5 Positive effects of animals for psychosocially vulnerable people: a turning point for delivery

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5.1 Introduction: factors affecting the human/animal relationship

The positive psychosocial effects of human/animal relationships engage our interest, arising from our own firsthand experiences with pet animals and our scientific curiosity, as well as the practical questions concerning how best to include pets as an adjunct for treatment for an autistic child or a paraplegic veteran, or to enhance the quality of life of an elderly person in an assisted-living facility. Despite the ever-growing research literature on the psychosocial effects of animals, a significant gap remains between that knowledge base and implementing it into treatment or support services for psychosocially vulnerable people. This chapter first reviews the research-based information about the benefits of pets, especially for the most vulnerable people, and then addresses the practical implementation of this expanding research.

5.1.1 Background and definitions

Typically, animal-assisted interventions (AAI), including animal-assisted activities (AAA), medically directed animal-assisted therapy (AAT), and uses of animals in animal-assisted education (AAE) are arranged in settings where the contact with the animal and the handler is scheduled for residents in a facility. These settings generally do not take into account the specific needs or interests of the person being assisted. Full-time exposure to animals is not usually provided, and the handler differs from the person being served the intervention.

This chapter suggests that to enjoy the positive effects, a relationship with an animal should be individually tailored to the psychosocial characteristics of the person. For example, full-time contact sometimes offers greater potential than a part-time relationship to impact the person’s life. Therapeutic psychological relationships with animals arise with assistance animals, working animals, and companion animals, where a special handler of the animal may or may not be involved. Early uses of assistance dogs emphasized them helping in specific utilitarian tasks, such as aiding
those with visual, hearing, or ambulatory disabilities, but by now their provision of psychologically therapeutic benefits, contact comfort, or as a social lubricant, also is highly valued (Hart, 2003). Dogs now fulfill a growing number of therapeutic roles, perhaps most notably including assisting people with mental illness.

The breeding and methods for training assistance dogs also are more varied than in the past. While no standardized certification criteria have been legislated or regulated in the USA pertaining to assistance animals, leaders in the various types of equine therapy have developed their own certification programs. In the USA, providers associated with therapeutic horseback riding programs generally affiliate with the North American Riding for the Handicapped Association (NARHA, 2010), a centralized professional organization which offers three levels of certification for instructors. In addition, specialty certification is available for instructors on carriage driving and gymnastics on a horse, termed vaulting. As a reflection of the fact that horses make a growing contribution to the mentally ill, a subsidiary section of NARHA focuses on mental health and is called the Equine Facilitated Mental Health Association (EFMHA, 2010).

### 5.1.2 Can pets be prescribed?

The positive results that have been reported for health effects of pets have spurred some mental health practitioners, aware of the tendency to “prescribe pets,” to formulate standardized techniques for offering contact with companion animals for people with disabilities or special needs. The role of pets is often assessed among individuals who have chosen to keep pets, such as populations of vulnerable individuals with disabilities, autism, Alzheimer’s disease, AIDS, or the elderly. However, profiling pets as though their effects for people of such groups are uniform has proven to be not useful when attempting to assess and predict which individuals would be likely to benefit from periodic or sustained contact with companion animals. Community-based epidemiological studies of pet keeping produce useful results for analyzing the geographic context and demographic factors that may be significant. To be able to effectively “prescribe” pets, we will need to become knowledgeable about those cases where pets are not associated with health benefits or may even add to the burden of vulnerable individuals or be harmful, as well as the cases where the animals are associated with positive effects.

### 5.1.3 Subcultures and psychosocial effects of pets

Epidemiological studies of entire communities identify subcultures where certain individual circumstances, neighborhoods, geographical features, or special situations are associated with beneficial or adverse health parameters. One classic epidemiological study by Ory and Goldberg (1984) revealed that pets were associated with negative indicators for elderly women living in rural settings, but with positive indicators for women in suburban and urban settings, suggesting a varying role of the pet with geographic location. The combination of higher socioeconomic status and pet ownership was associated with more positive indicators of happiness for women
(Ory and Goldberg, 1983); however, pet ownership was more typical among less affluent women. Weak attachment to a pet was associated with not being in a confidant relationship with the spouse and was also associated with unhappiness, when compared with non-owners and attached owners whose spouses more often were confidants.

A fairly recent community-based, longitudinal study examined over a one-year period whether attachment to companion animals was associated with changes in health among older people (Raina et al., 1999). Non-owners showed greater deterioration in their activities of daily living than pet owners, but the pet owners as a group were younger, more likely to be married or living with someone, and more physically active. Pet ownership was a positive factor associated with the change in psychological well-being of participants over the one-year period.

### 5.1.4 The type of pet matters

Selection of the type of pet is important in the outcome. For example, people who are burdened in their personal circumstances or health status, as is common for the elderly, can benefit from pets despite the pet’s care required, especially if they select a low-care cat rather than a dog or horse. Benefits were associated with cat companionship for men with AIDS (Castelli et al., 2001) and middle-aged women giving care to family members with Alzheimer’s disease (Fritz et al., 1996); in contrast, having a dog was more problematic in these two studies.

The term pet covers a wide range of animals and relationships, as families seek out pets to fill different roles. The pet’s treatment depends on the family’s context, traditions, and expectations. A study of residents in Salt Lake County revealed that pet-keeping practices vary with neighborhood and community (Zasloff and Hart, unpublished results). Zip code areas predicted the sources residents used in acquiring their pets with some showing high levels of pet adoptions from shelters. Other neighborhoods favored purebred animals; still other areas were associated with high adoptions of feral cats.

Employing epidemiological methods with statistical representation of the entire community offers a view of the context, including the community’s affluence, geography, age, gender, and ethnicity of pet-owning participants. By examining microneighborhoods and subcultures, we can more accurately profile the range of styles of pet ownership characteristic in our diverse societies, as well as identifying additional questions that need to be clarified.

