Depression and Subjective Well-Being as Predictors of Pet Owner University Students' Personality Traits

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Abstract

The pet ownership has a crucial role in individuals' lives, which offers many beneficial effects. By examining the relationship between pet ownership and owners' well-being, researchers have found that pets typically made their owners feel well. This study examines the ways in which pet owners' depression and subjective well-being levels predict their personality traits. It also aims to examine the relationship between these variables and of the participants' pet preferences. Totally, 307 pet owners participated in this study; all participants were university students living in Turkey. In addition, all participants were aged 18 and older. The Center for Epidemiologic Studies Depression Scale (CES-D) was used to determine the depression levels of the participants; the Subjective Well-Being Scale (SWBS) was used to determine their subjective well-being levels, and an Abbreviated Form Of The Revised Eysenck Personality Questionnaire (EPQR-A) was used to determine personality traits. Data was analyzed using path analysis. The study found that pet owners' depression and subjective well-being scores predicted their neuroticism and extraversion scores. Subjective well-being and depression predict neuroticism and extroversion in personality traits, and goodness of fit index of this model has been found to be at acceptable levels. It is important to conduct more experimental and correlational studies involving the same variables; these studies may focus on pet owners, as well as their difference with those who do not own pets. They may also focus on specific age groups, such as children, adults, and the elderly.

Keywords: Pets, Pet Owners, University Students, Depression, Subjective Well-Being, Personality Traits.

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INTRODUCTION

The number of multi-dimensional studies on the effects of owning pets has increased recently. Studies that focus on the relationship between humans and animals have revealed that people are highly interested in owning pets; in addition, it has also been revealed that people are highly interested in animal-assisted therapeutic interventions. Although some studies have focused on pet ownership in Turkey (Cevizci, Erginöz, &Baltaş, 2009; Karayağız-Muslu& Conk, 2011; Pamuk, 2015), this is the first study of its kind in to explore the Turkish context. Based on this need, this study focuses especially on young adult and adult pet owner students at several universities in Turkey, and aims to examine the effects of pet ownership on the following psychological factors: subjective well-being, depression, and personality traits. This study also aims to examine the relationship between these variables and of the participants' pet preferences. In line with this purpose, this study is structured by qualitative method on exploratory and predictive correlational models. Totally, 307 pet owner students aged 18 and above participated in this study; all participants lived in Turkey. Data was collected using an online questionnaire, and the participants were recruited using the snowball sampling technique.

Literature review reveals that pets and their owners typically form strong links with each other (Daly & Morton, 2006; Walsh, 2009). Studies have also focused on the positive effects owning a pet has on children (Bierer, 2000; Melson, 2003), adults (Allen, Blascovich, Tomaka, & Kelsey, 1991; Lewis, Krägeloh, & Shepherd, 2009; McConnell & Brown, 2011; Stanley, Conwell, Bowen, & Van Orden, 2014; Valeri, 2006; Wells, 2009) and older adults (Garrity, Stallones, Marx, & Johnson, 1989). In particular, these studies focus on the effects of strong attachment to pets; studies have also focused on aspects such as physiological status (Brodie & Biley, 1999; Chandler, Fernando, Barrio-Minton, & Portrie-Bethke, 2015; Garrity et al., 1989; Lewis et al., 2009; Trigg, Thompson, Smith, & Bennett, 2016; Valeri, 2006) and social development (Merrill, 2012; Silberstein, 2013).

