

**DOG VISITATION'S IMPACT ON SENIORS' SOCIAL SUPPORT:
COMPARING GROUP AND INDIVIDUAL CONDITIONS**

by

Lindsay Burton

BHSc, University of Calgary, 2012

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF SCIENCE

in

THE COLLEGE OF GRADUATE STUDIES

(Interdisciplinary Studies)

THE UNIVERSITY OF BRITISH COLUMBIA

(Okanagan)

July 2016

© Lindsay Burton, 2016

The undersigned certify that they have read, and recommend to the College of Graduate Studies for acceptance, a thesis entitled:

Dog Visitation’s Impact on Seniors’ Social Support: Comparing Group and Individual Conditions

submitted by Lindsay Burton in partial fulfillment of the requirements

of the degree of Master of Science.

Colin Reid, School of Health and Exercise Sciences, UBCO

Supervisor, Professor (please print name and faculty/school above the line)

Alan Davidson, School of Health and Exercise Sciences, UBCO

Supervisory Committee Member, Professor (please print name and faculty/school in the line above)

Cristina Caperchione, School of Health and Exercise Sciences, UBCO

Supervisory Committee Member, Professor (please print name and faculty/school in the line above)

University Examiner, Professor (please print name and faculty/school in the line above)

John Tyler Binfet, Faculty of Education, UBCO

External Examiner, Professor (please print name and university in the line above)

July 19 2016

(Date Submitted to Grad Studies)

Additional Committee Members include:

James Gillett, McMaster University

(please print name and faculty/school in the line above)

(please print name and faculty/school in the line above)

Abstract

Introduction: Social support (SS) is an important determinant of senior health. Dogs are an underutilized modality for seniors' SS promotion, and dog visitation programs are emerging to address this underutilization. Dogs impact SS in two ways according to the Social Support Theory, as an agent of SS (direct) or as a facilitator of SS (indirect). **Purpose:** To replicate naturalistic interventions to determine whether visiting dog programs positively impact SS, whether there are differences between individual and group conditions, and whether differences are primarily due to direct or indirect effects of dog visiting programs. **Methodology:** An exploratory quasi-experimental comparative intervention study design, with mixed methods, was utilised. The six-week intervention involved participants' (n=8) exposure to a dog and its handler to measure the influence on participants' perceived SS. Two conditions, group and individual, were compared to explore differences in visiting dog programs. Quantitative measurements of social support were taken at baseline, immediately post intervention, and at six weeks post intervention. Qualitative semi-structured interviews were conducted throughout the intervention along with field notes. Six weeks following the intervention a focus group was held to determine longer-term effects. Quantitative data were analyzed using mixed measures ANOVA and qualitative data were analyzed using interpretive description. **Results:** Mixed measures ANOVA were not significantly different between conditions, over time, or over time between conditions. The main effect in the individual condition was indirect, that is, facilitation of interaction between participant and handler. The group condition formed the primary bond with the visiting dog during the intervention (direct), however the group was able to maintain a connection because of the program six weeks post intervention (indirect). Reminiscence emerged as an important component of the visitation program. **Conclusion:** The visiting dog program produced positive influence on participants. The lasting impact of the program was the impression left by the relationship built between participants and the visiting dog. Future studies should incorporate reminiscence into the research design to further investigate its influence.

Preface

This dissertation is original, unpublished, independent work by the author, L. Burton. Data collection and all materials are covered under UBC Okanagan Behavioural Research Ethics Board Certificate number H15-00918. Use of the visiting dog in data collection is covered under the UBC Animal Care Certificate number A15-0094.

Table of Contents

Abstract	iii
Preface	iv
Table of Contents	v
List of Tables	vii
List of Figures	viii
Glossary	ix
Acknowledgements	xi
Chapter 1: Introduction	1
Literature Review	5
Social Support and Healthy Aging	5
Social Support in Assisted Living Facilities	8
Companion Animals as Providers of Social Support	10
Companion Dogs and the Social Support Theory	12
Companion Dogs' Impact on Social Support	15
Barriers To Dog Ownership	20
Visiting Dog Programs and Senior Outcomes	21
Group and Individual Comparisons	24
Naturalistic Interventions Versus Artificial Research Conditions	25
Research Questions	27
Hypotheses	27
Chapter 2: Methodology	28
Design	28
Sample	29
Research Phases	33
Phase one: facility recruitment.	33
Phase two: participant recruitment.	36
Phase three: intervention.	38
<i>Individual condition.</i>	39
<i>Group condition.</i>	40
Phase four: follow-up.	42
Measures	43
Analyses	46
Chapter 3: Results	51
Sample Descriptions	51
Facility Descriptions	51
Participant Descriptions	51
Group condition	52
Individual condition	53
Intervention Descriptions	53
Interviews and Field Notes	55
Group condition	56

<i>Personification</i>	56
<i>Bereavement</i>	57
<i>Pet Void</i>	58
<i>Emotional support</i>	59
Individual condition	60
Reminiscence	61
Focus Groups	63
Mixed Measures ANOVA	64
Chapter 4: Discussion	65
Hypothesis 1	65
Hypotheses 2 and 3	66
Reminiscence	71
Real World Intervention	73
Conclusion	74
Limitations	76
Contributions	80
Future Directions	80
References	82
Appendices	90
Appendix A: Conceptual model of social support’s multilevel impact on health (Berkman et al., 2000)	90
Appendix B: Facility Director Introduction Letter	91
Appendix C: Advertising Poster	92
Appendix D: Individual Condition Consent Form	93
Appendix E: Group Condition Consent Form	97
Appendix F: Demographic Questionnaire	101
Appendix G: Multidimensional Scale of Perceived Social Support	102
Appendix H: Semi-Structured Interview Questions	104
Appendix I: Guest Consent Form	105
Appendix J: Focus Group Consent Form	108

List of Tables

Table 3.1 Descriptive counts and means for group and individual condition participants.	52
Table 3.2 Similarities and difference between intervention conditions	55

List of Figures

Figure 1.2 The proposed impact of dogs on perceived social support under the social support theory	13
Figure 2.1. Timeline of Facility and Participant recruitment.	36
Figure 4.1 Interactions between participants, handler, and dog in the Group Condition.....	70

Glossary

Animal Assisted Therapy (AAT): Using an animal, usually a dog, to achieve therapy goals, for example, improving motor skills by throwing a ball for a dog or by brushing a dog.

Animal Assisted Activities (AAA): Another term for visiting dog programs, interactions with patients, participants, or residents without explicit therapeutic or programmatic objectives.

Anthropomorphic Thinking: Assigning human-like mental states in animals and other nonhuman agents.

Assisted Living Facility: Senior home which allows for independence while providing support through meals, laundry, housekeeping, and optional additional services.

Companion Animal Support: Interactions with companion animals serve to supplement and substitute human social support.

Direct Effect: When human social support is not sufficient or is difficult to obtain, companion animals may offer support in a number of ways: they may “top up” existing support, fill in for a deficiency of support, act as a cushion for fluctuating support.

Dog Companionship: An attachment relationship with a dog, which can include ownership but ownership does not always result in companionship.

Dog Handler: Usually the owner of the visiting dog who is responsible for the safety of participants, clients, residents, and the dog.

Dog Ownership: The presence of a dog within one’s household.

Indirect Effect: The companion animal acting as a social catalyst, where the presence of pets initiates social interaction and facilitates the creation of new social networks

Naturalistic Intervention: An intervention research study that approximates what would take place in a real world application of the intervention.

Placeholder: The role of the handler in the group condition, filling in for conversation when the visitation dog was occupied with another group member.

Recreation Coordinator: An assisted living facility employee responsible for arranging and promoting all recreation for seniors with the facility.

Reminiscence: The sharing of experiences or memories in response to stimulus. A psychological technique often used in senior populations.

Senior: An individual who is 65 years of age or older.

Social Support: The meaningful function provided by social relationships

Visiting Dog Programs: Interactions with patients, participants, or residents without explicit therapeutic or programmatic objectives.

Acknowledgements

I am forever grateful for the support I received from the faculty and staff at UBC O. This document would not exist without the patience, support, and critique of Dr. Reid. I thank my committee members, whose comments expanded my understanding and challenged my assumptions.

Special thanks to my family and friends who have supported me throughout my years of education, morally and financially.

Chapter 1: Introduction

This study aims to address a gap in the literature on the use of visiting dog programs as a means of promoting social support among seniors in assisted living facilities. This research area is important because social isolation and depression, which are products of poor social ties, are common in assisted living facilities and among the broader senior population (Krause-Parello, 2012). It is important to explore new interventions to expand the arsenal of health promotion options for a rapidly aging population. One such intervention option is the use of visiting dog programs in senior facilities. To date, however, little research has been conducted in this area.

Existing research on visiting dog programs and seniors' health outcomes, while having laid an important foundation for further research, must be expanded before robust statements can be made on the merits of visiting dog programs in senior populations. Studies on visiting dog programs in senior populations lack consistent methodologies, significant results, and naturalistic applicability (Banks & Banks, 2002; Banks & Banks, 2005; Banks, Willoughby, & Banks, 2008; Bernstein, Friedmann, & Malaspina, 2000; Berry et al., 2012; Filan & Llewellyn-Jones, 2006; Nordgren & Engström, 2014). To address the inconsistencies and limited applicability of previous research, this study focuses on the experience of visiting dog programs and relationships among participants to develop an in-depth understanding of this intervention. By developing this deeper understanding of the experience of a visiting dog program and linking this experience to outcomes, this research project forms a solid foundation upon which to build further research.

Social support is an important determinant of seniors' health (Gilmore, 2012). Seniors who report greater social support have lower scores on measures of loneliness and depression, as well as higher scores on measures of life satisfaction and overall physical health status (Brown &

Rhodes, 2006; Epping, 2011; Kahn, Hessling, & Russell, 2003; Rhodes, Murray, Temple, Tuokko, & Higgins, 2012). Social support is also related to health promoting behaviours, such as increased physical activity and good food choices, in seniors (Riffle, Yoho, & Sams, 1989). While social support is an important component of successful aging, seniors in assisted living facilities are at elevated risk of social isolation (Howie, Troutman-Jordan, & Newman, 2014). Transitions out of private residences into institutions such as assisted living facilities put seniors at increased risk for social isolation and poor social support because of potential separation from friends and family (Howie et al., 2014). Interventions aimed at promoting social support in can target seniors' vulnerabilities and potentially contribute to successful aging and overall well-being.

A promising new approach for promoting seniors' social support is the use of companion animals. The literature highlights the use of companion dogs to lessen depressive symptoms, decrease loneliness, increase social engagement, and to promote seniors' social support systems (Banks et al., 2008; Crowley-Robinson, Fenwick, & Blackshaw, 1996; Filan & Llewellyn-Jones, 2006; Krause-Parello, 2012; McNicholas & Collis, 2000). The use of companion animals is an increasingly popular approach to fostering health promotion. With the benefits of dog companionship encompassing physical, social, and mental health, the potential benefits of companion animals cover the entire continuum of care. Researchers have shown dog ownership to be a viable option for promoting health by increasing social support (Cutt, Giles-Cortia, Knuimana, & Burkeb, 2007; Friedmann & Son, 2009; O'Haire, 2010), as well as increasing overall well-being and self-rated health (Cutt et al., 2007; Friedmann & Son, 2009; Giaquinto & Valentini, 2009) and providing motivation for physical activity (Brown & Rhodes, 2006; Epping, 2011; Gretebeck et al., 2013; Rhodes et al., 2012).

The literature on human and animal companionship is dominated by the study of dog ownership, rather than of companionship. This distinction between ownership and companionship is important because researchers have shown that the benefits derived from animals are related to our attachment and companionship rather than ownership status *per se* (Crawford, Worsham, & Swinehart, 2006). Companionship studies are more reflective of reality than ownership studies because they are not mutually exclusive. Often, companionship is in conjunction with ownership, but not necessarily, and companionship without ownership is also possible, as in visitation programs. When research is focused on dog companionship (the relationship between humans and dogs) rather than ownership, we can translate that knowledge into visitation settings and the therapeutic role of dogs. However, dog visitation research is distinct from the study of dog ownership because the effects of dog handlers must also be taken into consideration (Chur-Hansen, Stern, & Winefield, 2010).

Dog visitation research, to date, has focused on separating the dog and the handler to isolate the dog's influence from the handler's influence on measured outcomes (e.g., loneliness) (Brodie, Biley, & Shewring, 2002; Chur-Hansen et al., 2010). In practice, however, dogs and handlers are never separate. It is thus important to consider the joint effects of the dog-handler team, even if the emphasis is on the dog's impact. Visiting dog programs have shown significant impacts on participants in a number of health outcomes related to social support. Banks and Banks (2002) found participants in the visiting dog group were less lonely compared to a control group. Similarly, Hall and Malpus (2000) found that after a twenty-week visiting dog intervention, participants' number of social interactions significantly increased.

Seniors benefit from programs that promote social support and the development of social relationships, in overall well-being, life satisfaction, and social engagement (Winningham &

Pike, 2007). Despite this, visiting dog programs have been underutilized and under researched as an intervention option for promoting social support in assisted living facilities. This study investigated the impact of visiting dog programs on seniors' social support using novel methods. These novel methods addressed the joint role of dogs and their handlers in promoting seniors' social support previously missing in the literature. The purpose of incorporating the handler was to understand the practical application of dog visitation programs to health promotion of seniors in assisted living settings.

This study examined the experience of a six-week visiting dog program and its impact on social support among seniors in two assisted living facilities located in the North Okanagan Valley, British Columbia, Canada. Each assisted living facility was assigned to either a group or individual condition to compare social support outcomes between and within each condition. The intervention maintained a naturalistic approach to the design to facilitate applicability to existing visiting dog programs. The naturalistic approach featured participant led program content and the inclusion of the handler. Within and between conditions were measured using a perceived social support scale, demographic questionnaire, semi-structured interviews, field notes, and focus groups.

Data were analyzed using mixed measures analysis of variance for quantitative data and interpretive description for qualitative data. Major themes emerged, including: dogs' role in emotional support, the use of reminiscence, and the challenges of recruiting socially isolated seniors. Results suggest that visiting dog programs do positively impact seniors' social support. Nevertheless, more research is needed to expand our understanding of the complex interplay between social support outcomes and a visiting dog program to further the development and use of interventions.

Literature Review

Social Support and Healthy Aging

Social support is an important component of successful aging; it has been shown to be protective against adverse outcomes among seniors living at home, in care facilities, and even in hospitals (Gilmore, 2012; Howie et al., 2014; Muramatsu, Yin, & Hedeker, 2010). Studies of seniors' health have shown that social support is related to health outcomes and is associated with measures of well-being, such as increased social participation and decreased loneliness (Chen & Gao, 2013; Cornwell & Waite, 2009; Gilmore, 2012; Liu & Rook, 2013). However, the concept "social support" can often be used as a catch-all for various positive social interactions, for example, network size, social participation, and social engagement. This section will define social support and establish its importance in healthy aging, as well as frame its use in the present study.

In the conceptual model proposed by Berkman, Glass, Brissette, & Seeman (2000), the multilevel phenomenon of social support's impact on health is broken into *Upstream factors* and *Downstream factors* (Appendix A). *Upstream factors* consist of macro level social-structural conditions, which include culture, socioeconomic factors, and politics, and mezzo level social networks, which include social network structures and characteristics (Berkman et al., 2000). *Downstream factors* consist of micro level psychosocial mechanisms, which include social support, engagement, and influence (Berkman et al., 2000). Berkman et al. (2000) proposed that *Upstream factors* condition the nature of and opportunities for the *Downstream factors*. For example, our culture and socioeconomic status dictates the characteristics of our social networks, which in turn condition the opportunities for social support and engagement (Berkman et al., 2000).

The macro level social-structural conditions shape social behaviour through, but not exclusively, norms, values, inequality, racism, sexism, ageism, political culture, and social change (Berkman et al., 2000). The macro level factors condition the extent, shape, and nature of the mezzo level social network structures, including their size, range, and density (Berkman et al., 2000). In turn the mezzo level social network structures and characteristics provide opportunities for micro level social interactions (Berkman et al., 2000). These *Downstream factors*, social support, social interactions, and social engagement, mediate pathways, which influence health behaviours and health outcomes, such as loneliness and depression (Berkman et al., 2000).

Focusing on the micro level dimensions of social support, this study adopts the definition of social support from Cobb's 1976 seminal paper on social support and health outcomes as the meaningful function provided by social relationships. Cobb (1976) proposed four dimensions of social support: emotional, esteem, tangible, and informational. Emotional support provides care and comfort, allowing an individual to believe he/she are cared for and loved (Cobb, 1976). Examples include a hug from a friend or loved one, listening and empathizing. Esteem support builds confidence and self-worth, allowing an individual to believe they are held in esteem and valued (Cobb, 1976). An example is expressions of confidence or encouragement. Tangible support is the direct aid provided, allowing an individual to believe he/she are part of a network (Cobb, 1976). Examples include bringing soup to someone who is sick or driving someone to a doctor's appointment. Finally, informational support is the advice and information given to individuals within the network (Cobb, 1976).

In a widely cited paper by Cohen and Wills (1985), these four dimensions of social support were developed into two proposed mechanisms through which social support works to affect health and well-being. The first mechanism is articulated in the *main effect hypothesis*,

where the perceived quality or availability of social support acts to reduce the stress response to stressful events (Cohen & Wills, 1985). The second mechanism is articulated in the *stress-buffering hypothesis*, where the meaningful functions of social support (emotional, esteem, tangible, and informational) buffer stressful events and thus moderate health risks (Cohen & Wills, 1985). Both mechanisms have been widely adopted by researchers to examine social support and health outcomes in seniors (Kahn et al., 2003; Muramatsu et al., 2010; Wilkins, 2003).

In a study of long-term outcomes of coronary artery surgery, researchers found positive outcomes supporting the main effect hypothesis in recovery for adults, including seniors (King, Reis, Porter, & Norsen, 1993). The study followed adults ranging from 33 to 80 years (with a mean age of 60) post coronary artery surgery to measure their recovery outcomes against perceived social support measures (King et al., 1993). The researchers measured the four dimensions of social support using a modified scale where higher scores represented higher levels of perceived social support (King et al., 1993). The study demonstrated that perceived social support was positively related to emotional well-being and inversely related to functional disruption and angina up to one year after the coronary artery surgery. The researchers concluded that perceived emotional support was more important than tangible or practical support, supporting the main effects hypothesis (King et al., 1993).

Similar to the findings of King et al. (1993) in support of the main effect hypothesis, a more recent study found that perceived social support enables seniors to cope with deficits, such as illness or disability, in several ways resulting in greater life satisfaction, overall well-being, and other health outcomes (Hatfield, Hirsch, & Lyness, 2013). Kahn, Hessling, and Russell (2003) measured perceived social support, loneliness, depression, physical activity, and life

satisfaction in seniors. Their study found that seniors who reported greater perceived social support were less likely to report loneliness, depression, low levels of physical activity, and low life satisfaction (Kahn et al., 2003). Similarly, Riffle, Yoho, and Sams (1989) found that perceived social support was positively related to health promoting behaviours in seniors (e.g., exercise and nutrition).

Hatfield et al. (2013) found that perceived social support buffered the relationship between disability and depressive symptoms. Harvey & Alexander (2012) examined the relationship between perceived social support and health behaviours of older women. The results of their study indicated that perceived social support of friends predicted engagement in physical activity throughout the aging process (Harvey & Alexander, 2012). Another study found older suicidal adults also reported low perceived social support (Harrison et al., 2010). Along with these findings, studies have produced results that suggest that the well-documented effects of socioeconomic status, gender, and age on health outcomes may be mediated by perceived social support (Berkman et al., 2000; Stephens, Alpass, Towers, & Stevenson, 2011).

Social Support in Assisted Living Facilities

Transitions from the home into institutions, such as assisted living facilities can be very detrimental to seniors' health (Aneshensel, Pearlin, Levy-Storms, & Schuler, 2000). Individuals can face increased mortality, depression, and decreased quality of life following these transitions (Aneshensel et al., 2000). Senior residents in assisted living facilities face unique restrictions and challenges in their social lives (Howie et al., 2014). Moving into assisted living facilities constitutes a major life transition, which is often associated with a decline in physical health or the death of a spouse (Howie et al., 2014). This transition puts seniors at risk for social isolation

and poor social support because moving to assisted living facilities can also separate seniors from friends and family (Howie et al., 2014).

There are many factors that impact life satisfaction among seniors residing in assisted living facilities. Physical activity, psychological health, and social support have been highlighted as important as a few of these factors that influence life satisfaction among assisted living residents (Resnick, Galik, Gruber-Baldini, & Zimmerman, 2010). Resnick et al. (2010) examined these variables in relation to life satisfaction. Their study surveyed assisted living residents who were 65 years of age or over and without cognitive impairments (Resnick et al., 2010). Social support was found to be positively associated with life satisfaction among assisted living residents (Resnick et al., 2010). Life satisfaction was also positively associated with social support when physical activity encouragement was a component of their support system (Resnick et al., 2010).

In review: (a) social support is an essential determinant of health for seniors, (b) seniors who transition into assisted living facilities are at an increased risk of social isolation, and (c) seniors with strong social support are more likely to report greater life satisfaction. Given this, it is not surprising that the study done by Winningham and Pike (2007) found that institutionalized seniors may benefit from participating in programs designed to increase the level of social support and the frequency of meaningful social interactions. It is important to note, however, that not all seniors are capable of participating in programs which may increase social support and engagement because of mobility restrictions, cognitive impairments, or social isolation (Winningham & Pike, 2007).

