

When dogs are man's best friend — the health benefits of companion animals in the modern society

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ABSTRACT

Modern Australian society, like many Western societies, has evolved into a highly urbanised, somewhat hectic community where animal contact for its members is becoming limited. Research in the last few decades has indicated that association with companion animals can have far reaching benefits on the health of the owners of pets. The effects include those of a physical nature, such as increased exercise for dog owners, and a psychosocial nature, particularly for child development, depression and loneliness. People with minimal human social support appear to benefit the most and may include children, the elderly, socially isolated, chronically ill and handicapped. Recognition of the benefits of pet ownership by government bodies and health services could facilitate the continuance of responsible pet ownership in our society and help maintain our contact with nature.

INTRODUCTION

The study of Human Animal Interactions has evolved over the last few decades to investigate the role of companion animals in the health of humans. With an increasingly hectic lifestyle and the evolution of a society that places much less importance on the human-animal bond, some health professionals have come to realise that we are losing part of our animal centred heritage and culture. For these reasons some have come to discover the ways in which animals are an important part of our lives and health.

WHY DO WE KEEP PETS?

When owners are asked why they keep pets, a typical response is companionship. In most cases people are unable to explain this reason further (Endenburg, Hart and Bouw, 1994), but several aspects of our relationships with animals suggest that the motivation to keep pets is complex and unique.

Pet ownership is an ancient activity as was discovered by the recovery of a 12000-year-old Palaeolithic tomb in Northern Israel containing the remains of a human and a dog buried together. The dead person's hand had been arranged so that it rested on the dog's shoulder as if to emphasise a bond that had existed between the two individuals during life (Davis and Valla, 1978). This is very interesting as the domestication of animals for food and transport needs occurred well after this burial (Robinson, 1995), indicating that animals were first domesticated for 'companionship' means.

Apart from being an ancient phenomenon pet keeping is also not restricted to the more affluent Western societies, but is widespread in other cultures (Robinson, 1995). The type of pet may vary between cultures, but the motive to keep them still remains. In Western cultures, dogs and cats are favoured as pets and this is thought to have developed because these animals share more similar 'social organisation' and communication systems with humans than other animals. This is the reason wolves were the first animals to be selected for domestication. Dogs and cats are also unique amongst the domesticated animals because they do not have to be tethered or caged to encourage them to stay with humans.

Archer (1997) considers that there is a strong motivation to keep pets because pets manipulate human responses that have evolved to facilitate human relationships; usually those between parent and child. The human owner is able to derive continuing satisfaction for interacting with the pet and in some cases this is greater than derived from relationships with other people.

Companion animals are able to infiltrate people's lives to such an extent that the grief experience associated with the death of a companion animal can be similar to that associated with the loss of a significant human (Gerwolls and Labott, 1994). Indeed, the fact that people are willing to live with inconvenient behaviours, such as chewing on furniture or biting people, also suggests that the level of attachment between humans and pets is very high (Voith, 1985).

The result of the strong motivation for people to live with pets is that in Australia approximately 60% of the 6.2 million households have one or more pets and over 83% of people have had a pet at some point during their lives (McHarg, Baldock, Headey and Robinson, 1995).

HEALTH IN AUSTRALIA

Health, according to the World Health Organisation, is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity (WHO, 1947). Governments are increasingly coming to accept that a complex mix of social, cultural and environmental factors is vital to the maintenance of health (Donovan, Nobbs, Searle, Stevenson, de Looper, Pearce and Smith, 1996). It is within this context that the medical care system works on a 'biopsychosocial model' in which all of these factors are considered.

The major causes of death in Australia have shifted away from infectious diseases to 'lifestyle' diseases such as diseases of the circulatory system and cancers. Today the leading causes of death in Australia include cancer, ischaemic heart disease (heart attacks), cerebrovascular diseases (stroke) and respiratory conditions (Donovan et al, 1996). Even more important is that most of these diseases are chronic in nature resulting in a major loss of health, function and vitality (Allen, 1997).

Although the death rates in Australia have declined over the past century and our life expectancy has increased dramatically, the reduction in mortality rates in the last 25 years has mostly been among the elderly. Medical care has lengthened life, but the quality of life in later years has not necessarily improved at the same rate. Medical, surgical or pharmacological therapies may reduce life quality by lengthy or multiple hospitalisations, intrusive or painful procedures, medication with adverse side effects and interventions that are unwanted (Wilson, 1994).

HOW DO PETS AFFECT OUR HEALTH?

Pets play many potential roles in the health of humans; particularly in improvement of the quality of life. With the increase in life expectancy and chronic diseases among our modern population the role of pets has become even more important. The impact companion animals have is greatest among vulnerable populations:

- children;
- elderly;
- socially isolated;
- chronically ill; and
- handicapped.

