

PET ATTACHMENT, MENTAL HEALTH AND PERCEIVED SOCIAL SUPPORT

Zara Israr^{*}, Sheeba Farhan^{**}, and Tooba Atif (zara.israr@hotmail.com)
Institute of Professional Psychology, Bahria University, Karachi Campus
Pakistan^{*}, Federal Urdu University of Arts, Science & Technology^{**},

ABSTRACT

Objectives: Keeping the growing trend of using pets for psychological well-being of humans at front, this study was devised to investigate the association between pet attachment, depression, anxiety and perceived social support.

Design of the study: Correlational study

Duration and Place of study: Bahria University Karachi, Campus

Subjects and Method: A purposive sample of 100 (unmarried, age 18-45 years) participants, men (N=46) and women (N=54) owners of different pets were recruited through snow ball sampling technique. A package of questionnaire was administered, along with the demographic and consent form. These included; Pet Attachment in Life Impact Scale, Center of Epidemiological Studies for Depression, Burns Anxiety Inventory and Multi-Dimensional Perceived Social Support Scale.

Results and Conclusion: Findings revealed the potential contribution of pet attachment with depression, anxiety and social support. The implications of the finding and avenues for the future research were discussed.

Keywords: Pet attachment; Social support; Anxiety Depression

INTRODUCTION

According to the World Health Organization (2017a), mental health has been an important concern over the last years. Mental health disorders are on the rise and are becoming a large societal problem worldwide. A number of protective factors to mental health have been identified. Among those, pet ownership is often considered to be one of the prevention and a treatment strategy for individuals dealing with mental health problems like anxiety and depression and pets have also been used in mental treatments with positive effects on individual's condition (e.g. Kamioka et al., 2014; Wood et al., 2005). In the past couple of years, a lot of researchers have shed light on the human-animal bond, and its associated advantages for the pet owners specifically. There is plenty of publications identifying different aspects of human-animal interactions. This trend can be confirmed with the current EBSCO® inquiries of PsycINFO, MEDLINE, CINAHL, Soc INDEX, and Education Research Complete web crawlers utilizing the expressions "pet connection" or "pets" or "human animal association" etc. (Cromer & Barlow, 2013).

In the greater part of these investigations, pets are depicted as pretty much compatible, although it had little effect to the relationship whether the pet happens to be a cat, a dog, a rabbit or any other type of animals. The passionate ties between the owners and their pets might be to some degree autonomous of the kind of animal included (Staats et al., 2008; Jalongo, 2004). In any case, this connection has significant ramifications for the self-awareness of the pet owners (Shore et al., 2005). A considerable measure of researchers has detailed that pet owners have better signals of love and regulation than individuals who don't have pet. In spite of this growing attention toward advantages of having pets, little is comprehended about positive as well as negative effects on social support, personal growth, and personality traits of an individual having a pet. Pets facilitate the owner's social interaction and their social network. A number of studies have demonstrated strong positive effect of pet-ownership on the owner's mental health (e.g. Wood et al., 2005). On the other hand, a greater number of studies have demonstrated social support from different sources as a protective factor to mental health as well (McDowell & Serovich, 2007). Truth be told, when connection to pets is assessed in the literature, the term connection is normally utilized reciprocally with attachments towards pets (Herzog, 2007). The present examination presents the PAL (Pet Attachment and Life Impact) scale that has been created to gauge positive and negative parts of associations with pets, including the effect of pets on owners mental health; it additionally operationalizes connection in view of the relevant literature.