Further evidence of the benefits of social support in assisted living facilities was measured using the Lubben Social Network Scale (Howie et al., 2014). The Lubben Social

Network Scale defines social support as the perception of family and friends presence for emotional support (Howie et al., 2014). Researchers had 154 assisted living facility residents complete the Lubben Social Support Network Scale and the Successful Aging Inventory to examine the relationship between social support and successful aging (Howie et al., 2014). The mean age of participants was 80 years and the majority reported at least one chronic condition (Howie et al., 2014). Results showed a positive correlation between perceived social support and successful aging (Howie et al., 2014), a finding consistent with existing research.

The health benefits and other outcomes associated with the various measures of social support can also be observed when measuring the social support impacts of companion animals. While the majority of the social support research focuses on human social support, companion animals have been shown to play an important role in social support (Chur-Hansen, Zambrano, & Crawford, 2014; Friedmann & Son, 2009; Hart, 2006; Knight & Edwards, 2008; McNicholas, Collis, & Fine, 2006). Companion animals may have a significant impact on social support as owners and individuals develop long lasting, meaningful relationships with pets (O'Haire, 2010).

Companion Animals as Providers of Social Support

Animal companionship can be a powerful intervention for promoting social support in seniors. Researchers have identified animal companionship as supplementing or substituting social support of family or friends (Flynn, 2000; Kurdek, 2009; Paul et al., 2014; Veevers, 1985). Although companion animals cannot take the place of human social support when it comes to tangible and informational support, companion animals have been identified in a review of ownership studies as important providers of emotional support (Flynn, 2000). This section will introduce the concept of animals as providers of social support, while acknowledging the difference between animal and human social support.

Companion animals as important providers of social support have been analyzed through the lenses of anthropomorphic thinking (Paul et al., 2014). Companion animals are animals which humans form meaningful bonds with (Paul et al., 2014). Keeping animals as pets and companions necessarily involves varying degrees of anthropomorphism or “personification”: we name them, photograph them, talk to them, dress them, and mourn them (Paul et al., 2014). Paul et al. (2014) expanded on the concept of anthropomorphic thinking and identifying pets as providers of social support by measuring pet owners’ perceptions of social support provided by their pet.

Paul et al. (2014) measured perceptions of social support provided by the pet by listing different situations and asking how likely they would be to turn to their pet for support. Situations included: ‘loneliness’, ‘a bad day’, ‘trouble with close relations’, ‘lacking confidence’, ‘sickness’, ‘depression’, ‘problems outside the home’, ‘nervousness’, and ‘bereavement’ (Paul et al., 2014). They repeated this measure by asking how likely they would turn to friends or family for support in the same situations (Paul et al., 2014). The study found that individuals who were unmarried or lived alone relied heavily on their pets for support (Paul et al., 2014). Researchers suggested that people who are more socially isolated tended to identify their pets as sources of social support more often than did those who are not socially isolated (Paul et al., 2014).

Individuals who are not socially isolated still identify that pets are family members and sources of comfort, but identifying companion animals as a provider of social support is more likely among those who are deficient in human social support. In a study examining women who were victims of domestic violence, half the women reported that pets were a very important source of emotional support (Flynn, 2000). Similar to the conclusion drawn in the Paul et al. (2014) study, the percentage of participants who reported pets as providing very important

emotional support was higher in women without children compared to women with children. This finding highlights that individual variation in the identification of companion animals as providers of social support can depend on the quality of human support. The same study also identified pets as emotional substitutes for family (Flynn, 2000).

Paul et al. (2014) and Flynn (2000) both confirmed Veevers (1985) conclusion that: “Since interaction with companion animals can approximate human companionship, the presence of pets may serve to supplement the benefits usually derived from the roles of friend, parent, spouse, or child” (p.11). Interactions with companion animals serve to supplement and substitute human social support (Veevers, 1985). Companion animals, as a source of social support for owners, have been refined into a theory specific to companion dogs, as discussed further in the following section. The theory outlines companion dogs’ role and impact on social support while linking their role and impact to outcomes in health.

Companion Dogs and the Social Support Theory

The social support theory, as proposed by Collis and McNicholas (1998), emphasizes the capacity of dogs and other companion animals to (1) reduce loneliness and increase well-being as a provider of social support and (2) links the benefits derived from dog companionship to social support. The social support theory has been tested using multiple indicators of social support (e.g., loneliness, depression, perceived social support, and social interactions) as well as using multiple definitions of dog interactions (i.e., ownership, companionship, and visiting dogs).

The theory proposes the dogs’ role in social support in two ways: directly (the emotional support provided by the dog for the human); and indirectly (the dog acting as a social catalyst). The direct social support effect refers to the companion animal acting in the role of or as the agent of social support (Figure 1.2). When human social support is insufficient or is difficult to

obtain, companion animals may offer support in a number of ways: they may “top up” existing support, fill in for a deficiency of support, act as a cushion for fluctuating support, and create a space free from judgment and awkwardness (McNicholas et al., 2006). Pet ownership was related to feelings of control and normalcy when dealing with breast cancer treatment and diagnosis, and it was found that pets provided invaluable support (McNicholas et al., 2006). In a longitudinal study of spousal bereavement, dog owners reported the most support from their pets and that support was independent of human social support (McNicholas et al., 2006). In a visiting dog walking program, participants reported feeling better because of the dogs; they also reported the dogs gave them a reason to get up in the morning (R. A. Johnson & Meadows, 2010). This study used a handler for the dogs to accompany participants, however the handler had limited interaction with participants and did not detract from the primary impact of the dogs (R. A. Johnson & Meadows, 2010). The social support theory has not been used to test the combined influence of dog and handler, however because of the breadth of this theory’s use in current literature on companion dogs, it will be extended in the present study to the combined effect of dog and handler, particularly because humans provide support similar to dogs.

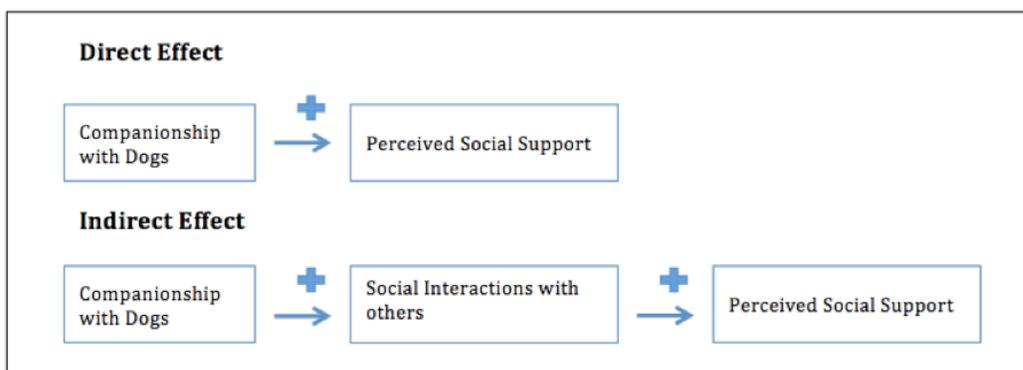


Figure 1.2 The proposed impact of dogs on perceived social support under the social support theory

The indirect effect refers to the companion animal acting as a social catalyst (Figure 1.2), where the presence of pets initiates social interaction and facilitates the creation of new social networks (McNicholas et al., 2005). More social interactions take place when a person is with a dog when compared to situations without a dog, even in locations not normally associated with dog walking (e.g., public transit instead of a park) (McNicholas & Collis, 2000). Interactions between strangers and acquaintances were increased (McNicholas & Collis, 2000). Not only did McNicholas & Collis (2000) find that number of interactions increased in the presence of the dog, but they also found heightened interactions continued with acquaintances after the dog was no longer accompanying the individual. This demonstrates the social facilitation and network building capacity of using companion animals. Similarly, Cutt and colleagues (2007) found that the presence of dogs may lead to an increase in social capital and networking among dog owners and non-owners. Knight and Edwards (2008) found that dogs acted as the mechanism to promote socialization between dog owners. Participants stated that without their dog present they would not have the reason or initiative to create friendships with other dog owners.

While some studies have focused on the direct or the indirect effects of dog companionship, most studies have not been designed to distinguish between them. The methodology of these studies (cross sectional surveys) do not allow for the interpretation of why pet owners reported outcomes such as reduced loneliness, reduced depressive symptoms, and improved moods, that is, whether the outcomes were from direct or indirect effects (Krause-Parello, 2012; Odendaal, 2000; I. H. Stanley, Conwell, Bowen, & Van Orden, 2013). Stanley and colleagues (2013) found senior pet owners were 36% less likely to report loneliness than were non-owners. In a study of older women, Krause-Parello (2012) found negative relationships between pet attachment and social support, and the outcome variables, loneliness and depression.

Researchers have also found that dog visitation programs reduce blood pressure and elevate the mood of patients (Odendaal, 2000). There is mounting evidence supporting the social support theory, however, the current literature is limited by the focus on dog ownership rather than companionship. Companionship studies have much wider applicability. They focus on the relationship with a dog rather than the continuous presence of a dog in the home. Studies that examine the effects a relationship with a dog however, can be used in visiting and ownership studies.

Companion Dogs' Impact on Social Support

This section reviews the impact companion animals have on human health in animal ownership studies and in visitation studies. As the visitation literature is limited, this section will also illustrate how findings from studies focusing on dog owners can be applied to visitation settings.

The research on the health benefits of companion animals has not expanded over the past two decades and many studies have produced inconsistent results (Cherniack & Cherniack, 2014). There are different fields of inquiry, which investigate these potential health benefits (for example, increased social support, increased physical activity, and psychological well-being), including dog ownership, dog companionship, animal assisted therapy (AAT)¹, and dog visitation². These terms are defined as follows: Dog ownership is very simply the presence of a dog within one's household. Dog companionship is an attachment relationship with a dog, which can include ownership. It should be noted that ownership does not always result in companionship. AAT is using an animal, usually a dog, to achieve therapy goals, for example,

¹ Other terms for AAT used in the literature include: pet therapy, pet-facilitated therapy, and animal assisted intervention.

² Another term for visiting dog programs is animal assisted activities (AAA)

improving motor skills by throwing a ball for a dog or by brushing a dog. Dog visitations differ from animal assisted therapy because they have no therapeutic intent or programmatic objectives. Research on dog ownership, animal companionship, AAT, and dog visitations inform one another because the streams of inquiry all examine health benefits that result from the relationship built between human and dog.

Although ownership studies predominate, a small but growing number of studies have focused on companion animal benefits deriving from attachment and companionship (Crawford et al., 2006; Peacock, Chur-Hansen, & Winefield, 2012). Studies examining ownership can nonetheless inform dog visitation research. Companionship may occur with pet ownership, it may also exist without ownership (R. A. Johnson, Odendaal, & Meadows, 2002). Likewise, ownership does not always result in attachment or companionship with a pet (R. A. Johnson et al., 2002). A study examining both ownership and companion animal attachment found similar results to studies focused solely on ownership (Peacock et al., 2012). Peacock et al. (2012) found strong pet attachment in owners was associated with decreased levels of depression, and it is reasonable to assume similar effects from pet companionship whether or not the pet is owned.

Studies have shown that dogs and other pets can often fulfil dimensions of social support commonly reserved for human social support (Knight & Edwards, 2008; McNicholas et al., 2006; Peacock et al., 2012). In a study on breast cancer recovery and diagnosis, the majority of participants reported their pet fulfilled at least one important dimension of social support, most commonly emotional support (McNicholas et al., 2006). Pets were also shown to be an important form of social support and companionship when recovering from spousal death (McNicholas et al., 2006). Results from a United Kingdom focus group identified dogs as important members of owners' families, providers of comfort, and important in contributing to owners quality of life

(Knight & Edwards, 2008). Dog ownership has also been associated with a reduction in psychological distress (Peacock et al., 2012).

A study looking at companion animal attachment and mental health implications found companion animal attachment was significantly related to increased psychological well-being (Peacock et al., 2012). This study also found that there was no association between living with the companion animal and well-being (Peacock et al., 2012), adding further evidence to the argument that the relationship with the dog or companion animal is more important than mere ownership. The impact of companion animals on social support is most important and influential in vulnerable populations, such as seniors (Peacock et al., 2012). As seniors in assisted living facilities are more vulnerable to social isolation and, as the positive impact of companion dogs is most influential on vulnerable seniors, it is logical to suggest using companion dogs to promote social support in seniors.

Not only have dogs been identified as a direct source of social support for their owners (Cutt et al., 2007), dogs have also been well documented as facilitators of social interactions (McNicholas & Collis, 2000). Dog owners are significantly less likely than non-owners to report difficulty getting to know people (Wood, Giles-Corti, & Bulsara, 2005). McNicholas and Collis (2000) described the robust catalyst effect of dogs in areas not traditional to dog walking. Most dog walking is associated with areas around parks and neighbourhoods, however, this study found catalytic effects in areas such as universities and public transit. Even when the dog was trained not to solicit attention, researchers found more social interactions occurred with strangers and acquaintances if walking with a dog than if walking alone (McNicholas & Collis, 2000). Furthermore, Knight & Edwards (2008) concluded that dog ownership provided owners with a sense of “group membership” from meeting and socializing with other dog walkers

The impact companion dogs have on social support is most often measured as a secondary component to their influence on physical activity and their use in therapy. The use of dogs in promoting physical activity and in therapy is successful, in part, because of the support provided by the dogs. In a review of dog ownership and physical activity, dog owners were found to be consistently more physically active, a result which many researchers attribute to dog walking (Cutt et al., 2007). Dog walking has been identified as a feasible motivator to increase physical activity across socio-economic statuses and ages (Epping, 2011; Rhodes et al., 2012). A scoping review identified the potential of dog walking to increase owners' physical activity but also to increase neighbourhood physical activity and social cohesion (the catalyst effect of companion dogs) (Toohey & Rock, 2011). Studies have also shown dogs provide a level of social support as an exercise companion that contributes to increased physical activity (Cutt et al., 2007). The primary motivator for dog walking is the obligation felt towards maintaining the health and well-being of one's dog (Brown & Rhodes, 2006; Gretebeck et al., 2013). Dog walking has the potential to benefit not only dog walkers, but dogs as well (Degeling, Burton, & McCormack, 2012). Not only have dogs provided social support and exercise motivation to their owners and companions, these effects have likewise been utilized in AAT to produce desired outcomes.

AAT come in many forms and encompass many different therapeutic intents or specific outcome goals for participants, for example physical activity or motor control. The therapeutic intents for AAT include reduction of depression (Berry et al., 2012), reduction of loneliness (Banks & Banks, 2002), alleviation of dementia symptoms (Filan & Llewellyn-Jones, 2006), and increase in physical activity (R. A. Johnson & Meadows, 2010). Additionally, it can even be used in family therapy (Walsh, 2009). The most common therapeutic intents aim at mitigating

adverse health events that have been associated with social support (e.g., depression and loneliness).

The most common settings for AAT include psychiatric facilities (Hall & Malpus, 2000), long-term care facilities (Banks & Banks, 2002), hospitals (Kamioka et al., 2014), and in counselling sessions (Pichot, 2012). AAT is not limited to dogs. Other animals used include cats, horses, birds (Kamioka et al., 2014), and even robotic pets (Banks et al., 2008). Generally, when companion animals are used in AAT there is a specific purpose or intent to their introduction (e.g., increasing physical activity) where the dogs are used as a tool to produce the desired outcomes (Pichot, 2012).

It is important to distinguish between dog visitation programs and AAT. Although they are similar in that they both utilize relationships with dogs, or other animals, which can produce positive outcomes in participants, the primary difference is that AAT has specific goals. AAT uses the animal as a tool to produce results in patients, participants, or residents (Pichot, 2012). Dog visitation programs, also known as animal assisted activities (AAA), involve interactions with patients, participants, or residents without explicit therapeutic or programmatic objectives.

There is evidence that the benefits seen across a range of health conditions and in various settings can also be seen in populations exposed to dogs where there is no therapeutic intent. For example, the only long-term study of visiting and resident dogs in nursing homes took place from November 1990 to September 1992 and found decreases in depression, anger, and confusion scores when compared to a control group (Crowley-Robinson et al., 1996). As discussed previously, the benefits seen from dogs and other companion animals with and without therapeutic intent have been linked to the social support impacts from companion animals.

Barriers to Dog Ownership

Despite all the evidence regarding the social support benefits of dog ownership, a weakness in the methodology used to date, is the focus on ownership rather than companionship (Peacock et al., 2012). In fact, researchers have shown that the benefits derived from companion animals are related to attachment rather than ownership status (Crawford et al., 2006). The focus on ownership rather than companionship also limits the transferability to non-owner circumstances. However, as discussed previously, the results from studies on ownership can still inform future research on the influence dogs have in a visitation setting, because studies focusing on companionship, ownership, and visitations report similar results and health outcomes.

Despite the benefits, pet ownership is not always a feasible or desirable option later in life (Anderson, Lord, Hill, & McCune, 2015; Chur-Hansen, Winefield, & Beckwith, 2008). Thus, seniors are often excluded from the potential benefits associated with companion animal relationships. Reasons given by former pet owners for not owning pets fall generally into practical or emotional reasons (Anderson et al., 2015; Chur-Hansen et al., 2008). Practical reasons included: fear of what would happen to the pet should the individual die, constraints of pet care, living constraints such as a retirement home, assisted living, limited living space, fees associated with pet deposits and veterinary care, and, finally, the burden of caring for a pet (Anderson et al., 2015; Chur-Hansen et al., 2008). Emotional reasons given for not owning a pet included avoiding the grieving process (both for the pet and individual) and not wanting “another child” (Chur-Hansen et al., 2008). Because of limitations to ownership, dog programs have been developed to address the needs of populations such as seniors; “Such [programs] might allow the individual to enjoy time with a companion animal without the associated burden of the responsibility of care and associated financial, emotional and physical costs” (Chur-Hansen et al.,

2008 p. 993). These programs attempt to provide the benefits of ownership without the responsibility, as well as the benefits of AAT without the therapeutic intent.

Visiting Dog Programs and Senior Outcomes

For individuals not able or willing to undertake dog ownership, options are available to experience the benefits of dog companionship in the form of visiting dog programs. The literature on visiting programs is very limited, however, studies have found a positive influence of visiting dog programs in a range of senior populations from community living seniors to long-term care residents (Banks & Banks, 2002; Banks & Banks, 2005; Banks et al., 2008; Berry et al., 2012; Hall & Malpus, 2000).

Hall and Malpus (2000) investigated the use of a visiting dog program in long-stay psychiatry to promote social interaction over a twenty-week period. Their research participants were all male, over 65 years of age, and had been in institutionalized care for over 40 years (Hall & Malpus, 2000). Over the course of the visiting dog sessions, the observed number of social interactions of participants increased notably (Hall & Malpus, 2000). Although this is a unique population of seniors, the study produced two results that can be applied towards future research. Firstly, the study findings suggested the visiting dog and not the dog handler provided the positive changes in the participants (Hall & Malpus, 2000). Secondly, the study found anecdotal evidence that the staff in the facility were using the visiting dogs to facilitate their client's engagement (Hall & Malpus, 2000). These findings support the social support theory that dogs positively influence social interactions and act as social facilitators (McNicholas et al., 2005).

Banks and Banks (2002) investigated the effects of visiting dogs on loneliness in nursing homes, testing for different dosages (no visitations, one visit per week, and three visits per week)

of the visiting dogs. This study used a convenience sample of 45 lonely seniors recruited from three long-term care facilities in Missouri, United States. The study found participants in the treatment groups were less lonely compared to participants in the control group (Banks & Banks, 2002). Similar to the Hall and Malpus (2000) study, Banks and Banks (2002) controlled for dog handler influence by restricting handler contact with participants to a standardized script read to participants at the beginning of each session. Notably, this study found that even a one half hour session once a week for six weeks was enough to show a statistically significant reduction in loneliness (Banks & Banks, 2002).

Berry et al. (2012) also investigated the social impacts of visiting dogs in a nursing home, although they followed an AAT design with structured therapy sessions. They found an increase in participants' willingness to participate with the dogs, as well as a reduction in depressive symptoms, when compared with when the intervention began (Berry et al., 2012). Evidence of dogs' ability to promote social support is significant for seniors' living arrangements; a recent study concluded that interventions that establish meaningful relationships and enhance social support could assist individuals in adjusting to new residential circumstances (Howie et al., 2014).

Bernstein, Friedmann, and Malaspina (2000) compared a visiting dog program to a control condition in long-term residents over a ten-week period measuring social behaviours. Volunteers from a local humane shelter would bring in puppies, kittens, and the occasional older dog, for visits with the residents (Bernstein et al., 2000). In the control group, puppy visits were replaced with craft time and snack bingo (Bernstein et al., 2000). The researchers concluded that the visiting dog program provided more of an opportunity for residents to engage in and initiate conversation with other residents and staff, compared to residents exposed to the control

condition (Bernstein et al., 2000). These findings also support the social support theory that dogs positively influence social interactions and act as social facilitators (McNicholas et al., 2005).

A study investigating a six-month visiting dog program and perception of loneliness in nursing home residents found significant differences before and after the intervention (Vrbanac et al., 2013). This intervention ran 90-minute sessions three times weekly for six months (Vrbanac et al., 2013). Residents were not forced to interact with dogs, but were encouraged to pet, play, walk, and talk with the dogs (Vrbanac et al., 2013). All participants expressed joy while visiting with the dogs, and previously solitary residents began meeting, before and after the sessions, and reminiscing about pets previously owned (Vrbanac et al., 2013), in line with the anticipated indirect effects of interactions with dogs (McNicholas et al., 2005).