(Siegel, Angulo, Detels, Wesch and Mullen, 1999).

Pet ownership is a very individual, complex relationship and as such not all human animal interactions are beneficial. Downfalls of pet ownership include zoonotic infections, bites and injuries, allergies to certain animals and the psychological effects of the loss of a close pet. Careful management can prevent most of these and, arguably, the potential benefits of animal ownership far outweigh these.

The type of pet can be a very important determinant of the potential impact on health, but more important than type of pet is the strength of the affective bond between owner and companion animal. This is particularly so for the effects pets have on the psychosocial parameters of our health. Owners with stronger bonds to their pets benefit the most from having pets (Siegel et al, 1999).

Whether owners bond to their pets depends on many factors including the cultural background of the owner (Siegel, 1995), the quality of the past experience the owner has had with animals (Beck, Katcher and Aoki, cited in Endenburg and Baarda, 1995; Perrine and Osbourne, 1998) and the satisfaction of the owner with the behaviour of the animal (Serpell, 1996). Overall, companion animal bonding is reported to be higher for adults in smaller families, urban residents, divorced adults (Poresky and Daniels, 1998) and those who choose the pet themselves (Lane, McNicholas and Collis, 1998; Kogan and Viney, 1998). Attachment to animals is also not dependent upon owning a pet; even non-pet owners can show positive feelings towards animals (Van Houtte and Jarvis, 1995).

Overall the beneficial effects pets have on human health can be considered as those affecting the physical or biological parameters of health and those affecting the psychosocial aspects.

Physical or biological parameters of health

Most of the reports of health benefits of pet ownership relating to physical or biological parameters are associated with cardiovascular disease. Cardiovascular disease, including coronary heart disease (heart attacks) and strokes, accounted for 43.3% of deaths and 12% (\$3719 million) of the total direct health costs in Australia in 1994 (Donovan, Nobbs, Searle, Stervenson, de Looper, Pearce and Smith, 1996).

Cardiovascular Disease

The risk factors that increase the likelihood of a person developing cardiovascular disease (CVD) include:

- being overweight;
- elderly and male;
- having a lower socio-economic status;
- smoking cigarettes;
- poor diet; and
- lack of exercise.

(Dobson, 1999). Most of these risk factors are related to behaviour or lifestyle.

Anderson, Reid and Jennings (1992), during a study of 20-60 year old participants attending a free screening clinic in Melbourne, found that pet owners had significantly lower systolic blood pressure and plasma triglycerides than non-owners and in male pet owners, lower plasma cholesterol than non-owners. The difference in systolic blood pressure seen between male pet owners and non-owners was similar to those reported for non-pharmacological means of lowering blood pressure (e.g. salt and alcohol restriction). This research was unable to confirm pet ownership as a causal factor for the improved health of owners, but other studies have also indicated that interactions with pets can cause an acute lowering of blood pressure (Friedman and Thomas, 1995). The mechanism for lowering blood pressure, though, remains unknown, as does the long-term effect of pets on blood pressure.

While these studies indicate that pets may have some indirect or direct effects on reducing a range of CVD risk factors, the major way in which pets could have a direct effect is by increasing the amount of physical activity the owner undergoes. Exercise improves blood flow, especially to the coronary arteries, reduces blood pressure and aids in weight control (Dobson, 1999).

The recommended amount of physical activity, according to the US Surgeon General's report, is at least five 30 minute sessions of recreational walking per week (Dobson, 1999). Only a minority of dog owners spends enough time walking their dogs (Bauman, 1999), but dog owners are more likely to reach the recommended level than non-owners (McHarg et al, 1995; Corti, 1999, cited in Dobson, 1999). For vigorous exercise Anderson et al (1992) found that pet owners were significantly more likely to report taking vigorous exercise three or more times per week than non-owners. Other studies have found little difference in vigorous exercise among dog owners and non-dog owners (Mc Harg et al, 1995; Corti, 1999; Bauman 1999). Acquisition of a dog can change people's exercise behaviour as well. Serpell (1991), during a longitudinal study, found that people adopting dogs sharply increased their time walking.

The effects of pet ownership on elderly people's exercise levels also appear to be positive. Although less likely related to CVD, physical activity helps to maintain overall health and effective function in older people (Hart, 1995). Siegel's (1990) study of elderly people found that dog owners spent 1.4 hours per day outside with their dogs. During a 12 months study of non-institutionalised elderly people, Raina, Waltner-Toews, Bonnett, Woodward and Abernathy (1999) found that pet owners reported having higher levels of 'activities of daily living' than non-owners.

Older pet owners tended to stay or become active and, therefore, maintain their physical health. Another study among older pet owners found that, 84% of men and 75% of women often played with their pets (Stallones, Marx, Garrity and Johnson, 1988).