### 5.1.5 Focus on the elderly

Considering age, the elderly are a growing population where animals can play a special supportive role. However, as mentioned above, the animal must be highly individualized to match the person with respect to personal history, living situation, and general health. As people age, they can be swamped in losses. Their former social networks shrink as they leave the workplace, move into smaller homes, lose friends and family members who have moved away or died, and/or experience chronic health
problems or disabilities. The Activities of Daily Living that are used in assessing a person’s active-life status are portrayed in Table 5.1, showing basic activities, as well as instrumental ones required for fully independent living. To put this into clear perspective, Figure 5.1 shows the years of life expectancy for men and women at ages 70, 80, and 90 years; also indicated is the able-bodied portion of their life expectancy.

Table 5.1 Activities of Daily Living: lists of activities that are commonly used by medical professionals, usually with the elderly, to assess their fundamental functioning (left side) and ability to live independently (right side).

<table>
<thead>
<tr>
<th>Basic Activities of Daily Living</th>
<th>Instrumental Activities of Daily Living</th>
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<tbody>
<tr>
<td>Personal hygiene</td>
<td>Doing light housework</td>
</tr>
<tr>
<td>Dressing and undressing</td>
<td>Preparing meals</td>
</tr>
<tr>
<td>Eating</td>
<td>Taking medications</td>
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<tr>
<td>Transferring from bed to chair,</td>
<td>Shopping for groceries or clothes</td>
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<tr>
<td>back</td>
<td>Using the telephone</td>
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<tr>
<td>Voluntarily controlling</td>
<td>Managing money</td>
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<td>urinary and fecal discharge</td>
<td>Using technology</td>
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<td>Elimination</td>
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<td>Moving around (as opposed to</td>
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<td>being bedridden)</td>
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Figure 5.1 Although the number of years of life expectancy for women at 70, 80, and 90 years of age exceeds that of men, the expected period of disability is also greater for women than men and from the age of 70 is a majority of the remaining years of life, for both men and women (from Crimmins et al., 1996). Being unable to perform essential tasks in the Activities of Daily Living was defined as a disability.
revealing that most people experience a substantial period of disability at the end of their lives when they are unable to perform all the activities of daily living without assistance, representing further losses (Crimmins et al., 1996). Further, the person’s cohort shrinks over time as the like-aged counterparts die at a growing rate. Among a person’s counterparts in the USA, 76% remain alive at 70 years of age, 53% at 80 years, 21% at 90 years, and 2% at 100 years. Having a companion animal can offer a source of reliable and accessible companionship. In one study of elderly dog owners, a majority said their dog was their only friend and believed their relationship with their dog was as strong as with humans (Peretti, 1990).

Understanding how best to optimize contact with animals for elderly people to increase benefit for them but not create a burden in their varied circumstances is an urgent question for society today, and one that is touched on several times in this chapter. Bridging the gap between the research results and the practitioners’ needs for specific and practical information requires evidence-based tailoring of the animal contact for effective therapeutic assistance with patients.

5.2 Goals of this chapter

This chapter is intended to present some highlights from the research literature, while also addressing the gap between research and practice and pointing the way toward an integrated translation of knowledge into helpful programs and practice. It also points to the importance of considering the specific roles of different animal species, dogs, cats, and horses, birds and fish, in enhancing the quality of human lives. Some related recent reviews of relevance to this theme are those by Wells (2007, 2009) on the health effects of dogs, and the intriguing roles of companion animals in detecting medical conditions, such as the presence of emerging cancer or predicting an impending seizure attack. Another paper, by Barker and Wolen (2008), reviews over 100 studies on the health benefits of human/animal interactions.

5.3 The potential of pets to enhance the quality of life

An important point to emphasize is that while companion animals offer potential enhancements to a person’s quality of life that can stem an unraveling decline into disability or disease, they only rarely offer a pathway to curing disease. As an unconditional support system, pets can be recruited for contact at any time of day or night. Essential comfort, relaxation, and entertainment are near at hand. The conflicts with the non-verbal animal are few as long as the person avoids behavior problems through careful pet selection and management.

Human relationships, or a lack of them, can promote health, or produce stress. Increased mortality rates are associated with decreased social connections (Berkman and Breslow, 1983). Despite family, friends, and other support services, at times of challenge and heartbreak, some vulnerable people will be without the social relationships they need for a reasonable quality of life. Persons who are facing hearing,
visual, or mobility disabilities, living alone in later years, or experiencing the onset of serious medical problems, may be at particular risk. Even temporary crises can be paralyzing in their impact.

Anyone who is socially isolated, and possibly experiencing an increase in medical problems, may begin to feel profoundly alone. The high costs of loneliness and a lack of social support to human health are well documented (House et al., 1988). While the link of loneliness and depression with cancer and cardiovascular disease has long been recognized (Lynch, 1977), depression is now considered to be a central etiologic factor of these diseases (Chrousos and Gold, 1992).

Recognizing that some elderly individuals are seriously challenged with their health problems and inability to perform activities of daily living, one community program over two decades ago placed animals, usually dogs, with elderly and provided some support for their care (Lago et al., 1989). Cats require less effort than dogs, and may be more appropriate companions for some elderly persons. While the effects of cat ownership are not well studied in this context, an Australian study found better scores on psychological health among cat owners than non-owners (Straede and Gates, 1993). Cat-owning women rate their cats highly in providing affection and unconditional love (Zasloff and Kidd, 1994a). A study by Karsh and Turner (1988) found that long-term cat owners were less lonely, anxious, and depressed than non-owners; the study even found that the pet owners reported improvements in blood pressure.

