

The value of pets for human health

Deborah Wells has a menagerie of surprising and controversial research on animal antics

A wide range of potions, pills and other therapies are prescribed every day in a bid to remedy the vast array of physical and mental disorders afflicting the British public. Many of these treatments come with a range of unpleasant, not to mention, costly, side-effects. But could the solution be simpler than this? Might our pets, for example, offer a slightly less bitter pill to swallow? This article explores the evidence for animals being able to promote human well-being, and examines whether or not they have a role to play in modern health care.

questions

Should AAT schemes be introduced to prisons in the UK?

Could AAT be detrimental to animal welfare?

What are the drawbacks of using animals as 'therapists'?

resources

Society for Companion Animal Studies: www.scas.org.uk
 Pets As Therapy: www.petsastherapy.org
 Animal Behaviour Centre: tinyurl.com/3xsdtpp
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The notion that 'pets are good for us' is by no means a new one. As early as the 18th century William Tuke, a Quaker philanthropist who ran an asylum for people with severe mental disorders, indicated that his patients gained health benefits from being around animals. The courtyards of the asylum were thus stocked with an array of rabbits, seagulls, hawks and poultry in the hope of encouraging 'benevolent feelings', greater responsibility and self-control. Animals became increasingly common features of English mental asylums throughout the 19th century. Indeed, it was recommended by the British Charity Commissioners that sheep, hares, monkeys and other domestic animals should be added to these institutions in a bid to create a less hostile, and more attractive, environment. The value of animals for physical health was also noted in these earlier years, with Florence Nightingale, in her *Notes on Nursing* (1880), indicating that people confined to the same room because of medical problems gained pleasure from the presence of a bird.

These early observations have been followed in more recent years by experimental work designed to explore the effect of animals on human health and well-being (see Wells, 2009). Much of this research has explored the influence of animals on physical health in humans. Although not without its criticisms, this work has yielded largely positive results. For example, in one of the most widely cited studies in this area, Friedmann and colleagues (1980) found that dog owners

were 8.6 times more likely to still be alive one year after a heart attack than non-dog owners. Cat owners, by contrast, were actually more likely to have died one year on from a coronary than their non-cat-owning counterparts. More recently, Anderson and associates (1992) found that pet owners were at a significantly lower risk of developing coronary heart disease than non-owners, while Serpell (1991) found that the acquisition of a dog or cat was associated with a significant reduction in the frequency of minor physical ailments (e.g. coughs, dizziness, hayfever) one month on from obtaining the animal.

Some authors have examined the short-term physical health benefits of animals, exploring, for instance, whether being in the presence of, or looking directly at, an animal can buffer people from potentially stressful situations. In one



Ownership of a pet dog or cat can ameliorate the

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of the earliest studies of this kind, Katcher and colleagues (1983) reported lower blood pressure responses to the stressor of reading aloud when participants were allowed to watch fish swimming in a tank, than whenever the same people were exposed to an aquarium devoid of animals or stared at a blank wall. In various studies the presence of a dog in an experimental room has been shown to result in transient decreases in heart rate and/or blood pressure responses to stressors, including reading aloud (Friedmann et al., 1983), mental arithmetic (Allen et al., 1991) and a cold pressor test (Allen et al., 2002). Although the results of these studies are hard to generalise beyond the experimental setting, they nonetheless shed useful light on some of the mechanisms by which animals might be able to improve our long-term health.

While most authors have concentrated on the health merits of 'live' animals, recent work has shown that videotapes of animals may serve as a potential alternative in stressful situations. DeSchraver and Riddick (1990), for example, reported decreases in the physiological stress responses of elderly people exposed to a videotape of fish swimming in an aquarium. More recently, Wells (2005) found that moving images of fish, birds and monkeys buffered participants from the stressor of reading aloud significantly more than exposure to video recordings of people or blank television screens. It was concluded that this mode of presentation may offer advantages where the use of live animals is not feasible or desirable.

Companion animals may not only be able to facilitate certain aspects of physical health in humans, they may also

contribute towards the long-term psychological well-being of people. Research has shown that ownership of a pet dog or cat can ameliorate the effects of potentially stressful life-events (e.g. bereavement, divorce), reduce levels of anxiety, loneliness and depression (Folse et al., 1994; Garrity et al., 1989) and enhance feelings of autonomy, competence and self-esteem (Beck & Katcher 1984; Kidd & Kidd, 1985; Levinson, 1972; Robin & ten Bense, 1985).

