

The study of the beneficial effects of pet ownership on some aspects of human well-being and behaviors



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The study of the beneficial effects of pet ownership on some aspects of human well-being and behaviors



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Statement of Author

I, Md. Saidur Rahman, certify unequivocally that I have performed all the tasks detailed in this report. The data was gathered from the record book of Clinical Case Investigation Record (Out-patient), Study report on online journals, books and other resources. All citations have been properly acknowledged. Consequently, I am solely responsible for collecting, manipulating, preserving, and publishing all data compiled in this report.

The Author

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List of abbreviations and symbols used

Abbreviations and symbols	Elaboration
CVASU	Chittagong Veterinary & Animal Sciences University
TTPHRC	Teaching and training pet hospital and research center
US	United States
USA	United States of America
BMI	<i>Body mass index</i>
mm Hg	Millimeter of mercury
e.g.	Example
<i>et al.</i>	And his associates
etc.	Et cetera
%	Percent
/	Per
>	Greater than

Abstract

There is a long history of anecdotal and observational evidence of the mutual benefits of the pet ownership. The present research examined links between attachment to pets and physical and psychological well-being in different populations. To analyze the bonding between pets and human in relation to well-being in Dhaka city, Bangladesh, 82 data from 15th February to 15th March were collected and evaluated. Among them, small number pets reared by young owner (9.76%), medium number by old category owner (18.29%) and large number by middle aged owner (71.95%). 52.44% owners were female and 47.56% were male. Maximum 58.54% owners were married, 34.15% were unmarried and rest 7.32% were divorced. Highest 56.10% owners do not have any kids, 21.95% owners have only one (1) kid, 17.07% owners have two (2) kids and only 4.88% owners have three (3) kids. Regarding employment status of owners, 65.85% owners were employed and 34.15% were unemployed. 70.73% owners lived in a joint family and other 29.27% owners separately. 62.20% owners have experienced for short period pet ownership where 37.80% owners have long period pet ownership. 65.85% owners reared pets as companion and hobby purposes, 28.05% owners have pets for breeding purposes and only 6.10% owners use pets for security purposes. 41.46% owners have given their statement that there was not any effect on reduction of chronic diseases or mental state due to having pets, 9.76% owners found reduction of high pressure, diabetes and heart disease due to pet ownership and maximum 48.78% owners reduced anger, depression, loneliness and restlessness for rearing pets. 20.73% owners were exposed some disease conditions like ring worm, asthma, and allergic reaction duo to having pets in their house and rest 79.27% owners did not have exposed any problems for pet ownership. The results provide evidence that pet acquisition may have positive effects on human health and behaviors, and that in some cases these effects are relatively long term.

Key words: Pet ownership, physical, psychological, companion, hobby, breeding, high pressure, diabetes, ring worm, asthma.

1. Introduction

The impact of pet animals on human health and well-being has become something of a warm topic over the past decade. At first glance, a substantial body of unimaginable, qualitative, and correlational record seems to prove the popular belief that pets have a positive effect on our lives, providing considerable benefits to physical and mental state and more than justifying the cost in time and money spent caring for them (Wells, 2009). Although most pet owners feel joy and happiness as soon as they own a pet, regardless of their age, most of them are unaware of the physical, mental, and health benefits of owning a pet (Valeri, 2006; Lass-Hennemann et al., 2020; and Anderson et al., 1992). Many studies started to evaluate scientifically the possible benefits of raising or owning a pet (Lass-Hennemann et al., 2020; Lentino et al., 2012; Levine et al., 2013; Engel et al., 2006 and Matchock, 2015). Bowlby's attachment theory claimed that a human need to be attached and near to somebody for the reason of forming and maintain a relationship to achieve a sense of well-being (Bowlby, 1977). Based on this attachment theory, many studies evaluated the ownership of pets as a way of achieving this theory's goals (McNicholas, 2005). It had been shown that Pets, especially interactive pets such as dogs and cats, can reduce stress, anxiety and alleviate depression and loneliness (Young et al., 2020 and Brooks et al., 2018). It also encourages their owners to be more physically active and socially involved (Coleman et al., 2008).

A number of studies have also demonstrated transient decreases in blood pressure and/or heart rate in experimental human subjects in the presence of pet animals, but so far none has provided evidence of sustained improvements in any physiological measure as the result of pet ownership (Katcher, 1981). A variety of cross-sectional health comparisons between pet-owning and non-owning populations have also produced unconvincing results. Some have failed to detect any apparent association between pet ownership and improved health status (Lago et al., 1989), while others have produced positive results which are difficult to interpret. At best, they suggest that, if a person has a strong attachment for an animal companion, pet ownership may help to improve the effects of negative life events, such as bereavement, and have a positive impact on certain anxiety and depression indices (Garrity, 1989).