By examining the relationship between pet ownership and owners' well-being, researchers have found that pets typically made their owners feel well; owners also report that pets reduce their stress levels significantly. Owners also report that they typically develop strong bonds with their pets and that owning a pet not only requires responsibility but also enables one to become more responsible. In addition, owners also view their pets as friends and companions. It has also been found that owning pets improves one's capacity to interact and communicate with others; it is also known to improve the quality of family and friendship interactions. More interestingly, pet owners report that pets contribute significantly to the development of personal and spiritual values, and they also report that pets make them feel more aware and more connected with nature (Chandler et al., 2015). McConnell and Brown (2011) note that dogs contribute significantly to the well-being of their owners; in fact, dog owners' well-being was found to be higher than the well-being of those who did not own dogs. By examining the relationship between pet ownership and peoples' tendency for and frequency of laughter, Valeri (2006) found that cat and dog owners tend to laugh more on a daily basis than those who did not own pets. The presence of pets is also associated with decreased stress levels. A study also found that women who were accompanied by their pets felt less stressed while performing stressful and demanding tasks than women who were accompanied by their friends (Allen et al., 1991); the former also reported feeling less threatened by the task and the circumstance.

Another study has examined the relationship between pet ownership and loneliness among the elderly who live alone (Stanley et al., 2014); the study found that pet owners felt less lonely than those who did not own pets. Antonacopoulos and Pychyl (2010) found that pet owners, especially dog owners, with strong social skills and a good support system were less lonely than people who did not own pets. Moreover, dog owners also reported feeling less hopeless than those who did not own a pet (Beals, 2009).

Studies have also examined the relationship between pet ownership and owners' personality traits. For instance, Merrill (2012) found that women who owned cats and dogs felt more empathy than women who did not. Interestingly, men and women who prefer to own cats as pets were found to

be highly empathetic, open-minded, gentle, and pleasing. In addition, Beals (2009) found that female dog owners who lived alone and were not involved in an emotional relationship at the time of the study had more self-esteem than those who did not have pets. Moreover, primary school children who had both cats and dogs as pets were found to be more empathetic than children who owned either a cat or a dog, as well as those who owned neither. In addition, children who preferred to own a horse or a bird were also found to be highly empathetic (Daly & Morton, 2006).

Studies have also focused on the attitudes of pet owners toward pets, as well as the interplay between pet ownership and variables related to attitudes and dispositions toward animals. Positive attitude toward animals is known to positively influence one's psychological well-being. For example, dog owners who were more conscientious and loving in raising their pets were found to be more capable of satisfying their social needs (McConnell & Brown, 2011). In an empirical study measuring the effects of people's attitudes toward pets on the negative mood, it was emphasized that there is a positive effect on dog owner women's mood who do not have an emotional relationship and have positive attitudes toward pets. Participants with generally positive attitudes toward their pets were found to be happier than those who were generally not very positive toward their pets. The study also found that dog owners with positive attitudes toward their pets were also more attached to them, and this emotional attachment contributed significantly to the owners' well-being (Beals, 2009). A study that focused on elderly pet owners who had few close friends found that those who were more emotionally attached to their pets experienced less stress and distress (Garrity et al., 1989). Owners who are emotionally attached to their pets typically include them in their daily activities. For instance Douglas (2005) found that dog owners who were highly attached to their pets typically included them in their family activities; they also showed keen interest in their dogs. Cat owners who are highly attached to their pets are known to buy gifts for their cats; they also tend to prefer being physically near to their cats.

However, some studies claim that pet ownership has no significant relationship with quality of life and psychological well-being (Antonacopoulos & Pychyl, 2010; Friedmann, Katcher, Lynch, & Thomas, 1980; Lewis et al., 2009; Pelletier, 2007) or physical health (Maynard, 2013, Winefield, Black, & Chur-Hansen, 2008). It has also been claimed that pet owners typically tend to feel separated from other people (Brown & Katcher, 2001). Another study suggests that pet owners tend to reject social relations (McConnell & Brown, 2011), which typically leads to debt, anxiety, loss, mourning, loneliness, and depression (Antonacopoulos & Pychyl, 2010). Also, Lem, Coe, Haley, Stone and O'Drady's (2016) study's results indicated that pet ownership is associated with fever symptoms of depression. Considering all these situations, this study examines the ways in which pet owners' depression and subjective well-being levels predict their personality traits. It also aims to examine the relationship between these variables and of the participants' pet preferences. The hypothesis of this study are as follows: (1) Depression level of pet owner university students in Turkey predicts neuroticism and psychotism positively; and extraversion negatively. (2) Subjective well-being level predicts neuroticism and psychotism negatively; and extraversion positively. (3) Depression, subjective well-being levels and personality traits differ according to pet preferences.

