# Chapter 13
# Older Adults and Pets—Physical and Psychological Benefits

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The next two chapters focus on the relationship older adults, and men in particular, have with their companion animals including the benefits, the challenges, and the programs designed to help preserve this bond.

This chapter provides background on older adults—who they are and the challenges they face. It then explores the psychological and physiological benefits of pet ownership for this population. The chapter ends with challenges of pet ownership for older adults; providing the background for the next chapter that describes intergenerational service learning and one example, Pets Forever, a course designed to support pet ownership for older adults.

## Elderly—Demographics

Today in the US, approximately one in every seven people are 65 years and older; older adults now constitute 13.7 % of the U.S. population (43.1 million); an increase from 4.1 % since 1900 ("A Profile" 2013). The number of older Americans has increased by 21 % since 2002 compared to an increase of 7 % for people under 65. Average life expectancy for people in the US has also increased dramatically in recent years. Individuals approaching 65 years of age now have an average life expectancy of an additional 19.2 years (20.4 years for females and 17.8 years for males) ("A Profile" 2013).

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Given the fact that the number of Americans aged 45–64 has also increased 24 % between 2002 and 2012, this trend is expected to continue. Between 2012 and 2050, the United States will experience considerable growth of the older generations. Largely due to the baby boomer generation, by 2030, more than 20 % of U.S. residents are projected to be 65 or older, and by 2050, this number is projected to be 83.7 million, almost double the population in 2012 (Ortman et al. 2014).

Furthermore, the older population itself is growing increasingly older. In 2012, the 65–74 age group was more than 10 times larger than in 1900; the 75–84 group was 17 times larger and the 85+ group was 48 times larger ("A Profile" 2013). The number of people aged 85 and over is projected to grow from 5.9 million in 2012 to 8.9 million in 2030. In 2050, those aged 85 and over are projected to account for 4.5 % of the U.S. population (Ortman et al. 2014).

Female life expectancy has long exceeded male life expectancy, resulting in women outnumbering men in all older age groups. While this trend is projected to continue within the foreseeable future, due to the more rapid increase in life expectancy for men projected over the next several decades, the gap between the number of older women and men is expected to narrow. Among those 65 years and over in 2050, 55.1 % are projected to be females, compared to 56.4 % in 2012. Among those 85 years and over, 61.9 % are projected to be females in 2050, down from 66.6 % in 2012 (Ortman et al. 2014).

The changing gender ratios, as well as where older populations choose to live, will likely have major impacts on communities. Currently, the percentage of older persons varies considerably by state, with some states experiencing much greater growth in their older populations. In 2012, the states with the highest percentages of people 65 and older included the following: Florida (18.2 %); Maine (17.0 %); West Virginia (16.8 %); Pennsylvania (16.0 %); Montana (15.7 %); Vermont (15.7 %); Delaware (15.3 %); Iowa (15.3 %); Hawaii (15.1 %); Rhode Island (15.1 %), and Arkansas (15.0 %) ("A Profile" 2013).

In addition to actual numbers, it is important to track which states are experiencing large increases in the 65+ population. There are 14 states in which the older population has increased 30 % or more between 2002 and 2012: Alaska (58.9 %), Nevada (49.3 %), Colorado (41.7 %), Georgia (40.1 %), Arizona (39.6 %); Idaho (39.1 %), South Carolina (39.1 %), Utah (36.6 %), North Carolina (34.6 %), Washington (33.9 %), New Mexico (33.6 %), Delaware (33.6 %), Texas (33.2 %), and Virginia (30.2 %).

Unfortunately, many older adults live below the poverty line. In 2013, the poverty rate for people aged 65 and older was 9.5 %, not statistically different from their 2012 estimates (United States Census Bureau 2014). Yet, the percentage of people 65 and older living below poverty varies a great deal state by state. In 2013, the District of Columbia (16 %), North Carolina (15 %), Louisiana (14 %), Arizona (13 %), and New Mexico (13 %) had the highest percentage of older persons at or below poverty. The states with the lowest poverty rates for older adults include Maine (5 %), Missouri (6 %), Wisconsin (6 %), Vermont (6 %), and Massachusetts (6 %).

These high poverty rates are especially concerning given that financial status impacts life expectancy. Reversing an earlier trend toward greater equality, there are significant differences in life expectancy between people with high and low socioeconomic status, and this difference has only widened over the past three decades (Burtless 2014). In fact, much of the recent increase in expected life spans is concentrated among those with above-average incomes, with life expectancy holding constant or declining for poorer Americans (Pear 2008).