Depression, anger, loneliness, and others are the most common mental illness of the people and among them depression is the most common. The highest rates of depression occur among adults. Depression can have significant effects on an individual's physical and mental health and may interfere with the fulfillment of daily responsibilities. Higher levels of depressive symptoms are associated with higher rates of physical illness, disability, and health care use and it can result in suicidal tendencies. Numerous factors contribute to the risk of depression in the elderly. The increased prevalence of depression with age has been attributed to the combined effects of chronic medical conditions and functional limitations (Roberts et al., 1997).

Numerous treatments are available for depression including antidepressant medications and psychotherapy. Alternative therapies may also be used singly or in conjunction with traditional forms of therapy. Improvements in mental health disorders have been reported with animal-assisted therapy (Antonioli & Reveley, 2005 and Holcomb et al., 1997), and, therefore, animal-assisted activities or pet therapy may be of value in alleviating some of the symptoms of depression. The health benefits of human-animal interactions are well-documented in the literature and include increases in physical activity, social support, and self-esteem, as well as reductions in stress levels and loneliness. Several studies have documented the usefulness of animal-assisted therapy in the treatment of depression. In a study by Holcomb et al. (1997), increased social interaction secondary to the use of an aviary was significantly associated with reduced depression levels among elderly men.

Pet ownership (and dog ownership) has been linked to myriad physical health benefits, including lower risk of cardiovascular disease and death (Mubanga et al., 2017), fewer visits to the doctor (Headey and Grabka, 2007), and positive health behaviours such as better sleep and more frequent exercise (Headey, Na, and Zheng, 2008). Pet ownership has also been empirically implicated in positive mental health outcomes in some populations, including improved mood (Turner et al., 2003), lower perceptions of stress (Kertes et al., 2017), lower levels of depression (Cheung and Kam, 2017), and less loneliness (Black, 2012 and Stanley et al., 2013).

What is called the 'magic effect' of owning a pet is being explained by the ability to reduce stresses and relieving anxiety through the security sense by the pet presence in a household, even the daily caring routines such as walking them, feeding them, and cleaning them could significantly boost

one's mood when we mention "pet," it should not be necessarily a cat or dog, even watching a fish swimming in an aquarium can reduce muscle tension and decrease the heart rate (Feldman, 2019).

On the contrary, some reported owning a pet could carry some disadvantages and risks, starting from being a source of disease transmission, especially parasitic organisms (Sterneberg-van et al., 2016 and Zucca et al., 2021).

If certain animal species are kept under less optimum conditions, they can pose a physical danger to the people around them (Sterneberg-van et al., 2016). The economic burden on the pet's owners, owing to special foods and veterinary care (Hall, 2017). Furthermore, the possible negative psychological impact of losing a pet (Hui, 2021).

The purpose of the study was to explore some of the factors proposed to influence the link between pet ownership and human well-being and also to examine the relationship between pet ownership, pet attachment, and psychological health among community-dwelling older adults.

2. Material and Methods

2.1. Study area and duration of study:

This study has been carried out at teaching and training pet hospital and research center, CVASU. A total of 82 cases record of Dhaka city area were collected during the 1-month study period (15th February – 15th March 2022).

2.2. Sampling strategy:

The methodology of sampling has been applied by simple random method. Prior to this study, a questionnaire was designed and followed during the sampling time. Questions were close ended and covered issues regarding to the study. At the time, 82 registered sample was conducted,

2.3. Data analysis:

All data were tabulated using commercial software (Microsoft Excel version 2016, Microsoft, USA), analyzed with a statistical program (STATA-14) and results expressed as frequencies, proportions, and ratios.

3. Results and discussions

A summary of the information's regarding pet ownership included in the study is presented in bellow tables.

Table 1: Frequency distribution of age of owner

Age of owner	Frequency	Percentage (%)
Young (10-20 years)	8	9.76
Middle (21-50 years)	59	71.95
Old (>50 years)	15	18.29
Total	82	100

Out of 82 samples, 59 participants representing 71.95% owners were middle age who reared pets in their house followed by 18.29% (15) owners were old ages and 9.76% (8) owners were young ages in this study. The study of Southerland, 2007 represents participants (n = 96) ranged in age from 55 to 87 years of age, with a mean of 69.61 (+7.95) years which is showing many dissimilarities comparing to the present study.

