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Are Pets a Healthy Pleasure? The Influence of Pets on Blood Pressure

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Abstract

Pet owners often describe their pets as important and cherished family members who offer solace in times of stress. This article considers evidence suggesting that pets influence human blood pressure. Studies on this topic extend current research testing the hypothesis that having other people around in stressful times can buffer the negative consequences of stress. The existing data suggest that people perceive pets as important, supportive parts of their lives and that the presence of a pet is associated with significant cardiovascular benefits, among both people with normal blood pressure and those with high blood pressure. Studies about pets and blood pressure have examined both naturally occurring and randomly assigned pet ownership

but are limited by their focus on responses to short-term, acute stress. Future prospective studies should explore the influence of pets on people at risk for cardiovascular disease and also consider explanatory mechanisms for the pet effect.

Keywords

pets; social support; blood pressure; stress

In recent years the popular media have publicized widely the idea of the “healing power of pets.” Ubiquitous advertisements featuring winsome puppies and kittens suggest that having a pet can cure everything from loneliness and alienation to hypertension and heart disease. The phrase “pets lower your blood pressure” is stated as a commonly known fact and appears in television commercials and even in publicity for nursing homes and hospitals. In this ar-

ticle, I discuss the existing scientific evidence about the influence of pets on their owners’ blood pressure, along with the limitations of the research in this area.

Today in the United States, there are more than 68 million pet dogs and at least 75 million pet cats. Considering the expense (Americans spend nearly \$30 billion annually on their pets) and the responsibility a pet adds to a person’s life, it is reasonable to question why people have pets. According to several nationwide surveys, about 90% of pet owners describe their pets as important, cherished family members. Further, they say that pets make them feel calm, happy, and able to handle stress in their lives. Inspired by the intuitive feelings of pet owners, the studies I summarize here have tested the ability of pets to diminish stress responses, investigating this possibility within the theoretical framework of ongoing research about social support and cardiovascular health.

BACKGROUND

Perhaps the most frequently cited publications about pets and health are two reports indicating that pet ownership is a significant

predictor of 1-year survival after a heart attack (Friedmann, Katcher, Lynch, & Thomas, 1980; Friedmann & Thomas, 1995). Specifically, Friedmann and her colleagues showed that high social support and pet ownership were associated with better survival after heart attack, and that these effects were independent of the physiological severity of the heart attack, demographic characteristics of the patient, and psychosocial factors. This finding aroused curiosity among researchers in several fields and engendered considerable research about people and pets. This research has demonstrated, for example, that compared with their counterparts without pets, elderly people with pets appear to be buffered from the impact of stressful life events and make fewer visits to physicians (Siegel, 1990). In addition, among people with AIDS, pet owners have a lower incidence of depression than do people without pets (Siegel, Angulo, Detels, Wesch, & Mullen, 1999). Just talking to pets, compared with talking to people, is associated with lower cardiovascular responses (Lynch, 1985), and the presence of pets reduces blood pressure of children reading aloud (Friedmann, Katcher, Thomas, Lynch, & Messent, 1983). Pet ownership also has been shown to be associated with lower lipid levels and reduced levels of other cardiovascular risk factors (Anderson, Reid, & Jennings, 1992).

THEORETICAL FRAMEWORK

Given that pet owners readily describe their dogs and cats as friends, studying the cardiovascular influence of pets within the framework of existing research on social support and blood pressure is a logical choice. Typically in such research, investigators assess car-

diovascular measures while study participants experience various psychological stressors (e.g., performing mental arithmetic or giving a speech) and compare the participants' cardiovascular changes in different social environments. Numerous laboratory and community-based studies have focused on the role of supportive friends and friendly strangers in buffering responses to stress. Researchers who have reviewed this literature (Lepore, 1998; Uchino, Cacioppo, & Kiecolt-Glaser, 1996) have concluded that when friends are perceived as totally nonjudgmental, they can indeed buffer stress responses. In this literature, of course, the "others" who buffer stress are other people. This body of research is based on the idea that individuals who experience pronounced, frequent, or enduring blood pressure and heart rate responses to stress may be at risk for the development of heart disease (Gullette et al., 1997).

BLOOD PRESSURE AND PETS: SOME RESEARCH FINDINGS

The main research question addressed in studies about pets and social support is the degree to which a pet can ameliorate a person's response to stress. Such studies mirror the standard research I have just cited, with the exception that they take place in participants' homes rather than laboratories. The investigators who have conducted these studies consider an emotional bond between the person and animal to be important (just as it is between human friends), so the animals used always belong to the participants.

Beginning with a desire to learn more about the potential role of pets in providing social support, my colleagues and I first conducted a study about women, measuring their blood pressure when they performed mental arithmetic

while alone or in the presence of their best (female) friends or their dogs (Allen, Blascovich, Tomaka, & Kelsey, 1991). Although we hypothesized that dogs would calm their owners to the same degree as their human friends, we found that participants perceived their friends as judgmental, but their dogs as totally friendly. That is, the friends produced large increases in blood pressure (relative to the control condition in which the women were alone), whereas the dogs did not.