In a study investigating the effects of dog visits on depression, mood, and social interaction in nursing homes, researchers found no significant results (Phelps, Miltenberger, Jens, & Wadson, 2008). Despite the absence of significant results in their study sample, the researchers found that all the participants wished to continue receiving visits from the dogs (Phelps et al., 2008). Dog visits consisted of the participant holding the dog's leash for five to ten minutes while the handler stood behind them (Phelps et al., 2008). This was repeated once a week for six weeks (Phelps et al., 2008).

Similar to the results and conclusions of the Phelps et al. (2008) study, Friedmann, Galik, Thomas, Hall, Chung, and McCune (2005) evaluated the impact of a visiting dog program on functional status in assisted living residents with mild to moderate dementia (Friedmann et al., 2005). Residents were assigned to either a control group (reminiscence therapy which consisted of encouraging conversation by sharing stories and photos), or to an experimental group, which engaged residents in dog-related activities with a Welsh corgi (Friedmann et al., 2005).

Following the 12-week intervention the researchers concluded that all trajectories of change from pre-post intervention were in the direction of improvement, although no significant changes were observed in either group (Friedmann et al., 2005).

Group and Individual Comparisons

Naturalistic visiting dog programs always take the form of either group or individual visits (Pet Partners, 2012; St. John Ambulance, 2014). Group visits consist of the handler-dog team visiting a group of people in a single location. Individual visits consist of the handler-dog team visiting with one person at a time. Banks and Banks (2005) is the only study, to date, that has looked at group versus individual visitations in long-term care facilities, or any other facilities. By measuring individual and group visitations they were able to investigate dog visitation programs approximating a natural environment. As well, using a comparative methodology also allowed the researchers to test, indirectly, the social support theory.

Banks and Banks (2005) investigated dog visitation programs in three long-term care facilities, and evaluated the impact that these programs have on loneliness. They recruited thirty-three individuals and randomly assigned them to the individual condition or the group condition for visitations. Both conditions were administered the dog visitation program for thirty minutes once a week for six-weeks. While the participants were allowed to interact with the dog in a self-prescribed manner, the interactions with the handler remained artificial, in that participants were read a script informing them to avoid contact with the handler throughout the visitation settings. The individual dog visitations were used as a measure of the direct effect and the group visitations were used as a combination measure of the direct and indirect effect of dogs on social support.

Participants in the individual visitation sessions showed a significant decrease in loneliness, however the participants in the group visitation session did not (Banks & Banks, 2005). The researchers concluded from these results that dog visitations did not facilitate human interactions in long-term care facilities. In other words, the indirect effects of the dogs were unobserved, but the direct effects of dogs were observed. Banks and Banks (2005) surmised that hearing impairment, incompatibility in the groups, and bias from previous relationships with participants influenced these results. The results from this study elucidate the need for more in-depth description of the differences and similarities in individual and group visitations. Using a methodology that replicates practical visitation environments and that aims to gather descriptive data testing the social support theory will allow for more meaningful results.

Naturalistic Interventions Versus Artificial Research Conditions

Previous studies' (described earlier) research designs predominantly isolate dog effects from handler effects (Banks & Banks, 2002; Chur-Hansen et al., 2010). However, these studies do not reflect the naturalistic application of visiting dog programs. What they have shown is that the effects of dogs on health outcomes occur independently of the effects of the handler (Banks & Banks, 2002; Hall & Malpus, 2000; R. A. Johnson & Meadows, 2010; Phelps et al., 2008). These studies demonstrated these effects by isolating the dog from the handler and controlling handler interactions (Banks & Banks, 2002; Hall & Malpus, 2000; R. A. Johnson & Meadows, 2010; Phelps et al., 2008). Phelps et al. (2008) had the dog handlers follow a script with participants, hand off the dog leash, and then leave or stand behind the participant to ensure no interaction. Banks and Banks (2002) had dog handlers in control of the dog leash at all times, but they were not to engage with participants or dogs.

Although these studies have isolated dog effects from handler effects, they do not reflect the practical application of dog visitation programs. Handlers are an important component of dog visitation programs and in practice handlers are never more than a leash length away from their dogs for the safety of residents and the dog (Pet Partners, 2012; St. John Ambulance, 2014). Current studies investigating the impact of visiting dogs on human health have designed their methodology around separating dog from handler, resulting in artificial environments that cannot be translated into naturalistic interventions (Banks & Banks, 2002; Hall & Malpus, 2000; R. A. Johnson & Meadows, 2010; Phelps et al., 2008). Few studies have been able to separate direct and indirect effects to fully test the social support theory. This study will replicate naturalistic interventions that test the social support theory, allowing for natural handler interaction with the dog and participants, and for comparing individual and group visitation conditions.

Research Questions

Primary Question: Do visiting dog programs positively impact perceived social support and are there differences between individual and group conditions? Subsidiary Question: Are those differences attributable to direct or indirect effects of dog visiting programs?

Hypotheses

(1) Both individual and group dog visitation conditions will have a positive impact on participants' perceived social support, both directly and indirectly. **(2)** The primary effect on participants in the individual visiting dog condition will be the direct effect (dog-human interaction). **(3)** The primary effect on participants in the group visiting dog condition will be the indirect effect (facilitating human-human interaction).

Chapter 2: Methodology

Design

This is an exploratory quasi-experimental comparative intervention study using mixed methods. The interventions involved participants' exposure to a dog and handler to measure the influence on participants' perceived social support. Two conditions were compared to explore similarities and differences in effects of two different visiting dog program designs. This study compared a visiting dog program that visits individuals (condition 1) to a visiting dog program that visits with a group (condition 2). The intervention design reflects naturalistic visiting dog programs (Pet Partners, 2012; St. John Ambulance, 2014).

The St. John Ambulance Therapy Dog Program matches handlers and dogs with individuals or groups within the community. Generally, groups or facilities will request therapy dogs and the volunteer coordinator will match dog-handler teams with them. Groups and facilities include, but are not limited to, nursing homes, assisted living facilities, retirement communities, hospitals, hospices, halfway homes, homeless shelters, group homes, and schools. Visits with the handler-dog team are arranged as either a group visit in a communal location or as a one-on-one visit with an individual. Group visits generally comprise individuals congregating in a communal location in any given facility at a pre-arranged time where the team meets and visits with the group as a whole. The individual visits are geared towards individual preferences, and can vary from sitting to going for walks with the team.

Perceived social support measurements were administered three times: 1) before the intervention was administered to both conditions (baseline); 2) after the intervention was administered to both conditions (post); and 3) six weeks after the intervention was administered to measure short-term impacts (follow-up). Demographic measurements were taken at baseline,

including; age, gender, and education. The experience of individuals and dogs in visitation settings is subjective and contextual. For that reason, there was not a prescribed plan for the participants to follow with the dogs. This approach is unique in the published literature and captures in-depth the influence of the visiting dog program, while maintaining a close approximation of actual visiting dog programs.

Sample

Participants were recruited from assisted living communities in the North Okanagan Valley, BC, Canada. The target sample was fifteen participants (approximately half men and half women) with ten participants for the individual condition and five participants for the group condition. This target was recruited from two sites, one for each condition. In keeping with the research design, the first site to respond to the research invitation was assigned to the individual condition and the second to the group condition. This target sample was selected to approximate previous studies while working within the confines of limited resources. During the planning phases of the study, it seemed feasible to recruit all ten participants in the individual condition from one site, however this proved to be impractical (discussed further in Chapter 4).

The research sites were recruited by approaching eligible facilities and presenting the research proposal to each facility's director. An email or letter (Appendix B) was sent to the facility directors introducing the study and inviting them to participate. Contact information for the facilities was taken from the facility's website. This email or letter was followed-up by a phone call by the researcher. A meeting was then arranged with the facility's recreation coordinator to discuss the study, what would be needed from the facility, and to respond to questions.

Eligible research sites were assisted living facilities restricted to seniors. Assisted living facilities provide assistance for daily living (e.g., providing meals, laundry, or bathing) but do not provide total care. The facilities provide residents with a private room and bathroom, with the option of a small kitchen, leisure and recreation programs, meals served in common dining area, 24-hour onsite staff, and medical reminders. Facilities' leisure and recreation programs include, but are not limited to, happy hour, fitness programs, organized games, movie nights, and lunch outings. Residents are assigned seating in the common dining area for lunches and dinners with the same people at each table. On-site staff includes security, nursing staff, directors and coordinators, as well as receptionists. The exclusion criterion for research sites was the presence of a resident dog, as they have been shown to have beneficial outcomes in seniors and presumably would contaminate the results (Crowley-Robinson et al., 1996).

The inclusion criteria for participation were as follows: (1) participants needed to be 65 years of age or older and (2) independently mobile (with or without the use of mobility aids). The age criterion of 65 or older was chosen because of academic standards, which define seniors as those individuals 65 or older. The participants needed to be independently mobile to allow for natural interactions with the visiting dog/handler team, unrestricted by mobility issues. Exclusion criteria for participation were: (1) fear of dogs; (2) severe allergy to dogs; (3) already being visited by another animal (either through friends, family, or volunteer organizations); (4) participation in social activities four or more times a week; (5) being visited by friends and/or family four or more times per week.

Potential subjects with fear of and allergies to dogs were excluded from participation for health and safety reasons. Those who were already visited by a dog were excluded from the study to avoid confounding results related to the other visiting dog. Seniors who participated in

frequent social activities were excluded from recruitment in order to target socially isolated seniors. Social isolation was measured as (1) the number of outings, programs, or events attended and as (2) the number of visits from friends or family in a usual week.

This approach to sampling captured data on seniors who were relatively mobile (able to walk with or without the use of mobility aids) and able to make decisions on their own, but who were in living situations that prohibited pet ownership. The purpose of these criteria was to select seniors who were unable to benefit from dog ownership, but who would be able to interact with the dog as if they owned the dog (i.e., allowing for visitation settings to mimic ownership behaviours). Modelling ownership conditions enables the extension of dog ownership studies to dog visitation programs.

Inclusion/exclusion criteria were also intended to provide the study with individuals who were not relatively active socially, (i.e. those whom research shows can gain the most from companion animal interactions). Individuals who are heavily involved in social activities and have strong social supports are less likely to benefit from dog visitation programs (Banks & Banks, 2005). As socially isolated seniors are more likely to benefit from visiting dog programs, the present study theorized that the effect size with this group would likely be larger than with socially active seniors. Furthermore, the measures chosen would be more likely to detect changes in perceived social support.

Previous studies of visiting dog programs reported “positive trends” or results moving “in the direction of improvement”, but were unable to detect significant results (Crowley-Robinson et al., 1996; Friedmann et al., 2005; Mossello et al., 2011; Nordgren & Engstrom, 2012; Nordgren & Engström, 2014; Phelps et al., 2008; Zisselman, Rovner, Shmueli, & Ferrie, 1996). Although the lack of significant results could be a combination not only of effect size, but also

measures, population, and intervention design, it was important to select inclusion and exclusion criteria that would maximize the effect size of this study.

The researcher owns the visitation dog (Barry, a five-year-old golden retriever cross) and acted as handler for all visitation sessions. Both handler and dog are certified by the therapy dog organization, St. John Ambulance. Certification involved a health and behavioural screening process. The dog was tested on temperament and reaction to stressful situations, loud noises, distractions, and other dogs. Certification is also based on maintaining immunizations, health screenings, and frequent bathing/grooming procedures. The dog and the researcher had one year of experience facilitating dog visitations, at the time of data collection. The continuance of certification of the dog-handler team requires the visitation dog be kept clean and healthy, and that the dog's immunizations are kept up to date, which St. John Ambulance monitors. The same dog-handler team was used during all visitations to maintain consistency of the intervention's execution and data collection. The same dog-handler team was also used to facilitate the development of familiarity and relationships between participants and visiting dog team. In visiting dog programs, the dog is generally owned by the handler (Pet Partners, 2012; St. John Ambulance, 2014), although the handler is generally not the owner in previous research (Banks & Banks, 2002; Banks & Banks, 2005; Banks et al., 2008; R. A. Johnson & Meadows, 2010). Using a dog-handler team that is also a pet-owner relationship reflects actual visiting dog programs, which contributes to the naturalistic application of this study. Utilizing one dog-handler team was also a constraint due to this study's limited time and available financial resources.

Research Phases

This study was carried out in four phases: 1) facility recruitment, 2) participant recruitment, 3) intervention, and 4) follow-up. Facility recruitment consisted of the identification and enrolment of assisted living facilities into the study. Facility director and institutional approvals were needed before potential participants could be identified and recruited into the study. Participant recruitment was a collaborative effort between researcher and each facility's recreation coordinators. Recruitment included a presentation and targeted pitches to facility residents. The six-week intervention was broken into group and individual conditions in two different facilities. The follow up was a focus group held six weeks post intervention. Its purpose was to gather the collective experiences and impressions of the intervention from participants.

Phase one: facility recruitment. Five eligible assisted living facilities were identified through business listings in the North Okanagan Seniors Housing Guide 2014. Facilities that identified and/or advertised as assisted living in the guide were contacted to invite their participation. An email was sent out to facility directors (Appendix B) explaining the project and potential benefits to their residences. If the email did not elicit a response within one week, the researcher followed up the email with a phone call to the residence's director. Following the email or phone call, a meeting was set up with the director or recreation coordinator to discuss the facility's eligibility and willingness to participate, answer any questions the director or recreation coordinator might have, and discuss the participant recruitment strategy.

Five assisted living facilities were contacted by email to participate in the study (see Figure 2.1); two facilities responded by email indicating interest. Emails were sent out to all assisted living facilities with contact emails (five total facilities); two facilities responded to the email by contacting the researcher (Facility A and B). Both facilities were determined to be

eligible for participation through telephone discussion and email correspondence between the researcher and the facilities' recreation directors. Letters of support were received from both facilities, which constituted consent to participate. The first facility to respond to the call for participation (Facility A) was selected for the individual condition and the second facility (Facility B) was assigned to the group condition. No other facilities responded to the email, and no phone calls were made to other facilities, as the desired number of facilities was reached within one week.

During participant recruitment for the individual condition (Facility A), it was determined by the recreation coordinator that there was not enough interest in participation to continue recruitment. The remaining three assisted living facilities (Facility C, D, and E) were then delivered a second hard copy of the email sent to facility directors. To maximize participant recruitment all facilities were contacted for follow-up and participation. Two of the remaining facilities (Facility C and D) responded and were deemed eligible for participation. Meetings (both by phone and in person) were arranged with recreation coordinators to discuss further the project, facility eligibility, and participant recruitment. As the visiting dog program being categorized as 'recreation', the facility directors approved the study and passed communication and organization to the recreation coordinators, who become the main contact for the researcher. Upon agreeing to have their facility participate in the study, letters of support, and operational approvals from Interior Health were received by both facilities (C and D). Facility D dropped out due to lack of interest by facility residents and to population fragility. According to the recreation coordinator, many of the residents, were fragile following the recent loss of their own pets and did not want to participate. The recreation coordinator was unable to find any other residents interested in participation and suggested, with regret, that they withdraw from the study.

Facility recruitment began in May 2015 (Figure 2.1). Operational approval was needed from each facility to obtain ethical approval. As soon as a letter of support and operational approval was submitted and received by the ethics department of both the University of BC and Interior Health, participant recruitment began concurrently with facility recruitment for other conditions. The letter of support and operational approval from Facility A was received June 2015 and participant recruitment commenced the same month. The letter of support and operational approval from Facility B was received July 2015 and participant recruitment commenced immediately following. Facility A dropped out of the program August 2015. Data collection for Facility B began August 2015. Phase two of facility recruitment began August 2015. The letter of support and operational approval from Facility C was received August 2015 and participant recruitment began the same month. Data collection for Facility C began September 2015. The letter of support and operational approval from Facility D was received September 2015, however, they were forced withdraw from the program the same month. After Facility D dropped out of the study, all assisted living facilities as listed in the North Okanagan Seniors Housing Guide 2014 had been contacted and participant recruitment and data collection had taken place for four months.

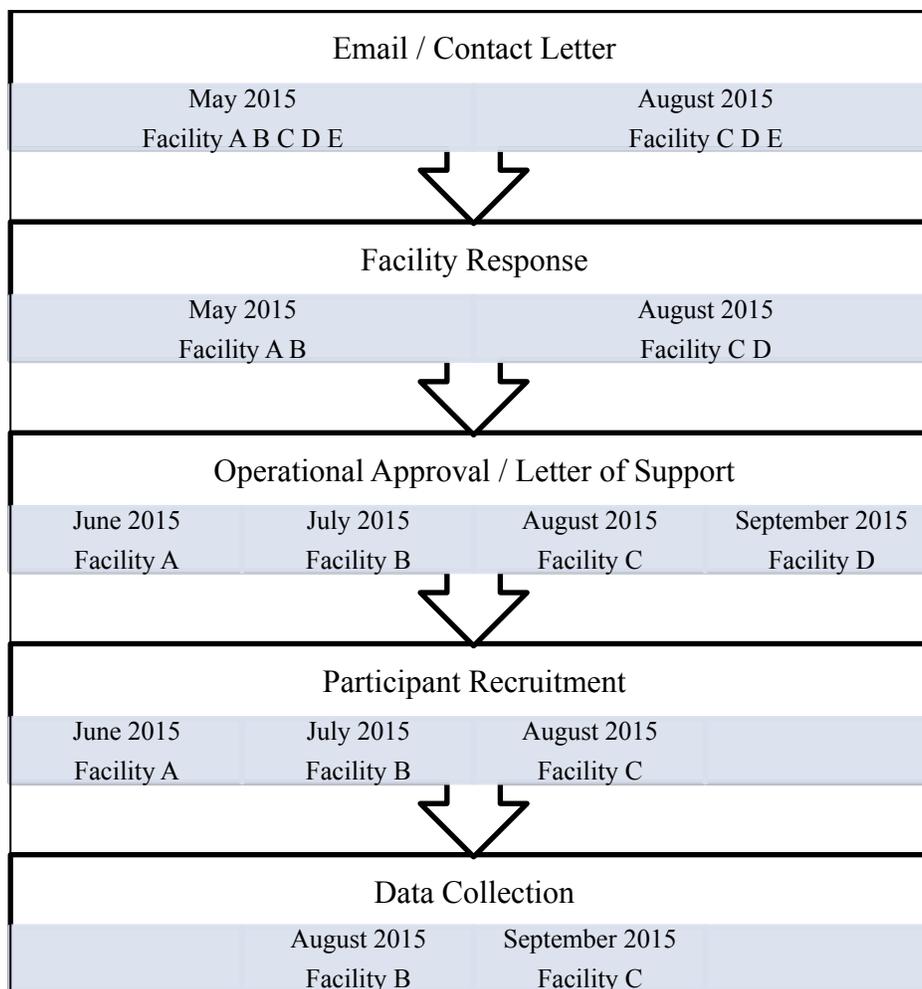


Figure 2.1. Timeline of facility and participant recruitment.

Phase two: participant recruitment. Participation recruitment took place within each of the selected facilities. A poster (Appendix C) advertising a presentation on the research project was sent to each participating facility up to two weeks before the presentation took place. The presentation given to each facility provided a brief overview of the time requirements, potential benefits, and brief description of the project given by the researcher/handler with the visitation dog present. The presentation was advertised as a public event and all residents were invited. The recreation coordinator also advertised through word of mouth with residents who fit the eligibility criteria.

This technique of participant recruitment has been successfully used in previous research (R. A. Johnson & Meadows, 2010). Residents of the facility were invited to take an individual condition consent form (Appendix D) or group condition consent form (Appendix E). Residents were reminded that the consent forms contained the contact information of the researcher, if they had any further questions, and were directed to the recreation coordinator if they wanted to sign up. Copies of the consent forms were left with the recreation coordinators of the facilities for interested residents. The researcher participated in ongoing communication with the recreation coordinators throughout participant recruitment.

Recreation coordinators identified potential participants, their eligibility and outlined time commitments to the residents. Recreation coordinators also provided consent forms for potential participants to review. The Facility A presentation was attended by 10 people; however, no residents signed up for the study following the presentation. Consent forms were left at the facility. Four people attended the Facility B presentation. Two people (a couple) were ineligible because their daughter brought her dog into to see them, one other person was ineligible because of cognitive impairment, and the fourth signed up for the study and was given a consent form to take home. Following the presentation the recreation coordinator was given more consent forms, for other interested residents not at the presentation. Through email correspondence with the recreation coordinator, it was established that three other residents were eligible and interested in participation. The recreation coordinator organized a time to meet with the four participants who had signed on and scheduled an initial visit. Five people attended the Facility C presentation. All the attendees were interested in participating and all were eligible. Consent forms were distributed and initial visits were scheduled. During the initial visit, it was discovered that one of

the participants was younger than the 65 year old cut off. She was given contact information for the St. John Ambulance dog visitation program and thanked for her participation.