Permanent institutional living almost always curtails the person’s quality of life, and reduces contact with the world at large, along with increasing the cost of living. And it is widely recognized that for some people in residential retirement communities, companion animals can contribute to their psychosocial health, and help extend by months, or even a few years, the period of living independently.

But what about precarious persons or the elderly who still live at home? Animal-assisted activities (AAA) or therapy (AAT), and other types of support related to pets, generally are not offered to precarious individuals who still live at home. An obvious gap exists in finding approaches to filling this need and testing the various approaches.

Finally, in introducing this section, it should be emphasized that a well-documented area is for children with mental or neuromuscular disabilities that benefit greatly from the extraordinary experience of therapeutic horseback riding, an occasion that affords joyous human social support as well as the unique sensation and physical challenge of riding the horse (Hart, 1992). Even the families of the afflicted child seem to benefit.

In short, a wide array of animals, and different contexts, give rise to a variety of psychosocial effects. These are organized as four main categories and reviewed in the section below.

### 5.3.1 Effects on loneliness and depression

Most people that are caregivers of pets value companionship most in their relationships with pets. However, for those who are isolated, the lack of companionship, depression, and lack of social support are major risk factors that can impede a person’s well-being and even increase the likelihood of suicide or other maladaptive
behaviors. Individuals experiencing adversity are more vulnerable and subject to feelings of loneliness and depression.

The concept of social support creating both main and buffering effects against stress is well known in discussions of human social support (Thoits, 1982), and pets seem to, at times, substitute for human companions in fulfilling this role. A study by Siegel (1993) showed that animals offer their elderly human companions a buffer of protection against adversity, as manifest in fewer medical visits during a one-year period.

In a notable review paper, psychological, social, behavioral, and physical types of well-being, pertaining to benefits of pets, were examined with regard to social support (Garrity and Stallones, 1998). Pet association frequently appeared beneficial, both directly and as a buffering factor during stressful life circumstances, but did not occur for everyone.

Descriptive, correlational, experimental, and epidemiological research designs have been used to assess the effects of contact with companion animals on human well-being. Correlational studies, whether of a cross-sectional or longitudinal type, often assess just whether or not a pet is present and have not taken into account the wide differences in individual variation of the target population, type of pet, and environment. These issues will be addressed in this section.

**Elderly people**

Among elderly people in one study who were grieving the loss of their spouses within the previous year and who lacked close friends, a high proportion of individuals without pets described themselves as depressed; low levels of depression were reported by those with pets (Garrity et al., 1989).

One of the unexplored confounding aspects in the analysis of the potential beneficial effects of pets for the elderly is that people who seek out animal companionship may be more skilled in making choices that maintain their own well-being than non-pet owners. The traits of dependability, intellectual involvement, and self-confidence are strong characteristics that are established at a young age and continue throughout life; individuals who as young people express this planful competence seem able to take adverse life events in their stride and take effective actions to keep their lives on track (Clausen, 1993). A decision to live with an animal could be one aspect of taking effective action in one’s life. Individuals keeping pets may also have acquired social skills and abilities that were reflected in the decision to have a pet.

It is tempting to ascribe the beneficial effects of pets for grieving elderly (Garrity et al., 1989) to the constant responsibility to nurture another individual, the loving devotion of a pet, and even the laughter that a pet inevitably brings into everyday life. Living alone is common in elderly people, and this lifestyle itself may be inherently stressful. Loneliness is associated with various diseases. Elderly women living alone were found in one study to be in better psychological health if they resided with an animal: less lonely, more optimistic, more interested in planning for the future, and less agitated than those women who lived without a pet (Goldmeier, 1986). In contrast, women living with other relatives did not show an extra boost with a pet.
Women graduate students who lived alone also showed a protective effect of a pet: those living with a companion animal, a person, or both, rated themselves as less lonely than those living entirely alone (Zasloff and Kidd, 1994b).

However convincing the above findings are, the psychosocial benefits, such as lowered risk of depression, are not necessarily accompanied by general differences in health status. No differences in health status were found among a large group of people (21 to 64 years of age) with and without pets (Stallones et al., 1990). The same finding was reported in a large study on just the elderly (Garrity et al., 1989).

People with mental illnesses

In the area of disabilities, we have traditionally thought of service dogs as being employed in the service of the blind, deaf, or hearing-impaired, and those who must rely on the use of wheelchairs. A new development is the contribution of service dogs for the mentally impaired or disabled. For this new area employing psychiatric service dogs, the formalized tasks of the dog include providing companionship, contact comfort, and affection, all of which contribute to the stabilization of mental health for someone suffering from mental illness (Psychiatric Service Dogs Society, 2010). For a syndrome very much in the public eye, post-traumatic stress disorder following war experiences, the syndrome is being treated at some centers by the warmth and acceptance dogs offer when providing tactile contact and calming the patient.

The use of psychiatric service dogs is broadening the concept of service dogs. Persons being treated work with dog training specialists and peers in training their own dogs. Clearly, professionals working in this new field recognize that the dog is just one aspect of treatment, along with pharmaceutical treatment and counseling assistance from human health professionals, as well as intervention with veterinarians when indicated.

The use of birds in residential facilities is an interesting sideline of this field. Depressed community-dwelling elderly in one study were less negative psychologically after prolonged exposure to pet birds (Mugford and M’Comisky, 1975). Depressed elderly men at an adult day health care program exposed to an aviary, and who ended up actually using the aviary, had a greater reduction in depression than those that did not interact with the aviary. In fact, the latter group showed no overall difference in depression (Holcomb et al., 1997). Those seeking out the aviary also apparently were more interactive with family and staff members. Along the same lines, lonely elderly people in a skilled rehabilitation unit who were given a budgerigar in a cage for a period of 10 days showed decreased depression (Jessen et al., 1996).