METHOD

This section is compulsory, and it should provide a specific description of the methodology. All descriptions of materials and methods should be included here in the main paper. It should have the following structure.

Study Group

Totally, 307 pet owners aged 18 and above participated in this study; all participants are university students lived in Turkey at the time of the study. Data was collected using an online questionnaire between March-June 2019, and participants were recruited using the snowball sampling technique. As per this technique, participants recruit other participants for a study until the target

sample size is attained (Şahin, 2014). Accordingly, university students were asked to spread the scale and share it with other student acquaintances through social media accounts. A total of 50 men and 257 women participated in the study, and the participants were aged between 18 and 43 years old. The average age of the participants was 21.49.

Instruments

The following measures were used in this study: the Center for Epidemiologic Studies Depression Scale (CES-D), the Subjective Well-Being Scale (SWBS), and an Abbreviated Form of the Revised Eysenck Personality Questionnaire (EPQR-A).

Center for Epidemiologic Studies Depression Scale (CES-D): This scale was developed by Sheehan, Fifield, Reisine, and Tennen (1995) in order to gauge and evaluate the symptoms of depression in the general population. The scale was made relevant to the Turkish context by Tatar and Saltukoglu (2010). CES-D is a Likert-type scale, and it consists of 20 items, where 0 = rarely or none of the time to less than one day and 3 = all the time to 5-7 days. Items 4, 8, 12, and 16 are scored in reverse. The highest possible score on this scale is 60, whereas the lowest is 0. High scores indicate the prevalence and level of depression. The test-retest reliability coefficient for this scale was found as 0.69; the Guttman Split-half coefficient was 0.89, whereas the internal consistency coefficient was between 0.75 and 0.90. Four sub-dimensional structures of the scale were tested, and confirmatory factor analysis revealed that goodness of fit was 0.84. The scale's extent of similarity with Beck Depression Inventory was found to be 0.77. The scale was found to be 81.7% effective in distinguishing between patient and non-patient groups (Tatar and Saltukoglu, 2010).

Subjective Well-Being Scale (SWBS): Developed by Diener (1984), this scale is used to determine the subjective well-being of people. It was made relevant to the Turkish context by Tuzgöl-Dost (2005). The scale consists of individual judgments about positive and negative emotional expressions and living space. SWBS is a Likert-type scale, which consists of 46 items, (e.g., "I generally feel active and vigorous"), where 1 = very untrue of me and 5 = completely true of me. As many as 20 items represent negative statements, and they are scored in reverse. The highest possible score on the scale is 230, and the lowest possible score is 46. High scores indicate high subjective well-being. The scale is also constituted by 12 subscales: comparisons of own life, positive and negative emotions, goals, self-confidence, optimism, activities, friendships, future outlook, family relationships, envy, coping, and pessimism. The test-retest reliability coefficient for this scale was 0.86, and Cronbach's alpha reliability coefficient was 0.93. Corrected item-test correlations were found to vary between 0.32 and 0.63. Factor analysis revealed that the KMO coefficient was 0.861 (Tuzgöl-Dost, 2005).

