

Companion animals and human health: an overview

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SUMMARY

Domestic animals share our environment in a variety of ways. One of these ways is as companions in and around our homes. Although a wide variety of species are kept in households for this purpose, the great majority are dogs and cats. Sharing our environment with such animals has a profound effect on the health of the humans concerned. As keeping companion animals is a very widespread activity, about 50% of all households in the Western world have some sort of animal, the effects are far reaching.

INTRODUCTION

The natural history and great antiquity of keeping animals as companions have been reviewed comprehensively by Thomas¹; Serpell²; Bergler³ and Manning and Serpell⁴. Representations of most aspects of the phenomenon occur throughout the history of representational art⁵.

Human health is a difficult concept to define. It is more than just the presence or absence of disease. The well being of the person has to be considered in a way which can be called 'quality of life'. In such matters, the sum total of all the factors influencing the case need to be taken into account.

The health benefits of companion animals have been the subject of a number of reviews in recent years notably Anderson⁶; Burger⁷; Endenburg⁸; Edney^{9,10}; and Robinson¹¹. These and three key compilations of papers on the inter-relationships between man and companion animals are required reading for those wishing to have a good grounding in the subject¹²⁻¹⁴.

Of the negative aspects of companion animal ownership as it effects human health, there is an important distinction which needs to be made. This is to differentiate between serious health hazards such as communicable disease and injury, which need to be separated from aesthetic offence and nuisance. Although the latter are far less damaging in health terms, they can have a marked effect on the quality of human life.

A positive attitude has to be taken to maximize the benefits of companionship with the positive psychological and physiological changes, improved social development, better physical health and the use of assistance animals. With sustained efforts to minimize the negative aspects of communicable disease, aesthetic offence, bites, scratches as well as environmental pollution, a satisfactory balance can be

achieved to make a significant contribution towards a better quality of life for owners and all who come into contact with their animals.

PHYSIOLOGICAL AND PSYCHOLOGICAL EFFECTS

The best known physiological effect of companion animals is the lowering of blood pressure of people under moderate stress in the presence of friendly dogs¹⁵. This and the relaxing effects of watching ornamental fish¹⁶ have resulted in further work on pet animals as an anxiolytic¹⁷; for moderating stress in the elderly¹⁸; and as a relaxant for hyper-tensives¹⁹. Garrity and others²⁰ found that the level of attachment of psychiatric patients to their pet animals was inversely proportional to their depression measured on a standard symptomatic scale. Pioneer work by Mugford and M'Comisky²¹ identified the beneficial effects of budgerigars, compared with house plants on old people living alone.

Serpell²² quantified the extent of the increased amount of exercise taken by new dog owners compared with non-owners. A number of studies have shown improvements in activity after a dog-visiting programme was begun at a long-stay hospital²³; decreases in anti-social behaviour were recorded in emotionally disturbed youths in similar circumstances²⁴. Siegel¹⁸ found that pet owners amongst a group of medicare patients were much better able to cope with stressful life events than non-owners. More recently, Perelle and Granville²⁵ charted the positive effects on the residents in a nursing home after the introduction of cats, dogs and rabbits. This, and many other studies clearly demonstrate that there is a positive relationship between the presence of **suitable** pet animals and the sociability and health of fit, as well as elderly and mentally disturbed patients. It is equally clear that unsuitable animals introduced carelessly will have undesirable effects. The Society for Companion Animal Studies (SCAS) in the UK produced an

invaluable set of guide-lines for those planning to introduce pets safely into nursing homes and similar institutions²⁶.