Animal-assisted therapy

Recognition of the fact that animals, and in particular dogs, may be able to bolster our psychological well-being has resulted in their wide-spread use in therapeutic settings. Interest in this area started in the

1960s, when Boris Levinson, a child psychologist, noted that his patients developed a rapport with his dog, and were more inclined to respond positively to therapy in its presence. Levinson (1962) surmised that the animal served as a social 'catalyst', opening up a channel for the discussion of subconscious worries and fears. Levinson's early theories have since been supported by a wealth of scientific studies exploring the role of 'animal-assisted therapy' (AAT) in hospitals, nursing homes and other settings. Schemes vary considerably according to the type of animal employed (see later), the mode of treatment delivery and the population of interest under scrutiny, but most share as their goal an attempt to improve the physical, mental, social and/or cognitive functioning of a patient.

Many AAT schemes have been targeted at people residing in nursing homes, hospitals or other healthcare facilities, and studies exploring their efficacy have yielded promising results. For example, Kawamura and colleagues (2007) found that elderly people in a residential nursing home showed significant improvements in their mental functioning over a one year period of twice-monthly visits from assistance dogs. Richeson (2003) similarly found significant decreases in agitated behaviours amongst older adults with dementia following AAT intervention for three weeks. Around the same time, Nathans-Barel and associates (2005) discovered a significant improvement in hedonic tone, the use of leisure time and a trend towards enhanced motivation in 10 chronic schizophrenia patients exposed to 10 weekly interactive sessions of AAT. Together, these studies show a vast range of physical and psychological benefits arising from animal-assisted intervention schemes. Indeed, a recent meta-analysis of AAT concluded that the intervention has a moderate effect on improving a range of outcomes, including behavioural problems, medical difficulties and emotional dysfunction (Nimer & Lundahl, 2007).

Although AAT might be particularly



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effects of potentially stressful life-events

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advantageous for people with recognised physical or mental disorders, its utility as a therapeutic tool for people residing in prisons and other types of correctional facility has started to attract attention. Like those living in other institutional settings, prison inmates can suffer from a wide variety of psychological disturbances, whether it be loneliness, denied responsibility or low self-worth. Animal-based therapy schemes have therefore been introduced to penal institutions in the United States, in a bid both to enhance psychological well-being and to rehabilitate previous offenders. While schemes differ slightly between sites, most of them require participants to look after the animal in their care, and in many cases train it for a specific purpose (e.g. as an assistance dog). In most circumstances animals are acquired from rescue shelters, where they may be facing prolonged stays, or euthanasia.

Research exploring the efficacy of animals employed in this context is relatively limited, though promising in its results. Studies of the Oregon-based scheme Project POOCH, for example, have shown that incarcerated male juveniles display a greater degree of honesty, empathy, nurturance and social growth following the introduction of abandoned and abused dogs (Merriam-Arduini, 2000). Women in a correctional centre have also been shown to demonstrate increased self-esteem following participation in an in-house dog training programme (Bustad, 1990). Although the long-term impact of such schemes is unknown, greater levels of respect for authority have been recorded; one step, closer, it could be argued, to rehabilitation and successful reintegration into society.

The UK has been much slower than the US in using AAT in prisons, although the positive results arising from the research in this area suggests that it may



only be a matter of time before similar schemes are introduced to British penal institutions.

How do animals enhance human health?

The evidence in support of animals promoting human well-being, whilst not entirely conclusive, is fairly convincing. One big question still remains, however; namely, how do they do this? A number of mechanisms may be at play (for review, see Wells, 2009). For example, some benefits may arise from the mere provision of companionship. It appears that the presence of another living being can help to reduce loneliness and feelings of isolation (e.g. Headey, 1998; Jessen et al., 1996). Pets may thus be particularly advantageous for people living alone (Zasloff & Kidd, 1994). The 'needy' behaviours exhibited by pets, in particular dogs and cats, may also help to enhance the well-being of their owners. Their greeting rituals, naturally affectionate disposition, loyalty and widely perceived ability to 'love' unconditionally may all

serve to promote feelings of self-worth and self-esteem.