Other potential participants expressing interest in the study but who had not met the eligibility criteria were given the contact details for St. John Ambulance. The researcher collected consent forms from eligible participants, who were then asked to complete the demographic questionnaire (Appendix F) and the Multidimensional Perceived Social Support Questionnaire (Appendix G). Eight individuals from Facility B and C met the eligibility criteria and agreed to participate, four individuals from the group condition facility (one male, three females) and four individuals from the individual condition facility (one male and three females). The visitation schedule for the group condition was arranged by the recreation coordinator to fit the schedule of all participants. The initial visitation schedule for the individual condition was arranged after the recruitment presentation. The researcher suggested times and participants signed up for slots, two visits per day were scheduled two days per week. Visitation schedules were consistently maintained week-to-week and participants were reminded at the end of each session when the next session would take place.

Phase three: intervention. The intervention consisted of up to one half hour per week visitations with the dog and handler over a six-session period. Sessions were scheduled to last 30 minutes but would end early if requested by the participant. This time period has shown significant results in research with similar sample sizes (Banks & Banks, 2002; Banks & Banks, 2005). For example, Banks and Banks (2002; 2005) conducted studies on dog visitations that lasted six weeks with half hour visits once a week, using samples with approximately 40 participants; they found a significant reduction in participants' loneliness when comparing pre and post scores.

During the intervention semi-structured interviews and ongoing participant observation were conducted by the handler at each of the 30-minute visitation sessions to collect in-depth data on the role of visiting dogs (Appendix H). The semi-structured interview included questions such as: How do you feel today? What would you like to do with the dog today? and/or What do you enjoy about visiting with the dog? Participants were encouraged to prescribe their own agenda with the dog, petting the dog, playing fetch, or walking for example. After the session participants were asked another set of semi-structured questions such as: How do you feel about your visit? and Are you excited about the dog's next visit? The handler digitally recorded the semi-structured interviews (with the participant's consent) and recorded participant observations in a field diary following the sessions.

During activities with the dog, the handler remained close to the dog to maintain control, participant safety, and dog safety. The handler's role was to encourage interaction between participants and the dog while maintaining natural interactions with the participants. Participants dictated the level of interaction with the handler.

Individual condition. The individual condition consisted of six visits, approximately once per week, during a set time in a prearranged location. Locations were agreed between the participant and the handler so that both felt comfortable and safe (for example, a common area or outside). Up to four sessions, with different participants, took place during one day of no more than 30 minutes with a 15-minute break in-between each session so that the dog could rest. It was outlined to participants that sessions would be cancelled and rescheduled if the dog became fatigued or agitated. The initial dog visit acted as an orientation and meet-greet between the participant, the handler, and the dog. This initial visit, much like in naturalistic settings (St. John Ambulance, 2014), allowed the participant and the dog to become comfortable with one another

and with the nature of the visitation sessions. The handler demonstrated possible activities that could be done with the dog (e.g., walking, brushing, playing, tricks, visiting) and encouraged interactions as if it were the participant's own dog. Suggestions were made for activities if the participants were not forthcoming. Semi-structured questions were asked throughout the initial visit, as outlined earlier. During each subsequent visit the sessions began with pleasantries (e.g., how are you, how have you been) and continued with semi-structured questions as was appropriate. Field notes were recorded following each session.

As participants became more comfortable and familiar with the dog it was expected that the activities they chose would become more natural. Subsequent visits with the participants began to take on a routine as the visits progressed. Participants were given a letter explaining the consent process should they wish to have a guest join in on a session. Guests would have been given a short version of the consent form to sign if they wish to participate (Appendix I), however no participants chose to have a guest join them. In a naturalistic setting people would not be excluded from interacting with the visiting dog (St. John Ambulance, 2014); to maintain naturalistic simulation we allowed for the option of guests within the study design. The final session with the dog followed the same procedure as the other sessions (i.e., brief semi-structured interview and field notes); however, participants were also asked to once again complete the Multidimensional Scale of Perceived Social Support (Appendix G) (Zimet, Dahlem, Zimet, & Farley, 1988). At the end of the sixth and last session, participants were thanked for their time and participation and were reminded about a follow-up focus group to take place approximately six weeks' later.

Group condition. The group condition consisted of one group comprising of four participants (three female and one male). It involved once a week visits at a set time and in a

prearranged location, over a six week period. The location was in a public space within the assisted living facility, which is large enough to accommodate all participants and the dog handler team, but separated from the general population. It was established that sessions would be cancelled and rescheduled if the dog became fatigued or agitated. The initial dog visit served as an orientation and meet-greet between the participants and the dog (all participants knew each other prior to the intervention). This initial visit, much like in naturalistic settings (St. John Ambulance, 2014), allowed the participants and the dog to become comfortable with each other and the nature of the visitation sessions. As described above regarding individual visits, the handler demonstrated possible activities that could be done with the dog (e.g. walking, playing, tricks, and visiting) and encouraged interactions as if it were participants' own dog. Suggestions were made for activities when the participants were not forthcoming. Semi-structured questions were asked throughout the initial visit and field notes were recorded following each session. During each subsequent visit the sessions began with pleasantries (e.g., how are you, how have you been) and continued with semi-structured questions as appropriate.

As participants became more comfortable and familiar with the dog it was expected that the activities they chose would become more natural. The group sessions were not rescheduled unless more than two individuals could not make the session. Data collection during the final session with the dog followed the same procedure as the other sessions (i.e., semi-structured interview and field notes); in addition, participants were asked to complete the Multidimensional Scale of Perceived Social Support (Appendix G) (Zimet et al., 1988). Participants were then thanked for their time and participation and were reminded about a follow-up focus group in approximately six weeks' time.

Phase four: follow-up. Following the intervention, a final meeting was arranged with the participants of each condition for the purpose of conducting a follow-up focus group. Only one participant from the group condition did not participate in the focus group. The participant did not give the researcher a reason; she asked the recreation coordinator to inform the researcher that she did not wish to take part in the follow up. Her wishes were respected and she was not contacted again. A meeting time was scheduled six weeks following the last visitation session, as determined by the majority of participants. The length of time between the intervention and the follow-up was selected to be the same length as the intervention, similar to the study by Richeson (2003), which examined visiting dog interventions and dementia patient behaviour outcomes. Very few studies on dog visiting programs in senior populations have conducted follow-ups, therefore no protocol on time periods has been set within the discipline.

The purpose of the six-week follow-up was to further test the differences between the direct and indirect effect of dog visitations. The indirect effects of the dog visitation program (facilitation of social interaction with other individuals) could extend after the intervention is complete, however the direct effect of the dog visitation program (interactions between participant and dog) would not. By conducting phase four of the present study, the direct and indirect effects will be easier to distinguish and would allow for the identification of any short-term outcomes. There is an absence of studies examining short-term outcomes and identifying duration effects in the dog visitation literature (Banks & Banks, 2005; Giaquinto & Valentini, 2009; Kamioka et al., 2014; Morrison, 2007).

Participants in each condition participated in a separate focus group. The location was in a public space within the assisted living facility, which was large enough to accommodate all participants and the focus group moderator (the researcher/handler). Each focus group session

was one-hour in duration. Participants were reminded at the beginning of the session of their right to discontinue participation at any time without consequence and that the focus group would be digitally recorded. Participants were asked to sign a reaffirmation of consent prior to the start of the focus group session. The focus group interview schedule included a brief introduction of the purpose and discussion guiding questions about the experience of the visiting dog program (Appendix J).

Measures

First, descriptive information was collected, including demographic information (Appendix F). Descriptive information included: age, length of time at the facility, marital status, number of children and grandchildren, previous occupation, and level of education. The questionnaire was kept brief; as most personal information was gathered throughout the intervention during casual conversation with participants, for example, pet ownership history. Personal information was either documented through semi-structured interview transcripts or recorded in field notes. Before and after the six-session intervention, participants were asked to complete the Multidimensional Scale of Perceived Social Support. Brief semi-structured interview questions were asked throughout each session and field notes were written following each session. The field notes were taken to capture non-verbal interactions between participants and the visiting dog. Finally, follow-up focus groups were held six weeks post-intervention, where perceived social support was once again measured.

Semi-structured interview questions (Appendix H) were developed because of their use in naturalistic visitation settings, such as St. John Ambulance Therapy Dog Program and Pet Partners (Pet Partners, 2012; St. John Ambulance, 2014). Existing visiting dog programs encourage handlers to ask about individuals' day, what they want to do with the dog, what they

used to do with pets they might have owned, etc. The semi-structured interview questions were developed to replicate naturalistic settings (to remain conversational) while gathering data of interest concerning the individuals' social status and the impact of the dog visits. Questions of this kind have not previously been used in the literature; therefore questions have been standardized towards naturalistic handler and participant interactions. The questions were designed to target the direct and indirect impacts of the visiting dog program to address the research hypotheses. For example, "what do you enjoy about visiting with the dog?" addresses the direct hypothesis, and "do you feel more approachable when with the visiting dog?" addresses the indirect hypothesis. Questions were also designed as conversational to avoid artificial interactions.

Field notes were recorded following each visitation session. Field notes captured non-verbal interactions with the dog and handler team, such as activity choices (e.g., walking) or affectionate gestures (e.g., hugging). Notes were taken on important or interesting topics brought up during the visitations, for example, their history of pet ownership. Field notes also captured the indirect effects of the dog visiting sessions, for example recording participants' interactions with others over the course of the intervention. Field notes were also used for the development and review of semi-structured interview questions and focus group questions.

Perceived social support was selected as the construct of social support for this study. Studies have indicated that subjective measures of social support (i.e., perceived social support) have greater influence on health outcomes in seniors, compared to objective measures of social support (Antonucci & Akiyama, 1987; Cohen & Hoberman, 1983; Wallsten, Tweed, Blazer, & George, 1999; Wethington & Kessler, 1986). Despite this evidence most of the literature on visiting dog interventions and seniors use objective measures of social support. For instance,

three studies measured social support as the observed number of spontaneous social interactions between the participants, dogs, and other residents (Berry et al., 2012; Hall & Malpus, 2000; Phelps et al., 2008). Two of these studies also measured depression as an outcome of low social support (Berry et al., 2012; Phelps et al., 2008). Three other studies measured loneliness (using the UCLA loneliness scale) as a component of social support (Banks & Banks, 2002; Banks & Banks, 2005; Banks et al., 2008).

Regardless of the preponderance of objective measures throughout the literature, the perception of social support remains the most appropriate measurement for this study. This measure coincides with our adopted definition of social support; the meaningful function provided by social relationships. Essentially the micro level perceived social support used in this study is a small part of a very large overarching phenomenon, each part of which plays an essential role in health behaviours and outcome of individuals (Berkman et al., 2000). However, focusing on perceived social support at the emotional level is most appropriate for studies of this kind with a small sample size, and exploratory descriptive design. Because of the qualitative component of this study, perceived social support allows for interpretation within the context of newly built relationships. Because of the design of the intervention, to facilitate the development of and promotion of support between participants and with the dog, using subjective measures of experience, perceived social support, allows for deeper interpretation and lays foundation for objective measurements in future studies.

Perceived social support was measured using the Multidimensional Scale of Perceived Social Support (MSPSS) (Appendix G) (Zimet et al., 1988). It is a twelve item scale measuring perceived support received from friends, family, and significant others measured using a Likert-type scale rating items from very strongly agree to very strongly disagree (Zimet et al., 1988).

The MSPSS has previously shown good reliability (.88) and good internal consistency (Zimet et al., 1988). Perceived social support was negatively correlated to depression and anxiety showing good construct validity (Zimet et al., 1988). Internal consistency remained good when tested on seniors with health problems (Oxman & Berkman, 1990), and the reliability and internal validity remained strong in seniors with anxiety (M. A. Stanley, Beck, & Zebb, 1998). The questionnaire takes approximately twenty minutes to complete.

The final measurement used was the focus groups. Focus groups were used rather than individual interviews to explore the collective experience of the visiting dog program (B. Johnson & Turner, 2003). The collective experience is the shared experience of participating in the visiting dog program for both conditions. Although the individual condition involved a non-collective visit, participants still shared the experience. Focus groups aid in individuals' recollection and encourage participation of those who feel they have nothing more to contribute (B. Johnson & Turner, 2003). Moreover, focus groups have been widely used to capture experiences in health services and have good interpretive validity (B. Johnson & Turner, 2003).

Analyses

The first hypothesis, "(1) Both visiting dog conditions will have a positive impact on participants' perceived social support, both directly and indirectly", was tested through the analysis of the semi-structured interview questions and substantiated by the MSPSS questionnaire and analysis of field notes. The semi-structured interviews, MSPSS questionnaire, and field notes all tested whether or not participants experienced a positive impact on their perceived social support. Hypotheses 2 and 3, "(2) The primary effect on participants in the individual visiting dog condition will be the direct effect (dog-human interaction), and (3) The primary effect on participants in the group visiting dog condition will be the indirect effect

(facilitating human-human interaction)”, were tested through the comparison of the group and individual condition focus groups. The focus group data allowed for a direct comparison of the two conditions.

The qualitative data (semi-structured interviews, field notes, and focus groups) were analyzed using interpretive description to search for emergent themes testing all three hypotheses. The purpose of interpretive description is to maximize smaller scale qualitative investigations to capture subjective perceptions arising in themes and patterns to generate a description that can inform understanding of a given phenomenon (Thorne, Reimer Kirkham, & O'Flynn-Magee, 2004). Interpretive description was developed for research within nursing to generate knowledge that could be applied in a clinical setting. The philosophical underpinnings of this method are aligned with the research objectives to examine the subjective nature of visiting dogs with seniors. The philosophical underpinnings state, “There are multiple constructed realities that can be studied only holistically. Thus, reality is complex, contextual, constructed, and ultimately subjective” (Thorne et al., 2004, p. 3). One of the benefits of interpretive description is the orientation of data analysis towards findings that will inform practice (Hunt, 2009). This allows an exploratory study to move beyond description, and allows for the interpretation and identification of patterns in subjective experiences to inform programs, disciplinary thought, and future research.

Recorded interviews were transcribed and analyzed using hand coding by the researcher. Transcriptions and field notes were reviewed prior to subsequent visits to inform further questioning. Interviews were labeled by condition (i.e., individual or group) and by session number (i.e., 1, 2, 3, etc.). Assigning these attributes allowed for easy comparisons across conditions and time periods. While transcribing visitation sessions, notes were taken on recurring

themes, interesting topics, and impressions of the data to aid in future coding. Transcripts were then read through and coded into direct and indirect social support nodes. Direct and indirect nodes were read through and coded for emergent themes. Conditions and time periods were compared between the two nodes, to examine any changes in direct and indirect social support at all three time periods (addressing Hypothesis 1) and if there are any differences between direct and indirect social support in both conditions (addressing Hypotheses 2 and 3).

Before analysis took place each session's transcripts and field notes were read through and notes were taken on interactions, behaviours, or interesting statements. This was done to orient the researcher with the data prior to coding. Analysis was done in five phases. Phase one consisted of coding sections of interviews and field notes into *direct interaction* and *indirect interaction* with the dog. *Direct interaction* was any contact or interaction that took place between a participant and the dog without handler or other participant involvement; for example, when a participant would pet, hug, or speak with the visiting dog. *Indirect interaction* was any contact between participants and others (participants, staff, strangers) that took place because of the visiting dogs presence; for example, when participants would talk to each other about the visiting dog. Quotes were copied into a Microsoft Excel file under each code heading. Notes were taken during coding on the nature of interactions, and as these notes developed more codes associated with them, they were re-examined during phase two of coding. Phase two of coding consisted of the development and coding of the *reminiscence* theme. The *reminiscence* theme captured the story sharing and reminiscence component of the visiting dog program. For example, sharing favourite memories of previous pet ownership. Phase three of analysis consisted of compiling codes within each condition and developing subthemes, by looking for patterns and commonalities. Subthemes developed included, *personification*, *bereavement*, *pet void*, and

emotional support. Phase four of analysis was coding the focus group transcripts and field notes for indirect support and shared experience of the visiting dog program. The fifth and final phase of analysis was the interpretation of developed codes, the comparison between conditions, and the comparison of focus groups.

Rigor for the qualitative data was established during data collection and analysis. Prior to data collection the researcher acknowledged the biases held about the benefits of visiting dog programs. Acknowledging this bias was critical so that the handler did not project those biases on the participants during the data collection phase or during the data analysis phase. Analysis and data collection was also done concurrently to allow for constant comparison of results and collection. Constant comparison has been used with interpretive description to add to the rigor of analysis (Thorne et al., 2004).

Quantitative data were used to test Hypothesis 1. They were also used to test differences between the conditions over time; however only the qualitative data allow for interpretation of why the differences arose (i.e., direct or indirect effect). Mixed measures ANOVA was used to compare condition means on the dependent variable (MSPSS) across the three periods of time (baseline, post intervention, and follow-up). Mixed measures ANOVA requires a continuous dependant variable (MSPSS) and a categorical independent variable (time). A repeated measure ANOVA has the underlying assumptions of sphericity. The violation of sphericity is when the variances of the *differences* between all combinations of related groups are not equal (Krueger & Tian, 2004). The assumption of sphericity was tested using Mauchly's Test of Sphericity. Time is referred to as the within-subjects factor, whereas the fixed condition variable is referred to as the between-subjects factor (Krueger & Tian, 2004). This was used to establish any positive impacts on perceived social support before and after the intervention, within the conditions, and to

ascertain if there are differences between the conditions. IBM Statistical Package for the Social Science (SPSS) version 21 was used for all quantitative analysis.

Chapter 3: Results

Sample Descriptions

Facility Descriptions. Two facilities were used as the sites for the visiting dog program intervention. Both facilities are located in the North Okanagan Regional District, in British Columbia, Canada. The facilities selected self-identified as Assisted Living Residences, providing their residents with meals, housekeeping, security, recreation, and on site nursing staff. Both facilities also house long-term care patients, however they formed a separate community.

Residents are free to come and go as they like from the facilities. Meals are all provided, and they are assigned seating in the dining area with other residents. Recreation coordinators arrange outings and activities weekly, such as outings to local tourist attractions or local shopping centers. Neither facility had a visiting dog program running at the time of the present study nor within the previous year, though they both expressed interest and believed it would be beneficial to their residents. Both facilities had restrictions against pet ownership.

Participant Descriptions. Eighteen residents were presented to during participant recruitment; three of those individuals were not eligible to participate and three individuals who did not attend the recruitment presentation signed up for the study. Eight individuals agreed to participate in the group and individual condition intervention, six women and two men. Each condition had one male and three females. The average age of participants was 84 years (Table 3.1), ranging from 69 to 91 years old. The most common level of education in the sample was some high school (n=5), while the other participants had completed high school or had had some college and technical training (Table 3.1). The average length of residency in assisted living was 30 months; six participants had moved into the facility within the last year, while the other two participants had lived at the facility for more than five years (Table 3.1). All participants had

previously owned dogs at one point during their lives. Many of the participants had family that lived close by and visited with them regularly. At the time the study took place, three participants were married (two participants to each other), two participants were widows, and three participants were divorced (Table 3.1).

Table 3.1 Descriptive counts and means for group and individual condition participants.

	Group	Individual	Total
Gender			
Male	1	1	2
Female	3	3	6
Age	88.25	80.25	84
Level of Education			
Some High School	4	1	5
Completed High School		1	1
Technical		1	1
Some College		1	1
Martial Status			
Married	3		3
Divorced	1	2	3
Widow		2	2
# of Children	3.25	6.25	3.63
# of Grandchildren	5.5	7.25	6.38
Length in Facility (Months)	36.75	23.75	30.25

Group condition. The group condition participants comprised three women and one man. Three of the four participants were still married at the start of the study, two of participants were married to each other, and one participant was divorced. In the six weeks between the last visitation session and the focus group one participant was widowed. The average age of the group condition participants was 88.25 and all the participants had completed some high school (Table 3.1). None of the participants in the group condition used mobility aids. All the rooms in the group condition residence were private pay without any government subsidies. Participants were all close in age with a range of only three years. The three married participants had lived in

the facility for five months at the time of the study, and the other divorced participant had lived at the facility for more than ten years.

Individual condition. The individual condition comprised three women and one man. Two women were widows at the time of the study; the man and third woman were each divorced (Table 3.1). The two divorced participants were younger than the other participants were, by approximately twenty years, and they commented on how difficult it was to socialize in the facility because of their relative youth and generational differences. All the participants used mobility aids, one used a walker, one used a wheelchair, and two used electric wheelchairs. All the participants could still walk but used the mobility aids when leaving their rooms because of breathing problems, stability problems, and sense of security. Most of the rooms in the individual condition facility were publicly funded rooms, with a few private pay rooms.

Intervention Descriptions

The structures of the intervention conditions were very similar, and both conditions fell into a rarely strayed from routine after two or three sessions. The individual condition interventions took place at the same time, the same day of the week, and in the same meeting space for each of the six weeks. The meeting place for each participant in the individual condition was different: three preferred to meet in their rooms and one in an unused hobby room. The initial visit acted as an introductory session to both the dog and the handler. (All the participants had previously met with the handler and dog briefly during participant recruitment.) During this initial visit each participant was re-introduced to the dog and handler, and given relevant background details on both. They were told the sex, age, breed of the dog, and were shown a selection of his tricks. In the first session the dog was made to sit beside the participant so they could pet him, hug him, praise him, and be licked by him.

Following the initial visit the sessions took on a routine for each participant. Sessions began with greetings and pleasantries (e.g. How have you been?), afterwards the conversation generally shifted towards the dog. Participants asked questions about him such as, his eating routine, what his favourite toys were, and how long I'd had him. Questions about the dog were often mingled in with reminiscing stories about dogs previously owned. Sessions always included large portions of time devoted to seeing the dog do tricks and giving him treats. Participants were given a demonstration of a few tricks, and then were able to give him commands as they pleased. Each session ended with the handler thanking the participant, reminding them of the next session, and a final dog petting.

