



Positive Contribution of Pet Nutrition to the Economy and Humanity during the Pandemic Period

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JEMT/2021/v27i930363

Editor(s):

- (1) Dr. Olusegun Felix Ayadi, Texas Southern University, USA.
- (2) Dr. Kamarulzaman Ab. Aziz, Multimedia University, Malaysia.

Reviewers:

- (1) Shailja Tripathi, IFHE University, India.
- (2) Surjit Kumar Kar, IBS Hyderabad, India.
- (3) Dibyendu Choudhury, India.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/75582>

Review Article

Received 17 August 2021

Accepted 27 October 2021

Published 11 November 2021

ABSTRACT

In this study, it is aimed to analyze the positive effects of pets on the market economy and people. The COVID-19 pandemic started with the virus outbreak that emerged in Wuhan City, the capital of Hubei Province of China, on December 1, 2019 [1], and the first case in our country was announced by the Ministry of Health on March 11, 2020. With the rapid spread of the epidemic in the world, closures in countries, travel restrictions, working from home and the introduction of the online education system, the rate of spending more time with pets, known as people's loyal friends, and the rate of adopting new animals have begun to increase. In this process, it has been seen that people are more interested in their animals and they are more sensitive in meeting their needs. It has been observed that they do not hesitate to allocate a significant part of their budgets in many subjects such as animal nutrition and veterinary care services, consumption expenditures such as pad shop products and purchasing new animals have increased, and this market has been dynamic. It is known that having a pet is good for blood pressure, greatly reduces the feeling of loneliness and depression in people, and always keeps their hopes warm. It can be said that taking care of furry friends after a long day helps people feel more optimistic and spending time with their pets helps them cope with stress, helps animals increase social relationships, and develops

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empathy, social skills, mutual love and sense of responsibility in children. It can be said that spending time with their pets is good for people's mood, and they even prefer their animals over other people in quarantine, and they gain social status. The trend of online shopping for pets also seems to become permanent. Pets are now more important than ever in our lives. The pandemic may ease in the near future, but the closeness of our pets will be permanent. It is seen that the tendency towards the adoption of pets and meeting their needs such as care and nutrition is increasing day by day. While various needs come to the fore in this trend, it is important to determine the economic role of consumption of these needs and their relationship with the reasons.

Keywords: Pet; COVID-19; economic benefit; social status.

1. INTRODUCTION

Throughout the history of civilizations, human beings, who have been together with animals for the purpose of protection, nutrition, dressing and employment, have benefited from them in many fields such as economic, medical and industrial, and adopted animal husbandry. Based on religious, economic and social gains, the animal-human union has preserved its existence by changing its dimensions and qualities from the primitive ages until today. In this process, the meanings attributed to the animal, the definitions made, have been the determinants of the attitude and point of view towards it [2]. For this reason, animals have sometimes been a prey to sustain human life, sometimes a mate in mythology, a sacred power with religious concerns, and sometimes a friend or treatment tool. People's interest in animal behavior within the animal husbandry activity started with the transition to the agricultural society. Human-animal relations, who were maintained for hunting and protection from predators in primitive ages, gained a different dimension with domestication in the following ages. With domestication, many animals have been actively involved in human life and have become useful. This gave rise to human-animal interaction. Among domesticated animals, dogs have an important place because they have similar characteristics to humans, are altruistic, helpful, empathetic, loyal and very good friends.

The human-animal relationship has a mutual interaction and a fluid dynamic. For this reason, animals; They perceive the person as a dangerous or ordinary object depending on the negative communication or no communication with them. Or they perceive someone who provides feed and water as a social partner [3]. However, a calm, confident, balanced breeder appears to have a non-violent, safe and peaceful effect on animals [4].