Mental health may also be facilitated by pets through the facilitation of social contacts with other people. Several studies have shown that walking with a dog results in a significantly higher number of chance conversations with complete strangers than walking alone (e.g. McNicholas & Collis, 2000). Younger dogs, with their large foreheads, big eyes, short limbs and clumsy movements (all good examples of 'supernormal' stimuli), and those with a reputed 'good' temperament (e.g. Labrador retrievers) tend to act as stronger social lubricants than older animals or those that have received more negative public attention, such as Rottweilers (Wells, 2004). The socialising role of dogs is perhaps most apparent for people with disabilities. Studies have repeatedly shown that the presence of a service dog encourages more approaches and positive acknowledgements from both friends and strangers (for review, see Hart, 2006). In this context, the dog has the ability to serve a normalising role, enhancing the

alleviation of depression, loneliness, and low morale or older adults in skilled rehabilitation units.

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PETS AS THERAPY

self-esteem and confidence of people who might otherwise feel overlooked or alienated.

Although dogs probably have the greatest potential to serve as social facilitators, in light of the fact they are taken out for walks, other species can also encourage interactions between people. As early as 1975, Mugford and M'Comisky provided two groups of elderly people with either a begonia or a budgerigar to look after.

Three years later, it was discovered that the people required to care for the bird had more friends, visitors and links with their community than those provided with a plant. While not statistically significant, the researchers also

discovered fewer deaths among the budgie owners. More recently, Hunt et al. (1992) found that a woman sitting in a park received significantly more social approaches from passers-by whenever she was accompanied by a rabbit or turtle, than when she sat alone with a television set or blowing bubbles.

As touched upon briefly earlier, it is also possible that animals may promote our health by serving as 'stress busters'. The action of stroking an animal, particularly a familiar one, has repeatedly been shown to result in transient decreases in blood pressure and/or heart rate (e.g. Katcher, 1981; Shiloh et al., 2003; Wilson, 1991). The mere presence of a companion animal can also offer short-term health benefits, helping to lower autonomic responses to conditions of moderate stress (see earlier). Allen and others (2002), for example, recently reported that the presence of a pet dog or cat resulted in lower heart rate and blood pressure responses relative to the presence of a friend or spouse, in people exposed to the psychological stressor of mental arithmetic, and the physical stressor of a cold pressor test. It must be assumed that

the animal in this context serves as a buffer or distraction to the stressful situation.

Health advantages, particularly long-term ones, may be also gained from pets indirectly, perhaps through the increase in exercise that typically accompanies the ownership of an animal (Bauman et al., 2001; Brown & Rhodes, 2006; Serpell, 1991). This mode of action would certainly explain why dogs, which need to be taken out for regular walks, seem to be more advantageous for our health than companion animals such as cats that lead more owner-independent lifestyles (e.g. Rajeck, 1997; Serpell, 1991).

The mechanisms underlying the ability of companion animals to improve human health are complex and further research is needed before firm conclusions can be drawn. The possibility that there is a non-causal association (i.e. no correlation) between animals and human health must also be acknowledged. It is possible, for instance, that people who choose to keep a pet also possess personality traits more likely to dispose them to enhanced health and well-being (McNicholas & Collis, 1998).

Dogs, cats and other beasts

It is often questioned what type of animal is best for our health. Although this might depend to some extent on who is asked (e.g. dog lover vs. cat lover), the domestic dog is certainly the most commonly used type of therapeutic animal (see Wells, 2007), and in this respect could be argued to offer the greatest health advantages. 'Man's best friend' is domesticated, easily house-trained, serves as a remarkably strong social catalyst and can be readily shaped to help people with a wide variety of disabilities, including hearing, visual and mobility impairments. This species is also likely to enhance human health through a number of different routes (e.g. stroking, the provision of companionship, social lubrication, exercise, etc.), perhaps increasing its chances of success.

More recently, studies have pointed to

the potential of dogs to help in the detection of certain types of underlying disease. Whilst not without its criticisms, research has shown that some dogs have an innate ability to detect cancer, oncoming seizures and even hypoglycaemia (see Wells et al., 2008). How they perform this feat is still unclear, although a variety of cues, including visual and olfactory signals, have been proposed. Using this knowledge, organisations such as Dogs4Diabetics (USA) and Support Dogs (UK) have started to train dogs to serve as an alert system for people with conditions such as epilepsy and diabetes. The animals are trained to monitor their owners for outwards signs of imminent seizures or hypoglycaemic episodes and exhibit 'alert' behaviour designed to attract attention, allowing the person to take appropriate action before the effects of the problem become disabling.