Abbreviated Form Of The Revised Eysenck Personality Questionnaire (EPQR-A): The Eysenck Personality Questionnaire was developed by Francis, Brown, and Philipchalk in 1992. The original questionnaire has since been abbreviated. The questionnaire was made relevant to the Turkish context by Karancı, Dirik, and Yorulmaz (2007). It consists of 24 items and 4 sub-dimensions, which are extraversion, neuroticism, psychoticism, and lie. The "lie" subscale is not used to assess personality, but to prevent bias and to control its validity. Each sub-dimension consists of six items, and participants are required to choose either Yes (1) or No (0). Items 3, 5, 7, 10, 15, 16, 17, 19, 20, and 22 are scored in reverse. The highest possible score for each personality trait is 6, whereas the lowest is 0. Each sub-dimension indicates a different personality trait. The test-retest reliability coefficients for the extraversion, neuroticism, psychoticism, and lie subscales were 0.84, 0.82, 0.69, and 0.69 respectively; their internal consistency coefficients were found to be 0.78, 0.65, 0.42, and 0.64 respectively. In order to determine the validity of the scale, the extent of its similarity with scales such as the Rosenberg Self-Esteem Scale, the Abbreviated Perceived Parental Attitudes-Child Form (EgnaMinnenBarndomsUppfostran/EMBU), and the Fear Survey Schedule was assessed. Results suggested that the scale was valid (Karancı et al., 2007).

Design and procedure

This is a quantitative study based on exploratory and predictive correlational models. Studies based on correlational models seek to understand an event by analyzing the relation between one or more variables without any intervention. Predictive correlation involves the prediction of an unknown property of another variable from a known value of a variable (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz, & Demirel, 2016).

Data analyses

One-way ANOVA and independent group t-test analyses were performed to investigate whether depression, subjective well-being, and personality traits differed according to the categorical variables used in the study. The Pearson Product-Moment Correlation analysis was performed in order to determine the relationship between the scores obtained for CES-D, SWBS, Extraversion, Neuroticism, and Psychotism. A path analysis was conducted to examine the predictability of Extraversion, Neuroticism, and Psychotism scores by using the CES-D and SBWS scores.

RESULTS

Since this is mostly the first research of its kind in Turkey, the focus was on identifying some traits of the pet owner students who participated in this study. Table 1 summarizes the traits of the sample group in terms of the answers given to some questions about their pets.

Table 1. Frequency and Percentage Values for the Sample Group

Variables	F	%
Pet preference		
Cat(s)	174	56,7
Dog(s)	47	15,3
Other(bird, fish, turtle)	25	8,1
Multiple (several different animals)	61	19,9
Time spent with pets		
Less than 1 year	41	13,4
1–3 year	93	30,3
3–5 year	44	14,3
Over 5 years	129	42,0
Time spent with pets during the day		
Less than 1 hour	20	6,5
1–2 hours	47	15,3
2–3 hours	58	18,9
3–5 hours	72	23,5
Over 5 hours	110	35,8
Whether or not the pet has an illness		
Has an illness	17	5,5
No illness	290	94,5
Traveling with pets		
Take it with me	39	12,7
Entrust it to someone	122	39,7
Have not traveled since I began owninga pet or pets	12	3,9
Taken care of by a family member who remains at home	58	18,9
I can leave my pet alone at home on short trips	64	20,8
I entrust my pet to the animal hotel	12	3,9

N: 307

First, the attitudes of the sample group toward pets were gauged using a few questions (see Table 2). To the question, "How much of the responsibility to care for your pet belongs to you?," as many as 8 participants chose "never care for" (2,6%); as many as 20 participants chose "I do not care for" (6,5%). 53 participants chose "rarely care for" (17,3%), and 55 participants chose "care for" (17,9%). On the other hand, another 55 participants chose "usually care for" (17,9%), whereas 116