Regardless of financial status, resources tailored for older adults will need to expand. These will include resources for both those who are able to remain living in their home (the majority of older adults) as well as those who move into some type of institution. Contrary to the popular conception, only a small percentage (3.5 %) of people 65 and older live in institutional settings (e.g., nursing homes). This percentage does increase with age, however, ranging from 1 % for persons 65–74 years to 3 % for persons 75–84 years and 10 % for persons 85 and older. In addition, approximately 2.7 % of elderly live in senior housing that offers at least one supportive service to their residents. Over half (57 %) of older noninstitutionalized people (71 % of men) live with their spouse yet this percentage decreases with age. About 28 % of all noninstitutionalized older persons live alone, representing about 19 % of all older men ("A Profile" 2013). The percentage of older adults living alone also increases with advanced age.

Although older adults are a heterogeneous group, there are many aspects related to aging that impact a large percentage of older adults, many of which can negatively affect their quality of life (Bourque et al. 2005; Paskulin and Molzahn 2007). As one ages, numerous physical and cognitive changes are common. In 2012, 58.7 % of adults 65 years and older had at least one basic action difficulty or complex activity limitation. Difficulties and limitations include challenges with movement, emotion, sensory ability (seeing or hearing), cognition, social or work limitations, or self-care; self-care defined as activities of daily living or instrumental activities of daily living (CDC 2015). Additional challenges include development of chronic conditions, loss of independence, and increased isolation (Bourque et al. 2005). The percentage of older adults needing assistance with everyday activities ranges from 9 % for those ages 65–69 to 50 % for those 85 years and older (APA 1998).

The most common physical changes include hearing and visual impairment. The number of older adults with vision loss is expected to double over the next 30 years (NYC Coalition 2015). Eighteen percent of the U.S. adults older than 70 have impaired vision. These impairments include problems with reading, difficulty seeing in dim light, and problems locating objects (APA 1998). These challenges can result in an increased risk of falling, overall poor health, and depression (NYC Coalition 2015). Although hearing impairment among older adults is often moderate or mild, it is widespread, experienced by 48 % of men over 75 years of age (APA 1998). Both visual and hearing impairments can significantly impact the ability to drive and other daily activities. Additionally, arthritis and chronic pain can both impact quality of life and the ability to care for oneself and others (Vacha-Haase et al. 2011).

Another serious health risk for older men is suicide. In the United States, men's suicides constitute 79 % of the total number of suicides each year. The risk for suicide among men is four times higher than among women, and this rate is highest for men 75 and older who live alone (APA 1998). According to the Centers for Disease Control and Prevention, about 51 of every 100,000 white men age 85 and older committed suicide in 2012, compared with the national average for all ages of 12.6. Additionally, White men 85 and older are more likely to commit suicide than Americans in any other age group, committing suicide at a rate of four times that of the general population (CDCP 2010).

## Health and Loneliness

Depression and suicidal behaviors and can be the result of age-related physical changes and limitations, or the loss of social connections and resultant loneliness. The number of one's social relationships tends to decrease with age (Holwerda et al. 2012), most often due to the death of a spouse, parents, friends, colleagues, or neighbors (Krause-Parello and Gulick 2013). These often lead to situational factors (e.g., being single or living alone) that can increase an older adult's risk for social isolation (Coyle and Dugan 2012). According to the Administration on Aging, 29 % of noninstitutionalized older adults live alone, and as the number of elderly increase, so will the number of individuals living alone. Yet being socially connected is not only important for psychological and emotional well-being, but it also has a significant and positive influence on physical well-being and overall longevity (Uchino 2006; Holt-Lunstad et al. 2010; Shor et al. 2013).

Although loneliness is often associated with forms of emotional and social isolation, research suggests that social isolation and loneliness are not always correlated (Coyle and Dugan 2012; Perissinotto and Covinsky 2014). It has been postulated that even though there may be a great deal of overlap between social isolation and loneliness, these are not equivalent terms and should be assessed individually. For instance, some may be socially isolated but content with minimal social contact or actually prefer to be alone; others may have frequent social contact but still feel lonely. Living alone, having few social network ties, and having infrequent social contact are all indicators of social isolation (Holt-Lunstad et al. 2015). Loneliness, on the other hand, is the perception of social isolation and is therefore a more subjective measurement. For many, those who report a lack of human contact also report feeling lonely. Both loneliness and social isolation are associated with poor health behaviors including smoking, physical inactivity, and sleep problems (Theeke 2010), as well as negative physical aspects such as higher blood pressure, increased C-reactive protein, lipid profiles, and poorer immune functioning (Grant et al. 2009; Hawkley and Cacioppo 2010).

It is not surprising then, that social isolation and loneliness result in higher likelihood of mortality. One recent study found the increased likelihood of death of

those reporting loneliness was 29 % for those reporting social isolation, and 32 % for those living alone (Holt-Lunstad et al. 2015). These findings are consistent with prior research suggesting that people who report being more socially connected have higher survival rates than those with fewer social connections (Holt-Lunstad et al. 2010; Cacioppo et al. 2015; Thoits 2011; Hawkley and Cacioppo 2010). The negative impact of loneliness cannot be overstated; it has been recognized as a clinically important frailty factor in older persons, and associated with psychosocial, psychological, and physical problems (Holwerda et al. 2012). In fact, the risks associated with social isolation and loneliness are comparable with well-established risk factors for mortality, including lack of physical activity, obesity, substance abuse, irresponsible sexual behavior, poor mental health, injury and violence, poor environmental quality, and lack of immunization and access to health care (Holt-Lunstad 2015).

