THE INFLUENCE OF PETS ON THE EMOTIONAL STATE OF YOUTH DURING LOCKDOWN

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Abstract

Existing studies of correlation between the experience of owning and caring for a pet with the psycho-mental state of a person confirm the relevance of this scientific problem. It was substantiated that lockdown restrictions in this context turned out to be a significant factor, as they affect all parts of a personal life, in particular, psychological and social health. The empirical basis of the study is represented by methods: The Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith), Budner's Intolerance of Ambiguity Scale (IAS), UCLA (University of California, Los Angeles) Loneliness Scale (D. Russell, L. A. Peplau, M. L. Ferguson), K. L. Milutina`s Responsible Pet Attitude Scale", author's questionnaire for understanding the pets behavior. For statistical data analysis we used Chi-square; descriptive statistics, Duncan's Multiple Range test (DMRT), Scheffé's Test for Multiple Comparisons contingency tables, One-way ANOVA, Fisher's F-test, Spearman rank correlation coefficient, Kolmogorov–Smirnov test (KS test), Livigne's homogeneity criterion. The study sample consisted of 79 people, their age ranged from 16 to 26 years. Sex distribution: men - 20.2% (16), women - 79.4% (63). The study found that people who have animals have lower rates of depression and anxiety than non-owners do, but higher rates of intolerance to the unknown. It has been shown that people who give more care to their pets are slightly less depressed than those who do not pay attention to their pets. We found that anxiety does not significantly depend on the care of animals.

The dynamics and causal relationship between animal care and anxiety remain controversial. As the prospects for further research, we see the empirical clarification of the young owner-pet relationship features depending on the owner`s separation from his family, functionality of this family, the purpose for buying and owning a pet; We also find interesting the study of the correlation between pet ownership and tolerance to the unknown. An important observation issue remains the consideration of ways to improve the psycho-emotional state of youth.

Keywords: pets, anxiety, tolerance to uncertainty, depression, lockdown.

Introduction

In recent years, the number of pets in families has increased significantly, which has inevitably led to an increase in researchers' interest in studying the nature of human-animal relationships. For example, according to the literature, more than half of families in the United States (Bernstein, 2005) and almost third of families in Europe have a pet (Serpell, 2002). Moreover, the role of animals in human life has changed in recent decades. Treatment of people with animals (zoo therapy) has been known since ancient times. Lack of healthy relationships with others in a large number of people leads to

depression, stress and psycho-emotional disorders. The positive effect of animals on a person is not sufficiently confirmed by experiments. Zootherapy is now used in all developed countries (Frasson, 2021). Special institutes have been established to study the effects of animals on humans, and international conferences and seminars have been held on methods of treatment with animals. There are organizations in the world that assist people with physical or mental problems in the form of zoo therapy (Castillo, Ladio, 2019). They all united by the fact that they use pets - most often dogs, cats, rabbits and birds - as a therapeutic agent (Vani, Mannem, Khantamneni, 2018). But the impact of coexistence with animals, without the purpose of their special use has not been studied enough.

The aim of the study: to investigate the dependence of the pet owner's psycho-emotional state on the presence, characteristics and factors of care for his pets.

Theoretical background

From the ancient times, pet-animals were mostly used to help people in farming and hunting, but nowadays the pet has become considered as a companion, a friend, a family member. In this case, according to a Serpell's study (Serpell, 2002) people really consider a pet as a member of their family, allocating a separate place to it in the family structure, different from the places of other human members due to the specifics of their interaction and its influences. Thus, the pet can integrate into the triangulation of the family system, have the different roles - as an agent of separation (Varga, 2009), or as a replacement for a family member and provide social support within the family (Varga, Fedorovich, 2010). During the development of humankind pet-animals lived next to us, they have evolved and adapted to mutually beneficial life, forming a kind of symbiosis with human in functions, which some researchers, in particular K. Lorenz (Lorenz, 2013), considers as being a higher type of social organization. As a result, the creatures of other species exist alongside the humans and their interaction is an interesting phenomenon for research, especially in interdisciplinary fields. As can be seen, in the scientific environment of Western countries, the issue of interaction between animals and humans is significantly and fully revealed by many works, which, unfortunately, cannot be said about the post-CIS countries, where such works are much less. This confirms the need and relevance of research on this topic one more time.