There are certain pros and cons of having a pet on mental health. Attachment with pets has been appeared to have an assortment of advantages for different unique emotional needs of human beings. Marks, et al. (1994) discovered some positive effect of owning a pet on physical, mental and social strength of pet owners. Pets tend to give their owner a conviction that all is good; limiting the stress and negativity in their lives (Alonso & Hinijosa, 2005). Garrity et al. (1989) found that pet possession and strong connection were essentially connected with less discouragement of the pet owners. Chan et al. (2007) recommended that people who are more connected to their pets communicated more elevated amounts of generativity. Besides, an overview of 350 undergrads demonstrated that the pets helped them to get past troublesome circumstances throughout everyday life (Nauert, 2008). As indicated by Vidovic et al. (1999), people who scored higher than normal on pet connection demonstrated essentially higher scores on love and prosocial introduction than non-owners. Furthermore, Beck, and Madresh (2005) along with Cheong, et al. (2005) found that there are larger amount of mental health, personal growth, confidence and regulation in pet owners. On the other hand, Foehrkolb (2005) reported that having a pet is time consuming and thus, sometimes causes problems for the owners. Education, play, care and giving attention takes up a lot of owner's time and this sometimes make them annoyed.

The relationship between owners' demographics variables and pet attachment has been studied by researches for instance found by Herzog (2007) that there was a measurably little impact of pet owner's gender on the level of pet attachment. On the other hand, Lewis et al. (2009) conducted a study with 336 participants and reported that females are fundamentally more prone to have higher pet attachment than males. In any case, numerous investigations which analyzed pet connection in the past uncovered that there was moderately little and even no impact of gender on pet attachment. Similarly, neither Stallones et al.(1989) found any gender contrast affecting the level of connection with pets (as referred to in Herzog, 2007).

Literature has a lot of studies on pet attachment primarily measuring dogs and cats simply because they are the most commonly found pets. Vidovic et al. (1999) looked at the pet connection level of dog owners, cat owners and different other sorts of pet owners in a study of 826 youngsters. They found that dog owners and cat owners more appended to their pets than owners of different sorts of pets. In a similar report, it demonstrated that dogs and cats are possessed

by individuals for the most part too. 826 kids were partitioned into 216 owners possessed a dog, 76 owners claimed a cat and 157 owners possessed different sorts of pets. Consequently, the greater part of pet subjects of pet connection would be dogs and cats.

A lot of studies have investigated the role of pet attachment in social support for the pet owners. However, the findings from these studies have been conflicting. Robins et al. (2002) found that pets helped owners with clashes between family members. In one examination, writers investigated that dogs might be a source of additional social support for individuals who have mental problems and assets to have adequate human social support (Enderburg et al., 1994). However Kessler and McLeod (1985) review the positive effect of social support on mental health, (Naderi et al., 2009). Sable (1995) revealed that an augmentation of mental health have a connection to people. Kurdek (2009) found construct examinations in light of Mary Ainsworth's model of human parent-tyke connection connections. It might be that individuals who profoundly humanize their pets need human-like source of help for their mental health (McKenzie, 1999, Moody 2002). This thinking is with low apparent Social support from different people encounter depression as compare with higher saw Social support (Naderi et al., 2009). In a survey of the writing, Herzog (2007) found that people are comparable on level of connection; ponders in which ladies were more appended had little impact sizes. Vidovic et al. (1999) found that, while people were similarly as prone to have support, ladies were more probable than men to report social support purposes behind having a buddy, for example, decreasing depression and having passionate help through tough circumstances. Hefner and Eisenberg (2010) also found a relationship in social support and mental health on large number of college students.

There is variety of researches that indicated the relationship between Pets and mental health. According to Ogilvie et al. (2005) beliefs that disclosure to the mental health system strongly impact individuals. Pet assistance can leads to increased levels of mental health and decrease anxiety and depression (Murphy et al., 2006; Ogilvie et al., 2005). The benefits of pet animals are disputable. Several studies have been conducted to study the relationship between animals and the wellbeing effects on humans finding positive results while others have not. Jorm et.al. (2003). do not agree that there is a relationship between pet ownership and good health. The researchers found information pointing that there is not a positive relationship between pet ownership and good cardiovascular health. On the contrary, Friedmann et al. (1980) found the

opposite to be true. Research conducted in Germany and Australia yielded results stating that pet ownership and good health is causal and corrective (Headey & Grabka, 2007). The researchers also noted that pets have many positive impacts on owners like company, friendship, relaxation, motivation and happiness (Nagengast et al., 1997). Allen and Blascovich (1996), add to previous research by noting the significance of pet existence compared to human presence of a sibling or close friend in reducing the depression. Not only does the presence of companion animals increase mental health they also promote a better immune system (Budahn, 2013). During adolescence pet animals are friends that provide kindness and love and helpfulness when parents are not able and assist adolescents (Ascione, 2005).