Inspired to learn more about social factors and blood pressure, we went on to consider the differential effects of the presence of friends, spouses, and pet cats and dogs (Allen, Blascovich, & Mendes, 2002). Marriage involves the closest of relationships, and we reasoned that a person's soul mate would be perceived positively and have a calming effect. We wondered about the relative influence of a pet. Once again, however, people experiencing a stressor in the presence of other people (however supportive and friendly they tried to appear) exhibited dramatically large increases in blood pressure. For example, the blood pressure of people asked to work on mental arithmetic in the presence of their spouses increased on average from 120/80 to 155/100. In contrast, when our participants had only their pets present, their blood pressure increased slightly, to 125/83. From both clinical and research perspectives, these are significant differences that warrant consideration and explanation.

EXPLAINING THE PET EFFECT

One explanation might be that the pets served merely as an entertaining distraction, eliminating the source of stress because people gave up on the difficult arithmetic task. We found, however, that the

opposite had happened. That is, study participants did not abandon the task, but actually performed better and faster when their pets were present than when their spouses were present. It also appears that pets can have a social facilitation effect; that is, perhaps pets allow people to relax and bring out the best in their owners, much as a cheering crowd helps an athlete perform well.

It is also possible that the buffering effect of social support depends on the relationship between the type of support needed (in the case of a mental arithmetic task, someone who thinks you are wonderful even if you cannot do it!) and the ability of the available supporters to fill that need. From this perspective, it appears that when people need complete positive regard, pets clearly are a preferred source of social support.

A valid criticism of the studies I have summarized is that it is possible that the pets had no effect at all and that people who choose to acquire pets are healthier than those who choose not to have a pet; that is, there might be some characteristic of pet owners that makes it unlikely they will ever experience large cardiovascular responses to stress. Clearly, the only way to determine the validity of this criticism is to conduct studies in which some participants are randomly selected to own pets and the others remain non-pet owners.

A CLINICAL RANDOMIZED TRIAL: PET ADOPTION

To test if a pet effect would occur among people who had not acquired pets on their own, we conducted a study in which half the participants were randomly selected to adopt a pet cat or dog from an animal shelter (Allen, Shykoff, & Izzo, 2001). The study par-

ticipants were all stockbrokers who lived alone and described their work as extremely stressful. None had owned pets for at least the previous 5 years. In addition, they all had high blood pressure (greater than 160/100) and were scheduled to begin drug therapy with Lisinopril (part of a class of drugs called angiotensin converting enzyme inhibitors). Although Lisinopril is quite successful in reducing resting blood pressure, previous studies had demonstrated that it is not capable of blunting responses to stress. In this experiment, then, it was possible to consider two important issues: (a) the influence of random assignment to pet ownership and (b) the degree to which the combination of a pet and Lisinopril may produce effects different from those derived from drug therapy alone.

Results of the study provide strong evidence for the role of pets in providing social support. As predicted, Lisinopril lowered the resting blood pressure of all participants. While under stress, however, the individuals who acquired pets had blood pressure increases that were less than half the increases of their counterparts without pets. Interestingly, we also found that people who reported the fewest social contacts and friends benefited the most from the companionship of their pets. In addition, we demonstrated that resting blood pressure and blood pressure reactions to stress are influenced by independent mechanisms. That is, resting blood pressure can be influenced by a drug, but adding a pet to the social environment can alter stress responses.

LIMITATIONS AND FUTURE DIRECTIONS

Although existing research about pets and health demonstrates a sup-

portive role for pets, there are also several important limitations to consider. For example, the studies of response to acute stress have been conducted independently from the epidemiological research that has followed people after heart attack. Consequently, although research indicates that pets can reduce blood pressure responses to short-term stress among people with normal and high blood pressure, it remains to be determined if such responses contribute to survival among individuals who have heart attacks, or if they could be factors that help prevent heart attack. In addition, most research about pets and blood pressure has not explored how explanatory mechanisms may be influenced by other physiological factors, such as endocrine function. One recent study provides an example of just such an innovative approach and demonstrates an association between a pet's influence on blood pressure responses to stress and the endocrine hormone oxytocin, which is associated with human attachment and bonding (Odendaal, 2000). In this study, as blood pressure decreased, levels of oxytocin increased, suggesting a relationship between social affiliation and blood pressure responses to stress.

Another shortcoming of the existing research is that it addresses only potentially positive physiological responses to having a pet. Because most researchers in this area are pet enthusiasts, experiments have not been designed to examine how the presence of pets may add stress to the lives of some people. Similarly, researchers do not know the degree to which the strong bonds people build with their pets have physiological consequences when their pets die. In addition, little is known about the potential benefits of species other than cats and dogs. Finally, additional research needs to focus on the degree to which health benefits from the presence of a pet may be

related to personal, cultural, and demographic characteristics.

CONCLUSIONS

Several epidemiological and experimental studies have demonstrated that having a pet cat or dog can have significant cardiovascular benefits. Although the idea that a pet serves as social support may appear peculiar to some people, pet owners talk to and confide in their pets and describe them as important friends. Because pets, unlike human friends, are perceived as nonjudgmental, they are ideal candidates for psychological interventions aimed at increasing individuals' social support. An important consideration, however, is that media reports of the ability of pets to lower blood pressure are often highly inflated and misrepresent actual research. Although pets can be an important adjunct to drug therapy, a person with high blood pressure should never consider a pet as a replacement for a prescribed medication. So, although a pet can enhance a person's ability to handle stress, it is not accurate to say simply that "pets lower blood pressure."

In conclusion, existing evidence about how pets influence people's

blood pressure suggests that for people who enjoy animals, and especially for those with few social contacts, pets can be a healthy pleasure.

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Note

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