Closely related to the issue of keeping a pet, as a companion is the question of the effects of interaction with it: its impact on human physical, physiological and psychological health and well-being. The main idea here is the thesis that companion animals can have a therapeutic effect on people of completely different ages and people with physical or mental diseases. Studies have shown the role of animals (and not only pets) in harmonizing interactions between humans, including in-families interactions with their various structural units, reducing the intensity of feeling loneliness, anxiety, depression, also in development of empathy and ability to feel happiness (Milutina, Vlasova, 2019; Fedorovich, Emelyanova, 2014). The effects of interaction with an animal cannot be determined without considering the issue of caring. True concern for someone/something affects a person's self-development. In addition, it develops empathy because the subject needs to understand and critically evaluate the condition of the object of care to determine exactly what help does it need. At the same time, exactly

the caring for a pet affects a person, just a fact of owning or having the animal nearby does not imply a close relationship. We should note that not all researchers share the idea of the positive contribution of pets to human health. It is important to highlight in owner-pet relationship such factors as anthropomorphization and replacement the lack of subjects in the human environment by animals (Marasina, 2020), which may be an obstacle for the psychological problems treatment and the family transition to a higher level of development (Milyutina, Vlasova, 2019).

Consideration of the issue in terms of interspecific interaction, as well as contact between human and nature is relevant and necessary in the age of rapid scientific and technological progress.

Methodology

The research uses methods of theoretical analysis of scientific approaches to the problem, correlation research, and analysis of the obtained data. The empirical basis of the study is represented by methods: The Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith), Budner's Intolerance of Ambiguity Scale (IAS), UCLA (University of California, Los Angeles) Loneliness Scale (D. Russell, L. A. Peplau, M. L. Ferguson), K. L. Milutina`s Responsible Pet Attitude Scale", author's questionnaire for understanding the pets behavior. For statistical data analysis we used Chi-square; descriptive statistics, Duncan's Multiple Range test (DMRT), Scheffé's Test for Multiple Comparisons contingency tables, One-way ANOVA, Fisher's F-test, Spearman rank correlation coefficient, Kolmogorov–Smirnov test (KS test), Livigne's homogeneity criterion. The study sample consisted of 79 people, their age ranged from 16 to 26 years. Sex distribution: men - 20.2% (16), women - 79.4% (63).

Results

Statistical processing of respondents' results showed that out of 79 subjects, 55 were pet owners and 24 did not have pets. The most popular species of pets are cats (27) and dogs (22). Six (6) respondents are owners of other pet species. Of the sample, 14 people live alone, 42 – with their parents, 22 with partners and one respondent lives with friends. We can be consider partnership living as separate family units. All respondents indicated that they had a pet in their childhood. We could not use this data for further analysis in this category, but we find this fact as interesting for descriptive statistics. According to the statistical analysis of the results obtained by HADS, the sample generally showed above normal values on the scale of depression and anxiety, expressed subclinical anxiety and depression (8.6 and 8.7 points, respectively); the highest values were 20 and 19 points for the factors of anxiety and depression, respectively, the lowest - 1 and 2 points. According to the IAS results, the average samples were normal (59.8 points). The highest value was 82 points, the lowest - 46 points. It is important to note that the higher these indicators according to the method, the higher the intolerance. Interesting data showed statistical processing of results of UCLA Loneliness Scale. The average scores here mean a low degree of characteristic expression (13.5) which demonstrated by the mode, while the highest value obtained (26 points) indicate its average level. This may mean that students as an age and social

group do not feel loneliness even during lockdown restrictions. This may be the effect of social networks development.

The average values for the pet care factor were quite high (22 out of 25 points), which indicates a generally good attitude and attention to pets in this sample. In this case, the lowest value is 15 points, and the highest - 24 points. Such results, however, may interfere with the analysis of the data, as in general the indicators of animal care do not differ significantly from each other.

In general, we can characterized he sample as tolerant to the unknown, with a slight expression of depressive and anxious states, without indicated state of loneliness. Most of the sample consists of pet owners who take sufficient care of them.

Further analysis showed the following data: the most popular characteristic of the pet for its role in the family was its characteristic as a family member - 59%. In second place in popularity was the answer about the friend-role of a pet - 20.2%, which is just a slightly different from a "simple pet of the family" role 17.2% (Fig. 1).