Cats have received less attention on the therapeutic front than their canine counterparts, and the research conducted using this species has not always produced positive results, or for that matter been without its methodological problems. For example, early work, although criticised for its failure to take other potential causal factors into account, found that cat owners were more likely to have died one year following a heart attack than non-cat owners; dogs owners, by contrast, were significantly more likely to have survived the attack (Friedmann & Thomas, 1995). Cat owners have also been found to be more likely to have to return to hospital with further heart-related problems or angina than non-pet owners (Rajeck, 1997), although the author's use of multiple statistical comparisons and failure to consider illness severity must be borne in mind here.

The news may not be as bad for cat owners as this early work suggests. Qureshi and colleagues (2008) found that cat owners have a 30 per cent lower risk of death from heart attack than individuals who do not own a cat. Whilst this result is not necessarily proof of a causal link, and again, other potential contributing factors

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(e.g. owner personality and lifestyle) were overlooked in the analysis, it does strengthen the case for a possible association between cat ownership and well-being, with stress reduction (perhaps through stroking, or simply being in the presence of the animal) most likely serving a key mediating role.

Dogs and cats, whilst the most common pets, are not the only ones that can offer health benefits. Horses, for example, have been employed since the 1960s to enhance the motor skills and sensory processing of adults and children with a wide variety of conditions, ranging from Down's syndrome to cerebral palsy. Equine-assisted therapy, or 'hippotherapy', as it is more widely known, is now relatively commonplace, particularly in Europe, although robust studies designed to assess its efficacy are few and far between, rendering it difficult to comment on its overall utility. Studies designed to explore the route by which such animals might enhance people's health are equally lacking, although it might be assumed that the increments in short-term mood enhancement that typically accompany pastimes like horseriding may be at play.

Dolphins have also attracted attention in relation to the health benefits they can bestow upon people. Dolphin-assisted therapy (DAT) began in the 1970s and has since expanded into an enormously lucrative industry, with organisations running the scheme around the globe. DAT allows people the opportunity to swim with dolphins (usually of the



Animals should not be overlooked as an alternative, or complementary, form of therapy

bottleneck variety) in captive or semi-captive conditions. The scheme is normally reserved for people with specific types of problem, including disturbed motor patterns, learning difficulties and autism.

Despite its now widespread occurrence, published research on the efficacy of DAT and the mechanism/s by which it exerts its effects, is surprisingly sparse, and results are fraught with controversy. Most of the studies published report positive benefits of DAT including, for example, improved attention span, language skills and motivation, and reduced short-term anxiety. Recent critical reviews of the literature, however, point to flawed methodologies in most, if not all, of the studies undertaken (e.g. Marino & Lilienfeld, 2007). This, coupled with reports of poor regulation over the DAT

industry, and potential welfare risks for both the people swimming with dolphins and the animals themselves, raises serious ethical questions over the future of this particular animal-assisted therapy scheme.

Conclusion

Whilst the evidence for a direct causal association between animals and human health is still not conclusive, the literature is largely supportive of the long-held belief that 'pets are good for us', contributing to both our physical and mental well-being. Unfortunately, not all of the research carried out in this area has been without criticism (for review, see Wells, 2009). The lack of longitudinal designs and standardised measures that assess diverse areas of physical and cognitive functioning makes it difficult to draw finite conclusions, and further work in this sphere is certainly needed. It must be pointed out that research exploring the relationship between pets and human health has not always produced positive results (e.g. Parslow et al., 2005; Pluijm et al., 2006). Moreover, animals have the potential to pose enormous threat to human health, spreading disease, inducing allergies, inflicting bites and triggering psychological trauma (e.g. Baxter, 1984; Baxter & Leck, 1984). Pets should certainly not be regarded as a perfect pill for treating ill health. Nonetheless, employed in the correct manner, and targeted at the appropriate user group, animals have the potential to contribute significantly to our well-being and quality of lives, and, as such, should not be overlooked as an alternative, or complementary, form of therapy in modern-day healthcare practices.



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