People who are mentally ill have also been a recent focus of the therapeutic equine advocates who now have an organization, the Equine Facilitated Mental Health Association (EFMHA, 2010). One difference between dogs and horses is that whereas a dog can be available 24 hours a day to provide companionship and comfort, equine-assisted therapy requires a significant infrastructure and human organization in order to provide treatments, even once a week. The equine therapists point out, however,
that the power, beauty, and strength of a horse compel the attention of the rider. For some patients the horse is uniquely effective in motivating the person and facilitating treatment.

Many communities have an equine-facilitated program operating nearby and if not currently utilized some of the horses could be cross-trained perhaps to provide not only the physical rehabilitation, but some mental therapy to a different set of patients. Green Chimneys (2010) is an example of a comprehensive residential treatment center for mentally disturbed children where equine-facilitated therapy is one of the important treatment modalities that are available.

People with a disability or requiring clinical care

The third topic in this section on depression and loneliness concerns benefits of pets for people in long-term treatment facilities, where irreversible disabilities like deafness and diseases such as Alzheimer’s disease are common. While a full-time therapeutic pet might seem best in terms of reducing loneliness, the pet can be just an occasional friend. AAT provided once or three times a week to elderly people in long-term facilities can result in a significant reduction of loneliness (Banks and Banks, 2002).

One important and common disability, loss of hearing, limits communication and predisposes people to feeling isolated and lonely, even when others may be nearby. In these circumstances, a hearing dog can offer ameliorative benefits aside from alerting the caregiver to the phone ringing. A dog, being a full-time companion, ends up being a conversational partner that responds behaviorally to the statements and moods of other people nearby, facilitating the person to socialize within the community. People with impaired hearing and a hearing dog rated themselves as less lonely after receiving their dogs, and also were less lonely than those who were slated to receive a hearing dog soon (Hart et al., 1996).

Alzheimer’s disease is one of the most challenging conditions for both the patient and the caregivers, and one that will increase with the changing demographics and growing aging population in much of the Western world. As noted, a cure is not to be expected from a pet, but some specific and important aspects of quality of life and patient management may be helped with strategic employment of animals. Another study of nursing home residents with dementia found that they had improved orientation to the days of the week based upon the presence or absence of a Canine Companion who participated at a day program on Tuesdays and Fridays (Katsinas, 2000). Dogs were used to join the patient for short walks within the facility; in the case of wandering a bit, the dog could be called back and the patient would also return.

Another study of a closed psychiatric ward for persons with dementia found in recordings of the general ward noise with a sound level meter that the noise levels were substantially decreased in the experimental ward during the dog’s two 3 hour visits each week, but not in the control ward (Walsh et al., 1995). Fewer loud spontaneous vocalizations and aggressive verbal outbursts resulted in a significantly lower intensity of noise levels in the experimental ward during the presence of the dog.
Here again, the pet does not have to be a dog or even a cat. Introducing fish aquaria into three residential facilities for people with Alzheimer’s disease resulted in an increased average nutritional food intake as shown in Figure 5.2, with weight gains for the residents who previously had been losing weight (Edwards and Beck, 2002). The increased intake persisted for some weeks after the aquarium was removed.

![Residents’ Food Intake (mean grams) at Alzheimer’s Disease Facilities](image)

**Figure 5.2** A virtually unexplored treatment for patients’ disinterest in food and lack of appetite that is common in Alzheimer’s disease and cancer may be exposure to animals. Elderly residents in facilities for Alzheimer’s patients, when provided a fish aquarium in their dining room, increased their nutritional intake and also had a weight gain (from Edwards and Beck, 2002). The increased intake persisted for some weeks after the aquarium was removed.

Here again, the pet does not have to be a dog or even a cat. Introducing fish aquaria into three residential facilities for people with Alzheimer’s disease resulted in an increased average nutritional food intake as shown in Figure 5.2, with weight gains for the residents who previously had been losing weight (Edwards and Beck, 2002). Residents remained at the dining table longer and were more attentive in the presence of the aquaria, eating the prepared food and requiring significantly less nutritional supplements such as Ensure (a 25% reduction).

These three studies involving patients with Alzheimer’s disease highlight the opportunities to consider less-conventional benefits of animals contributing to the person’s quality of life, by increasing their engagement in living, such that they eat more nutritiously, are more aware of days of the week, and express less distress in aggressive and loud outbursts. These outcomes—appetite, awareness of time, and aggressive outbursts—involves issues that regularly challenge caregivers and family members who assist in the management of patients with Alzheimer’s disease and some other diseases as well.

**Summary**

Despite some refinements that could be made in methodology by taking individual differences into account and the common use of cross-sectional or correlational studies, the numerous reports of positive effects for the comforting and calming effects of animals in alleviating loneliness and depression are impressive. The reliability of the conclusions of these studies is shown. One such meta-analysis evaluated studies of AAA and AAT for reducing depressive symptoms in humans. The studies included had to show random assignment of a treatment and
a comparison or control group, use a patient self-report measure of depression, and report sufficient information to calculate effect statistical strength of the treatment effect (Souter and Miller, 2007). The five studies meeting the criteria showed a significant effect of moderate magnitude, indicating that AAA and AAT are associated with fewer depressive symptoms. A broader meta-analysis, of AAT studies in general, identified 49 out of 250 studies that met the inclusion criteria (Nimer and Lundahl, 2007). Moderate significant effects were found in four areas: autism-spectrum symptoms, medical difficulties, behavioral problems, and emotional well-being.