The group condition took place at the same time (10:30 AM), the same day of the week (Wednesday), and in the same room for each of the six weeks (media room). The room where the sessions were held was also used as a theatre for movie viewings, with chairs, side tables, a small desk, and an entertainment unit at the front of the room. Participants sat in the chairs closest to the front of the room in a line or a semi-circle facing the dog and handler. The initial visit acted as an introductory session to both the dog and the handler. As all the participants knew one another prior to this study, they did not need an orientation with each other. During this initial visit they were all introduced to the dog and handler, and given relevant background details on both. They were told the sex, age, breed of the dog, and were shown a selection of his tricks. In the first session the dog was walked to each participant so they could pet him, hug him, praise him, and be licked by him.

The five sessions following the initial visit followed a set routine. Sessions began with greetings and pleasantries (e.g. How have you been?), generic talk about the weather, and afterwards the conversation generally shifted towards the dog. Participants asked questions about

him such as, his eating routine, what his favourite toys were, and how long I'd had him. This was often mingled with reminiscing stories of dogs previously owned. The dog would move from participant to participant, the conversation would generally include those not interacting directly with the dog, acting as placeholder between one-on-one dog time. Sessions always included large portions of time devoted to seeing the dog do tricks and giving him treats. Participants were given a demonstration of a few tricks, and then were able to give him commands as they pleased. Each session ended with the handler thanking the participants, reminding them of the next session, and final dog petting.

Interviews and Field Notes

Interview and field notes were sorted into the group and individual conditions. The group condition results were divided into four subthemes: *personification*, *bereavement*, *pet void*, and *emotional support*. Although the individual condition touched on similar themes to the group condition the interactions were focused mostly between the handler and the participants, therefore the individual condition results were coded into one subtheme. An unexpected theme that developed from both conditions was *reminiscence*. Similarities and difference between conditions are illustrated in Table 3.2.

Table 3.2 Similarities and difference between intervention conditions

Similarities	Differences
<ul style="list-style-type: none"> • Routine • Context driven • Sessions began with pleasantries • Sessions ended with tricks • Reminiscence • Dog primary source of program enjoyment • One on one interactions with dog 	<p>Group Condition:</p> <ul style="list-style-type: none"> • Conversation about dogs and pet ownership • Primary interactions between dog and participant
	<p>Individual Condition:</p> <ul style="list-style-type: none"> • Conversations about family • Primary interaction between participant and handler

Group condition. The group condition was focused primarily around interactions with the dog. Each session would begin with greeting and physical interaction with the dog, and would occasionally include unprompted interaction with the handler. Also all the conversation that took place was either instigated by the handler or was directed through or at the dog. For example, one participant stated the following: *'Oh you are such a nice boy. [petting the dog] Did you have a good sleep last night? [directed to dog] Huh? Did you have a good sleep? I did. Yeah I did.'* (Facility B, Age 86)

As the intervention continued and the participants became more familiar with the handler, more conversation was directed to her, rather than primarily through the dog. However, the conversation directed at the handler was starkly different from the conversations had with the dog. Questions directed to the handler were mostly information seeking, questions primarily about the dog (e.g., how long did it take you to train him?), about the study (e.g., will we be able to see the results?), and about her schooling (e.g., how long until you are finished?). In contrast the conversations through or directed to the dog rarely needed contribution from the handler or other participants. These conversations consisted of praise, longing for a pet, or personifying the dog by talking for the dog. At least one participant in every group session would stroke the dog and tell him how beautiful and special he was, for example: *'Mommy's got you looking so pretty. Pretty boy, you sure are. You just love compliments.'* (Facility B, Age 89)

Personification. The final theme that came out of the conversations with the dog was the tendency of the participants, and occasionally the handler, to talk for the dog or have a conversation like the dog was replying. Some of these overlapped with the praising of the dog, for example, asking him if he knew he was a good boy and replying "of course you do". Some of this was not just an initiated conversation but an interpretation of what the dog must be thinking

or what he would have said in those situations. These kinds of interactions happened with all the group participants during multiple sessions. One such conversation took place between two participants, one of which replies to the questions as the dog:

Participant 1: *That a good boy, aren't you? Hey. Yes a beautiful little boy! Are you glad to see me? [Baby voice]*

Participant 2: *He is, because he went right to see you when you walked in.*

Participant 1: *Awe.*

Participant 2: *He knew you [laugh] he says, "I'm just going to park here and I'm going to be [participant name] friend for the day!"*

(Facility B, Ages 86)

Bereavement. Between participant interactions were facilitated by conversations centered on the dog. These interactions were most commonly replies to or agreements with stories or opinions shared by another participant. On two occasions, two of the participants shared stories of grief from previous dogs they had to put down. The participants were visibly upset during these conversations but reassured each other that they had made the right decision in ending their pet's suffering. This conversation took place between two participants who had dogs all their lives and still struggled with the loss of their pets:

Handler: *It's a hard decision to make.*

Participant 1: *But he is counting on you to make that decision when they are suffering.*

Participant 2: *Oh but it was so hard.*

Participant 1: *I know I have been through it many times. But they count on you [voice breaking], they count on you to make that decision.*

Participant 2: *I know they do but it was so hard. The look in his eyes, was "oh just let me go."*

Participant 1: *Yeah he's in pain he wants to go.*

Participant 2: *Yeah I had to do it. Worst thing I ever did in my life. Worst thing and the best thing.'*

(Facility B, Age 86 and Age 89)

Pet Void. Another theme from the conversations with the dog was the sadness and longing for a pet they gave up, for any pet, or for the intervention dog to live with them. One of the group participants had to give up two dogs before she and her husband could move into the facility, and despite having her husband for company, wished there was a dog in her life to cuddle with. This participant said things like the following almost every session to the visitation dog: *'Well I could just live with you. Yeah, you would make me very happy.'* (Facility B, Age 86)

Participants often referred to pets as family and used language that personified the visiting dog. The handler was referred to as the 'mom', former pets were referred to as 'baby', and the participants' children's pets were referred to as 'grand-dogs'. It was established in the group without contest the importance of pets as company and their value as a source of comfort and companionship. Participants would often comment on how lucky the handler was to have the visiting dog as a companion and would lament not being able to own a dog. Participants looked forward to the visits with the dog and always left the sessions with a smile on their face.

Here are two examples of participants discussing how much they enjoy the sessions and how they think other people enjoy the sessions:

'It's really nice to see him. Yeah it's really nice. I think it's good to have pets – dogs come in. I think it's nice. And I think that people who are – we are together so we are really fortunate – but for people who are lonely in a place like this I think they get a lot out of it. You know I think they get the – I know [another participant] just loves it.' (Facility B, Age 86)

And,

'I know she hasn't been feeling well. So I hope she can [make it to the session], because she really looks forward to it. In fact she even cancelled her x-ray appointment, last week or the week before. She was supposed to go in for x-rays on Wednesday morning, she forgot about the dog. So she cancelled the x-rays to see the dog and her husband was so mad at her [laugh]. But she got in the next day so that's good. Oh here she comes!' (Facility B, Age 86)

During the group condition the primary interactions took place between the dog and the participants and sessions were supplemented by handler interactions. Most interactions with the handler were questions pertaining to the dog and filler comments about the weather and current events. These interactions were often placeholders for the participants not interacting directly with the dog. During the focus group when asked about the primary enjoyment, one participant commented that of course they were mostly there for the dog, and without him they wouldn't have interacted with the handler at all.

Emotional support. The group condition sessions resulted in a few occasions where the meaningful function of social relationships was seen through the combined comforting of participants from other participants, and using the dog as a soothing or comforting device. The topic of pet euthanasia came up in conversation and what always followed was a display of grief from one or two participants. Participants would either call to the dog for comfort, other participants would direct the dog over, or the handler would direct the dog over. Participants would also reassure one another by sharing stories of their own experiences with pet loss, how you never got over the loss of an important family member, and how ending their pain despite your guilt was the right decision. During the final group visit one participant was feeling unwell

due to her husband's worsening health. The visiting dog stayed with her for most of the visit and the other participants did their best to comfort her.

The following is an example of part of this conversation and her leaning on the dog for emotional support:

Handler: *How are you doing today?*

Participant 1: *Not so good. My husband is worse.*

Participant 2: *I told her she looked very nice today. That's such a nice colour on you.*

Participant 1: *My husband is back on bed rest.*

Participant 2: *Oh is he?*

Participant 1: *They have to wheel him down for dinners. He was in the hospital for 5 days and he has just been deteriorating ever since. He's not strong and healthy like you. [to Barry while stroking and hugging him]*

(Facility B, Ages 86)

Individual condition. The individual condition sessions were similar to the group condition, however the primary interactions took place between the handler and the participants, facilitated by the dog's presence. Each session would begin with greeting and physical interaction with the dog, and would include unprompted interaction with the handler. Most of the conversation that took place was either instigated by the handler or involved questions about the dog.

Participants in the individual condition shared many more personal stories with the handler that did not always involve reference to a previous pet. Whereas most of the group condition stories centered around previously owned pets, the individual condition participants shared stories about their families, where they grew up, where they used to live, and where they

used to work. The individual condition sessions also had many more interactions with staff and other residents because the visits were not always in a secluded area of the facility. Each day staff members greeted the dog (not the handler) by name when they both entered the facility. A common observation that came up among participants was not remembering the handler's name for the first few sessions, whereas they all remembered the dog's name:

Participant: *What's your name again?*

Handler: *Lindsay.*

Participant: *Lindsay!*

Handler: *And this is Barry.*

Participant: *Oh yes I remember Barry!*

(Facility C, Age 90)

The individual condition sessions would begin with petting the dog and giving him treats, but could also develop into the dog resting at the feet or beside the chair of the participant while the majority of the interactions took place between the handler and the participant. On one occasion, while trying to encourage interaction between the dog and the participant, the handler was told not to worry about having the dog involved, and that they could just chat.

Reminiscence. The most salient code from the semi-structured interviews was 'reminiscence'. This code was developed to capture positive storytelling and life histories shared between participants and with the handler. Reminiscence therapy is a psychology technique often used in senior populations and in visiting dog programs (Friedmann et al., 2005). St. John Ambulance training encourages handlers to promote reminiscing about past pet ownership as a way to connect to the dog and handler (St. John Ambulance, 2014). The most common reminiscence found amongst the participants was sharing stories of past pet and dog ownership.

This included time they used to spend with their pet, silly stories about their dogs, and sometimes about other family members' pets. For example, this participant from the group condition shared this story about interacting with her son's dogs:

My son had two big dogs and I would give them their treats. I could hear them out there. They would just be sitting in my garage waiting for their treats. Charlie would leave his because he liked a good scratch first, but Lucy would gobble hers down right away and then get a good scratch. (Facility B, Age 86)

Participants would often share stories of past dog ownership as a reaction to something the handler had shared with them, or something the dog did (e.g. a type of trick): *'I used to do that with my dogs all the time.'* (Facility C, Age 68)

Particularly in the individual condition, participants would share stories from their past which were not always related to their experiences with pets. Participants shared stories about growing up and how things had changed over the years. One participant shared the story of growing up in Nazi occupied Holland and how she met her late husband who was a Canadian soldier. Participants also shared stories about their families and their relationships with children, siblings, and close friends. One participant shared how visiting with the dog brought up old memories: *'I was thinking of Barry after our last visit and the dog I had in my 20s, a black lab.'* (Facility C, Age 69). Participants also shared the enjoyment they received from the visits with the dog and how it helped break up the repetitiveness of life in the facilities. Participants from both group and individual conditions would comment on this, for example:

'That's why we like you to come visit, because you make people happy don't you? You do, you're such a nice boy. You are just a bit of sunshine.' (Facility B, Age 86)

And,

'I was looking forward to it yes. I almost lost track of time earlier, but then I noticed the date on my TV. Everything is always the same here every day so it's easy to lose track of the days.'

(Facility C, Age 68)

Focus Groups

Only one individual from the group condition declined participation in the follow-up focus group. Remaining members of each condition met in the facilities approximately six-weeks following the intervention. All participants reported thoroughly enjoying the visits with the dog and that it was a "treat". Participants discussed how they incorporated it into their routine and gave them something to look forward to each week. One participant from the group condition commented: *'I think a lot of people missed out because you are just wonderful to get to know [Barry].'* (Facility B, Age 86)

When participants were asked what it was about the program they enjoyed they all resoundingly agreed that it was the dog. Despite primary interactions with the handler in the individual condition, the participants left the program impacted by the dog, not the handler. As discussed in the previous section, the majority of the interactions in the individual condition were between the handler and the participant. Much like during the intervention the participants discussed the dog visits as breaking up the routine of living in the facilities. While they found it helpful that the handler was approachable and good natured, the lasting impression was all about the dog. One participant from the individual condition expressed this as the dog bringing in something different and unique to the facility: *'We talk to and see people all the time, nothing against you, but it's definitely the dog. There is no access to animals here.'* (Facility C, Age 68)

The group condition also experienced similar reactions to the intervention, where their fondest memories from the visits were interactions with the dog directly. Contrasting with the

individual condition however, was the shared connection the group participants had after the intervention ended. The participants all shared a dinner table and commented on how the visiting program added to that relationship:

'We had dinner in common. Now we have that we both love Barry.' (Facility B, Age 86)

Mixed Measures ANOVA

The purpose of the mixed measures ANOVA was to test whether the mean Multidimensional Scale of Perceived Social Support (MSPSS) scores differed between conditions (main group effect), whether the mean MSPSS scores differed over time (main time effect), and whether the mean MSPSS scores differed over time between conditions (group-by-time interaction effect). This was to address the first research question, whether the intervention had a positive impact on perceived social support and if there were differences between the conditions. Mauchly's Test of Sphericity indicated that the assumption of sphericity had not been violated and data were normally distributed. There were no significant results for the three tests performed; the effect between conditions, $F(1, 10) = 2.25 p > .05$, the effect over time, $F(1, 10) = 1.17 p > .05$, and the effect between conditions over time, $F(1, 3.83) = 0.24 p > .05$.

Chapter 4: Discussion

The aims of this study were to describe and interpret the effect of a visiting dog program on seniors' perceived social support and to determine whether there were differences between group and individual conditions. This study utilized the definition of social support as the meaningful function provided by social relationships, through emotional support to interpret these effects. To address the research questions and hypotheses, interviews, field notes, and focus group data were transcribed and coded according to the social support hypothesis of the direct and indirect effect of companion dogs. Perceived social support was measured using the Multidimensional Scale of Perceived Social Support and analysed using mixed measures ANOVA. Results suggest that the visiting dog program did have a positive influence on participants' social support, although future studies are needed to expand this area of research.

Hypothesis 1

“Hypothesis 1: Both individual and group dog visitation conditions will have a positive impact on participants' perceived social support, both directly and indirectly.”

Looking solely at the results from the MSPSS mixed measures ANOVA the response to the first hypothesis would imply that the visiting dog program had no effect on individuals' perceived social support. However, the semi-structured interviews and field notes illustrate something much more complex than the research question (do visiting dog programs have a positive impact on participants' perceived social support?) can address. All the participants of the study reported that they enjoyed participating in the program and looked forward to the visits from the dog and the handler. The sessions allowed the participants to interact with new people in a new setting and provided them with conversation topics.

The results from the quantitative analyse must also be examined within the context of a small sample size. Considering the sample size of eight and the theorized small effect size it is not surprising that the results from the mixed measures ANOVA were not significant. This does not mean that given a larger sample size the results would have been significant, but that the results would be more reliable given a larger sample size. Despite being unable to quantitatively measure a change in perceived social support, it was noted that participants held the belief that the visiting dog programs were good for seniors and that pets brought joy to people in a fun and exciting way that was sometimes lacking in their everyday lives. Participants in both conditions felt so strongly about the benefits of visiting dog programs that they expressed their surprise that so few residents were willing to participate.

The belief in the benefit of the program was consistent with previous studies done, which were also unable to produce quantitative evidence on the effectiveness of these interventions (Phelps et al., 2008). Phelps et al. (2008) investigated the effects of dog visits on depression, mood, and social interaction in nursing homes and found no significant results. Despite this, all the participants wanted to continue receiving visits from the dogs (Phelps et al., 2008). Is it then the belief that visiting dog programs are beneficial that contributes to the positive outcomes observed in studies? Considering the deficiency in robust evidence on the effectiveness of these programs, the users and researchers hold strong biases towards their benefits.

Hypotheses 2 and 3

“Hypotheses 2 and 3: The primary effect on participants in the individual visiting dog condition will be the direct effect (dog-human interaction). The primary effect on participants in the group visiting dog condition will be the indirect effect (facilitating human-human interaction).”

The results from the interviews and field notes were opposite to the hypotheses. The distinct difference between the two conditions was the effect of the dog. The primary effect of the dog in the group condition was direct, from the participants having extensive one-on-one interactions with the dog, which did not include the group or the handler. The primary effect of the dog in the individual condition was indirect, facilitating conversation and interactions among the handler and the participants, and facilitating conversation and interactions with other residents at the facility.

The group condition conversations and interactions centered on the visiting dog and was comprised of three types of interactions (Figure 4.1): (1) direct interactions between participants and the dog, (2) indirect interactions between participants facilitated by the dog's presence, and (3) placeholder interactions between the handler and the participants. Of these three interactions, the most common were the direct interactions between participants and the dog. This was an unexpected finding, contrary to the hypothesis, which posited the main effect of the group condition to be the indirect effect. Very little interaction from the handler was needed during these sessions, which resulted in the participants forming a primary bond with the dog rather than each other or the handler. All the conversation that took place with the handler was either initiated by the handler, or was directed through the dog. For example, this conversation took place between a participant and the visiting dog:

'Oh you are such a nice boy. [petting the dog] Did you have a good sleep last night? [directed to dog] Huh? Did you have a good sleep? I did. Yeah I did'. (Facility B, Age 86)

Although the group condition participants did become much more comfortable with the handler as the six weeks progressed, the participants all identified the dog as their primary source of enjoyment and the reason for their participation.

During the follow-up focus group, the group participants reported that the visitations with the dog had given them another common bond to their pre-existing relationship. This suggests that despite focusing primarily on the dog during the sessions, the participants were able to form a bond because of their shared experience with the visiting dog. Although the indirect interactions between participants during the visitation sessions were secondary to the direct interactions, the presence of the dog facilitated interaction between participants after the visitation intervention ended. This lends further evidence to the indirect effect of dog companionship, even after the dog is no longer present (McNicholas & Collis, 2000). This also lends further evidence that the social support theory can be used in a visitation session, rather than strictly in ownership studies.

The researchers hypothesized that the primary interaction would be the indirect interactions between participants, facilitated by the presence of the dog. While these were not the primary interactions that took place during the sessions, they did persist after the intervention was completed. This is the first study, to date, to produce evidence directly linking dog visitation interventions to the social support theory. The only other study, to date, to compare group and individual conditions did not find evidence of the dog visitations facilitating interactions between participants (Banks & Banks, 2005). Researchers surmised the reason the dog visitations did not facilitate interactions between participants could have been due to hearing impairment, incompatibility in the groups, or bias from previous relationships (Banks & Banks, 2005). However, the study did not follow up to see if the visitations with the dog facilitated interactions after the dog was no longer present.

The third interaction that took place in the group condition was the placeholder interactions between the handler and the participants. The intervention was not designed to

minimize the contribution of the handler, however, this naturally occurred as the intervention progressed in the group condition. Interactions that took place between the handler and participants occurred in between interactions with the dog. This was an unexpected development in the group dynamic. As the dog took turns with one-on-one time with each participant, the handler and other participants would discuss whether, the dog, or sometimes share stories. These interactions prevented the room from filling with uncomfortable silence while the participants waited for their one-on-one time with the dog. Participants in one-on-one time with the dog generally did not take part in the placeholder discussions with the handler and other participants. This dynamic has not been explored in the research to date. This may be because handler effects have not been taken into account in previously conducted research.