Sadly, approximately 40 % of adults aged 65 years and older report feeling lonely at least part of the time, and 5–15 % report feeling frequently lonely; and given the numerous changes within society, these numbers appear to only be increasing (Pinquart and Sorensen 2001; Hawkley and Cacioppo 2010; Perissinotto et al. 2012; Victor and Yang 2012; Wilson and Moulton 2010). Considering that older adults are the fastest growing segment of the US population, the case can be made that loneliness is a significant public health risk (Cacioppo and Patrick 2008) and identifying ways to increase social connectedness should be a societal priority.

This need appears to perhaps be even more critical for men, given the fact that they are even more vulnerable to social isolation and loneliness, likely due to fewer close relationships outside marriage than women (Van Grootheest et al. 1999; Murray et al. 2006; Holwerda 2012; Dykstra and De Jong Gierveld 2004; Boomsma et al. 2005). For example, even after controlling for potentially confounding factors, Holwerda (2012) found that older men who reported feelings of loneliness were 30 % more likely to have died at a 10-year follow-up.

## Men and Masculinity

Although aging can be challenging for both men and women, there are societal aspects that make this a different experience for men compared to women. The social construct of masculinity, or what it means to be a man in a certain time and place (Tannenbaum and Frank 2011), presents unique challenges for aging men. Even though one may argue that men enjoy many advantages in the US culture (e.g., power and prestige), these may come at a cost. The social construct of masculinity in Western culture, associated with traits of competitiveness, wealth, emotional detachment, dominance, autonomy, and physical toughness, is pervasive (Bennett 2007). Yet, adhering to the traditionally accepted masculine identity can be highly restrictive and force men to suppress and reject displays of emotion and vulnerability (Genoe and Singleton 2006; Messner 1990).

Gender role conflicts (GRS) can have a detrimental impact on men's mental health. Several GRS have been identified by O'Neil et al. (1995). One is success, power and competition, in which men focus on personal achievements and a competitive edge. Another conflict is restricted emotionality, in which men are reluctant to display expressions of emotions. Restricted affectionate behavior between men is a third GRC. All of these can create challenges for aging men as the lose career roles, have increased needs, and suffer the losses of spouses or long-term close friends. These conflicts make it difficult for men to obtain the support they might need, leaving them vulnerable to loneliness and depression (Good et al. 1995).

Furthermore, the traditional view of masculinity conflicts with many aspects of aging. For many, growing old is associated with a loss of strength, autonomy, and physical and mental resiliencies (Bennett 2007). These changes force many aging men to try to maintain a culturally accepted masculine identity and personal autonomy in the face of changing physical abilities (Spector-Mersel 2006; Smith et al. 2007). This conflict directly impacts men's choices related to health and help-seeking behaviors, including the use of health services, hence contributing to the health disparities witnessed between men and women (Smith et al. 2007; Mahalik et al. 2007).

When confronted with a health threat, many men make health care choices based on their views of traditional masculine behavior, masculine gender-role socialization, and social constructionism; often leading to a delay in seeking treatment or a lack of treatment completely (Galdas et al. 2005; Addis and Mahalik 2003; Bertakis et al. 2000). Tannenbaum (2011) has suggested that many of the tasks associated with seeking help from a health professional (e.g., relying on others, admitting a need for help, or recognizing and labeling an emotional problem), conflict with the messages men receive about the importance of self-reliance, physical toughness, and emotional control. It is not surprising, therefore, that many men avoid or delay seeking medical care and feel that addressing health concerns and seeking help is a contradiction to their views of masculinity (Tannenbaum and Frank 2011; Courtenay 2000).

For these reasons, it has been suggested that men might have a harder time adjusting to the changes that occur with aging when compared to women. As a result, many men become increasingly isolated as they age and withdraw from others as they face the challenges of growing older (Illinois Council on Long Term Care 1996). This is compounded by the challenges aging men face remaining gainfully employed. Work is often a central theme in men's lives and a crucial component of their identity. Many men suffer a loss of identity and self-esteem when they can no longer work, and as a result are at increased risk of developing depression, dependence on alcohol or drugs, or committing suicide (Illinois Council on Long Term Care 1996).

Given the increasing number of older adults and the challenges that they face, it is vitally important to identify factors related to improving quality of life in old age (Himsworth and Rock 2013). One growing area of research that could mitigate some of the negative impact of aging for men is pet ownership. It has been

suggested that interactions with companion animals, and dogs in particular, have the ability to offer significant physical and psychological benefits for aging adults (McNicholas et al. 2005; Toohey and Rock 2011).

