher to understand areas that should be further investigated using the questionnaire, or at an individual interview. The focus group meetings provided opportunities for the participants and the researcher to discuss questions to be used in the questionnaire and at the individual interviews in order to ensure that the questions to be asked were clear and did not generate a specific answer.

The findings revealed from the information gained at the focus group meetings provide some initial trends towards a potential self-reported health benefit for individuals who use dog guides as their chosen form of mobility aid. While the results from the focus group meetings were only meant to be representative, they provided an early picture of dog guide mobility and its potential for health improvement within the current Australian setting. They also allowed the researcher to consider further areas that needed to be examined in the questionnaire and in the individual interviews.

The participants who attended a focus group meeting were generally pleased with the sessions, with most reporting how much they had enjoyed them. Participants also mentioned that they felt at ease with the facilitator and that they understood the reasons behind the research project. As a result of the findings from the focus group meetings, it became clear that there were potentially a number of benefits beyond mobility, that may be associated with working with a dog guide. The researcher was mindful, however, that the participants at the focus group meetings were only providing some early impressions. The focus group meetings were helpful, however, as they allowed the researcher to determine the critical areas for further investigation in the major data collection modes of the questionnaire and individual interviews.

Douglas et al. (2008) stress the importance of uncovering themes as a result of focus group meetings. The themes that emerged from the focus group discussions in this current study showed the value of having opinions listened to. They also showed the value in hearing the stories of others, the importance of the voice of people with vision impairment and the critical need to provide up-to-date information on the use of dog guides in order to better inform the vision impaired community.

7.7 Questionnaire Summary and Discussion

As presented in section 5.1.1, the questionnaire revealed data from a wide selection of persons who are blind or vision impaired from around Australia. A range of questions was explored which included issues such as age, gender, marital status, level of schooling, employment, health and other demographic issues. The participant responses revealed a wide range of self-

reported positive implications as a result of working with a dog guide. These practical implications included:

- increased levels of exercise
- lower reported levels of stress
- valuable companionship
- improvement to self-esteem
- freer mobility
- improved social interactions with others.

Negative implications of dog guide mobility were also reported, such as:

- having to clean up dog waste
- fur on clothing and furniture
- high cost of veterinary treatment and other ongoing costs such as food
- general care involved in looking after a dog.

Overwhelmingly, DGH reported higher levels of self-esteem, higher exercise levels, less visits to GPs and improved health since working with their dog guide. DGH suggested that the premier reason they felt their health had improved was as a direct result of working with their dog guide. Most (97 per cent) said that they felt since having a dog they had felt less lonely, had undertaken more exercise and experienced an improvement in mood and in overall health and wellbeing. A certain emotional benefit appeared to be obtained by the DGH with most (96 per cent), reporting an emotional gain since working with their dog. Although the questionnaire involved mainly yes/no type answers, there were also sections which allowed for comment and many DGH wrote a number of comments on the questionnaire that praised the role of the dog guide. This suggested that the dog guide was also a source of emotional support to their handler.

The dog guide handlers reported less visits to their GP when since working with their dog guide, reporting an average of 1-2 visits per year post dog guide and reporting an average of 4-5 visits prior to obtaining a dog. Most DGH reported lower levels of stress since working with their dog guide , however 6 per cent did not answer this question.

When the answers and comments made by DGH, were collated and analysed, a trend towards better emotional, physical, and psychosocial health was noted within the DGH cohort. The trends revealed include, but are not limited to:

- increased levels of independence
- increased social interactions
- increased levels of confidence
- decreased levels of stress
- an increase in levels of energy
- more social interactions
- camaraderie with their dog guide that enhanced interactions with other people.

The overall positive response from DGH who answered the questionnaire shows a potential towards improved health outcomes for people who use dog guides.

7.8 Individual Interviews Discussion

Individual interviews allowed the researcher to further define responses and to clear up any potential misunderstandings that may have arisen as a result of research processes (McNamara, 1999). With a total of 16 individual interviews being conducted the researcher was able to discern the views of a number of people in a comfortable private setting and was able to delve more deeply into issues due to fewer time constraints. As in the focus group meetings and questionnaire, both negative and positive aspects of dog guide mobility were revealed. The DGH at the individual interviews were

extremely positive about the impact that working with a dog guide had on their lives, reporting a decidedly positive emotional benefit associated with working with their dog. Most of the DGH stated that they would anticipate getting another dog when their current dog guide retires or dies. The DGH mentioned a number of positive implications they noted since working with their dogs which revealed a trend within this group. This trend included an:

- increase in levels of independence
- increase in social interactions
- increase in confidence
- decrease in levels of stress
- camaraderie with their dog.

All of the DGH reported an emotional advantage associated with dog guide mobility; enjoying the companionship of their dog guide. Many of the DGH also had increased their levels of exercise since working with their dog/s, with from between 1.5km per day to over 5km. DGH also reported lower levels of depression and better general health when compared with their pre dog guide days. DGH also reported visiting their GP on a less frequent basis since working with their dog, reporting an average of one visit per year to their GP, which compared to four to five visits per year prior to obtaining a dog.

The individual interviews revealed a trend that showed that DGH receive an emotional boost from working with their dog guide and that this encourages them to exercise more and to benefit from the companionship of their dog. The companionship and security of working with a dog guide, appears to increase levels of self-esteem, boost confidence and results in a potential improvement to overall health and wellbeing amongst the DGH cohort.

7.9 Analysis of Findings

The researcher used a variety of methods to collect data in order to ensure a valuable sample size for this study. The researcher has used recognised qualitative research methods to ensure relevant opinion was revealed.

Obtaining opinion from diverse persons improves triangulation (Patton, 2002) and enhances the integrity and reliability of data gathered (Denzin & Lincoln, 2005). Using research methodologies to examine a range of issues across a wide variety of areas, as recommended by Fairman and Heubner (2001) has helped the researcher to reveal an overall positive effect of working with a dog guide as reported by the majority of participants involved in this study. The use of focus group meetings, questionnaire and individual interviews helped to recruit a wide cross section of people from throughout Australia and allowed them to participate in this research in a manner in which they were comfortable. Findings from the information collected show that the sample of participants involved equates well with demographic data from the Australian Bureau of Statistics, (ABS, 2012). This project was aimed at people between the ages of 31-62 and provided a faithful representation of this cohort.

In any project such as this, ensuring that the knowledge gained is valid is crucial and, hence, the researcher has made links to known data from reliable sources to ensure reliability of findings e.g. gender distribution was consistent with Australian Bureau of Statistics data for Australia, however it is noted that there was an uneven split between females and males responding to the questionnaire in this study. This was discussed in the previous chapter and was not an unexpected occurrence as it reflects already known data from dog guide schools throughout Australia who report a greater preponderance of female DGH (BCA, 2011; SEDA, 2011). This finding, however, revealed an intriguing comparison with the data from the Whitmarsh (2005) study as conducted in the United Kingdom, where Whitmarsh noted a greater representation of male DGH when compared to female handlers which may reflect some differences between countries.

The researcher was also cognisant of the need to collect quantitative demographic data to support the findings of this study and to further enhance reliability. Validity was enhanced as the ratios revealed from the participants in this study show that the proportion of people who are blind, in relation to those who are vision impaired, is consistent with what is known about the population statistics of people who are blind or vision impaired as a whole (ABS, 2012).

Employment data was also included in this study as it allowed the researcher to compare the information collected for this study with data from the ABS (2012). People who are blind or vision impaired face a number of issues related to employment which equates to lower rates of employment and limited educational opportunities being noted (Hollier, 2006). Employment data in this study revealed a disproportionate number of people who are blind or vision impaired who are unemployed and currently looking for work, especially when these data were compared with unemployment rates in the general population (Hollier, 2006; ABS, 2012). Another issue considered which has an obvious impact on the employment of people who are blind or vision impaired is the limited educational opportunities experienced by people in this group (Hollier, 2006).

Negative emotions like fear, low self-esteem, poor emotional health and wellbeing were reported by a number of participants and these can negatively influence quality of life (Crews & Campbell, 2001). The DGH in this study self-reported perceived increases in emotional wellbeing, improved physical health and more positive social interactions since working with their dog guide. DGH also cited positives such as the companionship of the dog reducing feelings of loneliness and isolation. Stress levels also appeared to be lower, post obtaining a dog guide. Despite the overall positives reported by individuals who work with dog guides, some negative aspects of dog guide mobility were also reported, such having to clean up after and exercise a dog as outlined in earlier sections.

One of the most consistent self-reported findings in this research project, was the anecdotal self-reporting of overall improvement in general health and wellbeing as reported by the DGH. The DGH reported undertaking more exercise, having improvement in self-concept and confidence and they reported enjoying the companionship and freer mobility of working with a dog guide. DGH also reported lessening of depressive symptoms since working with their dog guide and stated how much they enjoyed the camaraderie they had with their dog. This research compares well with the reports from earlier studies conducted overseas regarding using dog guides and other service dogs. This research, in addition, further explores potential health issues and clearly reveals a positive health influence (physical,

emotional and psychosocial) obtained from using a dog guide (Fairman & Heubner, 2001).