chose "completely care for" (37,8%). This shows that the majority of pet owners who participated in the study tended to care for their pets. To the question, "How attached are you to your pets?," only 1 participant chose "not attached at all" (0,3%), whereas 3 participants chose "very less attached" 3 (1%). As many as 4 participants chose "little attached" (1,3%), whereas 16 chose "sort of attached" (5,2). The number of participants who chose "very attached" was 37 (12,1%), and the number of participants who chose "quite attached" was 87 (28,3%). Interestingly, 159 participants chose "strongly attached" (51,8%). Thus, it can be observed that most of the participants were attached to their pets. To the question, "How sad would you be if your pet passed away?'" only 1 participant chose "would never feel sad" (0,3%), and 2 participants chose "would barely feel sad" (0,7 %). The number of participants who chose "would be a little sad" was 8 (2,6%), whereas 11 chose "would be sort of sad" (3,6%). The number of participants who chose "would be very sad" was 21 (6,8%), and 21 participants also chose "would be quite sad" (6,8%). As many as 230 participants chose "would be extremely sad" (74,9%). According to the findings, it was observed that the majority of the participants reported that they would feel intense sadness in case of loss of their pets.

Table 2. The attitudes of the sample group toward pets

How much of the responsibility to care for your pet belongs to you?		
	f	%
never care for	8	2,6
I do not care for	20	6,5
rarely care for	53	17,3
care for	55	17,9
usually care for	55	17,9
completely care for	116	37,8
How attached are you to your pets?		
	f	%
not attached at all	1	,3
very less attached	3	1,0
little attached	4	1,3
sort of attached	16	5,2
very attached	37	12,1
quite attached	87	28,3
strongly attached	159	51,8
How sad would you be if your pet passed away?		
	f	%
would never feel sad	1	,3
would barely feel sad	2	,7
would be a little sad	8	2,6
would be sort of sad	11	3,6
would be very sad	21	6,8
would be quite sad	34	11,1
would be extremely sad	230	74,9
Total	307	100,0

ANOVA and an independent group t-test analysis were performed to test the correlation between some categorical variables (pet choices, time spent with pets, time spent with pets during the day, traveling with pets, and whether your pet has a chronic illness) and continuous variables (CES-D, SWBS, Extraversion, Neuroticism, Psychotism). Please see Table 1 for more details.

The following values were obtained for "pet choices": CES-D is ($F_{(3,303)} = 1,487$, $p > ,05$); SWBS is ($F_{(3,303)} = 2,058$, $p > ,05$); Neuroticism is ($F_{(3,303)} = 2,368$, $p > ,05$); Psychotism is ($F_{(3,303)} = 2,257$, $p > ,05$); and Extraversion is ($F_{(3,303)} = 1,762$, $p > ,05$). The following values were obtained for "time spent with pets": CES-D is ($F_{(3,303)} = 2,145$, $p > ,05$); SWBS is ($F_{(3,303)} = 1,378$, $p > ,05$);

Neuroticism is ($F_{(3,303)}$ = 2,041, p > ,05); Psychotism is ($F_{(3,303)}$ = 1,291, p > ,05); and Extraversion is ($F_{(3,303)}$ = ,918, p > ,05). The values obtained for "time spent with pets during the day" are as follows: CES-D is ($F_{(4,302)}$ = ,646, p > ,05); SWBS is ($F_{(4,302)}$ = 1,682, p>,05); Neuroticism is ($F_{(4,302)}$ = 1,641, p > ,05); Psychotism is ($F_{(4,302)}$ = ,930, p > ,05); and Extraversion is ($F_{(4,302)}$ = ,592, p > ,05). The following values were obtained for "traveling with pets": CES-D is ($F_{(5,301)}$ = 1,875, p > ,05); SWBS is ($F_{(5,301)}$ = ,882, p > ,05); Neuroticism is ($F_{(5,301)}$ = ,618, p > ,05); Psychotism is ($F_{(5,301)}$ = 2,163, p > ,05); and Extraversion is ($F_{(5,301)}$ = 1,357, p > ,05) The values obtained for "whether your pet has a chronic illness" are as follows: CES-D is (t(305) = −,822, p > ,05); SWBS is (t(305) = −,456, p > ,05); Neuroticism is (t(305) = −,757, p > ,05); Psychotism is (t(305) = 1,877, p > ,05); and Extraversion is (t(305) = −,030, p > ,05).