The human-animal relationship is in a mutual interaction and has a fluid dynamic. Therefore, depending on the negative or no communication with the animals themselves, they perceive the human as dangerous, as an ordinary object, as a provider of food and water, and finally as a social partner [3]. However, a calm, confident, well-balanced breeder appears to have a safe and peaceful effect on the animals without resorting to violence [4]. In such cases, they continue their association by not perceiving people as a dangerous threat, but as an ordinary object or social partner [3]. Studies on the use of animals for any purpose and human-animal association show that owning an animal has a positive effect on attitudes and behaviors towards animals [5]. It is possible to see people's interest in animals in every age period. This interest is not limited to curiosity, but also includes reasons such as the differences in the anatomical structures of animals, life styles and conditions, and the search for love and friendship.

¹ APPA's 2021-2022 Survey reports pet ownership has increased from an estimated 67% of U.S. households that own a pet to an estimated 70%. Millennials were also revealed to be the largest cohort of pet owners at 32%, followed closely by Boomers at 27% and Gen X at 24% [6-7].

Key findings from the 2021-2022 study include:

¹ Since 1988, APPA has collected and published the pet industry's most comprehensive consumer research study about pet ownership, pet care practices, and preferences in the consumption of product and services by America's pet owners. Published every other year, it is used by all sectors of the pet products industry and those looking to enter the market, including manufacturers and retailers, marketers, research and investment firms and media professionals alike to understand their consumers and define their business strategies. The American Pet Products Association (APPA) is the leading trade association serving the interests of the pet products industry since 1958.

- Pet spending increased during the past year, with 35% of pet owners stating they spent more on their pet/pet supplies – including food, wellness-related products and other pet care items – in the last 12 months than in the preceding year.
- Fourteen percent of total respondents (pet owners and non-pet owners) obtained a new pet during the pandemic. Additionally, at least one in four new pet owners shared their recent pet acquisition – including saltwater fish (60%), dogs (47%), birds (46%), small animals (46%), cats (40%), freshwater fish (34%), reptiles (27%) and horses (27%) – was influenced by the pandemic.
- Pet owners shopping online increased by almost 20%, from 72% in the prior year to 86% of responses in this year's study. Before the pandemic, 60% of pet owners usually purchased pet products in person at brick-and-mortar stores. During the pandemic, in-person shopping dropped to 41%, aligning more closely with the 46% of pet owners who prefer to purchase online with purchases shipped to their home.
- Fifty-one percent of pet owners are willing to pay more for ethically sourced pet products and eco-friendly pet products.
- Pet insurance purchases amongst both dog and cat owners have also increased, nearly doubling amongst cat owners in particular [6-7].

One of the most important dimensions in the human-nature relationship is the relationship established with other living species. In this relationship, animals occupy a very special position. Pets have functions such as object of love, relieving loneliness, regulating emotions [8]. There has been an increase in the number of individuals who have pets recently [9]. In studies conducted in the field of psychology, the need to establish relationships, the feeling of loneliness [10] and the healing power of having a pet on some pathologies are investigated [11]. It is among the findings of the study that elderly individuals who have established strong bonds with their pets in conditions of limited social support experience less depressive and anxious symptoms and have better physical health than others [12].

It can be said that pets can serve as an important source of social support, providing their owners with numerous positive psychological and physical benefits. In addition to being

psychologically good, scientific research in the field of medicine shows that keeping pets and being friends with pets have many benefits for human health. Information from these studies shows that owning a pet reduces the death rate from heart attack [13]. It has been reported that there are many positive effects on children such as mental and social development, taking responsibility, and the development of comprehension skills, and they are more prone to many activities such as doing sports and taking up hobbies, and children with pets are more successful in terms of empathy and social adaptation [14]. Animals are of great value as therapeutic aids in treating core problems such as loneliness in childhood and adolescence or in more complex disorders such as autism [15]. In the case of hospitalization, which is a major source of stress, it has been observed that pets can reduce physiological arousal in children during treatment and therefore help children better cope with stress and illness in the hospital environment [16]. Adolescent and early adolescent pet owners have higher self-esteem and autonomy. Children with pets appear to be better socially integrated, have higher social positive self-esteem, better cognitive development [17]. The friendship relationship that adolescents develop with their pets during pre-adolescence is very important, supporting the development of their self-esteem [18]. The positive effect of animal feeding is seen on children and adolescents as well as adults. In a study, animal-assisted therapy was used and positive effects were seen on the feelings of worth, self-respect and hopelessness in patients with AIDS [19].