## Pet Ownership

According to the 2015–2016 APPA National Pet Owners Survey, 65 % of the U.S. households own a pet, which equates to 79.7 million homes; clearly indicating that pets are an important part of the U.S. households. Many of these pet owners are 65 and older; 53 % of 65- to 69-year-olds and 34 % of those 70 and older have a pet ("Pet Population" 2014). For the majority of these owners, pets are not merely seen as animals, but as companions, as these pets share a relationship with their owners that includes codependence and mutuality (Walsh 2009). A 2013 study found that 86 % of pet owners consider their pet(s) to be part of the family, and 76 % feel they are a "pet parent" (Easterly 2013). In fact, 42.5 % of pet owners report they would not go on a vacation if they could not bring their pet, and 75 % report celebrating their pet's birthday or day of adoption ("How Do You" 2013).

People enjoy spoiling their pets; 75 % of owners report they have shared ice cream with their pet, over 99 % report their pet shares the bed with a family member, 40.3 % admit to sneaking their pet into a store or public area, and 99.4 % talk or sing to their pet ("How Do You" 2013). Another poll of more than 1000 pet owners conducted by the Associated Press reports that 35 % of owners have included their pet in a family portrait, and that 25 % of pet owners, who are married or cohabitating report that their pet is a better listener than their spouse. Other studies have found that 93 % of pet owners report they would risk their own lives for their pet and the majority of pet owners would take their pets if they had to evacuate their homes or refuse to evacuate their homes without their pets despite hazardous conditions (AAHA 2004; PR Web 2011; Knight and Herzog 2009).

## Benefits of Animals and Pet Ownership

The cost of animal ownership is not cheap, however. It is estimated that small to medium-sized dogs cost between $740 and $1325 for the first year and $500–$875 annually thereafter. This equates to approximately $7240–$12,700 over the course of dog's lifetime (using an average of 14 years). Annual costs are even higher for larger breeds, but the life expectancy is shorter (8 years). The first year of owning a large or giant breed costs between $1020–$1825 and $690–$875 annually, thereafter for a total estimated lifetime cost of $5850–$7950. These are just basic figures and do not account for emergency hospitalization or treatment or cover the extra items or luxuries so many owners give to their dogs (e.g., specialty treats and food; doggie day care, spas, clothing, etc.).

Given these costs, some question the reasoning behind why people, and older people specifically, make the decision to own a pet. Many older owners cite reasons that include love for the pet, a desire for companionship, and an antidote to loneliness (Enders-Slegers 2000). The decision to own a pet is supported by a growing body of the literature that explores the many benefits pets can offer people throughout one's lifetime (Mishra 2014; Campo and Uchino 2013; McNicholas 2014). These benefits can be broadly classified into physical, psychological, and social health (Smith 2012).

## Physical Health

Numerous studies have found pet ownership associated with better overall health, and in particular, cardiovascular health (Anderson et al. 1992; Bauman et al. 2001; Dembicki and Anderson 1996; Headey 1999; Raina et al. 1999; Serpell 1991). These benefits have been recognized by the National Institutes of Health, which has stated that pets should be considered as a possible protective human health factor (National Institute of Health 1988). These positive effects have been found to be especially promising for older adults, creating as trong impetus for increased research related to the potential health benefits of pet ownership for the elderly (Siegel 1993).

One of the first pivotal studies on this topic was conducted by Friedmann et al. (1980), who found that outpatients of a cardiac care unit who owned pets lived longer than non-pet owners. This seminal research influenced several other studies that subsequently supported this premise that pet ownership positively impacts physical health (Allen et al. 2001; Friedmann and Thomas 1995; Garrity et al. 1989; Koivusilta and Ojanlatva 2006; Parker et al. 2010; Parslow and Jorm 2003a, b).

Anderson et al. (1992), for example, found that pet owners have significantly lower cholesterol and blood pressure levels than non-pet owners. Another randomized control study of stockbrokers with hypertension found that pet owners experienced less stress-related increases in blood pressure when compared to non-pet owners (Allen et al. 2001). Two more recent studies support these earlier findings. Campo conducted a study that compared the cardiovascular effects of having a companion animal present during and after an emotionally stressful activity compared to having a close friend present or being alone (Campo and Uchino 2013). The results indicated that participants with their dogs experienced less unpleasant, stress-related emotions (i.e., distress, nervousness, etc.) than those who were accompanied by a friend or were alone (Campo and Uchino 2013). Conclusions of this study suggested that even when the perceived relationship quality is similar for pet dogs and close friends, dogs may provide more cardiovascular benefits during and after a stressful event (Campo and Uchino 2013). As one final example, a study by Polheber and Matchock (2014) found that the presence of a novel dog during a socially stressing event can positively impact participants' heart rate and cortisol response. Similar to results reported by Campo (2013),

this study found that the presence of the dog reduced salivary cortisol levels even more than when participants were accompanied by a friend or alone (Polheber and Matchock 2014).