The following are objectives and hypotheses:

- To investigate the impact of pet attachment (i.e. love, regulation, & personal growth) onto depression and anxiety in Pet Owners.
- To investigate the impact of perceived social support (i.e. family, friends, and significant others) onto depression and anxiety in Pet Owners.
- To investigate the gender difference on Pet attachment and perceived social support.

To conduct this research in its fullest means, following points are hypothesized and set as the foundation for analysis of overall results:

- There will be an impact of pet attachment (i.e. love, regulation, & personal growth) onto depression and anxiety in Pet Owners.
- There will be a impact of perceived social support (i.e. family, friends, and significant others) onto depression and anxiety in Pet Owners.
- There will be a difference between men and women pet owners on Pet attachment and perceived social support

METHOD

Participants

The sample of this study consisted of 100 pet owners. Both men (N=46) and women (N=54) owners of different pets were selected. The age range of the participants was between 18- 45 years ($\bar{x} = 23.71$, $SD= 4.25$). All three socioeconomic status i.e. Lower (n=4), Middle (n=85) & Upper (n=11) were considered. Only unmarried participants were included in the study.

Israr, Farhan, and Atif

Inclusion criteria

- Duration of Pet Ownership must be minimum 1 year
- Participants ranging in age minimum 18 years and above
- Participants must own a pet

Measures

Demographic form

It was used to get information about gender, marital status, socio economic status and pet details of the sample.

Multidimensional Scale of Perceived Social Support (Zimet et al., 1988):

The MSPSS is a short, easy to administer self-report instrument containing 12 items rated on a five-point Likert-type scale. It is consisted of three subscales, family, friends and significant others. The value of Cronbach's alpha was found to be 0.88.

Attachment and Life Impact Scale (PALS) (Cromer & Barlow, 2013):

PALS contain 35 items which are rated on five-point Likert-type scale. PALS measures four different life impact of keeping pets i.e. love, regulation, personal growth and negative impact. The value of Cronbach's alpha was found to be 0.92.

Centre of Epidemiological Studies Depression Scale (CESD-R), (Radloff, 1977)

This scale contains 20 items. It is a self-report measure of depression. Questions measure 8 different subscales, including: Sadness (Dysphoria), Loss of Interest (Anhedonia), Appetite, Sleep, Thinking/concentration, Guilt (Worthlessness), Tired (Fatigue), Movement (Agitation), Suicidal Ideation. Internal consistency for the CES-D-20 (Cronbach's α =.85 – .90).

Burns Anxiety Inventory (BAI) (Burns, 1984)

This scale contains 33 items. It is a self-report measure of anxiety. Questions measure 3 different subscales i.e. anxious thoughts, anxious feelings and physical symptoms. 4-Point Likert Scale where 1= not at all; 2= Somewhat; 3= Moderately; 4= A lot. The value of Cronbach's alpha was found to be .92

Procedure

In this study, participants were approached through snow ball sampling technique. This sampling technique is used to identify potential participants. Initially informed consent form was given to the participants containing details related to anonymity, confidentiality, and right to withdraw from the survey. After signing the consent form, participants were given a package of questionnaire to fill. These included; Pet Attachment in Life Impact Scale (PALS; Cromer, & Barlow, 2013), Center of Epidemiological Studies Depression (CESD-R Scale; Radloff, 1977), Burns Anxiety Inventory (Burns, 1984) and Multi-Dimensional Perceived Social Support Scale (Zimet et al., 1988). Individual administration was done. The researcher was present to handle any survey queries. Participants who were interested in results of the study were given the email id for further correspondence.