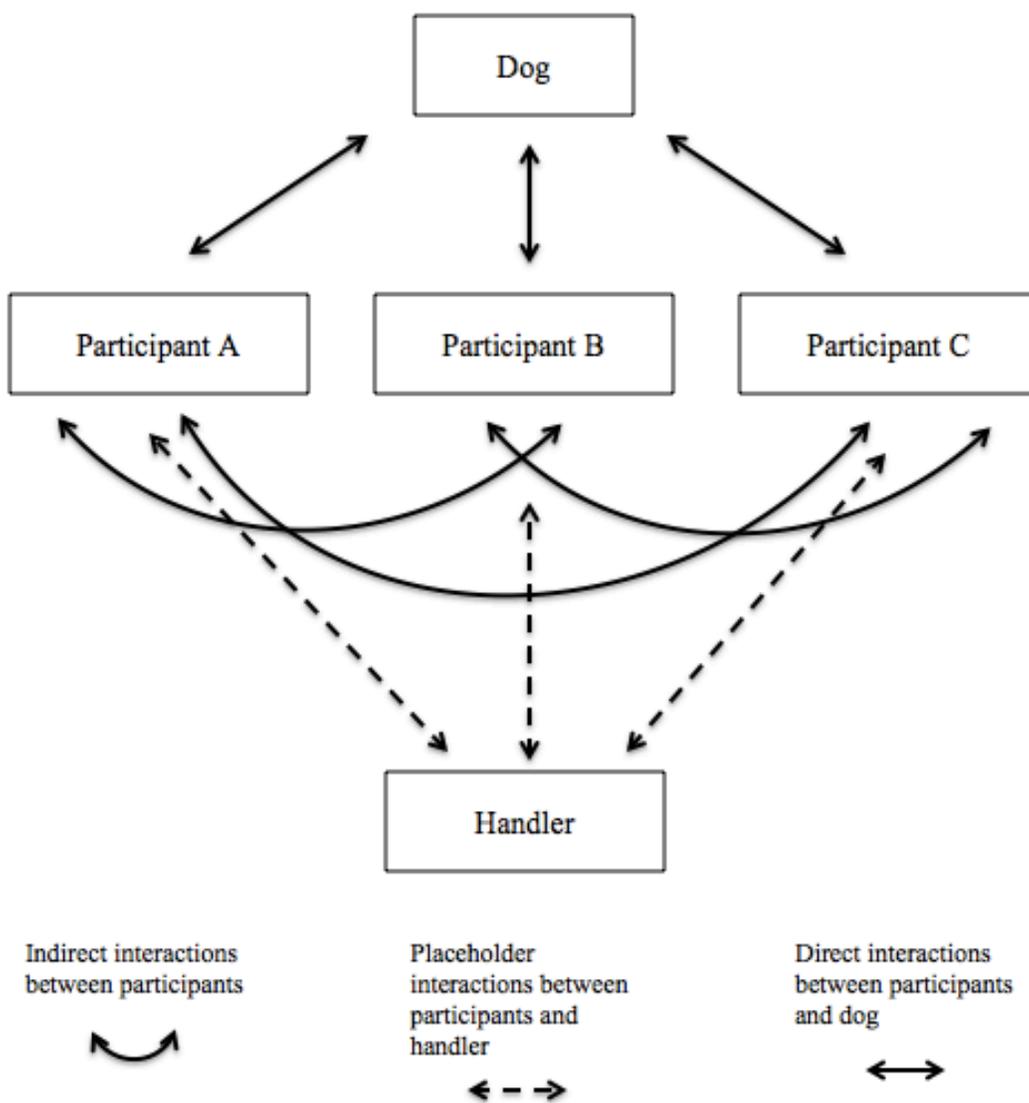


Figure 4.1 Interactions between participants, handler, and dog in the Group Condition

Unlike in the group condition, the individual condition conversations and interactions were initiated by the presence of the dog, but continued without him. Although different from McNicholas and Collis's (2000) description of social interactions being paved after the dog was gone, the visiting dog in this study did facilitate and "break the ice" for participants to become comfortable interacting with the handler in a social environment. The dog was the entry point

into the relationship between the handler and the participant, which would not have existed without the dogs' presence as a facilitator.

Reminiscence

Reminiscing was a prevalent theme raised in all the visitation sessions. Participants enjoyed sharing stories about past pets, about family, and about themselves. While this was not a result the study aimed to find, it comes up in some of the literature on visiting dog programs. However reminiscence has not been investigated as a component of visiting dog programs, to date. This unexpected component of the visiting dog programs should be explored further to determine its relevance in interventions of this kind.

Friedmann et al. (2005) used reminiscence therapy as the control group for their study on animal assisted therapy and functional status of seniors with mild to moderate cognitive impairment. Although they did not find any significant differences between groups or across time it is the only study to highlight the close relationship reminiscence has with visiting dog programs (Friedmann et al., 2005). Other studies briefly mention that reminiscing was one of the activities participants did with the dogs, but none discusses its relevance to the intervention (Banks et al., 2008; Richeson, 2003; Vrbanac et al., 2013).

The stories shared in each condition also used to distinguish between the primary relationships formed during the sessions. The group condition participants shared stories about past pet and dog ownership, while the individual condition participants shared stories mostly unrelated to experiences with pets. Individual condition stories were life stories, growing up in Nazi occupied Holland or how they met their spouses. Stories of where they grew up, their family life, kids, parents, partners. Pets would sometimes come up but mostly it was old memories not associated with their pets. This form of reminiscence is often referred to as

‘simple reminiscence’ in the literature, the sharing of experiences or memories in response to stimulus (in the present case the stimulus was a dog) (Haslam et al., 2014).

While exploring reminiscence therapy and seniors, two main types reminiscence stimulus were common: story and song. One study compared different group outcomes based on the type of stimulus (Haslam et al., 2014). Researchers compared the outcomes of three groups: a story reminiscence group, a secular song reminiscence group, and a religious song reminiscence group (Haslam et al., 2014). Researchers hypothesized that ‘group fit’ moderated health outcomes seen in reminiscence therapy (Haslam et al., 2014). They found no change over time from the intervention alone, but found significant interactions with the type of reminiscence group (Haslam et al., 2014). Group fit with the story reminiscence group was associated with improved cognitive outcomes and greater life satisfaction, and group fit with the religious song group was associated with decreased anxiety and greater life satisfaction (Haslam et al., 2014).

In another study exploring reminiscence using song stimulus, had six women participate in six group sessions using meaningful music of their choice (Somody, 2011). Participants used the music of their choice to describe current life events and future hopes (Somody, 2011). Following the sessions participants were interviewed individually to describe their experience (Somody, 2011). Outcomes from the group sessions included increased self-awareness, relationship building, and bereavement support (Somody, 2011).

Reminiscence has shown promising outcomes in senior participants, however the efficacy of these programs has also been questioned (Haslam et al., 2014). For as many studies that show positive outcomes from reminiscence, and equal amount show no change (Haslam et al., 2014). This ambiguity surrounding the efficacy of reminiscence is similar to the ambiguity surrounding the efficacy of visiting dog programs. Incorporating reminiscence into the visiting dog

intervention model could expand our understanding of the underlying dynamics of these programs. However, if small sample sizes and inconsistent methodologies are continually utilized in reminiscence and visiting dog intervention studies, the ambiguity surrounding their efficacy will also continue.

Naturalistic Intervention

The present study is the first, to date, study to examine a visiting dog intervention that replicates naturalistic interventions. The present study did not attempt to systematically isolate the handler from the intervention. A naturalistic intervention was replicated because the handler is a necessary component of the intervention to maintain participant and dog safety, and interventions of this kind can, therefore, not take place without the handler. The findings of the present study also suggest that the importance of the handler extends beyond maintaining participant and dog safety.

The primary interactions in the individual condition were between the handler and the participants. The handler was a necessary component of the individual condition to avoid an artificial research environment. One goal of the intervention design was to create a participant lead natural environment for the sessions to take place within. This would not have been possible had the handler been confined to a script, or had the handler been restricted from interacting with the participants all together. Considering the pivotal role the handler played in the individual condition, the restriction of the handler could attest to part of the reason for previous unsuccessful one-on-one interventions (Phelps et al., 2008).

The handler was also necessary in the early stages of the intervention to engage participants with the dog. Efficient handler and dog teams work together to create an environment in which participants feel comfortable engaging with both the handler and the dog

(Pichot, 2012; St. John Ambulance, 2014). This manifested in the group condition during the initial sessions. The handler would encourage the dog to go from participant to participant to ensure they each got time with the dog. The handler also showed the participants tricks the dog could perform so the participants could interact with the dog in the future without handler intervention.

Even though the handler was a necessary component of the intervention, the sessions remained 'dog-centric'. Group and individual condition participants were explicit during the focus group that the dog, not the handler, was the reason for their enjoyment of the intervention. This suggests that the effects from the intervention can be attributed to the dog, and not the handler. However, attributing effect on social support to either the dog or the handler must be approached cautiously. The dog and the handler are a team in the visitation intervention, and do not exist separate from one another, as they are both necessary components. This relationship warrants further exploration for the understanding of the dynamics involved in a dog visitation intervention.

Conclusion

The purpose of the present study was to investigate the effect of a visiting dog program on seniors' perceived social support. Social isolation and depression are common among senior populations and in assisted living facilities (Krause-Parello, 2012). Transitions into assisted living facilities can be very traumatic and detrimental to seniors' health (Howie et al., 2014). Strong social ties and social engagement can be protective against negative life events faced by seniors (Howie et al., 2014). As social support is an important determinant of seniors' health (Gilmore, 2012), it is likewise, important to develop interventions targeted at promoting social support in seniors.

Interventions aimed at promoting social support in seniors come in several different forms (Cattan et al., 2005; Findlay, 2003). Companion dogs have been shown to influence several indicators of social support, including, decreasing depressive symptoms, a decrease in loneliness, an increase in social engagement, and bolstering social support networks (Banks et al., 2008; Crowley-Robinson et al., 1996; Filan & Llewellyn-Jones, 2006; Krause-Parello, 2012; McNicholas & Collis, 2000). Despite this, not every senior can, or wants to, have a companion dog. Dog visitation interventions have the potential to exhibit the benefits on companionship with a dog, without the burden, or restrictions, of owning a dog. The present study examined the relationship between visiting dog programs and outcomes in social support in seniors residing in assisted living facilities.

The research was undertaken using a novel design aimed at capturing naturalistic interventions to make practical recommendations. The present study used a mixed method exploratory comparative intervention design. The intervention exposed participants to a visiting dog program over the course of six weeks. Two conditions were compared, group and individual, to explore similarities and differences, to answer two questions: (1) Do visiting dog programs positively impact perceived social support and are there differences between individual and group conditions, and (2) Are those differences attributable to direct or indirect effects of dog visiting programs. Addressing these questions were four main findings: (1) the visiting dog program showed evidence of emotional support and indirect effects in the group condition, (2) reminiscence is a necessary component of the intervention which must be explored further, (3) the challenges of recruiting seniors and the importance of gatekeepers to participants, and (4) replicating naturalistic visiting dog programs can be ‘dog-centric’, without an artificial removal of the handler.

To address question 1, yes there is evidence that a visiting dog intervention positively impacts social support, and there were differences between the individual and group conditions. Evidence of emotional support from the direct interaction with the visiting dog was shown in the group condition. The study also found evidence of the dog visitation intervention facilitating relationship building between participants in the group condition. These findings suggest that the intervention had a positive impact on participants' social support. However, this evidence was not found in the individual condition. This was the main difference between the two conditions. Although participants from both conditions reported enjoying the intervention, and in particular the dog, no evidence of a positive influence on social support was seen in the individual condition.

As for question 2, are these differences attributable to the indirect and direct effects of the visiting dog intervention? No, these differences are far more complex than the indirect or direct effect of the intervention. The handler's role in the intervention was previously unexplored, and particularly important in the individual condition. Why differences exist between group and individual conditions in visiting dog interventions will only be answered when the intervention design and experience is explored more in-depth. The reminiscence component of these interventions is previously unexplored, although alluded to in some of the research (Banks et al., 2008; Friedmann et al., 2005; Richeson, 2003; Vrbanac et al., 2013). Limitations of the present study must also be attended before addressing what attributed to the differences between the group and individual conditions.

Limitations

Although this study was able to contribute novel findings and new methodology to the field, limitations exist. The study was unable to meet the targeted fifteen participants, leaving the

study with a very small sample size. The data collected were rich with experience, a larger sample would have added to the robustness of findings and added credibility to the results. The study was also limited in its resources. Given a short time frame and only one handler/dog team the data collection would have been strained, and possibly compromised, had the sample been twice the size. A larger sample size would have required more than one visitation team, or, alternatively, data collection could have been done in phases to alleviate the strain on resources.

According to feedback from recreation coordinators, those who participated and who dropped out of the study, starting data collection in the summer months was a poor choice. Participants are less interested in committing to a program in the summer months, which are already filled with activities. It was suggested by the recreation coordinators that starting in the cooler months of the year might have attracted more participants. Recruitment was the biggest challenge faced throughout the study, and roadblocks were met at each level. Although more facilities expressed interest initially, only the two facilities we ended up with had personnel who had both the time and the willingness to help initiate the project. Recreation coordinators became the gatekeepers to successful participant recruitment and facility interest. For instance, the first facility that was recruited was very enthusiastic about participating; however due to vacation and scheduling conflicts with the recreation coordinator, participant recruitment stalled and the facility had to decline participation.

Akin to facility recruitment, participant recruitment would also have been impossible without buy-in from facility staff. The residents of the facilities only became curious and interested in the visiting dog program after we had completed recruitment and were almost finished with data collection. Along with the difficulties finding participants were the challenges of finding participants that fit the inclusion and exclusion criterion. A study done in Australia

came to similar conclusions about the importance of gatekeepers and key informants for recruiting and retaining seniors in their research (Feldman, Radermacher, Browning, Bird, & Thomas, 2008). A 1994 literature review found that challenges faced when recruiting seniors can lead to underrepresenting the population of interest, which can result in misrepresenting correlations or missing them entirely (Thompson, Heller, & Rody, 1994).

Recruiting seniors into research studies is particularly challenging (Bonk, 2010). In the present study, targeting and recruiting socially isolated seniors was near impossible. The inclusion/exclusion criteria of the study were designed to target seniors who were not often visited by friends and family, and who were not regularly engaged in social activities. However these criteria, as an objective measure of social isolation, did not capture seniors who had low levels of perceived social support or those identified as being isolated. Recruitment relied heavily on recreation coordinators promoting the study to those they felt would benefit from a visiting dog program. Without their advocacy the study would not have had any participants.

One study, which addresses the challenges of recruiting socially isolated seniors, also mentioned the importance of recreation coordinators (activity directors) in the participation in programs that promote social support and engagement (Winningham & Pike, 2007). This study identified recreation coordinators as the staff members most likely to implement and advocate for programs of this kind (Winningham & Pike, 2007). If the present study were repeated a greater emphasis would be put on the importance of developing strong relationships between the research team and recreation coordinator. They are the gatekeepers into assisted living facilities and participant recruitment started and stopped with them.

However, solving the problem of recruitment is much more complex than simply having a recreation coordinator as your advocate. When searching for articles on the challenges of

recruiting socially isolated seniors, none of the articles on the topic of socially isolated seniors described how they were identified, what caused them to become isolated, or whether or not they were in fact isolated. A review article that examined the effectiveness of interventions targeting socially isolated seniors identified seventeen articles using multiple designs (Findlay, 2003). Of those interventions only two targeted socially isolated seniors, and only one of those studies had a positive impact on loneliness and social support (Findlay, 2003). Most interventions were focused on prevention of social isolation, and many were effective at providing support for at risk seniors (Findlay, 2003), but those studies do not help in the identification and intervention with seniors who already are socially isolated.

Because the present study was unable to recruit socially isolated seniors, we are unable to conclude that visiting dog interventions are an effective tool for promoting social support. However, because the study was able to show positive impacts on its participants' emotional support and relationship development, visiting dog programs should be assessed as possible prevention interventions for socially isolated seniors. Consideration must also be made about the efficacy of the individual condition for targeting socially isolated seniors. In a systematic review of interventions aimed at preventing social isolation, ten studies were effective, nine of the ten studies were group based (Cattan, White, Bond, & Learmouth, 2005). The present study found evidence of emotional support and relationship building in the group condition but not in the individual condition. This is similar to the findings from the systematic review, which found group based interventions consistently demonstrated effectiveness in reducing loneliness and increasing social contact, whereas individual based interventions were consistently ineffective at reducing loneliness and social isolation (Cattan et al., 2005).

Another limitation of the study was self-selection bias. Self-selection bias can occur when comparison groups are comprised of individuals who choose to join them, rather than researcher assigned (SAGE Publications, 2005). All the participants were previous dog owners and volunteered to participate because they liked the idea of visiting with the dog. The sample was predisposed to enjoy the intervention and therefore, the results could be biased. During the focus group participants also discussed how they were surprised more individuals did not participate, because they believed it to be beneficial, which could also bias the findings.

Contributions

The present study was the first to date use of the social support theory in a visitation setting and the first to date use of a naturalistic intervention design. This combination produced the first to date evidence of emotional support and the indirect effect in a visitation setting. The present study also added further evidence of companion dogs' ability to facilitate relationship building even after the presence of the dog is removed.

Future Directions

This study was limited by a small sample size. Although many studies in the field of dog visitation research have suggested larger sample sizes, it bears repeating. However, as was encountered in the present study, recruiting large numbers of seniors can be extremely challenging. By highlighting the importance of gatekeepers, such as recreation coordinators, participant recruitment can be successful within appropriate timelines. Multiphase recruitment could also facilitate recruitment while saving on resources such as trained dog and handler teams.

Selection bias must also be considered in the development of new studies. As discussed, all the participants were previous dog owners and predisposed to enjoyment of visiting with a dog. Selection of participants and the acknowledgement of this bias are critical for adding

credibility to the results of this research. Incorporating key variables, not examined in the present study, could also lend insight into the impacts and nuances of visiting dog programs, key variables such as; marital status, age, health status, length of institutionalization, proximity of family and/or friends.

Future studies should also consider incorporating reminiscence into their design to further explore its significance as a component of the intervention. Friedmann et al., (2015) used reminiscence as a control group, however, it could be used as a comparison group. Future studies might expand on the group and individual condition comparisons by adding reminiscence as a third condition. Using this design the intervention could still approximate a naturalistic program without prescribed reminiscence incorporated into the visiting dog program. Reminiscence was a spontaneous component of the visiting dog program and comparisons to a prescribed reminiscence program would lend insight to its impacts in a visiting dog setting.

Social isolation presents a real risk for seniors moving into assisted living facilities. The group condition of the visiting dog program showed potential for the development of relationships facilitated by a companion dog. However, there are still many unknowns in this area of research. Further development is needed in naturalistic interventions, the incorporation of reminiscence, and larger samples over longer periods of time. Critical and robust research designs will foster the development of this field without flooding the literature with more anecdotal and biased studies. Until robust studies are completed, visiting dog programs will not gain credibility as a realistic intervention for socially isolated seniors.

References

- Anderson, K. A., Lord, L. K., Hill, L. N., & McCune, S. (2015). Fostering the human-animal bond for older adults: Challenges and opportunities. *Activities, Adaptation and Aging*, 39(1), 32-42.
- Aneshensel, C. S., Pearlin, L. I., Levy-Storms, L., & Schuler, R. H. (2000). The transition from home to nursing home mortality among people with dementia. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 55(3), S152-S162.
- Antonucci, T. C., & Akiyama, H. (1987). An examination of sex differences in social support among older men and women. *Sex Roles*, 17(11-12), 737-749.
- Banks, M. R., & Banks, W. A. (2002). The effects of animal-assisted therapy on loneliness in an elderly population in long-term care facilities. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 57(7), M428-M432.
- Banks, M. R., & Banks, W. A. (2005). The effects of group and individual animal-assisted therapy on loneliness in residents of long-term care facilities. *Anthrozoos*, 18(4), 396-408.
- Banks, M. R., Willoughby, L. M., & Banks, W. A. (2008). Animal-assisted therapy and loneliness in nursing homes: Use of robotic versus living dogs. *Journal of the American Medical Directors Association*, 9(3), 173-177.
doi:<http://dx.doi.org/10.1016/j.jamda.2007.11.007>
- Berkman, L. F., Glass, T., Brissette, I., & Seeman, T. E. (2000). From social integration to health: Durkheim in the new millennium. *Social Science & Medicine*, 51(6), 843-857.
doi:[http://dx.doi.org.ezproxy.library.ubc.ca/10.1016/S0277-9536\(00\)00065-4](http://dx.doi.org.ezproxy.library.ubc.ca/10.1016/S0277-9536(00)00065-4)
- Bernstein, P. L., Friedmann, E., & Malaspina, A. (2000). Animal-assisted therapy enhances resident social interaction and initiation in long-term care facilities. *Anthrozoos*, 13(4), 213-224.
- Berry, A., Borgi, M., Terranova, L., Chiarotti, F., Alleva, E., & Cirulli, F. (2012). Developing effective animal-assisted intervention programs involving visiting dogs for institutionalized geriatric patients: A pilot study. *Psychogeriatrics*, 12(3), 143-150. doi:10.1111/j.1479-8301.2011.00393.x
- Bonk, J. (2010). A road map for the recruitment and retention of older adult participants for longitudinal studies. *Journal of the American Geriatrics Society*, 58, S303-S307.
doi:10.1111/j.1532-5415.2010.02937.x
- Brodie, S. J., Biley, F. C., & Shewring, M. (2002). An exploration of the potential risks associated with using pet therapy in healthcare settings. *Journal of Clinical Nursing*, 11(4), 444-456. doi:10.1046/j.1365-2702.2002.00628.x

- Brown, S. G., & Rhodes, R. E. (2006). Relationships among dog ownership and leisure-time walking in western canadian adults. *American Journal of Preventive Medicine*, 30(2), 131. doi:<http://dx.doi.org/10.1016/j.amepre.2005.10.007>"
- Cattan, M., White, M., Bond, J., & Learmouth, A. (2005). Preventing social isolation and loneliness among older people: A systematic review of health promotion interventions. *Ageing & Society*, 25(01), 41-67.
- Chen, G., & Gao, Y. (2013). Changes in social participation of older adults in beijing. *Ageing International*, 38(1), 15-27. doi:10.1007/s12126-012-9167-y
- Cherniack, E. P., & Cherniack, A. R. (2014). The benefit of pets and animal-assisted therapy to the health of older individuals. *Current Gerontology and Geriatrics Research*, 2014, 623203. doi:10.1155/2014/623203
- Chur-Hansen, A., Stern, C., & Winefield, H. (2010). Gaps in the evidence about companion animals and human health: Some suggestions for progress. *International Journal of Evidence-Based Healthcare*, 8(3), 140-146. doi:10.1111/j.1744-1609.2010.00176.x
- Chur-Hansen, A., Winefield, H., & Beckwith, M. (2008). Reasons given by elderly men and women for not owning a pet, and the implications for clinical practice and research. *Journal of Health Psychology*, 13(8), 988-995.
- Chur-Hansen, A., Zambrano, S. C., & Crawford, G. B. (2014). Furry and feathered family members: A critical review of their role in palliative care. *American Journal of Hospice and Palliative Medicine*, 31(6), 672-677.
- Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, 38(5), 300-314.
- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98(2), 310.
- Cohen, S., & Hoberman, H. M. (1983). Positive events and social supports as buffers of life change stress1. *Journal of Applied Social Psychology*, 13(2), 99-125.
- Collis, G. M., & McNicholas, J. (1998). A theoretical basis for health benefits of pet ownership. *Companion Animals in Human Health*, , 105-22.
- Cornwell, E. Y., & Waite, L. J. (2009). Social disconnectedness, perceived isolation, and health among older adults. *Journal of Health and Social Behavior*, 50(1), 31-48.
- Crawford, E. K., Worsham, N. L., & Swinehart, E. R. (2006). Benefits derived from companion animals, and the use of the term " attachment". *Anthrozoos: A Multidisciplinary Journal of the Interactions of People & Animals*, 19(2), 98-112.