Pet ownership also appears to be associated with survivability after heart attacks. Malcolm (1994, cited in Dobson, 1999), found that people who did not own pets were about 30% more likely to have died within 6 years after a heart attack than those that owned pets. Friedman and Thomas (1995) found that patients who owned a pet or had high social support were significantly less likely to die within 1 year of the heart attack than those without human or pet support. These results occurred independently of other psychosocial factors and physiologic status and demonstrate a potential indirect benefit of pet ownership.

Psychosocial parameters of health

A growing body of research indicates that there is an association between pet ownership/attachment and psychosocial well-being, but the underlying mechanisms that mediate these effects remain unknown. In addition the majority of studies are not able to distinguish whether pet ownership is causing the changes in well-being or if there are other factors in common with companion animal ownership that are altering the results. In some cases the personality traits of owners that choose to own pets may be the protective factor rather than the acquisition of an animal per se. Despite this, researchers at the University of Warwick (cited in Lane et al, 1998) did not find a relationship between hardiness (a personality characteristic widely believed to help buffer against stress) and the desire to own a pet. Likewise no association between Type A (coronary prone) personality and a decreased likelihood of pet ownership has been demonstrated (McNicholas and Collis, cited in Lane et al, 1998). Perrine and Osbourne (1998) also did not find any differences in personality types (rated according to masculinity/femininity, independence, dominance and athleticism) between dog/cat owners and non owners.

The psychosocial benefits of pet ownership include facilitating normal child development, ameliorating loneliness and depression and providing social support and interaction.

Child development

Children perceive several beneficial effects of their relationships with their pets such as an increase in trust, community feeling, safety, self-confidence and self-enhancement (Byant, 1990). These types of feelings are especially important for children who, in their development into adulthood, must master tasks concerning cognitive, social and emotional development (Endenburg and Baarda, 1995). The most turbulent of times occurs during early adolescence when the biological, cognitive and social changes are happening at the fastest rate.

Pets may play special roles in the social-emotional development in children, particularly in their development of self-esteem, autonomy and the development of empathy for others.

Children are likely to feel competent and develop self-esteem when they accomplish tasks appropriate to their age. Taking care of a pet in a responsible way is thought to facilitate self-esteem development in younger children. In a 9-month study of the effects of keeping pets in a school classroom, Bergersen (1989) found that the children's self-esteem scores increased significantly during the study.

A study investigating self-esteem in early adolescents revealed that participants ranked a pet below parents but above other social referents on a list of things that made them feel good or satisfied with themselves (Juhasz, 1985). Other researchers have found higher self-esteem levels among pet-owning preadolescents than non-owners (Covert, Whiren, Keith and Nelson, 1985; Van Houtte and Jarvis, 1995).

Van Houtte and Jarvis (1995) found that pet-owning preadolescents were more able to see their parents in different roles than were the non-pet owning individuals and were therefore more autonomous. Pet owning was suggested as being positively related to a preadolescent's developing autonomy.

The compassion that children feel towards pets may be related to empathy to humans (Poresky and Hendrix, 1990) and other animals. Studies have found that younger children with close relationships with their pets tend to have higher scores on empathy measures (Poresky, 1996; Melson, 1991). Others have found that early childhood experiences with pets contribute to their positive attitudes and concern toward wildlife (Paul and Serpell, 1993; Kidd and Kidd, 1997). Ottney Cain (1985) suggested that pets might be important for teaching children responsibility and a respect for life. Pets may be perceived as empathic and attentive listeners

The positive empathic effects of pets are not only limited to normal children undergoing childhood development, but also to disturbed children who have become trapped in a cycle of antisocial and violent behaviour (Katcher, A.H. cited in Rowan and Beck, 1994).

Adolescents generally consider pets to be very important to them (Siegal, 1995), indicating that pets have the potential to act as supportive resources to other social bonds, particularly during times of stress. More than 70% of adolescents confide in their pets and, in some cases, pet-owner relationships can be a substitute for other social relationships (Robin and ten Bensel, 1985).

Depression, loneliness and social support

Up to 25% of people who attend general practitioners do so for depressive and anxiety disorders (Sartorius, Ustun, Lecrubier and Wittchen, 1996). Depression is considered much more disabling, both socially and in terms of physical functioning, than many chronic physical illnesses such as diabetes, arthritis and back pain (Ormel, Van Korff and Ustun, 1994). Although the causes of depression are multifactorial, loneliness is often associated with depression. Loneliness is also associated with low self-esteem and self-destructive behaviours such as alcoholism and in the extreme state, suicide (Zasloff and Kidd, 1994). According to Allen (1997), continuing "disintegration of family structure and increasing loneliness and isolation are among the greatest perils in the maintenance of health today".