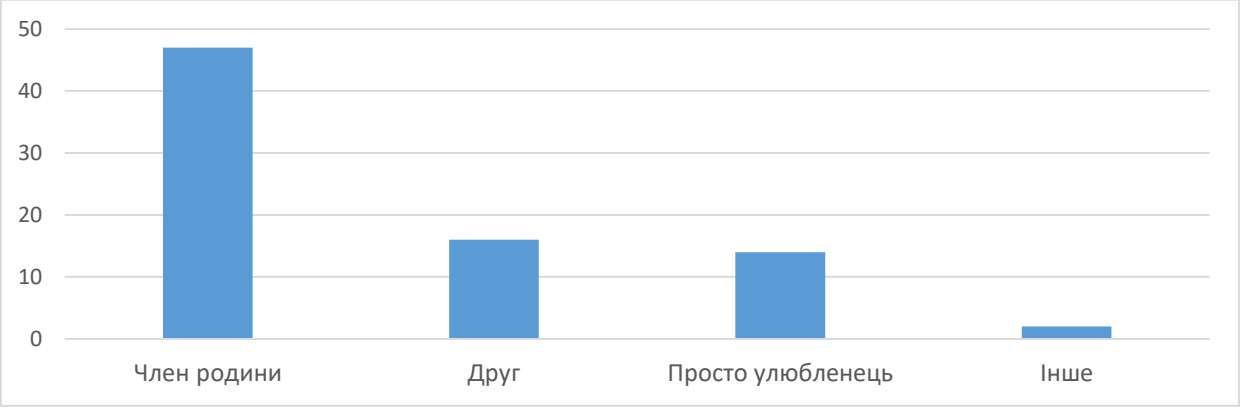

Fig. 1. Comparison of attitudes to the role of the pet in the family

The answers did not differ depending on the animal species, but depended on the presence: people who did not have pets mostly indicated the pet-role in the family as a “simple pet” or family member, and (2) respondents did not understand its role as a friend. These data confirm the results of other authors’ studies, mentioned in the theoretical part.

According to the answers with the task of characterizing the emotional state of the animal in the picture, the subjects generally coped well. Dog owners earned more points than cat owners did. At the same time, the most problems cat-owners had with recognizing the cat’s emotion of fear (20 out of 27 answers are not correct), the most understandable emotion for them - emotion of playfulness (aggression). For dog owners, the most understandable was dog’s calmness, the most problematic - playfulness (8 answers out of 22 incorrect).

The same distribution for the answers based on the criterion of the desire to have one more pet for the pet owners, for respondents who do not have a pet. An interesting observation for us became the fact that only one respondent among all who did not have pets answered that he does not want to have it in future as well. Other responses confirmed that people want to have a pet but cannot have it now. We also received two answers "Yes, I plan to have it soon". These answers may be related to the way people feel in lockdown and raise the importance of having a pet for people. This partially

confirms the hypothesis based on theoretical analysis of the literature that keeping a pet nowadays is considered as a norm and standard, while the non-having a pet is something wrong and unpopular. Respondents who have pets on a question about having one of few more answered as follows: 19 (34.5%) answers such as "I want, but I cannot afford it these days", 12 (21.8%) negative answers ("I do not want") and 24 answers (43.6%) positive (Yes, I plan it"). We can say that these people do not regret that they bought/bring home a pet, because they are so happy with their communication that they want to have more pet. However, this may mean that communication with their current pet is insufficient for these subjects.

At the beginning of data processing, we used KS test and Livigne's homogeneity criterion to study the normal distribution and equality of variances. The analysis showed the following conclusions: normal distribution on the scales of depression, anxiety and loneliness; abnormal - for the factor of tolerance to uncertainty. The Livigne's test showed the general equality of all variances. Thus, we the applied Mann – Whitney test to the latter factor, and the Student's t-test to the two previous ones. The data represented in table 1.

Table 1

Application of Student's t-test, Mann-Whitney test and Livigne's test

		Livigne's test	Student's t-test
		Value	Value (2-side)
Loneliness	dispersion levels expected	0.604	0.099
	dispersion levels not expected		0.116
Depression	dispersion levels expected	0.083	0
	dispersion levels not expected		0
Anxiety	dispersion levels expected	0.091	0
	dispersion levels not expected		0
		Mann-Whitney test	
Uncertainty			.003

Comparing the results of the t-Student's test analysis with the standard ($p < 0.05$), we can say that having a pet affects such factors as depression and anxiety, and has no effect on the loneliness factor; according to the Mann-Whitney test for the uncertainty tolerance scale, having a pet factor also shows statistically acceptable results ($p = 0.003$). Further analysis is to determine its specific impact.

After applying a one-way ANOVA to the sample to identify differences in the impact on the psycho-emotional state of different pet-animal species and using the Scheffé's test, we have got the results shown in Table 2.