Table 2: Frequency distribution of gender of owner

Gender of owner	Frequency	Percentage (%)
Male	39	47.56
Female	43	52.44
Total	82	100

Current study showing 52.44% (43) participants were female where as 47.56% (39) participants were male. Southerland, 2007, analyzed that a greater proportion of the sample was female (76.7%) than male (23.3%). Pranschke, 2019, accounts that female participants were higher which is 72.8% (75) than male participants were 24.3% (25) and other were 2.9% (3). Present study is not showing much difference between male and female participants but other authors study that have mentioned earlier found huge differences showing female participants were higher than male participants.

Table 3: Frequency distribution of owner's marital status

Marital status	Frequency	Percentage (%)
Married	48	58.54
Unmarried	28	34.15
Divorced	6	7.32
Total	82	100

Regarding owner's marital status, 58.54% (48) owners found married, where as 34.15% (28) were unmarried and remaining 7.32% (6) were divorced. The study of Southerland, 2007, showed that 52.9% (54) were married followed by widowed 31.4% (32), divorced 13.7% (14), separated 1% (1) and never married 1% (1). Pranschke, 2019, found married participants were 79.6% (82) and single were 20.4% (21). In all study's the authors found maximum participants were married than others.

Table 4: Frequency distribution of owner's employment status

Employment status	Frequency	Percentage (%)
Employed	54	65.85
Unemployed	28	34.15
Total	82	100

In present study 65.85% (54) owners were found employed and other 34.15% (28) owners were found unemployed. The research work of Southerland, 2007, found that the respondents were primarily retired (73.2%), employed (20.6%) and unable to work (6.2%).

Table 5: Frequency distribution of owner's children number

Number of children	Frequency	Percentage (%)
Zero (0)	46	56.10
One (1)	18	21.95
Two (2)	14	17.07
Three (3)	4	4.88
Total	82	100

In contrast of owner's children number, 56.10% (46) owners do not have any kids followed by one kids have 21.95% (18) owners, two kids have 17.07% (14) owners and three kids have 4.88% (4) owners, respectively.

Table 6: Frequency distribution of owner's family type status

Types of family	Frequency	Percentage (%)
Joint	58	70.73
Separated	24	29.27
Total	82	100

Out of 82 participants, 70.73% (58) participants found living in a joint family where as 29.27% (24) participants are separated from their original family. During survey period, the reason of separation from family was identified and that was due to having pets. In that case, the other family members dislike pets and face regular basis trouble with them. So separated participants decide to be separated from their original family.

Table 7: Frequency distribution of species of pet reared by owner

Species of pet reared	Frequency	Percentage (%)
Cat	51	62.20
Dog	20	24.39
Both	11	13.41
Total	82	100

During the defined period, 82 owners were selected for this study and found in 62.20% (51) owners have cat species followed by 24.39% (20) owners have dog species and remaining 13.41% (11) owners have both cat and dog species. The study of Pranschke, 2019, represents that 41.7% (43) have dog species followed by 28.2% (29) have cat species, 28.2% (29) have both dog and cat species and 1.9% (2) have other type of pet, respectively, which is showing dissimilarities compared to present study as highest percentage was cat species.

Table 8: Frequency distribution of pet's number of owner

Number of pets	Frequency	Percentage (%)
Large size (>10)	14	17.07
Medium (6-10)	11	13.41
Small (1-5)	57	69.51
Total	82	100

For the present study, the author categorized having pets' number of owners into 3 groups. Among them small size pets have in 57 owners constituting 69.51% of total. Similarly, large size pet number have in 14 (17.07%) owners and medium size in 11 (13.41%) owners, respectively.

Table 9: Frequency distribution of purpose of pet ownership

Purpose of pet ownership	Frequency	Percentage (%)
Companion and Hobby	54	65.85
Breeding	23	28.05
Guard	5	6.10
Total	82	100

There is multiple purpose of owning a pet. In the present study, the author identified some important purposes of pet ownership. The author analyzed 65.85% (54) owners have pets for companion and hobby purpose followed by 28.05% (23) owners rear pet for breeding purpose and 6.10% (5) for security purpose, respectively.