SOCIAL DEVELOPMENT

Children who are brought up in the presence of animals show many benefits. Better non-verbal communication, popularity and social competence²⁷ as well as higher levels of self-esteem have been observed in children from pet owning families, compared with those which are not²⁸. More positive feelings about animals and lower levels of fear are seen in children brought up with pets. There is a clear educational role for such animals; they help children develop fantasy games and provide a safe outlet for confidences otherwise left unsaid. Life, reproduction, birth, many healthy activities and illnesses, accident, death and bereavement are often encountered for the first time by children when they live with pet animals. Children enjoy the same increased physical activity as adults when they live in close contact with animals, especially dogs. They enjoy the same benefits of non-judgemental, unwavering affection and unquestioning allegiance given to mature people. The soft, furry nature of the surface of most animals kept as companions, appeals to the basic requirement for comforting textures from which children benefit (the 'security blanket effect'). A child is also able to see and learn from a situation where an animal corrected in its behaviour but is still loved. Just as there are benefits, there are drawbacks. Children can be exposed to unsuitable animals and be at risk. They can form excessively dependent relationships which may prejudice those with other humans. Over-dependence can lead to serious mental trauma if the animal is lost to them.

Pioneering work with bottle-nosed dolphins in Florida has shown that therapy for autistic children with such animals is a reality²⁹. This work makes use of dolphin's extraordinary rapport with humans in the water. A supervised free-swimming programme with dolphins has brought benefits to a large number of handicapped children.

It has been shown that levels of early cruelty to animals is a reliable indicator of child abuse and other criminal activity later on in life³⁰⁻³². Many studies have explored the positive socializing effects of companion animals on children³³⁻³⁶. The author's conclusion from all this work was that 'it is not too fanciful to conceive that it might be possible to reduce the levels of crime and other antisocial behaviour in young people by encouraging nurturing traits by the careful introduction of companion animals'⁹.

A number of animal programmes (mainly with birds and ornamental fish, but also some dogs) have been carefully introduced into prisons and similar institutions. These have been shown to be effective in the rehabilitation of inmates³⁷. An all round reduction in violence and other antisocial

behaviour, including suicides and drug taking, resulted in improved relationships between prisoners and staff, easing the problems of supervision in a number of penal units³⁸.

ASSISTANCE ANIMALS

The work of guide dogs for blind people is well known. There are some 4000 working dogs in the UK at present³⁹. Most other Western countries have comparable numbers. Guide dogs for blind people are well integrated into our society and the charities which run them are well supported. For centuries animals have been used to help human work by making use of their hunting, herding, tracking, vermin control, guarding and draught capabilities. It is much more recent though, that the supportive role of animals has been recognised as a force for good for those less fortunate members of our society who are handicapped in some way.

In the late eighteenth century, a progressive Quaker by the name of Willian Tuke realized the humanizing effects of animals in the York Retreat in the North of England. This was what was later to become known as an asylum. The inmates were encouraged to learn self control by 'having dependent upon them, creatures weaker than themselves'². A number of other 'mental institutions' used similar strategies with animals in later years⁹. It was not until the 1960s, however, that the concept of Pet Facilitated Psychotherapy (PFP) was crystallized by Boris Levinson in the USA. Levinson, a child psychiatrist found that his patients only responded to him positively *after* they had developed a rapport with his dog which used to sit in his office during treatment sessions⁴⁰. The idea was developed in the USA by Corson and others⁴¹ who developed PFP and introduced animals (mainly dogs but some cats) into hospitals with patients who had severe psychological disturbances. These techniques are now fairly commonplace, at least in the USA⁴².

Less well known than guide dogs for the blind, are hearing dogs for the deaf, dogs for the disabled and other support dogs. Over 100 trained hearing dogs work in the UK at present. They are trained during a 16 week course with the deaf person in residence in conditions as near to their home environment as possible. Hearing dogs alert deaf people to what is going on around them and allow them to enjoy the safety, convenience and independence people with good hearing take for granted.