These studies support the premise that interaction with a dog appears to offer protective physical benefits including transitory decreases in blood pressure and heart rate (Shiloh et al. 2003). In response to these studies, the American Heart Association (AHA) published a statement on pet ownership and cardiovascular risk in which it concluded that pet ownership, *particularly dog ownership*, is probably associated with a decrease in cardiovascular risk and may actually have a causal role in reducing cardiovascular risk (Levine et al. 2013). Given the lack of social support for many older men, these findings offer exciting potential solutions in efforts to mitigate negative effects that can accompany stressful situations. This can be of significant value to men, many of whom go to great lengths to avoid appearing weak or needy. It has been suggested that even though many men may recognize they need services, they feel unable to reach out to access them (Vacha-Haase 2011). Programs that introduce social contact in a way that does not threaten their attempts at preserving their views of masculinity, such as programs designed around their pets, can offer a window of opportunity.

In addition to cardiovascular health, when compared with older adult non-pet owners, those owning a dog display slower deterioration of the ability to perform activities of daily living (Raina et al. 1999). Furthermore, other studies comparing the health of pet owners and non-pet owners suggest that pet owners are healthier, have less pharmaceutical expenditure, and are less likely to be on medication for heart problems and sleeping difficulties than non-pet owners (Siegel 1990; Headey 1999; Pachana et al. 2005; Raina et al. 1999). Pet owners also make fewer annual doctor visits. In a study of older people's utilization of general practitioner services Siegel (1990) reported that older pet owners made significantly fewer visits to their doctor than did older people who did not own pets. Greater numbers of general practitioner visits for non-pet owners were associated with greater incidence of stressful life events, whereas this association was not evident in pet owners—indicating a positive role for pets in alleviating stress in their owners and thus reducing needs for medical services. A study conducted by Headey (2007) found that pet owners in both Germany and Australia made fewer doctor visits when compared to non-pet owners. In both countries, the researchers found that pet owners make about 15 % fewer doctor visits than non-owners each year, and this effect of pet ownership remains statistically significant even after controlling for gender, age, marital status, and income (Headey and Grabka 2007).

## Exercise

Physical exercise is another important component to health. As rates of obesity continue to increase in the U.S., exercise is a frequent news topic, and the search for innovative ways to help people lose weight or maintain a healthy weight

is a top national priority. In 2014, the adult obesity rate in the U.S. was 27.7 % (27.9 % for men and 26.9 % for women). For those 65 and older, the rate was 27.9 %. It has been suggested that reducing obesity rates can result in numerous economic and societal benefits (McCarthy 2014). Regular physical activity can positively impact several areas of health for older adults, including, but not limited to, cognitive functioning, physical abilities, and overall quality of life (Chan et al. 2013). Yet, despite the numerous health benefits, only 35.5 % of U.S. adults 65 and older (41.1 % of men and 31.2 % of women) meet the current recommendation of 150 min of moderate-intensity physical activity per week, and only 16.1 % (18.0 % of men and 14.7 % of women) meet the current recommendations for strength training (physical activities specifically designed to strengthen muscles) at least twice per week (CDC 2014).

Due in part to the Healthy People 2020, an initiative supported by the current First Lady, Michelle Obama, the topic of health and exercise has been one of increasing the U.S. interest. Numerous suggestions are constantly offered to help people increase their activity levels, but one area that has yet to receive much attention is the effect that dog ownership can have on physical activity levels, and especially those of older adults. Several studies have found positive associations between dog ownership and physical activity of aging adults (Dembicki and Anderson 1996; Feng et al. 2014; Gretebeck et al. 2013; Toohey et al. 2013; Garcia et al. 2015; Boldt and Dellmann-Jenkins 1992; Friedmann and Thomas 1995; Cutt et al. 2008), and it has been suggested by many that dog walking may be a viable strategy to combat the frequent decline of physical activity that often accompanies the aging process (Lim and Taylor 2005; Christian et al. 2013; Cutt et al. 2008; Toohey and Rock 2011).

For example, an earlier study found that dog owners between 70 and 79 years of age were more likely to engage in any activity and non-exercise related walking when compared to non-dog owners, suggesting that the benefits of dog ownership include an increase in physical activity (Thorpe et al. 2006). A more recent study of adults aged 50 and older found that frequent dog-walkers, (defined as those who walked their dog 4 or more times per week) were more likely than non-dog owners to reach the recommendation of 150 min of moderate-intensity physical activity per week (Toohey et al. 2013). Feng (2014) found similar results: older dog owners were 12 % more active than older non-dog owners. From these results, Feng et al. (2014) suggested that dog ownership may motivate physical activity by helping older owners overcome some of the potential barriers to physical activity, including a lack of social support, bad weather, or concerns of personal safety. Further, a recent meta-analysis of 17 studies that examined the relationship between dog ownership and physical activity found that dog owners report more minutes per week of walking and overall physical activity than non-dog owners (Christian et al. 2013).