Table 10: Frequency distribution of pet ownership duration

Duration of pet ownership (Year)	Frequency	Percentage (%)
Short (1-5 years)	51	62.20
Long (>5 years)	31	37.80
Total	82	100

People may have an experienced of owning pets for long years or short period of time. In contrast of pet ownership duration, present study revealed that 62.20% (51) owners reared pets for short period of time where as 37.80% (31) owners have pets for long period of times.

Table 11: Frequency distribution of attitudes of other family members towards pets

Reaction of other family members towards pets	Frequency	Percentage (%)
Positive	65	79.27
Negative	12	14.63
Few members like pets	5	6.10
Total	82	100

The outlook of family members towards pets differ person to person. There is a growing global trend to consider pets as part of the family. In fact, millions of people around the world love their pets, enjoying their companionship, going for walks, playing, and even talking to them. More and more often, animals are included in family events and become important to all members of the family. This can be particularly significant in single-parent families, where a pet can be an important companion to children. Out of 82 observations of this study, 79.27% (65) other family members of participants show positive reaction to the pets, on the other hand, 14.63% (12) other family members of participants show negative reaction to the pets and only 6.10% (5) few members of family like having pets in family.

Table 12: Frequency distribution of reduction of some chronic disease/mental state or not

Elimination of some chronic disease or mental state	Frequency	Percentage (%)
Yes	48	58.54
No	34	41.46
Total	82	100

Many health benefits to humans occur when there is an emotional attachment to pets. And we tend to care the most for animals that live with us. In present study, 58.54% (48) owners give positive statement on reduction of some chronic disease/mental state due to having pets with them and 41.46% (34) owners provide no significant change observed in reducing of some chronic disease/mental state.

Table 13: Frequency distribution of reduction checklist of some chronic disease or mental state

Elimination of some chronic disease or mental state	Frequency	Percentage (%)
Nil	34	41.46
Group-1 (High pressure, diabetes & heart disease)	8	9.76
Group-2 (Anger, depression, loneliness & restlessness)	40	48.78
Total	82	100

The reduction checklist of some chronic disease or mental state has documented and assessed for the study corresponded to the history of owner. Aiming to facilitate the analysis of the data and interpretation of the results, all documented reduction checklist was classified as mentioned to the table-13. Out of 82 records, 41.46% (34) owners do not have any effect on reduction of chronic disease or mental state due to having a pets, on the other side, 9.76% (8) owners get cure from group-1 type disease/mental state due to owning a pets and maximum 48.78% (40) owners provide information of reducing group-2 type disease or mental state.

Some studies showed that pet ownership might have some cardiovascular health benefits, as people with borderline hypertension who adopted dogs showed a decline in their blood pressure significantly within five months (Wright et al., 2007 and Levine et al., 2013). In an Australian study, Anderson et al. including 5741 individuals visiting a free screening clinic; although there was no difference regarding the BMI or socioeconomic status, however, the authors found that individuals who reported having a pet had a significant ($P=0.03$) lower systolic blood pressures (SBP) than individuals who do not have a pet (Anderson et al., 1992). Another study by Wright et al. including 1179 subjects to evaluate the relationship between pet ownership and the presence of elevated systolic blood pressure, the authors found lower values in pet owners (132.8 versus 139.5 mm Hg), lower pulse pressure (55.5 versus 63.9 mm Hg), and lower mean arterial pressure (105.0 versus 107.6 mm Hg) than no owners (Wright et al., 2007).

Nowadays, Domestic dogs are trained to respond to medical emergencies in Diabetic patients, showing a promising path for the future of medicine in evolving pet ownership into more advanced levels. Under the name of (Glycaemia alert dogs), they are reported to significantly improve the life quality of owners with Type 1 diabetes. Rooney et al. conducted a study on small numbers of dogs and provided conflicting results of using those alert dogs at responding to hypo- and hyperglycemic episodes. Dogs varied in their performance, with a median sensitivity to out-of-range episodes at 70%. The median sensitivity was 83% (66– 94%) to hypoglycemic episodes, while to hyperglycemic episodes, it was 67% (17–91%). The authors reported that the dog's characteristics, the partnership, and the household were significantly affecting performance (Rooney et al., 2019).

Companionship itself can guard against illness occurring; on the contrary, isolation and loneliness can aggravate symptoms of depression and anxiety (Hussein et al., 2021 and Rahman, 2015). Brooks et al. carried a systematic review to evaluate the role of pet ownership for people with mental health conditions; after including 17 studies, they found that pets contributed positively to the management of people with a mental health condition, especially in times of crisis; however, they also reported some negative aspects such as the emotional and practical burden of owning a pet and the negative psychological impact of losing a pet (Brooks et al., 2018).