Dogs for disabled people are especially valuable for those patients who are confined to wheel chairs or are bed ridden. The trained dogs can pick up dropped objects, bring a portable telephone or any other object on command. They open doors, operate water taps, electric light switches and press lift buttons to order. They provide physical support and are even trained to stand still to act as a steady hold if a patient falls over. In addition to the physical benefits of dogs

for the disabled and other assistance dogs, if properly selected and trained, they can give great social support. Hart and others³³ observed that problems such as less eye contact, stifled social interactions and increased personal distance, were significantly reduced for wheelchair bound owners who had the support of a companion dog. Compared with patients without animals, those with dogs were smiled at more frequently, received more social greetings and acknowledgements and engaged in conversations to a much greater extent. Dogs were found to be a sound basis for social acceptance of seriously disabled children.

There are now many animals which visit long stay hospitals such as 'PAT' dogs (Pets as Therapy). These are specially selected and trained dogs which are taken on visits and allowed physical contact with long stay patients⁴³. There are now over 7000 PAT dogs in the UK (Scott 1993, personal communication). Although there are many benefits from resident animals in hospitals²⁵ and problems can be much less than anticipated⁴⁴ there are advantages in having visits from such animals. They do not take up much of the time of busy staff, there are no difficulties with feeding, cleaning or possession. The patients have something to look forward to, something to enjoy and to talk about afterwards which is not their own illness.

The use of horses and ponies to enrich the lives of disabled people, is equally impressive. Riding for the Disabled (RFD) is now well developed in Europe. It allows quite severely handicapped people the benefits of riding selected saddle horses under careful supervision. Even conditions such as spina bifida, cerebral palsy and Down's syndrome do not preclude a chance to engage in riding successfully, provided suitable mounts are used with very experienced support staff. As well as many physiological improvements in balance and coordination^{45,46} there are mental benefits. Such patients, usually confined to a wheelchair, can find they have a measure of control of their movements and enjoy looking down on, rather than up to their surrounding world.

Very recently, investigations have taken place on the ability of dogs to anticipate acute human illness. As a result, a profile of behaviour has been built up on dogs which can anticipate human seizures¹⁰. Work is now in progress to identify and reinforce the trait in dogs to help particular individuals with epilepsy. Also a number of cases have been documented where dogs have shown a response to human diabetics who were in the early stages of hypoglycaemia⁴⁷. The possibility of animals sensing other acute human conditions needs further investigation.

NUISANCE

It is easy for people to confuse nuisance with more damaging hazards. Nevertheless, some nuisances can be irritating in

the extreme and have very deleterious effects on the quality of human life. The aesthetic offence of faecal pollution is very much greater than the real risks to human health. At least, it is usually possible to avoid direct contact with most of the contamination. With noise pollution, there can often be no escape. Other people's music, rows, slamming car doors, car alarms, night time do-it-yourself activities and uncontrolled children can make life virtually intolerable for those who live nearby. Continuously barking dogs are in the same category of provocation. Most nuisances with animals, such as disturbance due to separation anxiety with dogs left alone at home, need not happen⁴⁸. Veterinarians can have a powerful influence on improving such human behaviour by way of initiating training and socialization programmes.

INJURY

A very real hazard of modern life is the possibility of physical injury resulting from encounters with animals. Everything from tripping over the cat to being savaged by a very aggressive dog are risks we all face. However, it is dog bites which worry us most. In fact few dogs will attack people unless provoked. One problem is recognizing what provokes dogs. When attacks do occur it is usually a result of territorial defence, fear or sexual aggression or in response to acts dogs see as aggressive.

In the majority of cases, some signal is given before there is actual violence. It is not surprising that a high proportion of dog bites are experienced by adolescent boys, for which the dog often pays with its life. What is frequently forgotten is that dogs have teeth *as their only means of defence*. Another common situation when bites occur is when the dog sees itself as pack leader in the household⁴⁹. All who are subservient to the leader are at risk from bites.

The real problem is often a failure to recognize that a person has invaded a dog's territory or that they have assumed an aggressive attitude. When this happens people often fail to recognize warning signals most dogs give before the escalation to biting. Every day it is possible to see careless human behaviour which could lead to injury. Our relative height means that we usually tower over our companion animals. This can be an advantage when establishing rank order. However, if it is combined with a direct stare it can add to the risks. The human habit of baring the teeth in a smile with direct eye contact in a close face to face position (as many do when trying to get a baby to smile at them) can be interpreted quite differently by companion animals. With attempts to pat the head or worse, grab at the muzzle, the animal's anxiety level is likely to increase. Unless that is, the animal has been trained to cope with such treatment. Again veterinary training and socialization programmes can prevent undesirable traits developing.