There are likely several reasons why dog ownership appears to increase physical activity (Banks and Banks 2002; Feng et al. 2014). Similar to a walking partner or workout buddy, dogs may provide external motivation for physical activity (Wells 2009). For some owners, their sense of responsibility in caring for

their dogs' physical health and exercise level may serve as an impetus to walk or exercise, and may be helpful in motivating individuals to overcome barriers of minor illness or depression, lethargy, bereavement, feelings of insecurity when walking alone, and inclement weather (Cutt et al. 2007; Knight and Edwards 2008; Toohey and Rock 2011). Walking dogs can also promote socialization with people in the neighborhood, which can then incentivize additional walking (Toohey and Rock 2011; Toohey et al. 2013; Wells 2004; Wood et al. 2007). Given the number of older pet owners, even a small positive influence of pet ownership on human health could have significant public health ramifications.

Dogs not only impact exercise levels and cardiovascular health, they have also been found to impact other important health-related aspects, several of which are related to psychological and emotional well-being. For example, owning a dog has been associated with beneficial neuroendocrine changes such as increases in dopamine, oxytocin, and B-endorphin, and decreases in cortisol, even after controlling for tobacco use, body mass index, and social economic status (Odendaal 2000). Other studies have found an increase in owners' oxytocin levels when their dog looks into their eyes, suggesting that interactions with a dog can increase an owner's oxytocin levels (Nagaswa et al. 2009, 2015). Increase in oxytocin level is important in human health, as oxytocin may be a mechanism for the stress-buffering effects of social support (Heinrichs et al. 2003). It has been suggested that, similar to humans' positive relationship quality, the attachment one feels toward their pet may be a driving force behind many of the health benefits witnessed by pet owners (Crawford et al. 2006). This effect carries important implications for owners' psychological health, feelings of loneliness and isolation, and purpose in life—the topics covered in the next section.

## Psychological

Many people recognize the role that animals can have in mitigating feelings of stress. One study that tried to compare retirement home residents found themselves unable to conduct the study as originally designed because 99 % of all participants chose to have the dog present. Although a comparison between groups of dog present and dog not present could not be completed, the results suggested that residents strongly preferred having a dog present during a potentially stressful event (Eshbaugh et al. 2011). In fact, the presence of dogs during therapy sessions has been demonstrated to increase willingness to disclose information by participants with a history of being reluctant to disclose (Schneider and Harley 2006), as well as show promise in helping support older adults in a variety of physical and psychosocial ways through animal-assisted therapy (Cherniack and Cherniack 2014). Part of this effect might be due to the nonjudgmental nature of animals; their presence can help facilitate feelings of safety, thereby creating an environment in which owners feel comfortable to communicate and openly express their feelings (Bryan et al. 2014).

People who seem to be particularly vulnerable to a lack of social support are individuals who have a great deal of ambivalence concerning emotional expression. Ambivalent emotional expression (AEE) results from a conflict in which one wants to express one's feelings, but is afraid of the consequences (King and Emmons 1990). Those with AEE report higher levels of psychological distress, depression, obsessive-compulsive tendencies, and fear of intimacy (Bryan et al. 2014). Owning a dog has been shown to mitigate the negative effects of AEE, suggesting that pet attachment may serve as a protective buffer for these pet owners (Bryan et al. 2014).

Additionally, pets have been found to moderate the effect of depression on mortality. For example, Friedmann et al. (2011) found pets to be beneficial for depressed patients recovering from heart attacks. In fact, older dog owners in general report fewer symptoms of depression than those without dogs (Wells 2009). Overall, pet ownership appears to have a positive effect on physical and mental health among older adults (McNicholas and Murray 2005; Baun and Johnson 2010; Siegel 2011) including the challenges of loneliness and isolation; two major issues that many elderly men face.

## Loneliness and Isolation

Social support has been defined as emotional assistance from significant others; support that may either be actually received, or simply perceived to be available when needed (Thoits 2010). The disengagement theory (Cumming et al. 1961) has been used to explain the challenge men face in this area. For many men, their identity is tied to their career. When their job ends, they tend to have less involvement with others, which can lead to a downward spiral of reduced social contact. Social support has been associated with positive physical benefits, including reduced risk of developing heart disease, getting cancer or AIDS/HIV, as well as psychological benefits such as reduced risk of stress, depression, anxiety (Stanley et al. 2014; Cacioppo et al. 2002; Barth et al. 2010; Pauley and Hesse 2009; Nurullah 2012). It has been suggested that social support may reduce perceptions of stressful events, and even protect people against anxiety-related illness and enhance recovery from such serious health risks such as strokes, heart attacks, and cancer (McNicholas and Collis 2004).