Table 2

The results of Scheffé's test tables

Dependent variable			The average difference (I-J)	Value
Tolerance to uncertainty	no pet	cat	-4.22222	.183
		dog	-7,03030*	.009
		other pet	-2.33333	.902
	cat	no pet	4.22222	.183
		dog	-2.80808	.554
		other pet	1.88889	.943
	dog	no pet	7,03030*	.009
		cat	2.80808	.554
		other pet	4.69697	.518
	other pet	no pet	2.33333	.902
		cat	-1.88889	.943
		dog	-4.69697	.518
Anxiety	no pet	cat	7,03704*	.000
		dog	7,30303*	.000
		other pet	9,66667*	.000
	cat	no pet	-7,03704*	.000
		dog	.26599	.997
		other pet	2.62963	.561
	dog	no pet	-7,30303*	.000
		cat	-.26599	.997
		other pet	2.36364	.660
	other pet	no pet	-9,66667*	.000
		cat	-2.62963	.561
		dog	-2.36364	.660
Depression	no pet	cat	8,57407*	.000
		dog	6,89394*	.000
		other pet	8,83333*	.000
	cat	no pet	-8,57407*	.000
		dog	-1.68013	.451
		other pet	.25926	.999
	dog	no pet	-6,89394*	.000
		cat	1.68013	.451
		other pet	1.93939	.711
	other pet	no pet	-8,83333*	.000

	cat	-.25926	.999
	dog	-1.93939	.711

** Significant indicators are highlighted in pink*

We used the Scheffé's test to determine the average response for different groups by three methods, as the previous analysis did not show a significant difference between the groups of pet owners and pet non-owners on the criterion of loneliness. Analysis of Scheffé's test tables shows that there is a difference for the factor of tolerance to uncertainty with the criterion of dog ownership, but no difference for criterion of cat or other pet-animal ownership. There is also no difference between having different species of pets for this criterion.

For a more detailed analysis, we can consider the results of comparing the average responses using the Duncan test (DMRT) for each of the factors visualized in Fig. 2.

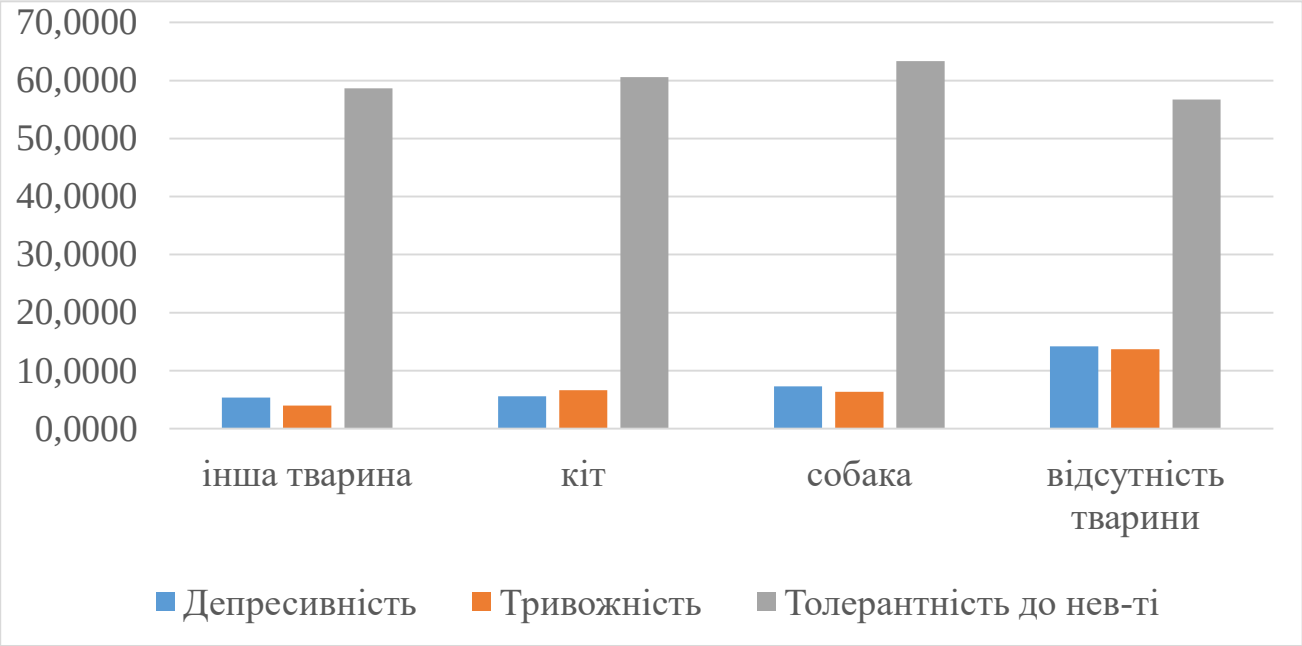

Fig.2. Comparison of average responses by methods of psycho-emotional state evaluation based on Duncan's test (DMRT)

As can be seen, the average indicators for the factor of anxiety and depression of pet non-owners are generally higher than the responses of pet owners, and the figures did not differ much depending on the species of pets. The graph shows that the indicators for measuring these two factors are higher for pet non-owners and slightly reduced depending on the type of pets: dog, cat, other animal. We can conclude that tolerance for uncertainty does not depend on the species of pets, but it is different for dog owners and non-owners of pets.