5.3.2 Socializing effects

Somewhat linked to the effects of alleviating depression and loneliness in specific groups is the socially lubricating effect of pets, especially dogs. Such effects are strongly supported by empirical data. AAA visits in institutional environments improved social interactions among residents and staff in two separate studies, one in a psychiatric facility for elderly women (Haughie et al., 1992) and the other in a residential home (Francis et al., 1985). Along the same lines, social interactions were shown to improve in association with visits by animals to nursing homes for patients with Alzheimer’s disease (Beyersdorfer and Birkenhauer, 1990; Kongable et al., 1989).

It is broadly recognized that the absence of a supportive network of social companionship leads to loneliness, depression, and stress, as well as at times suppression of the immune system, with predisposition to some disease states. With the substantial buffering effects for stress and anxiety that social companionship by animals provides (Serpell, 1986/1996), it is tempting to speculate that companionship of animals could result in a reduced likelihood or reduced severity of certain diseases for certain people.

As any dog, cat, and even horse owner knows, people almost inevitably speak to their animals. Apparently, animal companions make great conversational partners! If you need documentation, you are referred to the studies by Rogers et al. (1993) and Beck and Katcher (1989). Conversational dogs can be such a strong component of walking, for those that at least occasionally walk their dogs, that they talk about their dogs to other people they meet on walks when the dog is not present (Rogers et al., 1993). And it is not just dogs, cats, and horses. Most people with birds even talk to their companions (Beck and Katcher, 1989). Animals do not just provoke people to talk to them, but provoke people to speak with one another, stimulating friendly conversations and providing a comfortable topic of conversation. People may start conversations, laugh, and exchange stories more when a dog is present than when the person is alone (Messent, 1984).

Among people using assistance dogs, social facilitation, social support, and affection correlate with the person’s self-perceived health (Lane et al., 1998). The dog creates social opportunities with people while also serving as an essential family member and friend. Dogs may have an edge over cats in this respect because they stay closer to a person than cats, and seem to more easily provoke social interactions.
(Miller and Lago, 1990). That said, a rabbit, or even a turtle can stimulate people to socialize with other people, talking about the animal (Hunt et al., 1992).

The powerful socializing effect of dogs, while evident to almost any dog owner, is a primary benefit for people with hearing dogs, even overshadowing the hearing loss contribution (Hart et al., 1996). The socializing effect extends to adults or children using wheelchairs who have a service dog (Eddy et al., 1988; Mader et al., 1989). People will stop and talk to the person in the wheelchair, and smile more than when the dog is absent. The dog normalizes the social environment for the person with a disability who might otherwise be ignored or treated awkwardly.

Investigators have yet to reach the limits on the types of mental illness that may be benefited by therapeutic animals. An impressive study of a clinical population of elderly schizophrenic patients in a controlled, clinical trial, found that exposure to AAT was associated with a significant improvement in interpersonal socialization, as well as some enhancement of activities of daily living and general well-being (Barak et al., 2001).

5.3.3 Motivating effects of pets

A third identifiable effect of animals, becoming more apparent, is their effect in motivating people to engage in constructive activities. This may be in taking walks, a necessary responsibility for dogs in restricted living quarters. For others, it inspires them to bring animals into a nursing home, school, or hospital on a regular basis, where they can see firsthand the valuable effect on others.

From the 1980s, the practice of taking pets on a regular basis to nursing homes became widespread and is now referred to as animal-assisted activities (AAA). If an aspect of an integrated overall treatment plan for the patient, the nursing home visits may be known as animal-assisted therapy (AAT). Volunteers who do engage in AAA or AAT find it rewarding to share their animals with others. The motivation to volunteer their time usually would not occur if the person were visiting the nursing home without an animal. The animal partner is the essential participant inspiring the volunteer.

Animals provide significant motivation for children in learning environments and can range from learning about nature and conservation to how to care for a pet and as a bridge to learning about biology. The popular programs for children reading to dogs capture the motivational magic of pets that reduces the child’s self-consciousness about reading (Reading Education Assistance Dogs: R.E.A.D., 2010). Extending to pervasive developmental disorders, children with a dog present were found in one study to be more focused, more aware of their social environments, and more playful (Martin and Farnum, 2002). While the dog garnered its share of the attention, the effects extended beyond the dog.

A recent area of serious, health-related research, reflecting the known health benefits of physical activity, is that dogs motivate people to take walks. After adopting a dog, people sharply increased their daily walking in one of the first studies in this area (Serpell, 1991). In a related finding, elderly people in southern California who kept dogs reported spending 1.4 hours per day outdoors with the animal (Siegel, 1990). Exactly what influences dog owners to engage in walking their dogs is a specific current focus of epidemiologic inquiry, since several studies show that most
dog owners do not gain the health benefits of exercise. As shown in Figure 5.3, elderly people who do regularly walk have a more rapid walking speed than non-walkers in one study, and maintained their advantage over non-walkers during a 3-year period (Thorpe et al., 2006). This edge in walking speed of dog walkers was seen whether or not the dog was with them. A study of California adults found the dog owners walked 18.9 minutes more per week than non-owners, and they engaged in more recreational walking than others (Yabroff et al., 2008). A study in Australia reports that while most dog owners did not engage in dog walking per se, they did average 18 minutes’ more walking per week than non-owners (Bauman et al., 2001). The percentage of owners and non-owners that met the criterion of 150 minutes’ walking per week did not differ between study groups, so the gain was in walking above the minimum criterion. In another Australian cross-sectional study, only 23% of dog owners walked at least five times a week, but still the owners had better odds of sufficient activity than non-owners (Cutt et al., 2008a). The finding that only a minority of dog owners walks regularly seems consistent across many large studies and settings. The message that comes through from these various studies is that dogs somehow lead to social support to be more active and may promote in their caregivers an intention to walk aside from meeting the dog’s eliminative needs (Cutt et al., 2008b).