ZOONOSES

The subject of zoonotic disease has been reviewed in detail in many texts. The reader is directed especially to a publication of the British Small Animal Veterinary Association (BSAVA)⁵⁰.

Many people worry about 'things they can catch from their animals'. Whilst there are plenty of communicable diseases shared between species, most infectious diseases are reasonably species specific. It is much more likely that a small child will catch some infection from another small child than it will from its dog or cat. With everyday hygiene measures the risks which do exist can be reduced to a very low level. In the final analysis the guidelines of the World Health Organization⁵¹ sum up the sensible attitude:

Whilst irresponsible attitudes easily result in problems of surplus and straying animals, environmental pollution and an increased risk of zoonotic disease, companion animals which are properly cared for bring immense benefits to their owners and to society and are a danger to no one.

In addition to infectious disease and parasites, there are matters such as phobias and allergies. Phobias are the realm of the psychiatrist but allergies can be of practical importance to veterinarians. They are a long way from a simple dislike of certain species. Where there is a physical reaction it is usually a result of a sensitivity to hair or dander. It is possible to get round such difficulties by keeping dogs which do not shed their coat such as Poodles or Bedlington Terriers or Rex cats, if desensitization is not a practical proposition.

As the keeping of companion animals normally results in an attachment being formed, there can be serious mental effects when that bond is severed. Owners have to cope with such deprivations as the price they pay for the benefits of companionship with a relatively short-lived animal. In fact, what occurs when a pet animal dies is a form of bereavement. Veterinarians can help owners through the trauma of these events if they help them to understand what is happening and that grieving is a normal and helpful process. The subject is reviewed in an earlier paper⁵². The Society of Companion Animal Studies (SCAS) has a 'befriender' service to give a sympathetic ear to those recently suffering pet loss. The British Small Animal Veterinary Association (BSAVA) has a useful leaflet to help the recently bereaved cope with the loss of a companion animal.

INFLUENCE OF COMPANION ANIMALS ON HUMAN PHYSICAL HEALTH: RECENT WORK

In recent times there has been a surge in studies of the effects of animals on our health. The effects on cardiac activity have been explored in relation to survival after a coronary

episode. The work of Friedmann and others¹⁵ who found a more favourable survival rate after a heart attack in pet owners compared with non-owners, is well known. A report on subsequent work updated the situation 10 years later with similar conclusions⁵³. Hypertensives have shown to benefit from the relaxation given by a suitable companion dog¹⁹.

An extensive survey of risk factors in pet owners and non-owners in Melbourne, Australia showed significantly lower levels for plasma triglycerides, circulating cholesterol and systolic blood pressure⁵⁴. In the USA, Siegel¹⁸ explored the moderating role of pet ownership amongst the elderly confronted with stressful life events.

An extensive prospective study by Serpell²² looked at the behaviour changes and health of new owners from the time they took on their dogs and cats. The main conclusions from this work were that, not only did pet owners experience fewer minor health problems and took more exercise, they had significantly higher levels of self-esteem. These improvements were sustained over a 10 month period.

CONCLUSION

Close contact with companion animals is part of everyday life for a very large number of people in the Western world. The great majority choose to share their lives with dogs, cats and other species. The reward for such activities is a combination of companionship, support, protection and a focus of interest outside themselves. The negative factors which may be associated with these benefits are mostly nuisance and the risk of communicable disease, but with care and forethought, these can be minimized and the benefits enjoyed by all. The role of the veterinarian is clear in providing the guidance required to promote responsible pet ownership⁵⁵. It is certain that the full potential for the good of both people and pets has yet to be realized.

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