7.10 Conclusion

While it has long been recognised that companion animals help their owners to support improved health (Beetz et al., 2012), little research has considered this issue in regard to DGH in Australia today. This chapter analysed and interpreted the data that were gathered in response to the research questions that guided and directed this investigation. The shared visions of participants were analysed and the researcher has unpacked, compared and contrasted the qualitative and quantitative data with previously known data, as presented. The researcher has also proposed the essence of each of the emergent themes.

The key indicators as discussed in this chapter, allowed the disclosure of the self-reported beliefs of DGH and this revealed a definite trend towards health enhancement when working with a dog guide. The qualitative design of this project allowed an effective interaction between participants and the researcher provided a wide range of different perspectives (Lloyd, 2004). The researcher was mindful to follow suggestions to use a methodological triangulation approach when considering the collection of data as suggested by (Mays, 2000; Pernice, 1996; Lloyd, 2006). The purpose of including information achieved through the process of undertaking focus group discussions, questionnaires and individual interviews, was not to promote the collection of data which were based statistically, but to present a diverse range of opinion and include personal perspectives (Lloyd, 2006).

Chapter 8 develops conclusions and makes recommendations for future research and links the findings presented with the objectives and premises that guided this research.

Chapter 8
Conclusions and Recommendations – Reflecting Back but Looking Forward

8.0 Introduction

This chapter provides a demonstration of the research processes as used in this study and as presented in this thesis. This study suggests that there are positive health benefits to be obtained by people who are blind or vision impaired if they work with a dog guide. The health implications include an improvement in physical and psychosocial health. It has been demonstrated that working with a dog guide seems to provide a form of social support and improved self-esteem and confidence. It also appears that when dog guides are used as a mobility aid, levels of depression are reduced. This study provides a snapshot of people around Australia who are blind or vision impaired and reveals a trend towards a positive influence on health if they work with a dog guide. The research processes utilised in this study enabled the researcher to respond to the aims of the thesis, these being:

- To provide a rich description and analysis of how working with a dog guide supports emotional, physical and social wellbeing in human handlers.

- To examine and describe any potential advantages of dog guide mobility for the specific benefit of potential dog guide handlers (DGH) and other stakeholders.

- To add to the available literature regarding the health implications of dog guide mobility.

The study draws the following conclusions:

- The trends identified in this study suggest that people who are blind or vision impaired experienced better general health when they used a dog guide as their primary mobility aid.

- This research project provides useful current information about the perspectives and experiences of blind and severely vision impaired

> people in Australia with regard to advantages and disadvantages of dog guides as a primary mobility aid.

This chapter also considers the outcomes of the research in light of the literature as reviewed in Chapter 2. This final chapter recalls the journey that was begun over four years ago that prompted the researcher to undertake this research and it also explains the issues that led to the research questions and how the research methodologies were chosen and developed. Finally, the research processes that were used are discussed and recommendations made for future research.

8.1 Reflections on Research Processes Used in this Study

It is clear that, "research questions should drive methods," (Desimone, 2009, p. 190). The research questions that were presented in this thesis necessitated the use of research methods that generated substantial data. The researcher used mixed methodologies utilising both qualitative and quantitative research methods and more than 19 per cent of the total number of DGH throughout Australia were sampled. The data obtained provided an in-depth understanding of how dog guides may support people who are blind or vision impaired and how that support might provide a health benefit to the handler. The data that were collected from the focus group meetings, the questionnaire and the individual interviews helped to reveal how dog guides are more than just a mobility aid; they also support the psychosocial needs of their human handlers. Desimone (2009) advises researchers that the qualitative research methods as used in this study are ideal if the research is seeking to:

> provide narratives, examples, and anecdotes to answer research questions directed at questioning models; generating hypotheses; and describing and understanding complexities in a specific context and how beliefs and attitudes change. (p. 190)

These purposes were integral to the researcher's aims. The data collected has revealed that dog guides assist mobility and it has also suggested that dog guides enhance the health of their handlers. These enhancements include, but are not limited to, enhanced self-esteem and self-confidence and improved exercise tolerance. All data obtained in the current study though,

are based on participant self-reporting. Self-reported data is sometimes questioned as being tenuous in respect of its validity and reliability. Lloyd (2006), for example, argues that there are some negative aspects of self-reporting and explains that participants may tend to report more positively on their beliefs, opinions and their abilities. They may also tend to say what they believe the researcher wishes to hear (Lloyd, 2006). This possibility was addressed by obtaining data from multiple sources i.e. focus groups, questionnaire, and interviews, and using triangulation of data across research modes. This has strengthened the validity of the data obtained in this project (Desimone, 2009).

Cone and Foster (2006) mention other potential biases that may impact on social desirability and suggest ways in which to minimise bias. They suggest that when researchers conduct individual interviews with participants the interviews should be undertaken in a comfortable private setting. Cone and Foster (2006) argue that in a private interview setting the participants feel more able to express honest opinion and are assured of the confidentiality of their responses. Cone and Foster also advise that the researcher should not work for a particular agency related to a research topic and suggest that all necessary steps should be taken in order to minimise any potential bias that could otherwise occur (Cone & Foster, 2006). All of these criteria were attended to in the current study.

Schechter (1999) proposes other issues to consider when using self-reporting and argues that there is a need to consider the frailty of human memory. Schechter notes that it can be difficult for participants to recall past events in an accurate manner especially when reflecting on events that may have occurred some time ago. Many cognitive psychologists affirm the fallibility of human memory and, therefore, recommend that information gained cannot always be guaranteed to reflect actual events (Schechter, 1999). Lloyd (2004) suggests that to ensure reliability the researcher should use multiple methods for data collection and give participants a choice of settings in which to express their opinions. This, Lloyd asserts, will negate many of these concerns (Lloyd, 2004). Therefore, to ensure the validity and reliability of this study, the researcher used a variety of data collection methods. in

order to be able to validate and differentiate the responses as presented by all groups.

Participants shared their feelings readily and as many had experienced their vision loss over a period of many years, and had been using dog guides for a long period of time, they were able to share valuable information about their experiences using dogs as guides. Sanders (2000) stresses the value of lengthy time investment, to validate subjective data. Lloyd (2006) argues that respondent desire to assist in topics close to their heart and to have the opportunity to provide opinions, further ensures the validity of the data collected. The type of data collection utilised in this thesis helped to uncover and to develop a sense of context (Desimone, 2009). The above suggestions were core to the researcher's research aims and guided the researcher in the collection and interpretation of the data gained in all research modes.

The use of mixed research methods enabled the researcher to speculate about the data collected and to discover the facts surrounding the use of dog guides as a mobility aid. The strength of this thesis is that it reveals a sequence that allows others to examine the progress of the modern day dog guide and to analyse theoretical explanatory models.

The researcher has paid attention to ensuring the outcomes of this research were compared and contrasted with similar research, although the available research was somewhat limited and recent data in an Australian context were extremely sparse. Even up to the final stages of writing of this thesis however, the researcher continued to review available research literature.

Throughout the research process, the researcher has tried to keep in mind the Framework for Reflexive Responding (Maxwell, 2004). Maxwell gives valuable insight into reporting of research and into the evaluation of research outcomes. Maxwell's framework highlights the need to identify issues that may affect the validity of findings. The researcher was conscious of ensuring validity throughout the whole process of developing and writing up of this thesis. The researcher was also careful not to make this thesis a glowing account of dog guide mobility, but to ensure she reported what was found in as accurate a manner as possible. Therefore, the researcher has been cognisant to include both sides of the argument, by

presenting positive and negative perceptions of dog guide mobility as noted by the DGH involved.

As there were many potential participants who did not volunteer for this research study, there is no doubt that the researcher may have missed out on an opportunity to include some useful data. To overcome this deficiency she was careful to ensure that she listened intently to those who did participate. The findings have been presented here in an accurate and impartial manner that will be able to be replicated and extended in further research in order to challenge or confirm the findings gained. The scope of the research has provided a broad cross section of people who are blind or vision impaired from around Australia. The inclusion of a variety of people from diverse backgrounds from around Australia has given the research process the ability to compare and contrast ideas and to construct credible research findings.

Some demographic data were also collected in this study and these data were compared and contrasted with data from reputable sources. The inclusion of these data and the inclusion of a wide representation of people who are blind or vision impaired has ensured that that the data collected were representative of people with vision impairment in the Australian community. While it would have been invaluable to have been able to open this study to participants from other countries, this was beyond the resources available for this project.

The methodology used and the large number of Australian participants involved, has provided a valuable snapshot of DGH opinion from throughout Australia. It has also allowed the use of limited quantitative summary data which supports the themes that have been identified. This gives a clear picture of trends that might be explored in further research. The research processes used in this study have allowed the discovery of reliable data and the knowledge gained has improved the understanding of the relevance of dog guide mobility and its impact on the health of the human handler. The information uncovered has contributed to the extremely limited information that was previously available in this area.

Finally, the researcher has followed suggestions as proposed by Alvesson and Skoldberg (2009) who promote the importance of reflection on the processes utilised in a research study of this type and scope. Alvesson and Skoldberg (2009) contend that when concluding a research project, it is imperative that the researcher looks back at the processes they have used. Alvesson and Skoldberg suggest that the researcher needs to be critical of the literature chosen and the research methods used and needs to ensure that they have clearly articulated the outcomes. In writing each section of this thesis, the researcher has followed these guidelines to ensure that the meaning behind the words has been shown to the reader (Alvesson & Skoldberg, 2009). This section has reflected on the research methods used for this study and the next section considers some of the ideas and intentions behind the research.