Those who feel a lack of social support tend to be less healthy than those who are more connected. For example, loneliness has been linked with cardiovascular disease (Thurston and Kubzansky 2009; Udell et al. 2012), depression (Cacioppo et al. 2006) and Alzheimer's disease (Wilson et al. 2007). Loneliness negatively impacts mortality (Perissinotto et al. 2012) and has been identified as similar to other established risk factors, such as cigarette smoking, high blood pressure, obesity, low physical activity, or drinking (House et al. 1988; Holt-Lunstad et al. 2010). Loneliness is, therefore, viewed as an important public health issue, and it is critical to identify factors which can protect against or reduce vulnerability

to loneliness (Pikhartoval et al. 2014). The threat of loneliness and lack of social support is especially challenging for men. One theory that can be used to help explain the challenge faced by older men when they change their roles is the selection, optimization, and compensation theory discussed by Bates (1996). Bates postulated that as men grow older, they suffer losses in social connections that not only lead to loneliness, but can create gender role-related dependency. For example, many older men rely on their wives for many areas around personal care including taking care of a house, cooking, cleaning, etc. When they no longer have this connection, they may struggle with feeling inadequate and dependent; which can conflict with their views of masculinity. To help combat these struggles it is suggested that men take an active approach to the aging process, and optimize their abilities while compensating for any declines or losses. Pets are often cited in the literature as a coping mechanism and a form of social support for older adults (Krause-Parello 2008, 2012).

People are social by nature, and it has long been recognized that the presence and support from close relationships has a powerful influence on people's well-being. Such relationships can provide a sense of well-being and the perception of feeling needed and useful—factors that are often absent in older people. The research interest in this area largely stems from the view that as people grow older, their opportunities for social interactions and for forming relationships begin to wane (McNicholas 2014). Retiring from employment, loss of older friends or family members, and a reduction in one's own health or mobility can all contribute to a reduction in a person's social network, leading to increased risk of social isolation, loneliness, and greater dependency on existing relationships. The lack of social connection and resultant loneliness is a major challenge for many older adults throughout the world. In North America, Australia, and Western Europe, approximately 40 % of adults 65 and older report severe or moderate loneliness. Countries in Central and Eastern Europe report prevalence rates of severe loneliness between 15 and 20 % (Fokkema et al. 2012).

Because of the significant number of lonely seniors, and the impact pet ownership can have on feelings of loneliness, it has been hypothesized that pet ownership may be especially beneficial to older people. Empirical research has largely supported this view. Lago and Miller (1989), for example, found that an average of 52 % of older pet owners' time is spent in the company of their pets and 29 % of their activities involve their pets, far exceeding the 2.8 % of time they spend with friends or family.

As discussed earlier, pets are not merely animals for most owners; they are often viewed as family members or friends, and owners acquire them for emotional support and companionship (Callahan 2014). For older adults, who often have limited social connections, these relationships with their pets can acquire even additional importance. McNicholas and Collis (2004), for example, found that 98 % of older adults identified pet ownership as one of their most important relationships in their lives, and found this cohort is more likely than other age groups to identify pets as a way to help alleviate emotional loneliness (McNicholas and Collis 2004).

Many older adults do not have the opportunities to establish new social contacts, but pets can provide one option for a satisfying emotional relationship (Scheibeck et al. 2011). The results of a study done by Krause-Parello (2013) support this premise by finding that attachment to a pet is significantly related to a decreased feeling of loneliness. It has been recommended that the benefits of pet relationships for older adults be examined. Programs that are geared toward helping older men's pets might be one way to address the cognitive dissonance many men feel toward accepting help (Festinger 1957).

Several studies have found that pets play an important role in the lives of older adults (Gulick and Krause-Parello 2012; Krause-Parello 2008, 2012), and especially, those living alone (Antonacopoulos and Pychy 2010; Stammbach and Turner 1999; Johnson et al. 1992; Adamelli et al. 2005). Pets can serve as a buffer against feelings of loneliness and may compensate for low (human) social connectedness (Barker and Wolen 2008; Garrity et al. 1989). For example, a recent study of older adults who presented to their primary care physician found that those owning a pet were 36 % less likely to report loneliness than older adults without pets (Stanley et al. 2014). Due in part to the results of these studies, the unique relationship older people share with their dogs as emotional companions has gained growing attention (Scheibeck et al. 2011). Contrary to some beliefs, there has been little evidence to suggest that a close relationship with a pet comes at the expense of human relationships. In fact, data appears to indicate that closeness to one's pet is mirrored, when possible, in other relationships (McConnell et al. 2011).

There are several ways in which dogs work to increase their owners' social connections and reduce isolation. Dogs may serve as a distraction from stress through games or stress-relieving activities like play or walking (Taylor et al. 2007). In addition to direct effects on loneliness, pet ownership can enhance social interactions with other people by providing an indirect effect by acting as social catalysts and helping people increase their contact with other people (McNicholas and Murray 2005). This effect has been shown to be of particular value to older adults, who often lack many other opportunities for social interactions. A case in point, Wood et al. (2007) found pet ownership positively associated with social interactions, favor exchanges, civic engagement, perceptions of neighborhood friendliness, and sense of community. It has even been suggested that pets may have a ripple effect—extending beyond their owners to non-pet owners and the broader community—and that this effect may be even more pronounced for older adult communities (Wood et al. 2007).