Linear Regression Analysis was conducted to assess the association and contribution of Pet Attachment (love, regulation and personal growth) onto depression and anxiety. Furthermore, Multiple Regression Analysis was conducted to assess the association and contribution of Perceived Social Support (family, friends, and significant others) onto depression and anxiety.

RESULTS

Table 1

Linear Regression Analysis with Love, Regulation, and Personal Growth as Predictor of Depression

Predictors	<i>B</i>	<i>SE</i>	β	R^2	<i>F</i>	<i>Sig</i>
Love	-.00	.03	-.01	.00	.007	.94
Regulation	.18	.06	-.31	.09	10.05	.00
Personal Growth	-.10	.12	-.32	.10	9.05	.00

Note: Regulation and Personal Growth dimensions of Pet Attachment explained significant variance i.e. 9% and 10% respectively onto scores of depression.

Table 2

Multiple Regression Analysis with Love, Regulation, and Personal Growth as Predictor of Anxiety

Predictors	<i>B</i>	<i>SE</i>	β	R^2	<i>F</i>	<i>Sig</i>
Love	.02	.02	.11	.01	1.195	.27
Regulation	.07	.03	-.23	.05	5.463	.02
Personal Growth	-.06	.03	-.26	.07	6.541	.01

Note: Regulation and Personal Growth dimensions of Pet Attachment explained significant variance i.e. 5% and 7% respectively onto scores of anxiety.

Table 3

Linear Regression Analysis with Social Support as Predictor of Depression

Predictors	<i>B</i>	<i>SE</i>	<i>B</i>	R^2	<i>F</i>	<i>Sig</i>
Social Support	33.36	3.34	-.41	.17	41.56	.000

Table 4

Multiple Regression Analysis with Components of Social Support as Predictors of Depression

Predictors	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	R^2	<i>F</i>
Constant	32.43	3.52	-	9.23	.000	.18	14.39 (.000)
Family	-.41	.14	-.22	-2.90	.004		
Friends	-.37	.09	-.27	-4.05	.000		
Significant Others	-.46	.13	-.24	-3.50	.001		

Note: All three components of social support i.e. family, friends, and significant others explained significant variance i.e. 18% onto scores of depression.

Table 5

Linear Regression Analysis with Social Support as Predictor of Anxiety

Predictor	<i>B</i>	<i>SE</i>	<i>B</i>	R^2	<i>F</i>	<i>Sig</i>
Social Support	30.43	2.51	-.55	18	12.95	.000

Table 6

Multiple Regression Analysis with Components of Social Support as Predictors of Anxiety

Predictors	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>	R^2	<i>F</i>
Constant	30.43	2.52	-	7.23	.000	.18	12.394
Family	-.45	.13	-.25	-4.90	.002		(.000)
Friends	-.46	.10	-.28	-3.05	.001		
Significant Others	-.37	.12	-.27	-4.50	.002		

All three components of social support i.e. family, friends, and significant others explained significant variance i.e. 17% onto scores of anxiety.

Table 7

T test Showing the Difference between male and female on Pet attachment and perceived social support

Variable	Group	N	M	SD	t	P
Love	Male	16	3.309	0.94	-1.78	.078
	Female	54	3.765	0.85		
Regulation	Male	16	3.277	1.11	-0.03	.973
	Female	54	3.288	1.04		
Personal Growth	Male	16	3.350	0.89	-0.33	.740
	Female	54	3.429	0.82		
Negative Impact	Male	16	2.031	0.96	0.98	.329
	Female	54	1.810	0.73		
Perceived Social Support	Male	16	58.93	15.03	-.912	.365
	Female	54	62.46	13.14		

**p<.01, * p<.05 (df=68)

Results reveal that there is no difference between males and females on factors of pet attachment i.e. love regulation, personal growth and negative impact. No difference is found on perceived social support of genders.