8.2 Reflecting on the Ideas Highlighted in this Thesis

The research described in this thesis involves perspectives which began with a number of ideas that were reflected in the researcher's ontological opinion and perspectives. The initial ideas provided and shaped the early research questions and provided a number of ideas which the researcher then used to examine information gained as a result of the initial pilot study. These ideas were then clarified further in the later research, i.e. focus group meetings, questionnaire and individual interviews. It has been of interest when exploring the data and especially now at the end of the writing of the thesis, to see how the focus has developed. It is notable to see the unveiling of the data that was collected and to compare whether the data collected in the literature review is now connected to the final findings. In this case, as there was little literature available regarding the health benefits related to working with a dog guide, any specific link has been difficult to ascertain.

The ideas that guided the research in the initial literature review were indispensable to the overall research process. In addition, the ideas generated in the literature review, and the research gaps identified, enabled the researcher to consider issues that needed further clarification. This allowed the researcher to refine and modify questions to be asked in the focus group meetings, questionnaire and individual interviews. These questions allowed the collection of meaningful data and allowed the researcher to understand

and to interpret how health may be impacted by working with a dog guide. The researcher believes that the processes involved have been both valid and reliable. The study has revealed valuable content and new information regarding the potential health benefits obtained from working with a dog guide. It is essential to consider, however, that while a considerable number of participants were involved, the study was limited, in that it did not involve a random sample of people with vision impairment (participants elected to be involved) and, as the data were self-reported, it is appropriate to consider the limitations that self-reported data can contribute to research outcomes (Alvesson & Skoldberg, 2009; Rogler, Malgady, & Tryon, 1992).

8.3 Future Directions for Research

Throughout the writing of this thesis, the researcher has made a number of suggestions for the direction of future research. During the writing of this chapter, the researcher has included information which reveals why an exploratory/descriptive model was used and how this model has allowed the revelation of useful data. Further research could potentially be undertaken by blindness agencies throughout Australia in order to reveal strategic quantitative data, in relation to the particular health conditions that are prevalent in people with vision loss. This would allow a further investigation into the impact on health of working with a dog guide in particular situations, settings or for specific health conditions. It would also allow the potential to compare and contrast data over time in an effort to determine how dog guide mobility impacts on clients who have specific medical conditions.

While the results of this study provide important information surrounding positive health benefits achieved by people who are blind or vision impaired who use dog guides, it would be appropriate and constructive to undertake a larger scale study incorporating DGH from other countries. This would allow for data collection in countries with a variety of differing norms and cultural influences and it would allow the comparison of issues between countries.

Valuable clinical trials could also be implemented to provide comprehensive quantitative data to determine any potential impact that working with a dog

guide has on issues such as blood pressure, exercise levels, depression scores and the like, in a more global setting and over a longer period. It would also be beneficial to cross-validate the findings revealed in this research using the larger study model and utilising randomised control studies. These studies would help to exhibit specific characteristics of the individuals who may most benefit by using a dog guide as their primary mobility aid. It would also be beneficial to follow participants over a longer period, e.g. five years.

While this research study involved DGH, it would also be valuable to survey and/or interview dog guide instructors in order to obtain further evidence which may be available through their standard reporting methods as well as their practical experience in the field (Senge, Scharmer, Jaworski, & Flowers, 2004). Importantly, useful information on a range of issues related to dog guide use could also be gathered from members of the dog guide handler's informal and formal support networks e.g. family, caregivers, friends, work colleagues and case managers (Senge et al., 2004).

The current study has suggested that there is a positive correlation between dog guide use and improved health and psychosocial outcomes in people who are blind or severely vision impaired. It is essential to collect further empirical data in order to examine more rigorously the links between enhanced mobility through dog guide use and health and psychosocial outcomes (Ingvarson & Semple, 2006).

In the current study, the researcher aimed to reveal any health-related trends and to capture the 'real story' behind the lived experiences of the DGH themselves. This story is very important and has practical implications for potential handlers and for the service agencies who work with this group of people. In short, the trends as shown in this thesis suggest a positive impact on the health and psychosocial adjustment of DGH. This knowledge will help inform future handlers and service providers in identifying optimal mobility choices for people with vision impairment.

The task of making conceptual connections has been a fundamental aspect of the success of this research project. It has enabled the researcher to explore issues from a new and fresh perspective (Senge et al., 2004). The data that have been unveiled will benefit blindness agencies around Australia,

allowing them to see the broader contextual and social value of dog guides for people who are blind or vision impaired. The data will also provide useful information for people considering this form of mobility aid.

8.4 Final Reflection

At the conclusion of any research enterprise, it is important to reflect on the process that has taken place as a whole. Taylor (2000) describes reflection by noting that, it is, "the throwing back of thoughts and memories, in cognitive acts such as thinking, contemplation, meditation and any other form of attentive consideration, in order to make sense of them, and to make contextually appropriate changes if they are required," (p. 3).

Taylor's description provides us with an example of reflective practice which respects and values a varied array of thinking on which we can build a solid basis for our thoughts (see also Boud, Keogh & Walker, 1985; Mezirow, 1990; Street, 1992). An important aspirational goal that underpins the strategies used in this section is that, "reflective thinking is a rational and intuitive process which potentiates positive change," (Sherwood, Freshwater, Horton-Deustch & Taylor, 2004, p. 4).

Reflection on research allows the disclosure of principles that advance practices and procedures (Sherwood et al., 2004). Early educationalists such as Schon (1983), Boyd and Fales (1983) and Boud et al. (1985), have all laid the groundwork for the importance of reflection on any research project undertaken. In the current study, this process has allowed the clarification of ideas, the establishment of context and the consideration of elements that may have previously been overlooked. In the end, this has allowed the development of a balanced final product that has contributed valuable knowledge for stakeholders and dog guide users in Australia today. The results of this study add to the limited information that is available surrounding the use of dog guides and their impact on the health of their human handler. Hopefully, these findings will be of value to prospective and current DGH and their families. Additionally, since dog guide services do not currently attract government funding in Australia (Vision Australia, 2011), these data may be useful to service providers in their fundraising efforts.

This research has provided a unique snapshot of a large population of DGH in the Australian setting and is an extensive work which identifies factors that are pertinent to the health and wellbeing of persons who are blind or vision impaired. The consistent finding across all research modes in the study is that dog guides do appear to promote quality of life and improvements in health and psychosocial functioning for people who are blind or severely vision impaired. The implications of this, need to be shared with the disability field and further research is needed to build on and clarify these findings.

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Appendices

Appendix 1
Letter of Introduction, Questionnaire

LETTER OF INTRODUCTION

Dear Sir/Madam

I am a PhD student in the Department of Disability Studies in the School of Medicine at Flinders University conducting a research project looking at the health benefits of owning a dog guide for people who are blind or vision impaired. The aim of this research is to produce a report that will be utilised for the writing of my PhD thesis.

I would be most grateful if you would volunteer to assist in this project, by completing the attached questionnaire. Please be assured that any information provided will be treated in the strictest confidence and none of the participants will be individually identifiable in the resulting report or publications. You are, of course, entirely free to discontinue your participation at any time or to decline to answer particular questions. Please be assured that your consent is on the condition that your name or identity is not revealed and that the confidentiality of the material will be respected and maintained.

Any enquiries you may have concerning this project should be directed to Dr Brian Matthews at the Department of Disability Studies (Flinders University) at the address given above or by telephone on 08 82013448 or e-mail brian.matthews@flinders.edu.au.

Thank you for your attention and assistance.

Yours sincerely

Geraldine Lane
Dept of Disability Studies
Flinders University

Appendix 2
Consent Form for Participants

Dear Sir/Madam/Name,
I,....., have been invited to participate in a PhD research study being undertaken by Geraldine Lane of Flinders University and as outlined in the letter of introduction (above) the above study, which is being conducted under the direction of Dr Brian Matthews and Dr Caroline Ellison both of Flinders University.
I understand that while the study will be under their supervision, other relevant and appropriate persons may assist or act on their behalf.
My agreement is based on the understanding that the research study looks at how the ownership of a guide dog impacts on the health (physical, psychological and psychosocial) aspects of a guide dog handler's life. I will be required to answer the questionnaire (attached).
I have received and read the attached 'Participant Information letter' and understand the general purposes, methods and demands of the study. All of my questions have been answered to my satisfaction. I understand that the project may not be of direct benefit to me.
I have read and understand the sections in the attached 'Participant Information letter' describing the tasks that I may be required to perform, and have also had them explained to me. In particular I have read and understand the sections in the attached 'Participant Information letter' describing the processes involved.
I understand that I can refuse to consent or withdraw from the study at any time without explanation and that I can be withdrawn by the Principal Investigator from this study at any time.
I consent to the publishing of results from this study provided my identity is not revealed.
I hereby voluntarily consent and offer to take part in this study.

Name of Participant: (PLEASE PRINT) _____

Signature (Participant)

_____ Date: _____

Participant's Contact Telephone No: _____

Name of Witness: (PLEASE PRINT) _____

Witness to signature

_____ Date: _____

Date:

Name of Investigator: Geraldine Lane

Signature (Investigator)

_____ Date: _____

Appendix 3
Invitation Form for Participants (Focus Group)

Dear Sir/Madam/Name,

I,....., have been invited to participate in a PhD research study being undertaken by Geraldine Lane of Flinders University and as outlined in the letter of introduction (above) the above study, which is being conducted under the direction of Dr Brian Matthews and Dr Caroline Ellison both of Flinders University.