In order to determine whether the variables had normal distribution, skewness and kurtosis values were calculated before performing the Pearson Product-Moment Correlation analysis and path analysis. The skewness and kurtosis values of the variables were found to be between -2 and +2 respectively (see Table 3).

Table 3. Pearson Product-Moment Correlation Analysis Results and Descriptive Statistics Used to Determine Correlation between CES-D, SWBS, Extraversion, Neuroticism, and Psychoticism Scores

	1	2	3	4	5
1. CES-D	-				
2. SWBS	−,710*	-			
3. Extraversion	−,163*	,435*	-		
4. Neuroticism	,596*	−,658*	−,244*	-	
5. Psychotism	,127**	−,115**	,047	,056	-
$\overline{X}$	16,55	170,55	3,72	2,83	2,02
SS	11,334	29,674	1,974	2,034	1,164
Skewness	,674	−,472	−,542	,058	,268
Kurtosis	−,305	−,020	−,976	−1,304	−,032

CES-D = Center for Epidemiologic Studies Depression Scale; SWBS = Subjective Well-Being Scale; *p < ,01 **p < ,05 (N = 307).

As shown in Table 3, there was a statistically significant correlation between CES-D and SWBS scores in the negative direction at the p < ,01 level (r = −,710; p < ,01). When CES-D and personality trait scores were examined, CES-D scores were negatively correlated with Extraversion scores (r = −,163; p <,01); the scores were also found to be positively correlated with Neuroticism (r = ,596; p < ,01) and Psychotism (r = ,127; p < ,05). The correlation between SWBS scores and personality traits was also examined. There was a statistically positive and strong correlation between SWBS scores and Extraversion scores (r = ,435; p < ,01). The correlation between neuroticism scores (r = −,658; p < ,01) and psychoticism scores (−,115; p < ,05) was found to be negative.
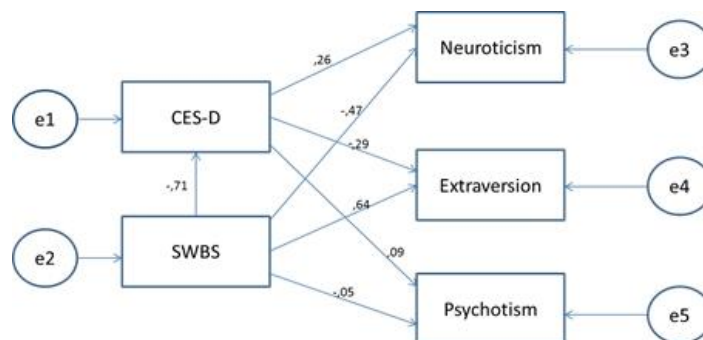

Figure 1. Path analysis figure and the extent to which CES-D and SWBS scores predict pet owners' Extraversion, Neuroticism, and Psychotism scores

Table 4. Path analysis results of the extent to which CES-D and SWBS scores predict owners pet owners' Extraversion, Neuroticism, and Psychotism scores

Independent variables	Neuroticism			Extraversion			Psychotism		
	ß	SE	T	ß	SE	t	ß	SE	t
CES-D	,260*	,011	4,379	,294*	,012	4,131	,091	,008	1,134
SWBS	−,474*	,004	−7,992	,643*	,005	9,044	−,050	,003	−,622

CES-D= Center for Epidemiologic Studies Depression Scale; SWBS=Subjective Well-Being Scale; *p < ,01 (N=307).

Figure 1 shows the form of the path analysis, whereas Table 4 shows the results of the path analysis. The SWBS scores predict the personality traits of Neuroticism (ß = −,474; p < ,01) and Extraversion (ß = ,643; p < ,01). However, SWBS scores are not a predictor of Psychotism (ß = −,050; p > ,01) scores. When we compare the CES-D scores with the related variables, we find that they predict Neuroticism (ß = ,260; p < ,01) and Extraversion (ß = −,294; p < ,01) scores, but do not predict Psychotism scores (ß = ,091; p > ,01).