5.3.4 Physiologic and calming effects

The final topic under the section on the potential of pets to enhance the quality of life concerns the measurable physiological and calming effects. One of the early studies on this topic dealt with fish. Looking at fish in an aquarium relaxes and relieves anxiety as was indicated for dental patients in a waiting room (Katcher et al., 1984). The calming effects of fish, of course, go beyond the dental office with the sound of drills in the background. Individuals with Alzheimer’s disease, and who still live at home, are calmer with a companion animal around (Fritz et al., 1995). A calmer

![Rates of Walking (m/sec) by Elderly](image)

**Figure 5.3** A longitudinal study of 2,533 elderly participants measured the usual and rapid walking rates of participants at the beginning of the study and three years later. With this method, the authors documented the decline in walking speed for all groups, and substantiated that fast walkers retained their advantage (from Thorpe et al., 2006)
patient is undoubtedly less distressing and exhausting to the caregiver, who is at risk for burnout in this challenging situation.

Similar calming effects for patients have been reported in therapeutic residential settings. During group therapy with dissociative patients, a therapy dog provided a calming influence and also alerted the therapist to distressed patients (Arnold, 1995). On the psychiatric ward, substantial reduction in noise levels brought about by a therapy dog’s visit benefits both the patients and staff in the ward (Walsh et al., 1995). In a clinical population of hospitalized psychiatric patients, exposure to AAT was associated with reduced state anxiety levels for patients with a variety of psychiatric diagnoses, especially patients, but also for those with mood and other disorders; this was in contrast with a recreation session that was associated with reduced anxiety only for patients with mood disorders (Barker and Dawson, 1998).

The calming effects of animals are especially valuable with children exhibiting attention deficit/hyperactive disorder. During therapeutic interventions in a learning setting, animals captured and held children’s attention and directed their attention outward (Katcher and Wilkins, 1997). Calming the children was a first essential step toward creating a learning environment. Behavioral improvements generalized somewhat beyond the classroom but did not carry over to all contexts. In a classroom study of children with Down’s syndrome, a real dog provided a more sustained focus than an imitation dog for positive and cooperative interactions with the nursing staff (Limond et al., 1997).

Evidence for animals calming people is well documented for dogs assisting people who have frequent seizures. A person who never knows when a seizure will occur suffers ongoing anxiety. Providing trained service dogs to assist persons who have seizures also gave them a feeling of calmness, and led to the discovery that the dog often was alerting prior to the seizure, providing advance notice for the person to get situated for the seizure (Strong et al., 1999). Using specially trained seizure-alert dogs, a research team found not only were seizures reliably predicted, but over time there was a reduction in the frequency of seizures to around half the previous rate (Brown and Strong, 2001; Strong et al., 2002). In looking for a mechanism, the investigators thought that this reflected the person being calm, more relaxed, and less anxious.

The ability of some pet dogs to alert to impending epileptic seizures in their human owners has expanded into an area of respected clinical research. One study reported that for dogs living with epileptic children, 40% showed anticipatory behavior prior to the seizures (Kirton et al., 2004). Similar results were found by another team of investigators, reporting that 33% of dogs living with a person that had seizures alerted prior to seizure onset (Dalziel et al., 2003). Interestingly, the phenomenon of seizure detection, which so far goes beyond any instrument that medical investigators have yet to devise, frequently occurs spontaneously with no intentional training of the responding dog. As mentioned above, dogs can also be trained as seizure alert dogs. One caution to be noted is the potential for seizures to possibly provoke fear, avoidance, or even aggression in pet dogs if they are not specially trained or habituated to seizures (Strong and Brown, 2000).

One of the intriguing sets of physiological effects from contact with animals comes from recent studies from Japan, on the autonomic and oxytocin responses of people to
animals. Motooka and colleagues (2006) used mean high-frequency power as a measure of autonomic nervous activity and found a strong response when elderly were at home with a dog, and an increasing response at a lower level when walking a dog over successive days. Their dramatic results partially shown in Figure 5.4 bear replication and further study.

Several studies now have examined human changes in oxytocin levels as a function of interactions with a dog. Oxytocin is known for its calming effects. Thus, it is interesting to examine some research that seems to delve into the mechanism by which canine contact, or even the gaze, may bring about a feeling of calmness. An increase in oxytocin following a dog gazing at the bonded owner was reported recently (Nagasawa et al., 2008). In another study shown in Figure 5.5, being with a dog resulted in significantly increased oxytocin levels for women, compared with reading, which resulted in falling oxytocin (Miller et al., 2009). The oxytocin levels of men are not necessarily so easily boosted and, in the study just cited, the levels were lowered in the reading scenario and were not boosted by having the companion dog around. One cannot help but think that the effect on women in some way relates to the potential for maternal behavior.

5.4 Personalized normalizing of the environment for people with special needs

The foregoing sections reviewed the compelling evidence for the strong impact of animals with regard to the socializing, motivating, and calming effects in the alleviation of loneliness and depression for the elderly, those with mental illness, and

![Image of Mean High-Frequency Power (Hz) in Elderly: Walking or at Home with a Dog](image-url)
people in institutional care facilities. This data-based evidence raises the question of how all of this works. The discussion of physiological aspects addresses one end of this question. The other is the psychological framework that mediates the effects, resulting basically in normalizing the environment, especially with people with special needs.

Several theoretical and somewhat overlapping perspectives have been proposed which can be useful in thinking about some of the results reviewed above. Attachment theory asserts that emotional well-being is affected by personal relationships; pets are included among significant attachment figures for promoting general mental health, offering unconditional love such as the perfect love of the ideal mother (Hanselman, 2002). Some adult owners turn to their dogs in times of emotional distress, as an attachment figure or safe haven; dogs are chosen over relatives and friends except romantic partners (Kurdek, 2009).