DISCUSSION

The present research hypothesized and significantly proved that pet attachment leads to a significant decrease in depression and anxiety. Perusal of literature suggests that individuals with mental health problem encounter many symptoms that leads to negative effect on their life like depress mood, stress, fear and lack of sleep and energy. Trend of keeping pets is healthy also animals and humans have cohabited for a long time (Kamioka et al., 2014). (Herzog, 2011;

O'Haire, 2010). It has been sustained that pets can affect their owner's mental, social and physical health in terms of how they assess their own well-being (Herzog, 2011; Wood et al., 2005; Zimolag & Krupa, 2009). The fact that having a pet enhances self-confidence and self-esteem, people often see their pets as the replacement for attachment to other humans (Sable, 1995).

Additionally, social support plays a vital role in mental health either it comes from family, friends or significant others, results reveal that social support from these channels have a positive effect on anxiety as well as depression. Similar findings have been reported by various researches (Newhart et al., 2019; Watkins & Hill, 2018; Feng et al., 2018; and Hefner & Eisenberg, 2009). There is a positive association between having a pet at home and human physical and psychological health (Westgarth et al., 2014; Wells, 2019).

Conclusion

The study was conducted to analyze how pet attachment could possibly affect the mental health of the pet owners. To achieve this goal, we analyzed the demographics and mental health of the pet owners in correlation with the level of attachment they have with their pets. This study affirms that owner's personality traits like love, regulation and personal growth are significantly associated with social support and mental health. A detailed review of literature and quantitative analysis of sampled data reveal that the magnitude of variance explained by social support and its components (18%) onto scores of depression is more than the variance explained by regulation (9%) and personal growth (10%) components of Pet Attachment. Moreover, the findings reveal that the magnitude of variance explained by social support and its components (17%) onto scores of anxiety is more than the variance explained by regulation (5%) and personal growth (7%) components of Pet Attachment. These findings suggest the potential significance of both social support from all sources, i.e. family, friends, and significant others and pet attachment components i.e. regulation and personal growth while formulating therapeutic interventions to promote mental health.

Limitations and Recommendations

The present study was conducted with small sample size and only with married people and in urban areas of Karachi city, hence having low generalize ability. Thus it is recommend to do future study with larger sample, including

Israr, Farhan, and Atif

other demographic variables and in other areas of country including urban and rural areas.

REFERENCES

- Allen, K., & Blascovich, J. (1996). The value of service dogs for people with severe ambulatory disabilities: A randomized controlled trial. *Journal of the American Medical Association*, 275(13), 1001-1006.
- Alonso, V., & Hinijsa, S. (2005). The health benefits that growing up with pets can provide to college students. *Senior thesis projects*. Retrieved May 5, 2018, from <http://psych.hanover.edu/research/Thesis05/AlonsoHinojosa.pdf>
- Ascione, F. R. (2005). *Children and animals: Exploring the roots of kindness and cruelty*. Purdue University Press.
- Beck, L., & Madresh, E. A. (2005). Romantic Partners and Four-Legged Friends: An Extension of Attachment Theory to Relationships with Pets. *Anthrozoö*. Retrieved May 5, 2018, from [http://www.brynmawr.edu/aschcenter/lisabeck/AZ%2021\(1\).E-Print-Beck-1.pdf](http://www.brynmawr.edu/aschcenter/lisabeck/AZ%2021(1).E-Print-Beck-1.pdf)
- Budahn, N. M. (2013). *Effectiveness of Animal-Assisted Therapy: Therapists' perspectives*.
- Chan, C. M. A., Cheung, K. W. K., & Lo, L. F. (2007). An exploratory study of pet raising and health of the elderly people in Hong Kong [Electronic version]. *Asia-Pacific Institute of Ageing Studies*, 12, 23-27.
- Cheong, S. K., Teoh, H. J., & Ng, L. O. (2005). The effects of owning a pet on self-esteem and self-efficacy of Malaysian pet owners. *Sunway Academic Journal*, 2, 85-91.
- Cromer, L., & Barlow, M. R. (2013). Factors and Convergent Validity of the Pet Attachment and Life Impact Scale (PALS). *Human-Animal Interaction Bulletin*, 1(2), 34-56.
- Enderburg, N., Hart, H. T., & Bouw, J. (1994). Motives for acquiring companion animals. *Journal of Economic Psychology*, 15(1), 191-206.