While the study will be under their supervision, other relevant and appropriate persons may assist or act on their behalf. My agreement to participate is based on the understanding that the research study looks at how the ownership of a guide dog impacts on the health (physical, psychological and psychosocial) aspects of a guide dog handler's life. I will be required to attend a focus group meeting.

I have received and read the attached 'Participant Information letter' and understand the general purposes, methods and demands of the study. All of my questions have been answered to my satisfaction. I understand that the project may not be of direct benefit to me.

I have read and understand the sections in the attached 'Participant Information letter' describing the tasks that I may be required to perform, and have also had them explained to me. In particular I have read and understand the sections in the attached 'Participant Information letter' describing the processes involved.

I understand that I can refuse to consent or withdraw from the study at any time without explanation, and that I can be withdrawn by the Principal Investigator from this study at any time, I consent to the publishing of results from this study provided my identity is not revealed.

I hereby voluntarily consent and offer to take part in this study.

Name of Participant: (PLEASE PRINT) _____

Signature (Participant)

_____ Date: _____

Participant's Contact Telephone No: _____

Name of Witness: (PLEASE PRINT) _____

Witness to signature

_____ Date: _____

Date:

Name of Investigator: Geraldine Lane

Signature (Investigator)

_____ Date: _____

Appendix 4
Information Sheet, Overview of the Project

There's More to a Guide Dog than Meets the Eye – PhD Research Project
Geraldine Lane

To Whom It May Concern:

I am currently a student undertaking a PhD research project through the Faculty of Medicine (Dept of Disability Studies) at Flinders University, South Australia. As a person who is legally blind and a dog guide handler myself, I have noted a vast improvement in my health and wellbeing since having a dog guide. While many studies have explored the companion animal/human handler relationship, and a few studies have investigated the role of service animals, very little research has specifically addressed the dog guide/human handler relationship. There has been little research undertaken that has explored the implications that working with a dog guide has on the health of their human handler. More specifically it is my understanding that no studies have been undertaken by a person who is blind, and, who uses a guide dog for mobility and independence. As I fall into this category, I am, therefore, interested to reveal any new evidence surrounding the dog guide/ human handler relationship.

People who are blind or vision impaired experience many problems and hurdles in their lives that they need to overcome. One of the major problems is regaining mobility and independence. While using a white cane to assist with mobility issues is a valid and reasonable way to have independent travel, it has been my experience that this mobility aid has limitations. As a person who has now worked with four dog guides, I have experienced a vast improvement in health, both physical and emotional from working with my dog guides. I have also observed similar issues in my friends who have dog guides, however research has not been undertaken to show whether this is actually the case, it is, therefore, my hope to redress this problem.

My PhD project is titled "There's More to a Guide Dog than Meets the Eye" (Project number– 5169) and it is my hope that this project will help to reveal new knowledge surrounding the impact that evolves as a result of working with a dog guide.

Appendix 5
Consent Form for Participation in Research
(By Interview, Focus Group)

I ….....

being over the age of 18 years hereby consent to participate as requested in the introduction letter for the research project on "The health benefits of working with a dog guide". I have read the information provided.

Details of procedures and any risks have been explained to my satisfaction.

2. I am aware that I should retain a copy of the Information Sheet and Consent Form for future reference.
3. I understand that:
   I may not directly benefit from taking part in this research.
   I am free to withdraw from the project at any time and am free to decline to answer particular questions.
   While the information gained in this study will be published as explained, I will not be identified, and individual information will remain confidential.
   Whether I participate or not, or withdraw after participating, will have no effect on any treatment or service that is being provided to me.
   I may ask that the interview be stopped at any time, and that I may withdraw at any time from the session or the research without disadvantage.
4. I have had the opportunity to discuss taking part in this research with a family member or friend.

Participant's signature _____ Date _____

I certify that I have explained the study to the volunteer and consider that she/he understands what is involved and freely consents to participation.

Researcher's name _____

Researcher's signature _____ Date_____

Appendix 6
Questionnaire

The Survey Questionnaire

Introduction to Interview
Section 1 - General
Section 2 - Demographics
Section 3 – Medical and Mobility Issues
Section 4 – Social Aspects
Section 6 - Close

Guide dog Handler Questionnaire
Method
My name is Geraldine Lane and I am currently undertaking research on the Health benefits of owning a dog guide. I am legally blind and I have had 4 dog guides. I am undertaking this research in order to complete my PhD thesis. All information will be treated in the strictest confidence and no identifying information will be used. I am happy to organise an appropriate time to discuss questions with you if you wish.
Thank you for agreeing to participate in this research project. I understand the impact that having a guide dog can have on the life of a person who is blind or vision impaired, having had 4 dog guides up to this point in my life.
The questionnaire contains 4 sections which explore your life as a person who is blind or vision impaired, how many dog guides (if any) you have had, what impact on your health (if any) having a guide dog has had.
At the end of each section of the questionnaire there is the option to add additional comments and I encourage you to do so.
If there are questions that you find that are not relevant to you due to your mobility issues please write n/a. If there are questions you prefer not to answer please write (pna).
I am emailing this questionnaire to you in the first instance as it is quite comprehensive. I am happy to telephone you at a time convenient to you to discuss any questions you may have or for me and to clarify any points you feel need clarification if you so desire.
Please be advised I am not an employee of any blindness agency and any information you share with me will be treated in the strictest confidence. Information utilised in my thesis will be non-identifying. Information given will be mixed with information from a number of people so it will be impossible to identify any participants. If you do wish however to be identified in this thesis, I cannot do so unless you give me written permission to do so. Therefore, you can be very open in your comments.
It is important that you answer each question carefully so that the information provided reflects your situation as accurately as possible. It is estimated that it will require approximately 30 minutes to complete this questionnaire.

Your cooperation in completing this questionnaire is greatly appreciated.

Section 1
General questions

1. What is your gender?
Are you Male or female – Please write M/or F

2. How old are you?
If you prefer not to say – please write prefer not to say

3. Are you an Australian citizen? Y/N
If no do you identify with a particular ethic group?

4. Do you have congenital or acquired blindness or vision impairment?
If acquired, how old were you when you lost your sight

5. Do you currently use a guide dog? Y/N

6. Have you had previous dog guides? Y/N
If yes, how many dog guides have you had?

7. Did you apply for your first guide dog to please: yourself others or both?

8. What do you believe are the advantages associated with working with a dog guide?

9. What do you believe are the disadvantages associated with working with a dog guide?

10. Have your social interactions improved since working with a dog guide? Y/N. If yes, please explain

11. Have you felt more independent since working with a dog? Y/N Please explain

12. Other comments?

Section 2
This section looks at demographics

Are you Married, single, living with a partner, pna?

Do you have congenital blindness? Y/N

Do you have acquired blindness? Y/N
If yes, please say whether your vision loss was sudden or gradual

Was your vision loss as a result of an accident or illness? Please specify.

What is your visual status/cause of/degree of blindness/vision impairment?
Total (no light perception)
Total with light perception/projection
Partial with central visual field loss
Partial with peripheral field loss
Partial with unspecific field loss
Please give more detail

In terms of mobility how much useful vision would you say you had?

In terms of social interactions with other people, how much useful vision do you have?

Is your ability to interact with others affected by your vision loss? If yes, please explain how

Are you?
Employed
Unemployed
Looking for work
Not looking for work
Undertaking voluntary work
Not working but on a Centrelink benefit (Blind pension)
Undertaking further education

Do you have any other disability?
Y/N or pna

11. Other comments?

Section 3
This section discusses medical and mobility issues.

In these questions they are mostly Y/N answers, if you prefer not to say write PNS. Please rest assured however that any information supplied will be treated in the strictest confidence and all information supplied will be destroyed after I have collected the data from the questionnaire

Medical/Health Information

1. What is your visual diagnosis?

2. Do you have Diabetes?

3. Do you have any other health conditions? Y/N Please give more details If you prefer not to specify please answer other health condition not specified.

4 How many hours do you sleep per night on average?

5. How do you feel when you wake up? Rested/ Tired /Depressed/ Sore

6. Do you currently take medications? Yes/No
Please list medications you use/used regularly:

7. What is your approximate weight? Kg

8. What is your approximate height? _____ft____inches

9. Are you concerned about your weight? Yes / No

10. Since having a dog guide, have you noticed you?:
(If you answer Y to any question, please explain)

a) Had more energy Y/N

b) Had less colds or flu Y/N

c) Exercised more Y/N

d) Lost weight Y/N

e) Have improved mental health Y/N

f) Been more emotionally stable Y/N

g) Become more muscular Y/N

h) Suffered less pain Y/N

i) Slept longer and better Y/N

j) Had reduced Cholesterol Y/N

k) Had reduced allergies Y/N

l) Been less dependent on over-the-counter medications Y/N

m) Felt less depressed Y/N

n) Had increased exercise tolerance Y/N

o) Increase your acceptance of your vision loss? Y/N

p) Improve your general quality of life? Y/N

q) Other - Please specify

How often do you visit your medical practitioner? (Average per year over the past 2 years)

r) On average how far do you walk per day with your dog guide?

s) Has this level of exercise increased since you have obtained your dog guide? If so please provide information regarding the level of increase.