Pet ownership can be placed in the construct of self-psychology, in which the animal reflects back to the person as a mirror, representing an idealized partner who carries wished-for traits, or is a twin duplicate in perfect agreement with the person (Brown, 2004, 2007).

Coming from a sociological perspective, identity and self-concept are proposed as being of central importance by Sanders (2000). In his ethnographic exploration of people’s association with guide dogs, the dog shapes interactions with the public; the involvement in the owner/dog team extends the person’s self-definitions and social identities.

Another model is the stress-coping model (Spence and Kaiser, 2002). This was implied in a study of adaptation in chronically ill children. Chronic illness can impose demands on the child and family, drawing down individual and family resources. This affects the perceived demands which determine the amount of stress experienced by

![Figure 5.5](image-url)
the individual or family. Cognitive and behavioral coping to the perceived demands in order to restore stability leads to adaptation. The stress coping model conceives of companion animals as a source of social support in which petting the animal, and the acceptance by the animal, helps in coping with stress. These various theoretical frameworks discussed above can be used to develop new hypotheses, and offer some possible explanations for observed behaviors.

The psychosocial and normalizing effects described here are not indications to prescribe companion animals to individuals who are lonely or depressed in an across-the-board fashion. Contact with a particular animal can lead to positive or negative effects, varying with the person and the context. The effects depend on the person’s previous experience with animals, the person’s current health and responsibilities, and the species and breeds of animals. At the outset, it is useful to consider the suitability of species and the specific challenges and problems that can arise in a particular context (Sachs-Ericsson et al., 2002; Schuppli and Fraser, 2000). As an example, many hospice patients who would be keen to keep a companion animal are too frail to provide care, especially for a dog, or they live in a residence where pets are not allowed (Phear, 1996). Some of the nursing home residents in a facility simply do not want assistance animals around (Banks and Banks, 2003). An important consideration is that in middle and older age, people tend to be drawn to the species and even breed they had enjoyed previously (Kidd and Kidd, 1989). However, medical, economic, and housing situations may limit the practicality of acquiring the most favored species and breed. A woman who has always kept a German shepherd is likely to retain that strong preference, even in her eighties when she weighs less than the dog. Offering her a bird or a cat, although safer, may not be helpful.

Paradoxically, old age is the period when people are most strongly and deeply attached to their animals, yet this also is the age where the fewest people keep animals. Those likely to gain the greatest benefit from companion animal ownership are the least likely to have companionship with animals (Poresky and Daniels, 1998). One often cited reason why people who could benefit from a pet do not have one is a concern about what will happen to the beloved pet when the elderly caregiver dies. Some veterinary schools have offered a long care guarantee for a pet of a deceased elder, but the costs would be prohibitive for many. On the negative side of companion or assistance animals, one focus group of elderly described both emotional and pragmatic reasons for no longer keeping pets (Chur-Hansen et al., 2008). Convenience, negative opinions about companion animals, and competing demands on time or energy were among the pragmatic reasons. Emotional reasons included not needing additional social support, not wanting another “child,” and not wanting either the pet or themselves to go through a grieving process.

A message that comes across repeatedly is that the psychosocial benefits of companion animals are more likely when the person is strongly attached to the animal (Garry et al., 1989). People who were relatively compatible with their pets reported better mental health overall and fewer physical symptoms. The fit between the animal and the owner on physical, behavioral, and psychological dimensions is key to enjoying the benefits (Budge et al., 1998).
Harking back to the preferred species, optimal attachment and compatibility are more likely when the animal is of the person’s preferred species and breed. In a study addressing this issue, dogs were more salient for participants than cats in maintaining morale in the family (Albert and Anderson, 1997). Yet, cats may elicit attachment as strongly as dogs (Zasloff and Kidd, 1994a). These studies indicate that psychosocial benefits of pets relate to the companionship they offer, not usually to the instrumental or physical assistance they provide.

While most uses of animal assistance are directed toward psychosocially vulnerable people with little prospect of full recovery, all people are likely to experience periods in their lives of heightened vulnerability due to severe illness or disability or suffering through the illness or death of family members. Anyone living long enough sustains some adverse consequences of aging. These experiences can create a precarious vulnerable state, particularly if the person lacks a strong network of social support. Whether a precipitating problem represents an onset of an entrenched or a temporary period of vulnerability, companion animals can buffer and normalize a stressful circumstance, offering engaging and accepting interactions without reflecting back the discomfort, concern, and agitation of the difficult situation. An animal communicates a message such as “It’s not as bad as it seems; everything is fine” and thus helps put people more at ease in coping with the situation. For friends visiting someone with a disability, an animal offers a pleasant focus of attention that is apart from the difficult medical circumstance. Elderly people with companion animals, especially dogs, differ from others in not increasing their medical visits during times of life stress events (Siegel, 1993).

The nurturing of a small child and/or an animal is an important part of human development. For children in large families, the older ones experience nurturing as they care for younger siblings. The youngest siblings, or children who have no siblings, can gain the benefits of nurturing by giving the attention and time spent with their animals (Melson, 1988).

Much has been said in this chapter about patients with Alzheimer’s disease. For those still living at home with family caregivers, regular contact with companion animals can normalize the home social environment, reducing aggressive outbursts and episodes of anxiety (Fritz et al., 1995). The time when the patient has to be placed in an institutional facility may even be delayed. The model for these effects is that animals play a role as a stress buffer that softens the impact of stressful events.

Among people with a service dog maintained primarily for utilitarian purposes such as to pull a wheelchair or provide visual guidance for someone who is blind, there is clearly a value of the dogs’ psychosocial contributions above the instrumental assistance. A service dog can even normalize and calm social interactions at home and work (P. Knott, personal communication).