Table 5. Comparison of Goodness of Fit and Research Results

Goodness Criteria	Good Fit	Acceptable Fit	Compliance values obtained from the study
c2	0≤c2≤2df	2df≤c2≤3df	1,163
P values	,05≤p≤1	,01≤p≤,05	,322
c2/df	0≤c2/df ≤2	2≤c2/df ≤3	1,08
RMSEA	0≤RMSEA≤,05	,05≤RMSEA≤,08	,023
NFI	,95≤NFI≤1,00	,90≤NFI≤,95	,999
NNFI	,97≤NNFI≤1,00	,95≤NNFI≤,97	,997
CFI	,97≤CFI≤1,00	,95≤CFI≤,97	,999
GFI	,95≤GFI ≤1,00	,90≤GFI≤,95	,996
AGFI	,90≤AGFI≤1,00	,85≤AGFI≤,90	,978
RFI	,90<RFI<1,00	,85< RFI <,90	,977

(Schermelleh-Engel, Moosbrugger, & Müller, 2003)

The path analysis conducted to test the model's goodness of fit suggests that the values are included in the goodness criteria. The following values were obtained from the path analysis: chi-square $\chi2 = 1,163$; (P < .01); ($\chi2$ / sd) = 1,08; RMSEA = ,023; GFI = ,996; AGFI = ,978; NFI = ,999; CFI = ,999; and RFI = ,977. The obtained model meets the required standards as indicated by the goodness indices (see Table 5).

DISCUSSION

The benefit of animal and human interaction for the improvement and protection of health cannot be ignored. The pet ownership has a crucial role in individuals' lives, which offers many beneficial effects. Pets may supply ongoing comfort and reduce feelings of sadness, loneliness, and helplessness during stressfull events. Psychological well-being is defined as managing existential challenges such as pursuing meaningful goals, personal development and building quality relationships with others (Keyes, Shmotkin & Ryff, 2002). Well-being of university students is of special importance for the society. The future well-being of a nation depends on the well-being of the students. Although there are many studies examining the well-being of university students (Cenkseven&Akbaş, 2007; Doğan, 2006; Selçukoğlu, 2001; Taysi, 2000, the relationship between psychological well-being and pet owership has not been studied. Basd on this need, this study focuses especially on pet owner university students living in Turkey, and aims to examine the effects of pet ownership on the following psychological factors: subjective well-being, depression, and personality traits. It also aims to examine the relationship between these variables and of the participants' pet preferences. This is the first study of pet owner university students in Turkey. It was conducted by

quantitative method based on exploratory and predictive correlational models. Let us first focus on owners' attitudes toward their pets.

As it is known, many research findings highlight the importance of increased awareness among youth service providers of the potential impacts of pet ownership for people. In this study, results supported the notion that, the pet ownership has a crucial role in participants' lives, which offers many beneficial effects. The findings of this study show that a large number of the participants are strongly attached to their pets; they also tend to take full responsibility to care for their pets. A large number of the participants also reported that they would feel extremely sad if their pets passed away. It is also important to consider the participants' profile while interpreting the variables. A large number of the participants were found to care for their pets, and this finding may have an effect on the results.

According to the findings, owning a cat, dog, or other animals (bird, fish, tortoise), or owning more than one animal as a pet, does not cause have any impact on the participants' depression, subjective well-being, or personality traits. On the other hand, some studies have shown that preference for a certain pet animal can impact the ways in which individuals measure their empathy and self-esteem (Beals, 2009; Daly and Morton, 2006; Merrill, 2012). When participants were asked about the time spent with their pets and the average time spent with pets during the day, it was found that most of them were pet owners for more than 5 years. In addition, most of them spent more than 5 hours with their pets during the day. However, these factors also do not have an impact on the participants' depression, subjective well-being, and personality trait scores.