Have these above findings been verified by a medical practitioner/medical tests? Y/N

Do you have a regular physical fitness regime?

Do you monitor your blood pressure?

Has your level of physical activity changed since you started working with your dog?
If yes, what has changed

Since working with your guide dog, has your regular medical practitioner made any comments about your general health and/or fitness? If yes, please explain.

Has your medical practitioner made any comments to you about your health that may imply a benefit that has occurred as a result of having a dog guide? Y/N
If yes please explain.

How often do you see you GP for monitoring of your health

Do you have depression? Y/N Please explain if yes.

Do you take medication for depression? Y/N

Did you have depression before having a dog guide? Y/N

Have you felt less depressed since working with a dog guide? Y/N If yes

Do you have feelings of sadness and how often? Y/N Please explain if yes

If you have feelings of sadness, have they decreased since working with a dog guide? Y/N

Other comments?

Section 4
This section discusses social aspects of having a dog guide. In these questions they are mostly Y/N answers, if you prefer not to say write PNS. Please rest assured that any information supplied will be treated in the strictest confidence and all information supplied will be destroyed after I have collected the data from the questionnaire.

If you answer yes to any question, please explain.

Since having a dog guide, have you
Noted people want to interact with you more? Y/N
Please explain

If you have noted more social interactions since having a dog guide, do you enjoy this increased attention? Y/N Please explain.

Have you noticed a change in the way people react to you since you have used a guide dog as your preferred mobility aid?
If yes, how did they respond?
If no, please explain?

Exercise more? Y/N If so please explain

Lost weight? Y/N If so please explain

Since having a dog guide, do you feel safer when moving about? Y/N

Since having a dog guide, do you feel more confident? Y/N

On a scale of 1-10, how would you rate your mobility before with a dog guide? With 1 being the lowest and 10 being the highest. Please specify

On a scale of 1-10, how would you rate your mobility since working with a dog guide? With 1 being the lowest and 10 being the highest. Please specify

What do you feel are the advantages of using a dog guide as a mobility aid?

What do you feel are the disadvantages of using a dog guide as a mobility aid?

Do you intend to use a dog guide in the future? Y/N

As all dog guide handlers have been previous long cane users, please answer the following questions. People who have a guide dog are encouraged to also keep up their white cane mobility skills, as there is always an occasion where a person may need to revert to a white cane as a mobility aid (e.g. if a guide dog gets ill).

1) It has been reported by a number of guide dog owners of my acquaintance who use a white cane from time to time instead of their guide dog, that they experience different reactions from the community when they are using their white cane as opposed to their guide dog? What do you think the Australian community's perception is of people who are blind or vision impaired and who use a white cane? Please explain

2) What do you think that the community perception of people who are blind or vision impaired who use a dog guide is? Please explain

Other comments?

Closing Comments

1. Do you wish to add any further comments?

Thank you

Geraldine Lane

Close of survey

Thank you for participating in this research survey, your answers will help to highlight vital aspects of the dog guide/handler relationship. I hope you have enjoyed being a part of this research project.

One last question. If further questions in relation to this research become evident, would you be willing to answer another shorter questionnaire? Y/N

Thank you once again for your participation

Appendix 6.1
Tables

Additional Demographic of Participants who Attended a Focus Group Meeting

Respondent Characteristics	Number (n-22)	Percentage
EMPLOYMENT STATUS:		
Paid fulltime employment	4	18.18%
Paid part time employment	2	9.09%
Volunteer Unpaid	5	22.72%
Self-employed	0	0.00%
Unemployed/looking for work	11	50.00%
Retired	0	0.00%
QUALIFICATIONS OBTAINED		
Completed Year 10	4	18.18%
Completed Year 12	18	81.81%
TAFE Certificate	4	18.18%
First degree	1	4.54%
Postgraduate degree	0	0.00%
LIVING ARRANGEMENTS		
Live Alone	15	68.18%
Live with one or more others	7	31.81%
NATIONALITY		
Australian Citizen	18	81.81%
All other categories	4	18.18%

Basic chart template courtesy - Whitmarsh, 2005

Additional Demographic Profile of Questionnaire Participants

Respondent Characteristics	Number (n-123)	Percentage
Employment Status		
Paid fulltime employment	20	16.26%
Paid part-time employment	15	12.19%
Volunteer/Unpaid	22	17.88%
Self-employed	0	0.00%
Unemployed	20	16.26%
Retired	0	0.00%
Unemployed/looking for work	46	37.39%
Qualifications Obtained		
Completed Year 10	72	58.53%
Completed Year 12 (TEE)	30	24.39%
TAFE Certificate	28	22.76%
TAFE Diploma	2	1.62%
First Degree	12	9.75%
Postgraduate Degree	3	2.43%
Living Arrangements		
Live Alone	70	56.91%
Live with one or more others	54	43.08%
Nationality		
Australian Citizen	119	96.74%
All other categories	4	3.25%

Basic chart template courtesy Whitmarsh, 2005

Marital Status of Questionnaire Respondents

Respondent Characteristics	Number (n-123)	Percent
Single	70	56.91%
Partnered	50	40.65%
Divorced or Widowed	3	2.14%
Prefer not to say (PNS)	0	0.00 %

Appendix 7
Sample Questions – Individual Interviews

Note: although questions were similar to the questionnaire distributed, extra medically based questions were able to be asked) See example excerpts of interviews in Appendix 8

General questions for individual interviews

What is your gender?
Are you Male or female – Please write M/or F

How old are you?
If you prefer not to say – please say prefer not to say

Are you an Australian citizen? Y/N

If no do you identify with a particular ethic group?

Do you have congenital or acquired blindness or vision impairment?

If acquired, how old were you when you lost your sight

What is your visual diagnosis?

What is your remaining level of vision, if any?

Do you currently use a guide dog?

Y/N

Have you had previous dog guides? Y/N

If yes, how many dog guides have you had?

Did you apply for your first guide dog to please: yourself others or both ,

Section 2
This section looks at demographics

Are you Married, single, living with a partner, prefer not to say?

Do you have congenital blindness? Y/N

Do you have acquired blindness? Y/N If yes, please say whether your vision loss was sudden or gradual

Was you vision loss as a result of an accident or illness? Please specify.

What is your visual status/ degree of blindness/vision impairment?

Total (no light perception)
Total with light perception/projection
Partial with central visual field loss
Partial with peripheral field loss
Partial with unspecific field loss

In terms of mobility how much useful vision would you say you had?
In terms of social interactions with other people, how much useful vision do you have?

Is your ability to interact with others affected by your vision loss? If yes, please explain how

Are you?

Employed
Unemployed
Looking for work
Not looking for work
Undertaking voluntary work
Not working but on a Centrelink benefit (Blind pension)
Undertaking further education

Do you have any other disability?
Yes, no pns

Interview participants with extra disabilities or health conditions then answered:

1.Please tell me a little more about your disability or health condition

2. Do you take medication for this disability/health condition?

This section discusses medical and mobility issues.
Medical/Health Information
1. What is your visual diagnosis?
2. How often do you visit your GP?
3. Do you have Diabetes? If answer was yes, participants then were asked to supply levels of insulin taken and amount of exercise.
4. Participants with diabetes were also questioned about diet.
5. How many hours do you sleep per night on average?
6. How do you feel when you wake up? Rested/ Tired /Depressed/ Sore
7. Do you currently take medications? Yes/No
Please list medications you use/used regularly:
8. What is your approximate weight? Kg
9. What is your approximate height? _____FT____Inches
10. Are you concerned about your weight? Yes / No
11 Since having a dog guide, have you noticed you?:
If yes, please explain.

a) Had more energy Y/N
b) Had less colds or flu Y/N
c) Exercised more Y/N
d) Lost weight Y/N
e) Have improved mental health Y/N
f) Been more emotionally stable Y/N
g) Become more muscular Y/N
h) Suffered less pain Y/N
i) Slept longer and better Y/N
j) Had reduced Cholesterol Y/N
k) Had reduced allergies Y/N
l) Been less dependent on over-the-counter medications Y/N
m) Felt less depressed Y/N
n) Had increased exercise tolerance Y/N
o) Increase your acceptance of your vision loss? Y/N
p) Improve your general quality of life? Y/N
q) Do you generally feel Y/N
i) happy ii) unhappy iii) not sure iv) other - Please specify

12. How often do you visit your medical practitioner?
13. Have these above findings been verified by a medical practitioner/medical tests? Y/N
Do you have a regular physical fitness regime?

14. Since using a guide dog has your level of physical activity changed since you started working with your dog?
(14.a) If yes, what has changed?
15. Since working with your guide dog, has your regular medical practitioner made any comments about your general health and/or fitness? If yes, please explain.
16. Has your medical practitioner made any comments to you about your health that may imply a benefit that has occurred as a result of having a dog guide? Y?N
If yes please explain
17. How would you describe your general health
a) poor b) fair
18. How often do you visit your GP for monitoring of your health?