The effects of pet ownership on reducing loneliness and depression are most marked for people with inadequate human social support (Garrity et al, 1989). In a study of the relationship between pet ownership and loneliness among single women, Zasloff and Kidd (1994) found that women living entirely on their own demonstrated higher loneliness scores than those living with pets. Pet ownership was also most influential in reducing AIDS-associated depression among persons with low levels of confidant support (Siegel, 1999). McCulloch (1981) found that pet's affection enabled pet owners with medical illness and depression to cope with the loneliness and isolation they were facing. For the elderly population living in their own homes pet ownership appears to have a significant effect on both loneliness and depression (Roberts, 1996, cited in Crowley-Robinson and Blackshaw, 1998). Karsh, Moffatt and Burket (1988, cited in Zasloff and Kidd, 1994) likewise reported greater life satisfaction and less loneliness and depression among persons over 60 years of age, one year after adopting a cat than did non-cat owners. More recently, though, Crowley-Robinson and Blackshaw (1998) found that owning a pet does not significantly increase the perceived level of happiness or significantly decrease the level of depression experienced. In this case the degree of attachment owners had to their pets was not assessed; only ownership. Ory and Goldberg (1983) found that higher levels of attachment to a pet was associated with increased happiness in older women rather than ownership *per se*.

The way in which companion animals ameliorate the effects of loneliness and depression is most likely related to their ability to act as a 'social support'. Perceived support is the measure most strongly associated with mental health outcomes (George, Blazer, Hughes and Fowler, 1989) and person-pet relationships do seem to have similar effects to human-human relationships with respect to support (Lane et al, 1998). In fact the social support given by pets may have some advantages compared to that given by humans, by making people feel unconditionally accepted without judgement or criticism (Endenburg and Baarda, 1995). A pet can act as a social buffer for people with little human social support (Garrity et al, 1989), especially during times of stress (Siegel, 1990; Raina et al, 1999) such as the loss of companionship (Siegel, 1990) or when they face a chronic or terminal illness (Siegel et al, 1999).

Social facilitation

Although companion animals can act as social support people still need human companionship and an animal companion can greatly facilitate social interactions. Being accompanied by a dog can increase the number and quality of greetings and transitory social contacts received (McNicholas et al, 1993). People in wheelchairs are also more frequently smiled at, spoken to and acknowledged when with their dogs (Mader et al, 1999). Assistance dogs serve to shift the focus of attention away from the recipient's disability toward their competence in handling a highly trained dog (Lane et al, 1998).

Dogs and other pets can also improve people's social interaction when used in visiting programs for elderly people (Francis, Turner and Johnson, 1985) and patients with Alzheimer's disease (Beyersdorfer and Birkenhauer, 1990).

WHAT IS THE FUTURE OF COMPANION ANIMALS IN PUBLIC HEALTH?

In 1990 Siegel reported that pet owners make fewer doctor visits than non-owners do and that, during stressful life events, non-owners visit their doctors more frequently. These results were based on a prospective 1-year study of 938 elderly members of a health maintenance organisation in the U.S. Similarly, Headey (1999), after analysis of the results of an Australian national survey into pet ownership, reported that dog and cat owners make fewer annual doctor visits and are less likely to be on medication for heart problems and sleeping difficulties than non-owners. The benefit, in terms of estimated savings to the health system, was about \$988 million when the survey results were linked to health expenditure. These reports heralded some important findings.

By contrast, however, Jorm, Jacomb, Christensen, Henderson, Korten and Rodgers (1997) found that health service usage by elderly people (average age 79.9) did not vary between pet owners and non-owners when retrospective analysis of medicare records was undertaken. This may indicate that the health benefits of pets does not extend to all members of the community.

Despite what appear to be very promising results, further research into the area of companion animals and human health is needed. In 1998 a symposium to discuss public health research into animals and community health was convened by the Human-Animal Interaction Group in association with the National Centre for Health Promotion at the University of Sydney. Through a focused and central approach it is hoped that more convincing research can be attempted to clarify the role of pets in human health. In doing so, it may be easier to convince government bodies to provide services that do not deter pet ownership.

In the meantime, the research conducted so far clearly indicates that companion animals do have some positive effects on our lifestyles and preserving the bond between people and their pets is in the best interest of public health (Beck and Meyers, 1996). The ways in which we can preserve this bond is through development of pet friendly legislation and actions. Examples include; providing more access to public areas for dog exercise, changing policies regarding pet ownership for residents of hospices, aged care facilities and institutions and developing programs, such as Petlinks, that facilitate pet care for the disadvantaged. In an increasingly crowded urban environment communities have to become more imaginative to find ways to maintain our link with animals. Likewise in the present medical environment, with increased elderly and chronic disease patients, acknowledgement by the medical community of the potential benefits of pets in psychosocial settings is also important if we are to sustain a good quality of life. Pets can play an important and vital adjunct to traditional medical practices in Australia if given the opportunity to do so.

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