- Crowley-Robinson, P., Fenwick, D. C., & Blackshaw, J. K. (1996). A long-term study of elderly people in nursing homes with visiting and resident dogs. *Applied Animal Behaviour Science*, 47(1-2), 137-148. doi:[http://dx.doi.org.ezproxy.library.ubc.ca/10.1016/0168-1591\(95\)01017-3](http://dx.doi.org.ezproxy.library.ubc.ca/10.1016/0168-1591(95)01017-3)
- Cutt, H., Giles-Cortia, B., Knuiamana, M., & Burkeb, V. (2007). Dog ownership, health and physical activity: A critical review of the literature. *Health & Place*, 13(1), 261 - 272.
- Degeling, C., Burton, L., & McCormack, G. R. (2012). An investigation of the association between socio-demographic factors, dog-exercise requirements, and the amount of walking dogs receive. *The Canadian Journal of Veterinary Research*, 76, 235-240.
- Epping, J. N. (2011). Dog ownership and dog walking to promote physical activity and health in patients. *Current Sports Medicine Reports*, 10(4), 224-227. doi:10.1249/JSR.0b013e318223ee41
- Feldman, S., Radermacher, H., Browning, C., Bird, S., & Thomas, S. (2008). Challenges of recruitment and retention of older people from culturally diverse communities in research. *Ageing and Society*, 28(4), 473-493.
- Filan, S. L., & Llewellyn-Jones, R. H. (2006). Animal-assisted therapy for dementia: A review of the literature. *International Psychogeriatrics*, 18(04), 597-611. doi:10.1017/S1041610206003322
- Findlay, R. A. (2003). Interventions to reduce social isolation amongst older people: Where is the evidence? *Ageing & Society*, 23(05), 647-658.
- Flynn, C. P. (2000). Woman's best friend: Pet abuse and the role of companion animals in the lives of battered women. *Violence Against Women*, 6(2), 162-177.
- Friedmann, E., Galik, E., Thomas, S. A., Hall, P. S., Chung, S. Y., & McCune, S. (2005). Evaluation of a pet-assisted living intervention for improving functional status in assisted living residents with mild to moderate cognitive impairment: A pilot study. *American Journal of Alzheimer's Disease and Other Dementias*, 30(3), 276; 276-289; 289.
- Friedmann, E., & Son, H. (2009). The human - companion animal bond: How humans benefit. *Veterinary Clinics of North America: Small Animal Practice*, 39(2), 293. doi:<http://dx.doi.org/10.1016/j.cvsm.2008.10.015>"
- Giaquinto, S., & Valentini, F. (2009). Is there a scientific basis for pet therapy? *Disability and Rehabilitation*, 31(7), 595-598. doi:10.1080/09638280802190735
- Gilmore, H. (2012). Social participation and the health and well-being of canadian seniors. *Health Reports*, 4, 23-32.

- Gretebeck, K. A., Radius, R., Black, D. R., Gretebeck, R. J., Ziemba, R., & Glickman, L. T. (2013). Dog ownership, functional ability, and walking in community-dwelling older adults. *Journal of Physical Activity & Health, 10*(5), 646-655.
- Hall, P. L., & Malpus, Z. (2000). Mental health. pets as therapy: Effects on social interaction in long-stay psychiatry. *British Journal of Nursing, 9*(21), 2220-2225.
- Harrison, K. E., Dombrowski, A. Y., Morse, J. Q., Houck, P., Schlernitzauer, M., Reynolds, C. F., & Szanto, K. (2010). Alone? perceived social support and chronic interpersonal difficulties in suicidal elders. *International Psychogeriatrics, 22*(03), 445-454.
- Hart, L. A. (2006). Chapter 4 - psychosocial benefits of animal companionship. In A. H. Fine (Ed.), *Handbook on animal-assisted therapy (second edition)* (pp. 59-78). Burlington: Academic Press. doi:<http://dx.doi.org.ezproxy.library.ubc.ca/10.1016/B978-012369484-3/50006-2>
- Harvey, I., & Alexander, K. (2012). Perceived social support and preventive health behavioral outcomes among older women. *Journal of Cross-Cultural Gerontology, 27*(3), 275-290. doi:10.1007/s10823-012-9172-3
- Haslam, C., Haslam, S. A., Ysseldyk, R., McCloskey, L., Pfisterer, K., & Brown, S. G. (2014). Social identification moderates cognitive health and well-being following story-and song-based reminiscence. *Aging & Mental Health, 18*(4), 425-434. doi:10.1080/13607863.2013.845871
- Hatfield, J. P., Hirsch, J. K., & Lyness, J. M. (2013). Functional impairment, illness burden, and depressive symptoms in older adults: Does type of social relationship matter? *International Journal of Geriatric Psychiatry, 28*(2), 190-198. doi:10.1002/gps.3808
- Howie, L. O., Troutman-Jordan, M., & Newman, A. M. (2014). Social support and successful aging in assisted living residents. *Educational Gerontology, 40*(1), 61-70. doi:10.1080/03601277.2013.768085
- Hunt, M. R. (2009). Strengths and challenges in the use of interpretive description: Reflections arising from a study of the moral experience of health professionals in humanitarian work. *Qualitative Health Research, 19*(9), 1284-1292.
- Johnson, B., & Turner, L. A. (2003). Data collection strategies in mixed methods research. In A. Tashakkori, & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioural research* (pp. 297-319). Thousand Oaks: Sage Publications.
- Johnson, R. A., & Meadows, R. L. (2010). Dog-walking: Motivation for adherence to a walking program. *Clinical Nursing Research, 19*(4), 387-402. doi:10.1177/1054773810373122
- Johnson, R. A., Odendaal, J. S. J., & Meadows, R. L. (2002). Animal-assisted interventions research: Issues and answers. *Western Journal of Nursing Research, 24*(4), 422-440.

- Kahn, J. H., Hessling, R. M., & Russell, D. W. (2003). Social support, health, and well-being among the elderly: What is the role of negative affectivity? *Personality and Individual Differences*, 35(1), 5-17.
- Kamioka, H., Okada, S., Tsutani, K., Park, H., Okuizumi, H., Handa, S., . . . Mutoh, Y. (2014). Effectiveness of animal-assisted therapy: A systematic review of randomized controlled trials. *Complementary Therapies in Medicine*, 22(2), 371-390.
doi:<http://dx.doi.org.ezproxy.library.ubc.ca/10.1016/j.ctim.2013.12.016>
- King, K. B., Reis, H. T., Porter, L. A., & Norsen, L. H. (1993). Social support and long-term recovery from coronary artery surgery: Effects on patients and spouses. *Health Psychology*, 12(1), 56-63. doi:10.1037/0278-6133.12.1.56
- Knight, S., & Edwards, V. (2008). In the company of wolves: The physical, social, and psychological benefits of dog ownership. *Journal of Aging and Health*, 20(4), 437-455.
- Krause-Parello, C. A. (2012). Pet ownership and older women: The relationships among loneliness, pet attachment support, human social support, and depressed mood. *Geriatric Nursing*, 33(3), 194-203.
doi:<http://dx.doi.org.ezproxy.library.ubc.ca/10.1016/j.gerinurse.2011.12.005>
- Krueger, C., & Tian, L. (2004). A comparison of the general linear mixed model and repeated measures ANOVA using a dataset with multiple missing data points. *Biological Research for Nursing*, 6(2), 151-157.
- Kurdek, L. A. (2009). Pet dogs as attachment figures for adult owners. *Journal of Family Psychology*, 23(4), 439-446. doi:10.1037/a0014979
- Liu, B. S., & Rook, K. S. (2013). Emotional and social loneliness in later life: Associations with positive versus negative social exchanges. *Journal of Social and Personal Relationships*, 30(6), 813-832.
- McNicholas, J., & Collis, G. M. (2000). Dogs as catalysts for social interactions: Robustness of the effect. *British Journal of Psychology (London, England: 1953)*, 91, 61.
- McNicholas, J., Gilbey, A., Rennie, A., Ahmedzai, S., Dono, J. A., & Ormerod, E. (2005). Pet ownership and human health: A brief review of evidence and issues. *BMJ (Clinical Research Ed.)*, 331(7527), 1252-1254. doi:10.1136/bmj.331.7527.1252
- McNicholas, J., Collis, G. M., & Fine, A. H. (2006). Animals as social supports: Insights for understanding animal-assisted therapy. *Handbook on Animal-Assisted Therapy: Theoretical Foundations and Guidelines for Practice*, 2, 49-72.
- Morrison, M. L. (2007). Health benefits of animal-assisted interventions. *Complementary Health Practice Review*, 12(1), 51-62.

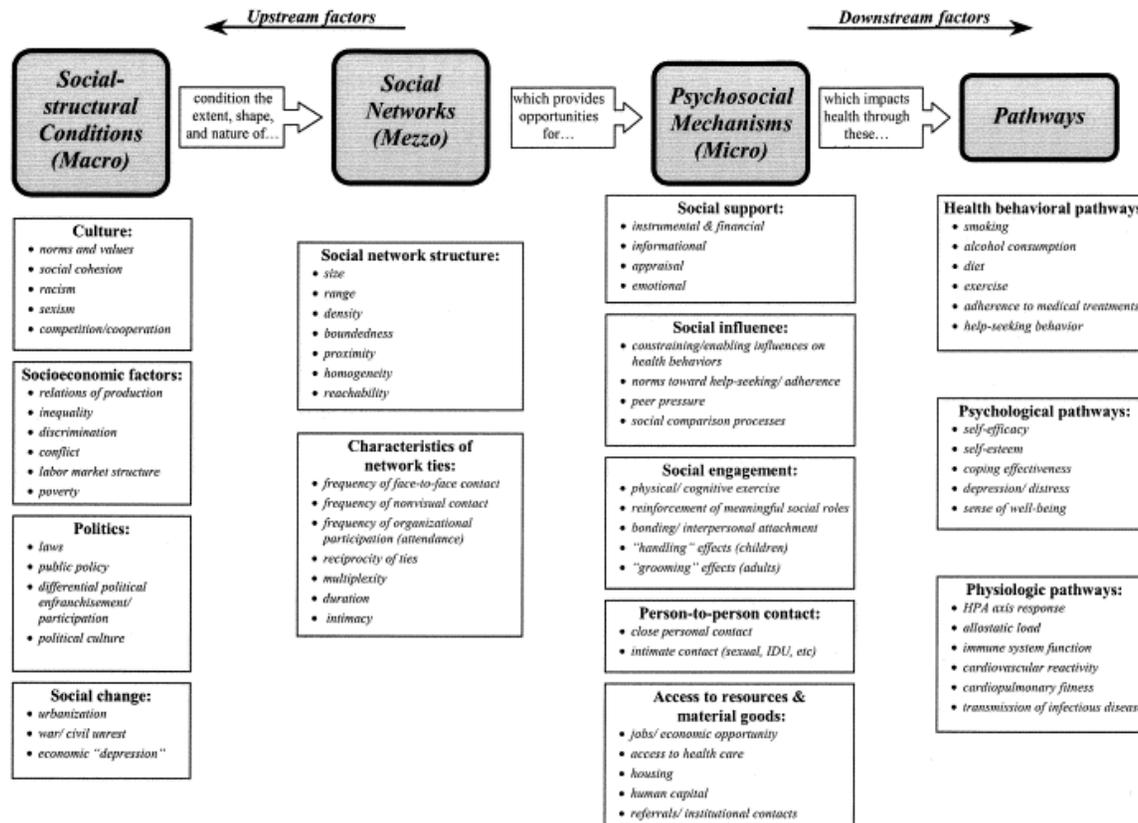
- Mossello, E., Ridolfi, A., Mello, A. M., Lorenzini, G., Mugnai, F., Piccini, C., . . . Marchionni, N. (2011). Animal-assisted activity and emotional status of patients with alzheimer's disease in day care. *International Psychogeriatrics*, 23(06), 899-905.
- Muramatsu, N., Yin, H., & Hedeker, D. (2010). Functional declines, social support, and mental health in the elderly: Does living in a state supportive of home and community-based services make a difference? *Social Science & Medicine*, 70(7), 1050-1058.
- Nordgren, L., & Engstrom, G. (2012). Effects of animal-assisted therapy on behavioral and/or psychological symptoms in dementia: A case report. *American Journal of Alzheimer's Disease and Other Dementias*, 27(8), 625-632.
- Nordgren, L., & Engström, G. (2014). Effects of dog-assisted intervention on behavioural and psychological symptoms of dementia. *Nursing Older People*, 26(3), 31-38.
doi:10.7748/nop2014.03.26.3.31.e517
- Odendaal, J. S. J. (2000). Animal-assisted therapy — magic or medicine? *Journal of Psychosomatic Research*, 49(4), 275-280.
doi:[http://dx.doi.org.ezproxy.library.ubc.ca/10.1016/S0022-3999\(00\)00183-5](http://dx.doi.org.ezproxy.library.ubc.ca/10.1016/S0022-3999(00)00183-5)
- O'Haire, M. (2010). Companion animals and human health: Benefits, challenges, and the road ahead. *Journal of Veterinary Behavior: Clinical Applications and Research*, 5(5), 226-234.
doi:<http://dx.doi.org.ezproxy.library.ubc.ca/10.1016/j.jveb.2010.02.002>
- Oxman, T. E., & Berkman, L. F. (1990). Assessment of social relationships in elderly patients. *The International Journal of Psychiatry in Medicine*, 20(1), 65-84.
- Paul, E. S., Moore, A., McAinsh, P., Symonds, E., McCune, S., & Bradshaw, J. W. S. (2014). Sociality motivation and anthropomorphic thinking about pets. *Anthrozoös*, 27(4), 499-512.
doi:10.2752/175303714X14023922798192
- Peacock, J., Chur-Hansen, A., & Winefield, H. (2012). Mental health implications of human attachment to companion animals. *Journal of Clinical Psychology*, 68(3), 292-303.
doi:10.1002/jclp.20866
- Pet Partners. (2012). Developing a visiting animal program. Retrieved from <http://www.petpartners.org/>
- Phelps, K. A., Miltenberger, R. G., Jens, T., & Wadeson, H. (2008). An investigation of the effects of dog visits on depression, mood, and social interaction in elderly individuals living in a nursing home. *Behavioral Interventions*, 23(3), 181-200.
- Pichot, T. (2012). *Animal-assisted brief therapy: A solution-focused approach* (2nd ed.). New York: Routledge Taylor & Francis Group.

- Resnick, B., Galik, E., Gruber-Baldini, A. L., & Zimmerman, S. (2010). Satisfaction with assisted living: The unexplored role of physical activity. *Geriatric Nursing, 31*(3), 197-205. doi:<http://dx.doi.org.ezproxy.library.ubc.ca/10.1016/j.gerinurse.2010.04.010>
- Rhodes, R. E., Murray, H., Temple, V. A., Tuokko, H., & Higgins, J. W. (2012). Pilot study of a dog walking randomized intervention: Effects of a focus on canine exercise. *Preventive Medicine, 54*(5), 309. doi:<http://dx.doi.org/10.1016/j.ypmed.2012.02.014>"
- Richeson, N. E. (2003). Effects of animal-assisted therapy on agitated behaviors and social interactions of older adults with dementia. *American Journal of Alzheimer's Disease and Other Dementias, 18*(6), 353-358.
- Riffle, K. L., Yoho, J., & Sams, J. (1989). Health-promoting behaviors, perceived social support, and self-reported health of appalachian elderly. *Public Health Nursing, 6*(4), 204-211. doi:10.1111/j.1525-1446.1989.tb00598.x
- SAGE Publications, Inc. (2005). Self-selection bias. dictionary of statistics & methodology. SAGE publications, inc.
- Somody, C. F. (2011). *Meaning and connections in older populations: A phenomenological study of reminiscence using 'A musical chronology and the emerging life song'*. (2011-99160-456).
- St. John Ambulance. (2014). Therapy dog services. Retrieved from <http://www.sja.ca/English/Community-Services/Pages/Therapy%20Dog%20Services/default.aspx>
- Stanley, M. A., Beck, J. G., & Zebb, B. J. (1998). Psychometric properties of the MSPSS in older adults. *Aging & Mental Health, 2*(3), 186-193. doi:10.1080/13607869856669
- Stanley, I. H., Conwell, Y., Bowen, C., & Van Orden, K. A. (2013). Pet ownership may attenuate loneliness among older adult primary care patients who live alone. *Aging & Mental Health, , 1-6*. doi:10.1080/13607863.2013.837147
- Stephens, C., Alpass, F., Towers, A., & Stevenson, B. (2011). The effects of types of social networks, perceived social support, and loneliness on the health of older people: Accounting for the social context. *Journal of Aging and Health, 23*(6), 887-911.
- Thompson, M. G., Heller, K., & Rody, C. A. (1994). Recruitment challenges in studying late-life depression: Do community samples adequately represent depressed older adults? *Psychology and Aging, 9*(1), 121-125.
- Thorne, S., Reimer Kirkham, S., & O'Flynn-Magee, K. (2004). The analytic challenge in interpretive description. *International Journal of Qualitative Methods, 3*(1)

- Toohey, A., & Rock, M. (2011). Unleashing their potential: A critical realist scoping review of the influence of dogs on physical activity for dog-owners and non-owners. *International Journal of Behavioral Nutrition and Physical Activity*, 8(1), 1-9. doi:10.1186/1479-5868-8-46
- Veevers, J. E. (1985). The social meaning of pets. *Marriage & Family Review*, 8(3-4), 11-30. doi:10.1300/J002v08n03_03
- Vrbanac, Z., Zecevic, I., Ljubic, M., Belic, M., Stanin, D., Bottegaro, N. B., . . . Zubcic, D. (2013). Animal assisted therapy and perception of loneliness in geriatric nursing home residents. *Collegium Antropologicum*, 37(3), 973-976.
- Wallsten, S. M., Tweed, D. L., Blazer, D. G., & George, L. K. (1999). Disability and depressive symptoms in the elderly: The effects of instrumental support and its subjective appraisal. *The International Journal of Aging and Human Development*, 48(2), 145-159.
- Walsh, F. (2009). Human-animal bonds II: The role of pets in family systems and family therapy. *Family Process*, 48(4), 481-499. doi:10.1111/j.1545-5300.2009.01297.x
- Wethington, E., & Kessler, R. C. (1986). Perceived support, received support, and adjustment to stressful life events. *Journal of Health and Social Behavior*, , 78-89.
- Wilkins, K. (2003). Social support and mortality in seniors. *Health Rep*, 14(3), 21-34.
- Winningham, R. G., & Pike, N. L. (2007). A cognitive intervention to enhance institutionalized older adults social support networks and decrease loneliness. *Aging & Mental Health*, 11(6), 716-721. doi:10.1080/13607860701366228
- Wood, L., Giles-Corti, B., & Bulsara, M. (2005). The pet connection: Pets as a conduit for social capital? *Social Science & Medicine*, 61(6), 1159-1173. doi:<http://dx.doi.org.ezproxy.library.ubc.ca/10.1016/j.socscimed.2005.01.017>
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52(1), 30-41.
- Zisselman, M. H., Rovner, B. W., Shmuelly, Y., & Ferrie, P. (1996). A pet therapy intervention with geriatric psychiatry inpatients. *The American Journal of Occupational Therapy : Official Publication of the American Occupational Therapy Association*, 50(1), 47-51.

Appendices

Appendix A: Conceptual model of social support's multilevel impact on health (Berkman et al., 2000)



Appendix B: Facility Director Introduction Letter

Dear [Facility Director/Recreation Coordinator],

I, Lindsay Burton, a Masters student from the Department of Health and Exercise Sciences University of British Columbia Okanagan, invite your facility to participate in a research project entitled **The Impact of Visiting Dog Programs in Seniors Social Support**

The purpose of this study is to replicate naturalistic dog visiting interventions to determine if there are differences in social support outcomes. Should your facility choose to participate, your residents will be invited to take part in a visiting dog intervention. The nuances of dog visitation programs are not well understood and the residents who take part in these programs can provide very insightful information.

Individuals who participate in visiting dog programs have experienced reductions in depression symptoms, loneliness, and stress. Other benefits include increased overall well-being, self-rated health, and enhanced socialization.