Several studies showed that feeling lonely and socially excluded could be decreased or even prevented by raising a pet (Banks and Banks, 2002), reducing the daily stresses with an eventual reduction in depression and anxiety (Wells, 2009). Various interventions implementing what is called "pet therapy" obtained by just owning a pet to prevent loneliness and decrease the feeling of social abandonment (Podberscek et al., 2000). In hearing-impaired people, owning a dog showed a reducing effect on loneliness feeling as reported in a study by Guest et al., 2006. In a study by Pikhartova et al., 2014, aiming at evaluating the association between pet ownership and loneliness, after assessing the data from 5,210 men and women in the English Longitudinal Study of Ageing, they found that in 2001 41% of participants owned a pet compared to 30% in 2010. The association between pet ownership and loneliness was more robust in women in both directions, meaning that pet ownership both predicts and was a reason of feeling loneliness, they concluded that raising a pet significantly affects reporting of loneliness in women and reporting loneliness led to pet ownership (Pikhartova et al., 2014).

In an observational study including 2199 subjects performed by Coleman et al., 2008, significantly lower obesity (BMI >30 kg/m²) in dog walkers (17%) compared with both owners who did not walk their dogs (28%) and no owners (22%). The authors found that dog walking has an association with performing moderate to vigorous physical activity (up to 53%) while people who owned but did not walk their dog (33%) and dog no owners (46%) (Coleman et al., 2008).

Table 14: Frequency distribution of checklist of exposed disease

Exposed disease	Frequency	Percentage (%)
Nil	65	79.27
Ringworm	3	3.66
Asthma	4	4.88
Allergy	10	12.20
Total	82	100

Pet animals live in close contact with the human population, and the risk of transmitting zoonotic diseases to human is therefore, significant if the animal itself has been infected. Regarding to the diseases exposed to human from pets of this study, 79.27% (65) owners does not expose any diseases from their pets, in addition, 12.20% (10) owners claimed they suffered from allergic reaction due to having pets followed by 4.88% (4) owners found asthma problem and 3.66% (3) owners had ringworm of their skin due to having pets. Kids can get ringworm from touching infected dogs and cats. This can cause a dry, scaly round area with a raised red bumpy border and a clear center.

4. Limitations

This research has some shortcomings. Both the research period and the study region were constrained to a certain area. As a result, the results might not be generalizable to the entire nation.

5. Conclusions

Although owning a pet might be considered by some to be just a hobby or for having fun, however, pet ownership proved to have some beneficial physical and mental health effects, especially in promoting physical activity, lowering the risk of cardiovascular disease, and helping with loneliness and depression. We believe that choosing a suitable pet to raise will boost your well-being.

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8. Appendix Questionnaire

1. SL. No:
2. Owner details:
 - Name of owner:
 - Age:
 - Sex: M/F
 - Marital status: Married/unmarried/divorced
 - Employment status: Employed/unemployed
 - Number of Children's
 - Types of family
3. Species of pets: Dog/Cat/Both
4. Number of pets
5. Purpose of pet ownership:
6. Duration of pet ownership:
7. Number of pets:
8. What was the conception of pets before pet ownership?
.....
9. Are you separated from other family members due to having pets?
Yes/No
10. What is the image of other family members towards pets?
.....
11. Do you think due to pet ownership some of chronic diseases or mental state has reduced?
Yes/No, If yes:
 - Diabetes
 - Arthritis
 - High cholesterol
 - High blood pressure
 - Heart disease
 - Kidney disease
 - Eye problems (Cataracts, Glucoma)
 - Anger
 - Depression
 - Loneliness
 - Restlessness
 - Liver disease
12. Did you expose any skin diseases from your pet's?

9. Biography of Author

This is Md. Saidur Rahman, the child of A. Malek and Sahena Khatun, doing his graduation on Doctor of Veterinary Medicine (DVM) at Chattogram Veterinary and Animal Sciences University under Faculty of Veterinary Medicine. He passed the Secondary School Certificate Examination (SSC) in 2013 from Marichakandi D.T. Academy, Bancharampur - Brahmanbaria and got GPA 5.00 and then Higher Secondary Certificate Examination (HSC) in 2015 from Hazi Abed Ali College, Narsindi and got GPA 4.67 out of 5.00. Currently he is doing his yearlong internship. He has a great enthusiasm in his study area to develop day one skills and gain more practical knowledge to be prepared for the modern era of science.