The same concept of psychosocial contributions holds for police canines. Officer companions of police dogs generally value the dog’s psychosocial contributions to interacting with the public over and above the instrumental assistance (Hart et al., 2000).

Therapeutic horseback riding is another area inviting a reference to specific mechanisms by which the therapeutic effects are brought about. A meta-analysis of 11 studies on gross motor function in children with cerebral palsy showed that
horseback riding induces normalized pelvic movement, resembling normal ambulation, improvement in joint stability, improved weight shift management, and better dynamic postural stabilization (Sterba, 2007). Other work, not surprisingly, shows that riding horses is more effective than riding a barrel (Benda et al., 2003) or sitting astride a rocker board or other inanimate sitting device (Lechner et al., 2007). At the other extreme, vaulting, a type of structured dancing or gymnastics on a horse, is an ideal modality for offering group psychotherapy to some women (Vidrine et al., 2002). As an aside there is evidence of improvements in insulin sensitivity in elder diabetic patients following 12 weeks of exercise using horseback riding therapeutic equipment (Kubota et al., 2006).

Finally, under the topic of equine-assisted psychotherapy used for children who have suffered violence, it appears that this is particularly effective in normalizing the behavior of the young children involved (Figure 5.6; Schultz et al., 2007). Selby (2009) has provided a general review of equine-assisted psychotherapy.

5.5 For the health professions: leadership in implementing animals as treatment or social support

The above sections document the role that companion animals play in people’s quality of life, be it in the life of a so-called normal person or in the life of a psychosocially vulnerable person. While the contributions of animals can enhance anyone’s life, they can be crucial for persons whose network of social support is limited or absent. Research literature on human social support documents the essential role of relationships for avoiding early mortality and morbidity; undoubtedly

![Children's Global Assessment of Functioning with Equine-Assisted Psychotherapy](image)

**Figure 5.6** Equine-assisted psychotherapy for victims of family violence resulted in increased scores for children on the Global Assessment of Functioning scale. The positive effect was most marked among the youngest children, under 8 years of age (from Schultz et al., 2007). The global scale measures psychological, social, and school functioning for children aged 6–17 years of age.
relationships with animals offer social support and are efficacious for some people. By offering meaningful love and comfort, animals provide support that can, for some, be health sustaining when human companionship is lacking.

Emphasized above is that to play a major positive role in people’s lives, the animal needs to be well suited to the person’s living situation; the person should be able to manage care for the animal, and to do so in a way in which behavior problems in the animal can be avoided. Health professionals have an opportunity to provide leadership both by assisting in individualized pet placements with follow-ups to increase the rate of success and anticipating problems before they become serious.

A new area that is overdue for the benefits of companion animals is that of precarious individuals still living within their homes; health professionals can play an important role to address this gap. As an example, the organization Pets Are Wonderful Support in San Francisco (PAWS, 2010) has a long track record of recruiting and managing volunteers who provide whatever instrumental assistance is required in supporting people with the auto-immune disorder syndrome (AIDS) and other disabling diseases, compromising their ability to keep their animals. Changing litter boxes, delivering pet food, taking animals to the veterinarian, and walking dogs are a few of the tasks regularly fulfilled by the PAWS volunteers. PAWS can serve as a model for delivering assistance to the elderly, or people with disabilities, who cannot perform all the tasks required in keeping a companion animal.

Leadership from the health professional community is also needed to develop creative solutions for offering more flexible means of providing people continued contact with animals in later life, but without burdensome responsibilities. A wide range of types of exposure with varying levels of caregiver responsibility are available. Working with very disturbed young children in long-term residential care, Green Chimneys (2010) employs many methods for children building relationships with animals and can serve as a model for community efforts to serve both the elderly and people with disabilities. Some city council programs, such as those that oversee senior citizen centers, often include representatives from the human and animal health professions. They would be well positioned to begin tackling these challenges of the elderly living at home who could profit psychosocially from the companionship of the appropriate animal.

Precautions are in order with regard to assuring professional oversight and guidance in selecting and placing dogs in new settings. A case in point is the new use of specially trained dogs to calm abused children during forensic or child-abuse interviews and in court hearings. Rather than inviting volunteers to participate in this complex legal situation, this role requires that the animal use be conducted with legal, mental health, and animal behavior professionals providing vigilance in assuring that essential requirements for confidentiality and well-trained dogs for this task are employed (Courthouse Dogs, 2010).

With so many documented contributions from animals to the quality of life for both the psychosocially vulnerable as well as the rest of us, the primary challenge now is the translational phase, to apply the knowledge we have about human/animal interactions, to practical programs that enhance health-giving aspects of relationships.
with animals. Continuing education and formal education on human/animal interactions for health professionals are not as yet generally available.

However, this situation is being addressed by the new organization, International Society for Animal-Assisted Therapy (ISAAT, 2010), which has outlined an essential list of curricular topics and course of study. Educational institutions that recruit an appropriate group of faculty and lay out the details of a full curriculum for animal-assisted interventions can apply to ISAAT for certification in offering a two-year course for preparing individuals already in the health, legal, or veterinary profession for involvement in this area. Institutes that already have been accredited are: Institute for Social Learning with Animals, Germany; I.E.T., Institute for Applied Ethology and Animal Psychology, Switzerland; and the Magid Institute of the Hebrew University of Jerusalem, Israel.

This new development will spearhead the creation and availability of curricular resources and enhance the number of people prepared to provide leadership in the area of human/animal interaction, bringing research into practice. Undoubtedly, new institutes will be developed in the near future in the USA and Japan. A structured curriculum and accreditation process will accelerate filling the gap between research findings and practical application and provide useful guidelines to assist health professionals who seek to make informed, evidence-based decisions when assisting patients regarding interactions with companion animals.

References