Quite different, more significant results shows the table comparing the factors of anxiety and depression with the pet having.

Similarly, we applied Scheffé's test and one-way ANOVA to other data found by the answers of the respondents to the questions compiled separately from the questionnaires, which in some ways showed significant results. Thus, the factors on the metric scales did not differ in the variable of residence (with the partner / with parents / with friends), but the difference was noticeable if the independent variable used the factor of the owning a pet in childhood and a type of this pet. Thus, one-way ANOVA showed a correlation ($p < 0.05$) between the scales of uncertainty ($p = .000$) and loneliness ($p = .007$) with the factor of the having a pet in childhood.

It was also important for us to establish the specific effect of the criteria on having a pet factor rather than the pet type. We used Spearman rank correlation coefficient for this. The data are shown in table 3.

Table 3

The results of Spearman rank correlation coefficient on the variable grouping the factor of pet ownership

Spearman rank correlations						
		Pet ownership	Uncertainty	Loneliness	Anxiety	Depression
Pet ownership	correlation coefficient	1.000	-,294**	-.215	,640**	,644**
	Value (2 side)		.009	.057	.000	.000
Loneliness	correlation coefficient	-.215	-.158	1.000	.123	-.059
	Value (2 side)	.057	.169		.279	.607

** Significant indicators are highlighted in yellow*

Discussion

We can say that the analysis found a significant effect on anxiety and depression of pet non-owners, but did not show a significant difference in the results of comparisons for owners of different species of pets. A. Nikolska obtained similar results in her work of (Nikolska, 2009). Such data suggest that regardless of the pet type, depression and anxiety of their owners are lower than in pet non-owners.

Interesting data were obtained by the method of tolerance to uncertainty (IAS). The factor of intolerance to uncertainty is higher in dog-owners, even higher than in pet non-owners. These results lead to the possible conclusion that dog owners are generally more dependent on their pets, because they live longer and require more care than other species of pets. A similar pattern is observed in cat owners, while in owners of other animals intolerance to uncertainty is lower.

Thus, it is on this criterion that an unexpected picture emerged for the research hypothesis: intolerance to uncertainty is low for people who do not have pets and it increases with the difficulty of keeping a pet. However, this difference is not so great if

you look at Duncan's table (is 3-5 points). This factor is also promising for further study, as it is interesting that it does not correlate in this way with the other two scales - depression and anxiety. Note that K. Marasina obtained similar results were in her work (Marasina, 2020). Analysis of Scheffe's tables allows us to summarize that the rates of loneliness in people with a large number of pets in childhood (several species) were on average 4 points lower than in those who had specific species (10.4 and 15.1 points, respectively). For the uncertainty tolerance parameter, this factor was inverse. Thus, people who had many animals as children ate more intolerant of uncertainty, but less lonely.

The factor of tolerance for uncertainty has shown different results: here the connection is reversed, although not significant. That is, pet owners are more tolerant of uncertainty than pet non-owners are. We wonder how the analysis differs by specific species and by the ownership factor itself.

It is also worth paying attention to the fact that the pet ownership affects loneliness. Although the result was not very significant, it approached the number of low correlation, with the opposite.

We can say that pet owners are more prone to loneliness than pet non-owners are. An important issue here is the initial dependence: lonely people are more likely to have pets to make up for the lack of social contacts. However, the analysis also showed that these people have lower needof communication, which is expressed in the lack of correlation between loneliness and depression and anxiety. In this way, people can satisfy their need of communication by having a pet. Maybe it is about introverts, who consider such a lifestyle as more calm and comfortable.

Conclusion

We found in our study that pet owners have lower rates of depression and anxiety than pet non-owners do, but higher rates of intolerance to uncertainty. At the same time, people who take care of their pets are slightly less depressed than those who do not care. Anxiety does not significantly depend on the pet caring.

As **the prospects for further research**, we see the empirical clarification of the young owner-pet relationship features depending on the owner`s separation from his family, functionality of this family, the purpose for buying and owning a pet; We also find interesting the study of the correlation between pet ownership and tolerance to the unknown. An important observation issue remains the consideration of ways to improve the psycho-emotional state of youth.

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