If you choose to participate I will put up posters advertising the study and will give a presentation to the residents giving further information about the study. I will need room to give my presentation and use of common areas for the intervention. The expected duration of this intervention is approximately six weeks, with a follow-up 12 weeks after the intervention begins. The dog will be brought in 1- 3 days per week for six weeks. Ideal participants will be less socially active (as they have been shown to benefit the most from these types of interventions), not currently visited by a dog, and have no fear or allergies to dogs.

I will be undertaking all data collection and am a certified dog handler through St. John Ambulance. If you are interested in participating we will set up a meeting to further discuss the facilities eligibility, recruitment strategies, liability, time and space commitment, and answer any questions that may have arose.

If you have any questions, please feel free to contact me (see below for contact information). I will follow up this email with a phone call in one week if it goes unanswered.

Thank you,

Co-Investigator:

Lindsay Burton, UBC, 250-540-5238, l.burton@alumni.ubc.ca
Masters student in the department of Health and Exercise Sciences

Principal Investigator:

Dr. Colin Reid, UBC, 250-807-9910, colin.reid@ubc.ca

Appendix C: Advertising Poster

a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

Okanagan Campus

What Is The Impact of Visiting Dog Programs in Seniors Social Support? PLEASE HELP US FIND OUT!

You have an opportunity to take part in a study that seeks to further understand the relationship between visiting dog programs and seniors' social support.

FOR MORE INFORMATION:
COME TO OUR
PRESENTATION WEDNESDAY
SEPT. 16TH AT 10:30AM
OR
SEE IVANA FOR MORE
DETAILS



This study is being taken on as a masters thesis project at the University of British Columbia Okanagan in the School of Health and Exercise Sciences.

Lindsay Burton: l.burton@alumni.ubc.ca 250-540-5238
Colin Reid: colin.reid.ubc.ca 250-807-9910

Appendix D: Individual Condition Consent Form



UBC Okanagan School of Health and Exercise Sciences

Individual Condition Consent Form The Impact of Visiting Dog Programs in Seniors Social Support

I. WHO IS CONDUCTING THE STUDY?

Principal Investigator:

Dr. Colin Reid, UBC, 250-807-9910, colin.reid@ubc.ca

Co-Investigator:

Lindsay Burton, UBC, 250-540-5238, l.burton@alumni.ubc.ca
Masters student in the department of Health and Exercise Sciences

This research is for a graduate degree and will be publish as part of a Master's thesis, which is a public document available on the Internet via Circle. This research will also be used for publication in journal articles.

II. WHY SHOULD YOU TAKE PART IN THIS STUDY?

You are being invited to take part in this research study because we want to learn more about the role of visiting dog programs on an individual's social support. This study will help us learn more about dogs' roles in social interactions and their potential use in health promotion interventions.

Individuals who are eligible for this study:

- Not allergic to dogs
- Unafraid of dogs
- Not currently visited by dogs.

III. WHAT HAPPENS TO YOU IN THE STUDY?

If you decide to take part in this research study, here are the procedures we will follow: You will be asked to fill out a questionnaire three times, before and after the dog visitation sessions, and six weeks after the dog visitation sessions end. The questionnaire takes no more than 20 minutes to fill out.

During the study you will be asked to participate in 6 individual dog-visiting sessions of up to 30 minutes approximately once a week. During these visits you will be asked questions by the Co-Investigator which will be recorded by an audio device.

Six weeks following the dog visitation sessions, you will be asked to participate in a focus group, which will take approximately one hour. The purpose of the focus group is to gain your thoughts and reflections of the dog visitations. The focus group will be conducted with approximately five participants. Focus group sessions will be recorded on an audio device and facilitated by the Co-Investigator. Affirmation of consent will be collected before the focus group sessions begin.

To ensure confidentiality digital audio recordings will be accessible only by the Principal and Co-Investigator. Files will be stored for five years after publication on a secure computer and then deleted.

The total time commitment for this project is up to 7 hours over 3 months.

IV. STUDY RESULTS

The results of this study will be reported in a graduate thesis and may also be published in journal articles. A report of the research findings will be made available to all participants.

V. POTENTIAL RISKS OF THE STUDY

We do not think there is anything in this study that could harm you. There are health risks associated with pet allergies, therefore if you are allergic to dogs you will be ineligible to participate in the study. The visitation dog has been specially selected to avoid any health risks. The dog has been specially trained not to jump up on people, to lean on people, or to show any signs of aggression. The dog is also carefully monitored for cleanliness and health. The Co-Investigator is a certified dog handler and is trained to minimize risks to both the participants and the dog.

Following the study there is a risk of sadness from the termination of dog visitation sessions. To address this risk, following the study, all participants will be given the contact information of a local dog visitation program such as St. John Ambulance Therapy Dogs.

VI. WHAT ARE THE BENEFITS OF PARTICIPATING?

There are many ways in which this study may benefit you.

Individuals who participate in visiting dog programs have experienced reductions in depression symptoms, loneliness, and stress. Other benefits include an increase in overall well-being, self-rated health, and enhanced socialization.

VII. HOW WILL YOUR PRIVACY BE MAINTAINED?

Your confidentiality will be respected. Information that discloses your identity will not be released without your consent unless required by law. All data will be stored on a secure computer only accessible by the principal and co-investigator. Files will be stored for five years after publication then deleted.

Information linked to the identity of participants will not be included in any publications, masters thesis or journal publications.

Due to the nature of focus groups, confidentiality is limited. All participants are encouraged to respect the privacy of other group members and, to this end, not disclose what is discussed with non-participants.

VIII. CONTACT FOR INFORMATION ABOUT THE STUDY

If you have any questions or concerns about what we are asking of you, please contact the study Co-Investigator. Contact names and telephone numbers are listed at the top of the first page of this form.

IX. WHO CAN YOU CONTACT IF YOU HAVE COMPLAINTS OR CONCERNS ABOUT THE STUDY?

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics toll free at 1-877-822-8598 or the UBC Okanagan Research Services Office at 250-807-8832. It is also possible to contact the Research Complaint Line by email (RSIL@ors.ubc.ca). You may also contact the Chair of the Interior Health Research Ethics Board at 250-870-4602 or via email at researchethics@interiorhealth.ca.

X. PARTICIPANT CONSENT AND SIGNATURE PAGE

Taking part in this study is entirely up to you. You have the right to refuse to participate in this study. If you decide to take part, you may choose to pull out of the study at any time without giving a reason and without any negative impact on you.

- Your signature below indicates that you have received a copy of this consent form for your own records.
- Your signature indicates that you consent to participate in this study.
- Your signature indicates that you consent to being recorded.

Participant Signature

Date

Printed Name of the Participant signing above

Appendix E: Group Condition Consent Form



UBC Okanagan School of Health and Exercise Sciences

Group Condition Consent Form The Impact of Visiting Dog Programs in Seniors Social Support

I. WHO IS CONDUCTING THE STUDY?

Principal Investigator:

Dr. Colin Reid, UBC, 250-807-9910, colin.reid@ubc.ca

Co-Investigator:

Lindsay Burton, UBC, 250-540-5238, l.burton@alumni.ubc.ca
Masters student in the department of Health and Exercise Sciences

This research is for a graduate degree and will be publish as part of a Master's thesis, which is a public document available on the Internet via Circle. This research will also be used for publication in journal articles.

II. WHY SHOULD YOU TAKE PART IN THIS STUDY?

You are being invited to take part in this research study because we want to learn more about the role of visiting dog programs on an individual's social support. This study will help us learn more about dogs' roles in social interactions and their potential use in health promotion interventions.

Individuals who are eligible for this study:

- Not allergic to dogs
- Unafraid of dogs
- Not currently visited by dogs.

III. WHAT HAPPENS TO YOU IN THE STUDY?

If you decide to take part in this research study, here are the procedures we will follow: You will be asked to fill out a questionnaire three times, before and after the dog visitation sessions, and six weeks after the dog visitation sessions end. The questionnaire takes no more than 20 minutes to fill out.

During the study you will be asked to participate in 6 group dog-visiting sessions of up to 30 minutes approximately once a week with five other participants. During these visits you will be asked questions by the Co-Investigator which will be recorded by an audio device.

Six weeks following the dog visitation sessions, you will be asked to participate in a focus group, which will take approximately one hour. The purpose of the focus group is to gain your thoughts and reflections of the dog visitations. The focus group will be conducted with approximately five participants. Focus group sessions will be recorded on an audio device and facilitated by the Co-Investigator. Affirmation of consent will be collected before the focus group sessions begin.

To ensure confidentiality digital audio recordings will be accessible only by the Principal and Co-Investigator. Files will be stored for five years after publication on a secure computer and then deleted.

The total time commitment for this project is up to 7 hours over 3 months.

IV. STUDY RESULTS

The results of this study will be reported in a graduate thesis and may also be published in journal articles. A report of the research findings will be made available to all participants.

V. POTENTIAL RISKS OF THE STUDY

We do not think there is anything in this study that could harm you. There are health risks associated with pet allergies, therefore if you are allergic to dogs you will be ineligible to participate in the study.

The visitation dog has been specially selected to avoid any health risks. The dog has been specially trained not to jump up on people, to lean on people, or to show any signs of aggression. The dog is also carefully monitored for cleanliness and health. The Co-Investigator is a certified dog handler and is trained to minimize risks to both the participants and the dog.

Following the study there is a risk of sadness from the termination of dog visitation sessions. To address this risk, following the study, all participants will be given the contact information of a local dog visitation program such as St. John Ambulance Therapy Dogs.

VI. WHAT ARE THE BENEFITS OF PARTICIPATING?

There are many ways in which this study may benefit you.

Individuals who participate in visiting dog programs have experienced reductions in depression symptoms, loneliness, and stress. Other benefits include an increase in overall well-being, self-rated health, and enhanced socialization.

VII. HOW WILL YOUR PRIVACY BE MAINTAINED?

Your confidentiality will be respected. Information that discloses your identity will not be released without your consent unless required by law. All data will be stored on a secure computer only accessible by the principal and co-investigator. Files will be stored for five years after publication then deleted.

Information linked to the identity of participants will not be included in any publications, masters thesis or journal publications.

Due to the nature of focus groups and group sessions, confidentiality is limited. All participants are encouraged to respect the privacy of other group members and, to this end, not disclose what is discussed and done with non-participants.

VIII. CONTACT FOR INFORMATION ABOUT THE STUDY

If you have any questions or concerns about what we are asking of you, please contact the study Co-Investigator. Contact names and telephone numbers are listed at the top of the first page of this form.

IX. WHO CAN YOU CONTACT IF YOU HAVE COMPLAINTS OR CONCERNS ABOUT THE STUDY?

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics toll free at 1-877-822-8598 or the UBC Okanagan Research Services Office at 250-807-8832. It is also possible to contact the Research Complaint Line by email (RSIL@ors.ubc.ca). You may also contact the Chair of the Interior Health Research Ethics Board at 250-870-4602 or via email at researchethics@interiorhealth.ca.

X. PARTICIPANT CONSENT AND SIGNATURE PAGE

Taking part in this study is entirely up to you. You have the right to refuse to participate in this study. If you decide to take part, you may choose to pull out of the study at any time without giving a reason and without any negative impact on you.

- Your signature below indicates that you have received a copy of this consent form for your own records.
- Your signature indicates that you consent to participate in this study.
- Your signature indicates that you consent to being recorded.

Participant Signature

Date

Printed Name of the Participant signing above

Appendix F: Demographic Questionnaire



UBC Okanagan School of Health and Exercise Sciences

Thank you for choosing to participate in this study. Please complete this one page questionnaire to the best of your abilities.

What is your gender? M or F

What is your date of birth? _____

What is the highest level of education you have completed?

- Some high school
- High school graduate
- Some college
- Trade/technical/vocational training
- College graduate
- Some postgraduate work
- Post graduate degree

What was your main occupation? _____

What is your marital status?

- Married
- Divorced
- Widowed
- Single, never married
- Common law

Do you have any children or grandchildren? Yes or No

If yes, How many?

Children _____

Grandchildren _____

How long have you lived in this facility? _____

Thank you for taking the time to complete this survey. The data collected will be analyzed in aggregate and no individual information will be used.

Appendix G: Multidimensional Scale of Perceived Social Support



UBC Okanagan School of Health and Exercise Sciences

We are interested in how you feel about the following statements. Please read each statement carefully and indicate how you feel about each statement. This document contains 2 pages.

Circle the “1” if you **Very Strongly Disagree**

Circle the “2” if you **Strongly Disagree**

Circle the “3” if you **Mildly Disagree**

Circle the “4” if you are **Neutral**

Circle the “5” if you **Mildly Agree**

Circle the “6” if you **Strongly Agree**

Circle the “7” if you **Very Strongly Agree**

There is a special person who is around when I am in need.

1 2 3 4 5 6 7

There is a special person with whom I can share my joys and sorrows.

1 2 3 4 5 6 7

My family really tries to help me.

1 2 3 4 5 6 7

I get the emotional help and support I need from my family.

1 2 3 4 5 6 7

I have a special person who is a real source of comfort to me.

1 2 3 4 5 6 7

My friends really try to help me.

1 2 3 4 5 6 7



Circle the "1" if you **Very Strongly Disagree**

Circle the "2" if you **Strongly Disagree**

Circle the "3" if you **Mildly Disagree**

Circle the "4" if you are **Neutral**

Circle the "5" if you **Mildly Agree**

Circle the "6" if you **Strongly Agree**

Circle the "7" if you **Very Strongly Agree**

I can count on my friends when things go wrong.

1 2 3 4 5 6 7

I can talk about my problems with my family.

1 2 3 4 5 6 7

I have friends with whom I can share my joys and sorrows.

1 2 3 4 5 6 7

There is a special person in my life who cares about my feelings.

1 2 3 4 5 6 7

My family is willing to help me make decisions.

1 2 3 4 5 6 7

I can talk about my problems with my friends.

1 2 3 4 5 6 7

Thank you for taking the time to complete the survey. The data collected will be analyzed in aggregate and no individual information will be used.

Appendix H: Semi-Structured Interview Questions

1. How do you feel today?
2. What would you like to do with the dog today?
3. What do you enjoy about visiting with the dog?
4. What do you enjoy most about these visits, the dog or the handler?
5. Did you have pets before moving into this facility?
6. Do you feel more approachable when with the visiting dog?
7. Have you found yourself interacting with anyone new since you started this program?

Appendix I: Guest Consent Form



UBC Okanagan School of Health and Exercise Sciences

Guest Consent Form The Impact of Visiting Dog Programs in Seniors Social Support

I. WHO IS CONDUCTING THE STUDY?

Principal Investigator:

Dr. Colin Reid, UBC, 250-807-9910, colin.reid@ubc.ca

Co-Investigator:

Lindsay Burton, UBC, 250-540-5238, l.burton@alumni.ubc.ca
Masters student in the department of Health and Exercise Sciences

This research is for a graduate degree and will be published as part of a thesis, which is a public document available on the Internet via Circle. This research will also be used for publication in journal articles.

II. PARTICIPATING IN THIS STUDY

You have been invited by a participant to join a dog visitation session as a guest. We are conducting this research study because we want to learn more about how the role of visiting dog programs on an individual's social support. This study will help us learn more about dogs' roles in social interactions and their potential use in health promotion interventions.

Your role in this study is as a guest to the participant who invited you. Throughout the session questions will be asked to the participant and audio recorded. You will not be asked any questions beyond those that take place in causal conversation with a stranger (e.g., how are you today?).

To ensure confidentiality audio recordings will be accessible only by the Principal and Co-Investigator. Files will be stored for five years after publication on a secure computer and then deleted.

Are there any risks associated with participating? We do not think there is anything in this study that could harm you. There are health risks associated with pet allergies, therefore if you are allergic to dogs we ask you reconsider joining us in the study. The visitation dog has been specially selected to avoid any health risks. The dog has been specially trained not to jump up on people, to lean on people, or to show any signs of aggression. The dog is also carefully monitored for cleanliness and health. The Co-Investigator is a certified dog handler and is trained to minimize risks to both the participants and the dog.

Are there any benefits associated with participating? Visiting dog programs have shown benefits in different populations in various settings. Very generally, we expect you will experience joy from participating as a guest in our study.

III. HOW WILL YOUR PRIVACY BE MAINTAINED?

Your confidentiality will be respected. Information that discloses your identity will not be released without your consent unless required by law. All data will be stored on a secure computer only accessible by the Principal and Co-Investigator. Files will be stored for five years after publication and then deleted.

Due to the nature of group sessions, confidentiality is limited. All participants are encouraged to respect the privacy of other participants and, to this end, not disclose what is discussed with non-participants.

IV. CONTACT FOR INFORMATION ABOUT THE STUDY

If you have any questions or concerns about what we are asking of you, please contact the study Co-Investigator. Contact names and telephone numbers are listed at the top of the first page of this form.

V. WHO CAN YOU CONTACT IF YOU HAVE COMPLAINTS OR CONCERNS ABOUT THE STUDY?

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics toll free at 1-877-822-8598 or the UBC Okanagan Research Services Office at 250-807-8832. It is also possible to contact the Research Complaint Line by email (RSIL@ors.ubc.ca). You may also contact the Chair of the Interior Health Research Ethics Board at 250-870-4602 or via email at researchethics@interiorhealth.ca.

VI. PARTICIPANT CONSENT AND SIGNATURE PAGE

Taking part in this study is entirely up to you. You have the right to refuse to participate in this study. If you decide to take part, you may choose to pull out of the study at any time without giving a reason and without any negative impact on you.

- Your signature below indicates that you have received a copy of this consent form for your own records.
- Your signature indicates that you consent to participate in this study.
- Your signature indicates that you consent to being recorded.

Participant Signature

Date

Printed Name of the Participant signing above

Appendix J: Focus Group Consent Form



UBC Okanagan School of Health and Exercise Sciences

Focus Group Consent Form The Impact of Visiting Dog Programs in Seniors Social Support

I. WHO IS CONDUCTING THE STUDY?

Principal Investigator:

Dr. Colin Reid, UBC, 250-807-9910, colin.reid@ubc.ca

Co-Investigator:

Lindsay Burton, UBC, 250-540-5238, l.burton@alumni.ubc.ca
Master's student in the School of Health and Exercise Sciences

This research is for a graduate degree and will be published as part of a Master's thesis, which is a public document available on the Internet via Circle. This research will also be used for publication in journal articles.

II. WHY SHOULD YOU CONTINUE TO TAKE PART IN THIS STUDY?

You participated in a visiting dog program that was part of a study designed to help us learn more about dogs' role in social interactions and their potential use in health promotion interventions. Your continued participation is an important component for understanding any long-term effects of the program and to ascertain your expert opinion and reflections on the visiting dog program.

III. WHAT HAPPENS TO YOU IN THE FOCUS GROUP?

You are being asked to participate in a focus group, which will take approximately one hour. The purpose of the focus group is to gain your thoughts and reflections of the dog visitations. The focus group will be conducted with approximately five participants. Focus group sessions will be recorded on an audio device and facilitated by the co-investigator. You will also be asked to fill out a questionnaire at the start of the focus group that will take no more than ten minutes to fill out. Focus group sessions will take no more than one hour to complete.

To ensure confidentiality digital audio recordings will only be accessible by the principal and co-investigator. Files will be stored for five years after publication on a secure computer then deleted.

IV. STUDY RESULTS

The results of this study will be reported in a Master's thesis and may also be published in journal articles.

A report of the research findings will be made available to all participants.

V. POTENTIAL RISKS OF THE STUDY

We do not think there is anything in this study that could harm you. However, due to the nature of focus groups, we cannot ensure confidentiality. If you choose to continue participation we ask you do not disclose what is discussed outside of the focus group.

VI. WHAT ARE THE BENEFITS OF PARTICIPATING?

Continued participation in the study may benefit you by sharing the collective experience of the visiting dog program with fellow participants. Participants of focus groups have also experienced empowerment as valued experts on the topic discussed.

VII. HOW WILL YOUR PRIVACY BE MAINTAINED?

Your confidentiality will be respected. Information that discloses your identity will not be released without your consent unless required by law. All data will be stored on a secure computer accessible only by the principal and Co-Investigator. Files will be stored for five years after publication and then deleted. Information linked to the identity of participants will not be included in any publications, Master's theses, or journal publications.

Due to the nature of focus groups and group sessions, confidentiality is limited. All participants are encouraged to respect the privacy of other group members and, to this end, not disclose what is discussed with non-participants.

VIII. CONTACT FOR INFORMATION ABOUT THE STUDY

If you have any questions or concerns about what we are asking of you, please contact the study Co-Investigator. Contact names and telephone numbers are listed at the top of the first page of this form.

IX. WHO CAN YOU CONTACT IF YOU HAVE COMPLAINTS OR CONCERNS ABOUT THE STUDY?

If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics toll free at 1-877-822-8598 or the UBC Okanagan Research Services Office at 250-807-8832. It is also possible to contact the Research Complaint Line by email (RSIL@ors.ubc.ca). You may also contact the Chair of the Interior Health Research Ethics Board at 250-870-4602 or via email at researchethics@interiorhealth.ca.

X. PARTICIPANT CONSENT AND SIGNATURE PAGE

Taking part in this study is entirely up to you. You have the right to refuse to participate in this study. If you decide to take part, you may choose to pull out of the study at any time without giving a reason and without any negative impact on you.

- Your signature below indicates that you have received a copy of this consent form for your own records.
- Your signature indicates that you consent to participate in this study.
- Your signature indicates that you consent to being recorded.

Participant Signature

Date

Printed Name of the Participant signing above