Pet types have been a therapy tool for people of all ages. It ensures that it has a constructive effect in many areas such as positive personality traits and development, socialization, especially in childhood and youth. In addition, in recent years, it has been seen that animal-assisted therapy applications covering a wide variety of animals such as dogs, cats, farm animals, birds, rabbits, dolphins and fish have been applied to the elderly, children, mentally ill, disabled and even dying patients [20]. For the positive effects of animal interaction, it is also possible to say that it is effective in reducing stress-related parameters such as epinephrine and norepinephrine, improving immune system functioning and pain management, increasing trust towards others, reduced aggression, enhanced empathy and enhanced learning [21].

To summarize, these animal interactions, which occur as a result of human-animal association, pets, especially dogs, or animal-assisted therapy applications, have positive effects on people of different ages. These include humanistic interest, interpersonal interactions such as social behavior, stress-related parameters such as cortisol, heart rate, blood pressure, mood-related parameters such as fear and anxiety, and finally cardiovascular diseases, especially mental and physical health [2]. Owning a pet reduces the death rate from heart attack by 3 percent [13].

Many studies show that animal feeding has beneficial health consequences. In the Covid-19 period, many benefits of keeping pets have been seen.

2. HUMAN-ANIMAL INTERACTION DURING PANDEMIC

As a result of the pandemic that emerged in December 2019, it has caused difficult processes for both humans and pets. While people have social and psychological effects due to the implementation of the closures due to the pandemic, some of those who keep pets in their homes are experiencing economic difficulties; some people have started to keep animals in their homes in order to overcome the effects of the closures. This situation had a twofold effect.

1. People became friends with animals when they could not socialize.
2. Most of the people have started to experience some psychological problems with the effect of closure and pandemic. They tried to overcome their fear of being depressed and dying, being alone and working remotely or losing their jobs by keeping pets.

While some of the people who started to have pets have had animals before, some of them have started to have animals in their homes for the first time. This situation has provided a movement in the market with the active work of businesses that sell products and services for animals as a result of adopting pets purchased from pet shops and stray animals. According to the data of APPA, the distribution of the total pet sector expenditures in the USA by 2018, 2019, 2020 and 2021 is as follows.

Pet Industry Market Size, Trends & Ownership Statistics; Total U.S. Pet Industry Expenditures:

Year	Billions of dollars
2020	\$103.6 Actual
2019	\$97.1
2018	\$90.5

(Data was announced at the 2021 State of the Industry presentation on 3/24/21)

Actual Sales within the U.S. Market in 2020

In 2020, \$103.6 billion was spent on our pets in the U.S.

Breakdown:

Pet Food & Treats	\$42.0 billion
Supplies, Live Animals & OTC Medicine	\$22.1 billion
Vet Care & Product Sales	\$31.4 billion
Other Services	\$8.1 billion

(Other Services include boarding, grooming, insurance, training, pet sitting and walking and all services outside of veterinary care)

Estimated 2021 Sales within the U.S. Market

For 2021, it estimated that \$109.6 billion will be spent on our pets in the U.S.

Estimated Breakdown:

Pet Food & Treats	\$44.1 billion
Supplies, Live Animals & OTC Medicine	\$23.4 billion
Vet Care & Product Sales	\$32.3 billion
Other Services	\$9.7 billion

In addition, people can easily overcome various health problems by feeding animals. Therefore, researches show that those who keep pets at home during the pandemic process make them feel better spiritually, and thanks to these animals, they overcome their illnesses more easily without going to the hospital and doctor, and they allocate fewer budgets for health problems. Expenditures made by people for health problems have an important place in their budgets. It can be interpreted positively in terms of providing an indirect contribution to both individuals and the country's economy in economic terms, as they are purified from some mental health problems and reduce the budget spent by people for health. Our pets bring unconditional love into our lives. Focusing on pet ownership during the pandemic, the APPA COVID-19 Pulse Study revealed that some people are hesitant to leave their four-legged friends behind and return to the office, which is making the pandemic more bearable [22].

