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Beneficial effects of pet animals in patients with cardiovascular diseases

Efectos beneficiosos de los animales de compañía para los pacientes con enfermedades cardiovasculares

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To the Editor:

Pet animals (those that have been domesticated for the purpose of providing companionship or enjoyment to the owner), have played a major role in the life of human beings through history because they exert a beneficial effect in the prevention and recovery of physical and mental health of people with whom they live or are related[1].

This letter aims at informing the potential benefits that living with these animals bring for the health of people with heart disease, so that it might be considered as an additional therapeutic option to offer in our health institutions.

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These effects can be divided into therapeutic, physiological, psychological and psychosocial.

Therapeutic Effects

Assisted emotional therapy involves the introduction of animals, in a permanent or regular way, in the environment of a person to establish an emotional bond with him/her[2]. Through this practice the rehabilitation of patients with heart disease has been encouraged and the survival rate of coronary disease has been increased[3].

Physical therapy involves animals to treat some aspects of human physical health, such as those related to the musculoskeletal system and the central nervous system. The best known is equine therapy, which has become a tool to increase physical abilities and allows increasing blood flow into the circulatory system, so that it benefits the physiological function of internal organs[4].

Physiological effects

They protect against cardiovascular diseases, as they reduce blood pressure (BP), heart and respiratory rates, anxiety and stress in children and adults alike. Stroking a pet releases endorphins, oxytocin, prolactin, dopamine and decreases plasma cortisol, which has a positive effect on mood and provides well-being sensation[5].

Friedmann *et al.*[6-9] conducted several researches in the '80s decade. In the most cited one[6] survival at 1 year of a group of patients discharged from the coronary care unit was assessed and a lower mortality rate in the group of patients who owned animals was found (5.7%) compared to those without them (8.2%). This effect was independent of disease severity and the presence of other sources of social support. In 1983 it was demonstrated that the presence of a dog contributed significantly to reduce systolic and diastolic blood pressures as well as heart rate in children between 9 and 16 years old[7]. In 1990 it was concluded that the presence of friendly and known dogs reduced physiological and psychological manifestations of moderate stress[8], and in 1995, in an article published in the American Journal of Cardiology[9], it was found that patients who had dogs as pets had lower mortality at 1 year (1/87, 1.1%) than those who had not (19 / 282, 6.7%), so it was concluded that having a dog and social support were predictors of survival after suffering an acute myocardial infarction.

Vormbrock y Grossberg[10] assessed BP and heart rate in a group of students and reported that interacting with a dog was less stressful than with a person. Anderson *et al.*[11] investigated 5470 patients and found that those who lived with animals had significantly lower BP values and Nagengast *et al.*[12] in 1997 found similar results in children between 3 and 6 years.

In this century other authors[13-16] have already corroborated the positive effect exerted by pets by decreasing BP and heart rate in their owners.

Psychological Effects

They help reduce psychological disorders, reduce loneliness and increase intimacy feelings, which encourages the preservation of life in sick people[17]; also in states of anxiety, depression, grief and isolation, pets become an unconditional company, and allow the development of affection in children[17,18].

McConnell *et al.*[18]confirmed, in an article in late 2011, that pets are a source of social and emotional support for their owners (healthy or ill) who are happier, healthier, have higher self-esteem and physical fitness , feel less lonely and fearful, and are less concerned than those without these animals.

Psychosocial effects

They promote relationships and socialization among strangers, who become more supportive and communicative, and facilitate communication between different generations by constituting a source of common interest, both as part of the family and in the community. They also promote participation in recreational activities[16,19].

Benefits on metabolic control and physical health

In patients with coronary risk factors such as diabetes mellitus, obesity and lipid metabolism disorders as well as in those with known heart disease, having a dog can encourage physical activity (walking, marching, running) with consequent body weight loss, decreased levels of lipids (cholesterol and triglycerides) and stimulation of glucidic metabolism[11,20].

In Cuba, Torres[21] proposed practicing dog owner and dogs walking as part of the control of diabetes mellitus, which could be equally useful if implemented in the areas of cardiovascular rehabilitation and in those with peripheral arterial disease, where walking favors the formation of collateral circulation and reduces the risk of amputations in diabetic and normoglycemic patients[22].

Another important aspect to consider is that in patients with advanced disease, with poor functional class (ischemic or valvular heart disease, cardiomyopathy and heart failure), or disability, the help of a trained dog is incalculable[23].

Benefits on mental and intersocial health

Depression, anxiety, stress or other psychological manifestations typical of patients suffering from heart diseases may be relieved by contact with animals they like such as dogs, cats, birds, ornamental fish, or others, since stroking or simply watching them produces well-being feelings and has relaxing and antidepressant effects[24].

Secondly, the health benefit has an economic impact for the patient, the family, and social security, by reducing expenses in health care, hospitalization, medication and work interruption [25,26].

Moreover, the coexistence within a human family

brings benefits to animals, by receiving food, space, health care, attention and affection[27]. The negative effects of this relationship are the subject of another debate, but they surely do not outweigh the benefits, although it is important to note that having a pet takes knowledge, means and conditions for living together at home because this is an act of great individual, family and social responsibility.

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