Section 4
This section discusses social aspects of having a dog guide. In these questions they are mostly Y/N answers, if you prefer not to say write PNS. Please rest assured that any information supplied will be treated in the strictest confidence and all information supplied will be destroyed after I have collected the data from the questionnaire
1. Since having a dog guide, have you
Noted people want to interact with you more? Y/N
Please explain
If you have noted more social interactions since having a dog guide, do you enjoy this increased attention? Y/N
(c)Have you noticed a change in the way people react to you since you have used a guide dog as your preferred mobility aid?
If yes, how did they respond?
If no, please explain?

Exercise more? Y/N If so please explain
Lost weight? Y/N If so please explain
Please explain
Since having a dog guide, do you feel safer when moving about? Y/N
Since having a dog guide, do you feel more confident? Y/N
On a scale of 1-10, how would you rate your mobility before with a dog guide? With 1 being the lowest and 10 being the highest. Please specify
On a scale of 1-10, how would you rate your mobility since working with a dog guide? With 1 being the lowest and 10 being the highest. Please specify
What do you feel are the advantages of using a dog guide as a mobility aid?
What do you feel are the disadvantages of using a dog guide as a mobility aid?
How would you describe the impact of having a dog guide in your life? Consider issues such as health or emotions?

Do you intend to use a dog guide in the future? Y?N

People who have a guide dog are encouraged to also keep up their white cane mobility skills, as there is always an occasion where a person may need to revert to a white cane as a mobility aid (e.g. if a guide dog gets ill). It has been reported by a number of guide dog owners of my acquaintance who use a white cane from time to time instead of their guide dog, that they experience different reactions from the community when they are using their white cane as opposed to their guide dog? What do you think the Australian community's perception is of people who are blind or vision impaired and who use a white cane?

Closing comments

1. Do you wish to add any further comments?

Thank you

Geraldine Lane

Appendix 8
Excerpts of Interview Transcripts from Participant with a Dog Guide

While it is not appropriate to put all interview transcripts here, I have included some excerpts taken from an interview with a dog guide handler.

Note: Interviewees were asked the same questions as those who completed the questionnaire but were asked additional questions as time allowed for this and fuller responses were able to be obtained. I have included some insights from the interviews below.

Q1. How did you lose your sight?

I lost my sight due to an eye condition called retinitis pigmentosa, which is a hereditary condition. I have two brothers who also have this condition. I lost all my sight by the time I was 27.

Q.2. Were you aware that this eye condition would lead to a total loss of vision?

Yes, but I was unprepared still for the consequences of this eventuality. I went into a deep depression and it was only after I had had my first dog guide for a few months that I began to accept things. My dog guide changed my life for the better, I am ever so grateful to Seeing Eye Dogs Australia for matching me with my first dog; I have now had 4 dog guides. Researcher: That was going to be my next question?

Q.3. Is this your first dog guide? Y/N

If no: How many dog guides have you worked with

This is my 4th dog guide

Q.4. Do you have any other health conditions?

Yes, I have diabetes.

Q.5 Has working with a dog guide had any influence on your diabetes?

Yes, it has, as I now walk a lot more than I did before I got a dog guide. My dog gives me the impetus to get up and go outside, before I got my dog I tended to be less mobile, not just from the perspective of less confidence, but also as I tended to not want to be bothered going out. Since I got my first dog, I have since gone on to get a job, I am now working three days a week, but I also like to get out and about on my days off. You can't keep me at home now. I have digressed a bit, but to answer your question, the extra exercise and improvement in my mood, has motivated me a lot, it was a while before I noticed it, but my blood sugar levels became more level within

about a year of getting my first dog. So I guess to answer your question, the answer is yes.

Q.6. Did you consider when applying for your guide dog, the affect of your decision on your level of fitness?

No, I tended to mainly just think about it from the perspective of improved mobility.

Q.7. Did you consider becoming a dog guide handler to improve your overall health? Y/N?

No not really, I didn't really think about that aspect, however I have been pleasantly surprised as I not only feel better physically, but my mood, which tended to get very bleak, has been improved greatly.

Q.8. Do you take any medications?

I used to take an anti-depressant medication before I got my first dog guide, but two years after I got my first dog I was able to reduce the dosage and within three years I was totally able to discontinue its use. This was something I never expected to happen, as I had been taking this medication for quite a long time. It actually took about another year or so before I put two plus two together and worked out my reasons. When I thought about it I realised that it was since I had had my dog guide that I had felt better, I actually then considered the reason for this and I think, in my case, it was that I was now less lonely, less sad about my lot in life. The dog also helped me, I am sure to adjust to my total loss of vision, I think I would still be at home feeling sorry for myself if I had not got my first dog guide.

Q.9. What if any, other health benefits, have you noticed since working with your dog guide?

I have probably noted most of them, it was mainly that I have benefitted in my lower blood sugar levels, possibly due to the dog guide, possibly due getting more exercise, not sure. Whatever the reason I am very grateful to my dogs. Oh, and of course emotionally I feel better because I have my friend with me all the time.

Q.10. Do you think you will continue to use dog guides throughout your life? If yes, please give reasons, also if no, please let the researcher know why you would make a particular decision?

Yes, I believe I will, at least while I have enough work to warrant using a dog guide. For me I cannot imagine not working with a dog guide, I feel much freer and more secure when working with a dog guide, and I cannot imagine a time when I would not choose this form of mobility aid. Although this is how I feel, there may come a time in my life, when I am older and I do not have enough work to warrant using a dog guide, however my hope is to remain healthy into my old age, I guess we all hope that, but as long as I am healthy and can get out and about I would hope to be able to use a dog guide. I would most certainly miss the freedom it provides me with. I know I would also miss the constant company.

Appendix 9
Interview Guide and Codes Assigned to Individual Interview Questions

PART ONE: PERSONAL INFORMATION
Variable in code sheet
RESPONDENT NUMBER: _____ _____
STATE: *(state)* 1. New 2. Wes 3. V

GENDER: (*gen*) 1.Male2. Female

AGE: (*age*)_____

MARITAL STATUS: (*Mstatus*)
1. Single
2. Married
3. widow/divorced
4. Other (specify)_____

LEVEL OF LITERACY: Tick as applicable
1. None 2. Primary 3. Secondary
4. Tertiary (please indicate specific skills acquired)
(*Literacy*)

DISABILITY CATEGORY: (*disabcat*) Tick as applicable
1. Physical disability, e.g. impairment of limbs, muscular disorder, bullet injuries
2. Sensory disability, e.g. low vision, deafness etc
3. Intellectual disability, e.g. learning and speech difficulties
4. Mental disorders
5. Chronic medical conditions, e.g. asthma, epilepsy, backaches, tuberculosis etc
6. Multiple disabilities

EMPLOYMENT STATUS: (*emstatus*) Tick as applicable
Unemployed
Permanently employed
Employed on contract
Self-employed

PART TWO: QUESTIONS

A. Health CONCEPTS

1. Do you have other health issues/disabilities? (*odisab*)

2. How would you describe your health since you have worked with a dog guide? (*hdogdescr*)

3. Do you have depression and or low mood? (*depmod*)

4. How far do you walk each day? (*dwalk*)

5. Do you have diabetes? (*diabeyn*)

6. Do you use insulin? If so has your insulin usage changed since working with your dog guide?*(insuse)*

7. How does working with a dog guide improve others perceptions of you? (*ospercept*)

8. If you use a white cane or other mobility aid other than a dog guide sometimes, what do you feel are the advantages of using this mobility aid? What are the disadvantages of this mobility aid? (*odisaid*)

9. What are the advantages and disadvantages of working with a dog guide? (*doguidowndis*)

10. How often do you visit your GP? (*gpvis)*

11. Has your blood pressure changed since working with your dog guide? (*dgbp)*

12. Since working with your dog guide have you lost weight? (*lwyn)*

B. *Vision Category*

1. What is your level of vision? (*levvis*)

2. How long have you been blind or vision impaired? Explain (*bllengt*)

3. Do you feel being blind alters others perceptions of you? (*operc)*

4. Since working with a dog guide, how would you rate your mobility? Please explain? (*rmob*)

5. How would you describe your level of difficulty in moving about safely? (*levdifficul*)

6. If people who are blind or vision impaired are treated differently, what is your opinion regarding this treatment? (*optreat*)

7. What is the main disadvantage of having a disability? (*mdisadv*)

CHALLENGES FACING People who are blind or vision impaired
1. What is your life like as a person with a disability? (*lifelike*)

2. Do you encounter any marital challenges as a result of your disability? Explain (*marichal*)

3. Do you encounter any work challenges as a result of your disability? (*wchal)*

Examples of entries in the codebook are as follows:

Codebook examples

	Question 1 Marital status	Question 2 Disability	Question 3 Vision category	Question 4 Employment status
Respondent 1	Coded answer	Coded answer	Coded answer	Coded answer

Question 1. Mstatus (Marital status)
1. Single 2. Married 3. Widowed 4. Divorced 5. Other

Question 10. ODis (Other Disability) Do you have another disability apart from sensory disability?)
1. Yes. 2. No. 3.Prefer not to answer

Question 5. Vislo (What is your level of vision loss?)
1. Total (no light perception)
2. Total with light perception/projection
3. Partial with central visual field loss
4. Partial with peripheral field loss
5. Partial with unspecific field loss
6. Prefer not to say

An Example of How Data was Recorded

	Mstatus	Odis	Vislo
1	2	0	4
10	1	1	2
5	5	1	3

In the above table the first respondent was a married person (MStatus = 2) who had no other disability (ODis= 0). The respondent also reported their visual acuity as (Vislo = 4).