- Feng, D., Shan, S., Wang, L., & Fang, L. (2018). The protective role of self-esteem, perceived social support and job satisfaction against psychological distress among Chinese nurses, *Journal of Nursing Management*, 26, (4), 366-372.
- Friedmann, E., Katcher, A. H., Lynch, J. J., & Thomas, S. A. (1980). Animal companions and one-year survival of patients after discharge from a coronary care unit. *Public health reports*, 95(4), 307.
- Foehrkolb, C. (2005). *Quality of Family Life as a Factor or Self-Esteem*. Retrieved October 5, 2009, from <http://faculty.mckendree.edu/scholars/summer2005/foehrkolb.htm>
- Garrity, T. F., Stallones, L., Marx, M. B., & Johnson, T. P. (1989). Pet ownership and attachment as supportive factors in the health of the elderly. *Anthrozoos*, 3(1), 35-44.
- Headey, B., & Grabka, M. M. (2007). Pets and human health in Germany and Australia: National longitudinal results. *Social Indicators Research*, 80(2), 297-311.
- Herzog, H. A. (2007). *Gender Differences in Human-Animal Interactions: A Review*. Retrieved October 6, 2009, from <http://paws.wcu.edu/herzog/Gender.pdf>
- Herzog, H. (2011). The Impact of Pets on Human Health and Psychological Well-Being: Fact, Fiction, or Hypothesis? *Current Directions in Psychological Science*. 20, 236-239. 10.1177/0963721411415220.
- Hefner J., & Eisenberg, D. (2009). Social support and mental health among college students. *American Journal of Orthopsychiatry*, 79, (4), 491-499.
- Jalongo, M., (2004). Canine visitors: The influence of therapy dogs on young children's learning and well-being in classrooms and hospitals. *Early Childhood Education Journal*, 32, 9- 16.

Israr, Farhan, and Atif

- Jorm, A. F., Griffiths, K. M., Christensen, H., Korten, A. E., Parslow, R. A., & Rodgers, B. (2003). Providing information about the effectiveness of treatment options to depressed people in the community: a randomized controlled trial of effects on mental health literacy, help-seeking and symptoms. *Psychological medicine*, 33(6), 1071-1079.
- Kessler, R. C., & McLeod, J. D. (1985). Social support and mental health in community samples. In S. Cohen & S. L. Syme (Eds.), *Social support and health* (p. 219–240). Academic Press.
- Kurdek, L. A. (2008). Pet dogs as attachment figures. *Journal of Social and Personal Relationships*, 25, 247.
- Kamioka, H., Okada, S., Tsutani, K., Park, H., Okuizumi, H., Handa, S. & Honda, T. (2014). Effectiveness of animal-assisted therapy: A systematic review of randomized controlled trials. *Complementary therapies in medicine*, 22(2), 371-390.
- Lewis, A., Krageloh, C. U., & Shepherd, D. (2009). Pet Ownership, Attachment and Health-Rated Quality of Life in New Zealand. *Electronic Journal of Applied Psychology: General Articles*, 5(1), 96-101.
- Marino, T. (1995). Has mental health gone to the dogs? From prisons to nursing homes counselors finding benefits to pet therapy. *Couriers Today*, 37, 10-11.
- Marks, S. G., Koepke, J. E., & Bradley, C. L. (1994). Pet attachment and generativity among young adults. *The Journal of Psychology*, 128(6), 641-650.
- Murphy, N.A., Christian, B., Caplin, D.A., & Young, P.C. (2006). The health of caregivers for children with disabilities: caregiver perspectives. *Child Care & Health Development*, 33 (2), 180– 187
- Mcdowell, Tiffany & Serovich, J. (2007). The effect of perceived and actual social support and mental health of HIV+ individuals. *AIDS Care*, 19(10), 1223-9 .