Having positive attitudes toward pets is known to increase individuals' well-being and reduce their stress and distress levels (Beals, 2009; Garrity et al., 1989). In order to assess the participants' attitudes toward their pets, this study focused on the ways in which the participants plan their vacations—whether they take their pets along, whether they leave them alone, or whether they arrange someone to care for their pets. To this end, the study also focused on whether the participants knew if their pets had a disease. Contrary to expectations, these factors had no significant impact on participants' depression, subjective well-being, and personality traits.

The relationship between depression, subjective well-being, and personality traits was examined using the path analysis model. Subjective well-being and depression predict neuroticism and extroversion in personality traits, and goodness of fit index of this model has been found to be at acceptable levels. While depression predicts neuroticism positively, subjective well-being predicts neuroticism negatively. On the other hand, depression predicts extroversion negatively, whereas subjective well-being predicts extroversion positively. Subjective well-being has been found to be more predictive than depression for both personality traits.

The findings also reveal that individuals with high depression scores also have higher neuroticism and psychoticism scores. Other studies have suggested that depression scores are associated with neuroticism, exraversion (Fergusson, Horwood, & Lawton, 1989; Jardine, Martin & Henderson, 1984; Jylhä & Isometsä, 2006) and psychotism (Garcia-Torres &Alos, 2014). Studies that focus on pet owners typically focus on variables such as stress levels, hopelessness, and loneliness. In addition, these studies often compared pet owners with those who do not own pets (Allen et al., 1991; Beals, 2009; Garrity et al., 1989; Stanley et al., 2014). On the other hand, this study focused on the pet owners' symptoms of depression; it also examined the relation between depression and three sub-dimensions of personality traits. This study reveals that pet owners with high levels of depression also have high levels of neuroticism and psychoticism, but low levels of extraversion. These findings are similar to the findings reported by studies that focus on the general population.

Previous studies have shown that pet ownership contributes to subjective well-being (Chandler et al., 2015, McConnell & Brown, 2011, etc.). This study examined the relationship between subjective well-being and the personality traits of pet owners. It was found that subjective

well-being is positively correlated with extroversion scores. Thus, it is feasible to state that pet owners with high levels of subjective well-being also tend to be extroverted. In addition, subjective well-being has been found to be negatively correlated with the participants' psychoticism and neuroticism scores. Studies that have focused on the subjective well-being of adults have found that subjective well-being is associated with neuroticism, psychoticism, and extroversion (Alver, Dilekmen, & Ada, 2010; Hayes and Joseph, 2003; Schimmack, Radhakrishnan, Oishi, Dzokoto, &Ahadi, 2002). The results of this study show that the relationship between the above factors is similar for the general population, as well as pet owners.

The study is not without a number of limitations, however. First, the results of the study have been acquired from self-report scales, which may have biases in the answers, as individuals tend to be defensive and present themselves well in self-report-based evaluations. Second, the sample group was limited to university students. Although some studies have focused on pet ownership and animal-assisted therapy in Turkey (Cevizci, Erginöz, &Baltaş, 2009; Karayağız-Muslu& Conk, 2011; Pamuk, 2015), this is the first study of its kind in to explore the Turkish context. In this context, it must be mentioned that it is important to conduct more experimental and correlational studies involving the same variables; these studies may focus on pet owner students, as well as their difference with those who do not own pets. They may also focus on specific age groups, such as children, adults, and the elderly. These studies are likely to make significant contributions in the field of educational sciences and psychological counseling and psychotherapy, especially in terms of therapy techniques and treatments. While the effects of animal-assisted therapy have been studied quite extensively abroad, they have not received enough scholarly attention in Turkey. This is all the more important because findings reported by the studies conducted abroad have had significant impact on human life (Berge, 2019; Saliba, 2016). The centers offer psychological support to students, are available at many universities in Turkey. While these centers offer psychological support, they can offer support to students' well-being considering these practices in different ways.

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