Appendix 10
Ethics Approval Notice Flinders University

Flinders University and Southern Area Health Service
SOCIAL AND BEHAVIOURAL RESEARCH ETHICS COMMITTEE
Research Services Office, Union Building, Flinders University
GPO Box 2100, ADELAIDE SA 5001
Phone: (08) 8201 3116
Email: human.researchethics@flinders.edu.au
FINAL APPROVAL NOTICE
Principal Researcher: Ms Geraldine Lane
Email: gell@iinet.net.au and geraldine.lane@flinders.edu.au
Address: Department of Disability Studies
Project Title: 'Gone to the dogs'?
Project No.: 5169
Final Approval
Date:
20 June 2011
Approval
Expiry Date:
30 March 2012
The above proposed project has been approved on the basis of the information contained in the application, its attachments and the information subsequently provided.
If you have any outstanding permission letters (item D8), that may have been previously requested, please ensure that they are forwarded to the Committee as soon as possible.
Additionally, for projects where approval has also been sought from another Human Research Ethics Committee (item G1), please be reminded that a copy of the ethics approval notice will need to be sent to the Committee on receipt.
In accordance with the undertaking you provided in your application for ethics approval for the project, please inform the Social and Behavioural Research Ethics Committee, giving reasons, if the research project is discontinued before the expected date of completion.
You are also required to report anything which might warrant review of ethical approval of the protocol. Such matters include:
§serious or unexpected adverse effects on participants;
§proposed changes in the protocol (modifications);
§any changes to the research team; and
§unforeseen events that might affect continued ethical acceptability of the project.
To modify/amend a previously approved project please either mail or email a completed copy of the Modification Request Form to the Executive Officer, which is available for download from http://www.flinders.edu.au/research/info-for-researchers/ethics/committees/social-and-behavioural-research-ethics-committee/notification-of-committee-decision.cfm.
Please ensure that any new or amended participant documents are attached to the modification request.
In order to comply with monitoring requirements of the National Statement on Ethical Conduct in Human Research (March 2007) an annual progress and/or final report must be submitted. A copy of the pro forma is available from http://www.flinders.edu.au/research/info-for-researchers/ethics/committees/social-behavioural.cfm.
Your first report is due on 20 June 2012 or on completion of the project, whichever is the earliest. Please retain this notice for reference when completing annual progress or final reports. If an extension of time is required, please email a request for an extension of time, to a date you specify, to human.researchethics@flinders.edu.au before the expiry date.
Andrea Mather
Executive Officer
Social and Behavioural Research Ethics Committee
20 June 2011
c.c Dr Brian Matthews, brian.matthews@flinders.edu.au
Dr Caroline Ellison, caroline.ellison@flinders.edu.au

Appendix 11
A Guide to Australian Eye Health Data

(n.d.) Retrieved from https://docs.google.com/viewer?a=v&q=cache:kzV798gAOsEJ:www.aihw.gov.au/WorkArea/DownloadAsset.aspx%3Fid%3D6442459082+blindness+statistics+australia&hl=en&gl=au&pid=bl&srcid=ADGEESjYDDHUGy1FVub1eJ1hZyOczm1UwhMDX5Dg0-Cz2rxiPeS-TO9wb_VJZX2_TqsP0Evf_GPxCLSRo0iPsGgGPPqbaLcxb7K2irJqDI0COcYYWFPBddP7n2vU4vjrvIIdRJ1A2aV&sig=AHIEtbSZjKNy3kpm5oJvaD9e_Vu9Dp-38Q

Definitions of Visual Impairment used in Australia

The ICD-10-AM classification, 'visual impairment' includes 'blindness' and 'low vision'. Therefore a visual acuity with best possible correction of less than 6/18 and/or a corresponding visual field loss of less than 10 degrees around central fixation or no light perception (National Centre for Classification in Health 2006)

Adopted by:
National Mortality Database (Dunn et al. 2006)
National Hospital Morbidity Database (AIHW 2006b).

An individual has some degree of sight loss (Royal Blind Foundation Queensland 2006)

Visual acuity <6/12 in both eyes, established by Eye Research Australia (Access Economics 2004)

Visual acuity <6/18, established by the Katherine Region Diabetic Retinopathy Study.

Best corrected visual acuity <6/18 and/or visual field constriction to within 20° of fixation, established by the Melbourne Visual Impairment Project (Livingston et al. 1997)

Best-corrected visual acuity of 6/12 or worse, established by Blue Mountains Eye Study (Wang et al. 2000)

A person with visual acuity of less than 6/18 (0.3) but equal to or better than 6/60 (0.05) in the better eye with the best possible correction and/or a visual field of less than 20 degrees, referred to as 'vision impaired' (Vision Australia, 2011)

People who are visually impaired include those who are blind, who have vision significantly less than normal (which is usually taken as acuity less than 6/18) but are not classified as blind (Fred Hollows Foundation 2006)

'Visual Impairment' to be used when the condition of vision loss is characterised by a loss of visual functions (such as visual acuity, visual field etc.) at the organ level. Many of these functions can be measured quantitatively, established by International Council of Ophthalmology (ICO), as endorsed locally by the Royal Australian and New Zealand College of Ophthalmologist (ICO 2002).

Definitions of Low Vision used in Australia

Visual acuity with best possible correction of less than 6/18, but equal to or greater than 3/60 (National Centre for Classification in Health 2006)

Adopted by:
National Mortality Database (Dunn et al. 2006)
National Hospital Morbidity Database (AIHW 2006b).

A person is said to have low vision when their eyesight is limited or impaired and cannot be corrected with conventional glasses or contact lenses (Vision Australia 2006b)

Low vision is an impairment to vision that significantly interferes with the functioning of a person and cannot be adequately corrected with medical, surgical, therapy, conventional eyewear or contact lenses. It is often a loss of sharpness or acuity but may present as a loss of field of vision, light sensitivity, distorted vision or loss of contrast. Low vision may occur as a result of birth defects, injury or as a complication of disease (Macular Degeneration Foundation 2006)

'Low vision' is to be used for lesser degrees of vision loss, where individuals can be helped significantly by vision enhancement aids and devices. International Council of Ophthalmology (ICO), as endorsed locally by the Royal Australian and New Zealand College of Ophthalmologist (ICO 2002).

Definitions of Blindness used in Australia

Visual acuity with best possible correction of less than 3/60, and/or a corresponding visual field loss of less than 10 degrees around central fixation or no light perception (National Centre for Classification in Health 2006)

Adopted by:
Australian Corneal Graft Registry
Florey Adelaide Male Ageing Study
National Mortality Database (Dunn et al. 2006)
National Hospital Morbidity Database (AIHW 2006b)

Presenting visual acuity less than 6/60 in the best eye, established by the Blue Mountains Eye Study and Melbourne Visual Impairment Project combined study (Taylor et al. 2005)

Visual acuity of less than 3/60 or corresponding visual field loss in the better eye with best possible correction (Fred Hollows Foundation 2006)

Whether the individual has become legally blind in either or both eyes. Blindness is less than 6/60 vision in the better eye with glasses. Vision 6/60 is the ability to see only at 6m what the normal eye can see at 6m. An indicator of the presence or development of a visual impairment or inability to see (AIHW 2005b)

Visual acuity < 6/60 in both eyes established by the Australian National Diabetes Information Audit and Benchmarking (National Association of Diabetes Centres 2005)

'Blindness' to be used only for total vision loss (that is, no light perception) and for conditions where individuals have to rely predominantly on vision substitution skills, established by the International Council of Ophthalmology (ICO), as endorsed locally by the Royal Australian and New Zealand College of Ophthalmologists (ICO 2002)

There is total loss of sight; or corrected visual acuity is less than or equal to 6/60 in both eyes; or where, in the written opinion of an ophthalmologist, the visual fields deficits; and/or combination of deficits results in a visual impairment which is the equivalent of a corrected visual acuity measure of less than or equal to 6/60 in both eyes established by the Australian Government for the purposes of determining permanent blindness pensions paid by the Department of Veterans' Affairs (Australia Government, Department of Veterans Affairs 2006)

Definitions of Legal Blindness used in Australia

Visual acuity on the Snellen scale after correction by suitable lenses must be less than 6/60 in both eyes; or constriction to within 10 degrees of fixation in the better eye irrespective of corrected visual acuity; or a combination of visual defects resulting in the same degree of visual impairment as that occurring in the above points, established by the Australian Government for the purposes of determining permanent blindness for Disability Support Pension or Age Pension—Blind under Section 95 of the Social Security Act 1991 (Australian Government 2006)

Adopted by:
Blind Citizens Australia, used as determining criteria for full and junior membership (Blind Citizens Australia 2006); referred to a 'permanent blindness'
Eye Research Australia (Access Economics 2004)
Queensland Blind Association Inc. Used as a basis for membership and purchase of white canes (Queensland Blind Association Inc. 2001)
Royal Blind Foundation Queensland (2006)
Retina Australia (2001)
The Katherine Region Diabetic Retinopathy Study
Vision Australia, as stated in the Constitution (2006) (Vision Australia 2011)

Appendix 12
Projected Numbers of People who are Blind or Vision Impaired up until 2024

Projected number of people with low vision and blindness in Australia

	Estimated no. (95% CI)	
Year	Low vision (PVA < 6/12)	Blindness (PVA < 6/60)
2000	431 100 (394 700–469 100)	47 700 (41 800–70 100)
2004	480 300 (441 400–522 700)	50 600 (45 100–74 500)
2010	560 500 (514 300–611 300)	62 000 (55 100–88 400)
2014	619 700 (568 500–675 800)	68 800 (61 100–96 800)
2020	716 400 (657 700–780 700)	78 300 (69 600–107 700)
2024	799 100 (733 500–870 800)	87 600 (78 000–118 100)

PVA = presenting visual acuity (with spectacles if usually worn for distance viewing).