- McKenzie, J. K. (1999). *Correlation between self-efficacy and self-esteem in students*. Retrieved November 12, 2009, from <http://www.uwstout.edu/lib/thesis/1999/1999mckenzie.pdf>
- Moody, W., King, R., & O'Rourke, S. (2002). Attitudes of pediatric medical ward staff to a dog visitation programme. *Journal of Clinical Nursing*, 11, 537-544.
- Naderi, H., Abdullah, R., Aizan, H. T., Sharir, J., & Kumar, V. (2009). Self - esteem, gender and academic achievement of undergraduate students. *American Journal of Scientific Research*, 3, 26-37.
- Nagengast, S. L., Baun, M. M., Megel, M., & Leibowitz, J. M. (1997). The effects of the presence of a companion animal on physiological arousal and behavioral distress in children during a physical examination . *Journal of pediatric nursing*, 12(6), 323-330. [https://doi.org/10.1016/S0882-5963\(97\)80058-9](https://doi.org/10.1016/S0882-5963(97)80058-9).
- Nauert, R. (2008). *Pets relieve college stress*. Retrieved November 29, 2009, from <http://psychcentral.com/news/2008/12/24/pets-relieve-college-stress/3555.html>
- Newhart, S., & Mullen, P., & Gutierrez, D. (2019). Expanding Perspectives: Systemic Approaches to College Students Experiencing Depression. *Journal of Counseling & Development*, 97, 260-269. [10.1002/jcad.12266](https://doi.org/10.1002/jcad.12266).
- Ogilvie, A., Morant, R., & Goodwin, M. (2005). The burden on informal caregivers of people with bipolar disorder. *Bipolar disorders: An international journal of psychiatry and neuroscience*, 7(1), 25-32.
- O'Haire, M. (2010). Companion animals and human health: Benefits, challenges, and the road ahead. *Journal of Veterinary Behavior Clinical Applications and Research*, 5. [10.1016/j.jveb.2010.02.002](https://doi.org/10.1016/j.jveb.2010.02.002).
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurements*, 1, 385-401.

Israr, Farhan, and Atif

- Sable, P. (1995). Pets, Attachment, and Well-Being across the Life Cycle. *Social Work, 40*(3), 334.
- Shore, E. R., Douglas, D. K., & Riley, M. L. (2005). What's in it for the companion animal? Pet attachment and college students' behaviors towards pets. *Journal of applied animal welfare science, 8*(1), 1-11.
- Staats, S., Wallace, H., & Anderson, T. (2008). Reasons for companion animal guardianship (pet ownership) from two populations. *Society and Animals, 16*(3), 279-291.
- Vidovic, V., Stetic, V. V., & Bratko, D. (1999). Pet ownership, type of pet and socio-emotional development of school children. *Anthrozoos, 12*(4), 211-217.
- Watkins, K., & Hill, E.M. (2018). The Role of Stress in the Social Support–Mental Health Relationship, *Journal of College Counseling, 21*, (2), 153-164.
- Wells, D. L. (2019) The State of Research on Human–Animal Relations: Implications for Human Health. *Anthrozoös, 32*(2), 169-181, DOI: 10.1080/08927936.2019.1569902
- Westgarth, C., Christley, R.M., & Christian, H.E. (2014). How might we increase physical activity through dog walking?: A comprehensive review of dog walking correlates. *International Journal of Behavioral Nutrition and Physical Activity, 20* (11), 83. doi: 10.1186/1479-5868-11-83.
- Wood, L., Giles-Corti, B., & Bulsara, M. (2005). The pet connection: Pets as a conduit for social capital? *Social Science and Medicine, 61*, 1159–1173. doi: 10.1016/j.socscimed.2005.01.017
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment, 52*(1), 30–41. https://doi.org/10.1207/s15327752jpa5201_2

Zimolag, U., & Krupa, T. (2009). Pet Ownership as a Meaningful Community Occupation for People With Serious Mental Illness. *The American journal of occupational therapy*, 63. 126-37. 10. 5014 / ajot.63.2.126.