## Purpose of Life

Another benefit of living with a companion animal is the care they require, which can have positive effects on an owner's sense of control and self-efficacy (Pachana et al. 2005). Dogs can add meaning, structure, and purpose to the lives of older

adults; they give owners a reason to prepare meals, get out of bed, stay active, and keep a regular schedule (Scheibeck et al. 2011; Raina et al. 1999). Dogs depend on their owners for survival, giving their owners a sense of worth and responsibility that comes from caring for another living being (Stanley et al. 2014) This is consistent with studies of human interactions, which suggest that providing support to others, rather than receiving it, may confer greater health benefits (Brown et al. 2003).

This purpose in life, which involves having meaning and goal directedness, has been identified as a key component of psychological well-being, yet is a modifiable factor that can impact healthy aging (Yu et al. 2015; Ryff and Keyes 1995). Purpose in life is correlated with many other psychological constructs, including sense of coherence, resilience, and optimism (Nygren et al. 2005). Older adults with a greater sense of purpose are less likely to develop adverse health outcomes, including a decline in physical function (Collins et al. 2008), increased frailty (Gale et al. 2014), and disability (Boyle et al. 2010; Zaslavsky et al. 2014); Alzheimer's disease (Boyle et al. 2010) clinical strokes (Kim et al. 2013) and even mortality (Krause 2009). A recent study done by Yu (2015) found that a greater sense of purpose in life is associated with approximately a 50 % reduced likelihood of cerebral infarcts. These results are similar to those found in an earlier study in which purpose in life was found to be associated with a reduced risk of clinical strokes for people ages 53–105 (Kim et al. 2013).

## Importance of Helping to Keep Pets in Home

Given the harmful effects of loneliness and social isolation on both physical and mental health, coupled with the changing demographics in the USA resulting in increasing numbers of older adults living alone, pet ownership offers many potential benefits that are often overlooked. Yet, despite the multitude of physical and psychological benefits that dog ownership can offer to older adults, and especially to older males, there are challenges in preserving this bond. Programs designed around preserving this bond, while also connecting with older male pet owners, can offer potential solutions around the challenges of cognitive dissonance many men feel toward knowing they need help but being reluctant to accept any.

The challenges that older adults face with keeping pets include the possibility that these owners 'because of fears related to their companion animals' might neglect their own health care, avoid seeking medical care, resist medical advice, or fail to leave inadequate housing conditions (McNicholas and Murray 2005; Morley and Fook 2005). For example, some older adults may avoid seeking medical care because they fear being admitted to hospital or residential care facility and have concerns about the well-being of their pet (McNicholas 2014; Raina et al. 1999). Other challenges include older adults' ability to physically and or financially care for their pet. (McNicholas 2014; Boldt and Dellmann-Jenkins 1992; McNicholas et al. 2005; Scheibeck et al. 2011).

It is not surprising therefore, that despite the health benefits for older people of owning pets, pet ownership declines with age. One recent survey conducted in the UK found that 16 % of respondents over 60 and 26 % of those over 80 who do not currently own a pet made that decision because of concerns related to becoming too frail or dying, making them unable to continue caring for a pet. These concerns were highest among those who lived alone, even though such people are the most likely to benefit from owning a pet (News and Reports 2012).

The psychological and physical benefits that can be attributed to pet ownership not only impact individuals, but can also influence the healthcare system and as a result, public expenditure for health care (Headey et al. 2002). This fact has helped fuel support for programs designed to help older adults keep their pets at home. Many of these programs are great examples of cross-sectorial partnerships that include geriatric services, animal welfare services, government agencies, recreational services, community support services, and acute and long-term care facilities. Although one such program is described in detail in the following chapter, other models include programs created by large nonprofits that have chosen to help with this issue, as well as organizations created specifically to address this need.

The Meals on Wheels Association of America is one example of a well-established nonprofit organization that created an initiative in 2006 to address this community need. Other programs share similar goals of providing needed pet supplies and services to the homebound clients (Stanley et al. 2014). An example of a program created specifically to help sick pet owners is Paws Houston, a volunteer-run program in Houston, Texas. This program helps sustain relationships between pet owners and their pets through an owner's terminal and/or chronic illness (Paws Houston 2014). The Balwyn Welfare Association in Boroondara, and the Pets of Older Persons (POOPs)' program in New South Wales (both in Australia) are two more examples of programs created to support older or disabled pet owners (Balwyn Evergreen Centre 2015; POOPS 2015). Another option to provide support in maintaining this important bond between older adults and their pets is through an intergenerational service learning course. The next chapter explores service learning and provides details on one such program—Pets Forever.

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