Data: courtesy Taylor et al. (2005) the Blue Mountains Eye Study and the Melbourne Visual impairment Project

Population characteristics and results of the surveys of eye disease

	Melbourne Visual Impairment Project		Blue Mountains Eye Study	
	Rural–urban	Nursing home–hostel	Rural–urban	Nursing home–hostel
No. of participants	4744	403	3632	130
Participation rate	85%	90%	82%	96%
% women	53%	79%	57%	65%
Median age in years (range)	58 (40–98)	84 (47–102)	66 (50–97)	78 (51–102)
% in age group				
< 50 years	27%	1%	0	0
50–59 years	28%	1%	27%	5%
60–69 years	25%	6%	36%	15%
70–79 years	15%	23%	26%	35%
80–89 years	5%	46%	9%	35%
90 + years	1%	23%	1%	10%
% with low vision	4%	38%	11%	31%
% with blindness	0.5%	35%	0.5%	9%

Data: courtesy Taylor et al. (2005) the Blue Mountains Eye Study and the Melbourne Visual impairment Project

Estimated numbers of people with low vision and blindness caused by different conditions in Australia, 2004

	Low vision (PVA < 6/12)			Blindness (PVA < 6/60)		
Cause	Estimated number (95% CI)	% (including RE)	% (excluding RE)	Estimated number (95% CI)	% (including RE)	% (excluding RE)
Age-related macular degeneration	48 300 (43 200–73 900)	10%	26%	24 200 (21 400–52 400)	48%	50%
Glaucoma	13 700 (12 600–38 800)	3%	8%	6 900 (6 000–30 900)	14%	14%
Cataract	68 700 (61 700–94 600)	14%	37%	6 100 (5 400–31 400)	12%	13%
Diabetic retinopathy	7 800 (7 200–31 000)	2%	4%	5 700 (5 200–64 800)	11%	12%
Other retinal	15 900 (14 700–34 500)	3%	9%			
Neuro-ophthalmic	8 700 (7 900–27 800)	2%	5%	1 400 (1 300–28 800)	3%	3%
Other	20 500 (18 900–26 400)	4%	11%	4 400 (4 000–29 600)	9%	9%
Refractive error	296 700 (275 900–320 600)	62%	–	1 900 (1 700–30 800)	4%	–
Total	480 300 (441 400–522 700)			50 600 (45 100–74 500)		

RE = refractive error. PVA = presenting visual acuity (with spectacles if usually worn for distance viewing).

Data: courtesy Taylor et al. (2005) the Blue Mountains Eye Study and the Melbourne Visual impairment Project

Estimated age distribution of people with low vision and blindness in Australia, 2004

Age group (years)	Low vision (PVA < 6/12)		Blindness (PVA < 6/60)	
	Estimated no. (95% CI)	Age-specific prevalence (95% CI)	Estimated no. (95% CI)	Age-specific prevalence (95% CI)
40–49	19 800 (18 200-21 400)	0.67 (0.62–0.72)	0 (0–14 200)	0 (0–0.48)
50–59	57 500 (54 300-60 900)	2.28 (2.16–2.42)	2 308 (2 200-5 400)	0.09 (0.09–0.22)
60–69	73 200 (69 200-77 300)	4.51 (4.27–4.76)	4 600 (4 400-4 900)	0.29 (0.27–0.30)
70–79	132 200 (123 600-141 300)	11.41 (10.67–12.20)	7 900 (7 400-8 500)	0.68 (0.64–0.73)
80–89	172 300 (155 200-190 200)	28.75 (25.92–31.75)	24 700 (22 300-27 400)	4.12 (3.71–4.58)
90 +	25 400 (20 700-31 700)	39.49 (31.23–47.76)	11 000 (8 800-14 000)	16.94 (13.29–21.13)

PVA = presenting visual acuity (with spectacles if usually worn for distance viewing).

Data: courtesy Taylor et al. (2005) the Blue Mountains Eye Study and the Melbourne Visual impairment Project

Appendix 13
Approval Letter SEDA (Seeing Eye Dogs Australia)

Seeing Eye Dogs Australia

9 June 2011
Geraldine Lane
12 Savior Court
CRAIGIE WA 6025

Re: PhD Research - Seeing Eye Dogs Australia Dear Geraldine

This letter is to confirm that Seeing Eye Dogs Australia will be delighted to participate in your PhD research project titled "There's More to a Dog Guide than Meets the Eye" an investigation into the world of the dog guide handler.
We will be most pleased to advertise for participants from our extensive client base from around Australia. We will advertise the overview of your research project and explain the 'opt out' processes and support that we can offer participants in our client newsletter, and invite clients to participate in your study. We will be happy to refer any clients to you who agree to participate.
We believe that your project will provide invaluable information for our organisation and will be happy to assist in any way possible. We look forward to being part of this exciting research.
Yours faithfully

Leigh Garwood

Appendix 14
Email Distributed by Blind Citizens Australia

From: Kerry Cameron
Date: 3/08/2011 2:47:52 PM
To: Undisclosed-Recipient:,
Subject: Fw: bca-l: Research Project - "Gone to the Dogs" (Project number – 5169)
----- Original Message -----
Research Project - "Gone to the Dogs" (Project number – 5169)
Please contact Geraldine Lane direct for more information email: g.lane@flinders.edu.au

Geraldine, is interested in talking to people who have or had a Dog Guide or anyone who chooses not to use a Dog Guide.
See below for more information
My PhD project is titled "There's More to a Guide Dog than Meets the Eye" **(Project number – 5169)** and it is my hope that this project will help to reveal new knowledge surrounding the true impact that evolves as a result of working with a dog guide.
Principal Researcher: Ms Geraldine Lane
Email: g.lane@flinders.edu.au

Dear Sir/Madam

I am a PhD student in the Department of Disability Studies in the School of Medicine at Flinders University conducting a research project looking at the health benefits of owning a dog guide for people who are blind or vision impaired. The aim of this research is to produce a report that will be utilised for the writing of my PhD thesis.

I would be most grateful if you would volunteer to assist in this project, by completing the attached questionnaire. Please be assured that any information provided will be treated in the strictest confidence and none of the participants will be individually identifiable in the resulting report or publications. You are, of course, entirely free to discontinue your participation at any time or to decline to answer particular questions. Please be assured that your consent is on the condition that your name or identity is not revealed and that the confidentiality of the material will be respected and maintained.

Any enquiries you may have concerning this project should be directed to Dr Brian Matthews at the Department of Disability Studies (Flinders University) at the address given above or by telephone on 08 82013448 or e-mail brian.matthews@flinders.edu.au
Thank you for your attention and assistance.

Yours sincerely
Geraldine Lane
Dept of Disability Studies
Flinders University, Department of Disability Studies
Flinders University
GPO Box 2100
Adelaide SA 5001
Tel: 08 8201 3422
Fax: 08 8201 3646 Caroline.Ellison@flinders.edu.au
CRICOS Provider No.00114A

Appendix 15
Statistics from Whitmarsh (2005) Guide Dog Study

Demographic profile of survey respondents *Whitmarsh, (2005)*

	Dog guide owners		Non-dog guide owners	
Respondent characteristics	N	% of group	N	% of group
Gender				
Male	203	50.2	173	40.5
Female	201	49.8	254	59.5
Additional disabilities/serious health problems				
Yes	213	52.7	273	63.9
No	191	47.3	154	36.1
Registration status				
Registered blind	386	95.5	236	55.3
Registered partially sighted	17	4.2	171	40
Not registered	0	0	13	3
Don't know	1	0.2	7	1.6
Residual vision				
Yes	235	58.1	369	86.4
No	169	41.9	58	13.6
Employment status				
Paid full-time employment	26	6.5	11	2.6
Paid part-time employment	14	3.5	7	1.7
Volunteer/unpaid	11	2.7	5	1.2
Self-employed	15	3.7	6	1.4
Full-time student	8	2	3	0.7
Retired	207	51.2	343	80.3
Unemployed/looking for work	27	6.7	11	2.6
Unable to work	74	18.3	34	8
Looking after the home	22	5.5	7	1.7
Qualifications obtained				
GCSE/O-Level	165	81.7	104	74.5
GNVQ	26	12.9	12	8.5
BTEC	14	6.9	16	11.3
A-Level	85	42.1	49	34.8
First degree	77	38.1	46	32.6
Postgraduate degree	28	13.9	29	20.6
Living arrangements				
Live alone	131	32.4	160	37.5
Live with one or more others	273	67.6	267	62.5
National origin				
White	395	98.8	419	98.6
All other categories	9	2.2	8	1.9
Total	404	100%	427	100%