Royal Canin [23], according to his research, reveals that some participants prefer their pets to other people during the forced confinement period (quarantine period) spent at home, that spending time with their pets is good for their mood. Many pet owners make serious life decisions, including changing jobs to spend more time with their pets. According to data from the "Pets in Pandemic" report, at least three-quarters of pet owners say their pet has companionship (86%), reducing stress and anxiety (78%), boredom (75%), and decreasing feelings of depression (74%) show significant benefits and instill hope (69%) during the COVID-19 pandemic [23].

The observed figures reveal that 1 in 3 pet owners in the world have adopted a new pet during the pandemic. 36% of pet owners state that they adopt an animal to prevent or alleviate the negative feelings caused by loneliness, and 58% of them state that they adopt an animal to be their friend. According to a joint study by the Human-Animal Bond Research Institute (HABRI) and Mars Petcare, 85% of people show that interacting with pets helps them reduce their loneliness, and 76% show that these interactions support them during the social isolation process. Studies show that pet owners are less likely to be depressed than those who don't [24]. In addition, playing with a dog or cat can increase serotonin and dopamine levels by creating a calming effect, which makes people happy. 95% of pet owners see their animals as part of their family [24].

Since the compulsory quarantine situation brings with it limited social relations, it is very important to have a pet for psychological health. As the time people spend with their animals increases, the negative impact of the epidemic and quarantine decreases. Individuals with pets are less affected by the epidemic and quarantine process than people who do not have pets [25].

Cats and dogs have been a source of hope and happiness for their owners, especially in times when we had to be as isolated as possible from the outside world, such as the pandemic. In addition, the presence of pets has provided very beneficial results in terms of both physical and mental health, enabling people to be more active in their daily routine. Emotions such as anxiety and boredom can be managed better with the activities carried out to fulfill both the happiness they provide to people and the requirements of responsible animal ownership. It is also a fact that pets reduce stress and feelings of

loneliness. During the pandemic, many people have extended their family with a pet. In this context, pets have provided people with the kind of social support that can help reduce feelings of loneliness and isolation [26].

3. CONCLUSION AND SUGGESTIONS

Studies show that people who take care of their pet friends feel more optimistic after a long and stressful day, and some say that spending time with their pets helps them cope with stress. The health benefits of owning a pet are a fact that experts have already revealed. Still, many pet owners have had the opportunity to personally experience these beneficial effects during closures.

Having and caring for pets has been a life saver for many people during this challenging time. As a result, while the importance given by pet owners to the health of their cats or dogs has increased, there have also been significant changes in consumer behavior. People have entered the trend of shopping online for their pets as well as their own needs, and this trend seems to be permanent. Pets are now more important than ever in our lives. The pandemic may ease in the near future, but the closeness of our pets will be permanent.

Here, both the stagnation in the markets has been reduced economically, and people have been away from the stressful pandemic conditions with online shopping, which makes their lives easier in order not to be in crowded environments during the pandemic process. This indirectly brought about economic vitality and reduced medical expenses by keeping people away from diseases caused by stress and fear.

According to the APPA National Pet Owners Survey Data Portal Data, starting with Covid-19 and continuing in the US, when pet owners are profiled and consumer segments are examined; pet ownership, lifestyle, media and demographic criteria, behavioral information such as purchasing habits, preferences for certain services, preferences for retail outlets, dollar amount spent per product category, and motivations are given in Fig. 1.

Studies show that pets, especially cats and dogs, reduce stress and anxiety in humans, alleviate loneliness, encourage exercise and entertainment, and even support the protection of their owners' heart health. The presence of animals also makes people feel much safer,

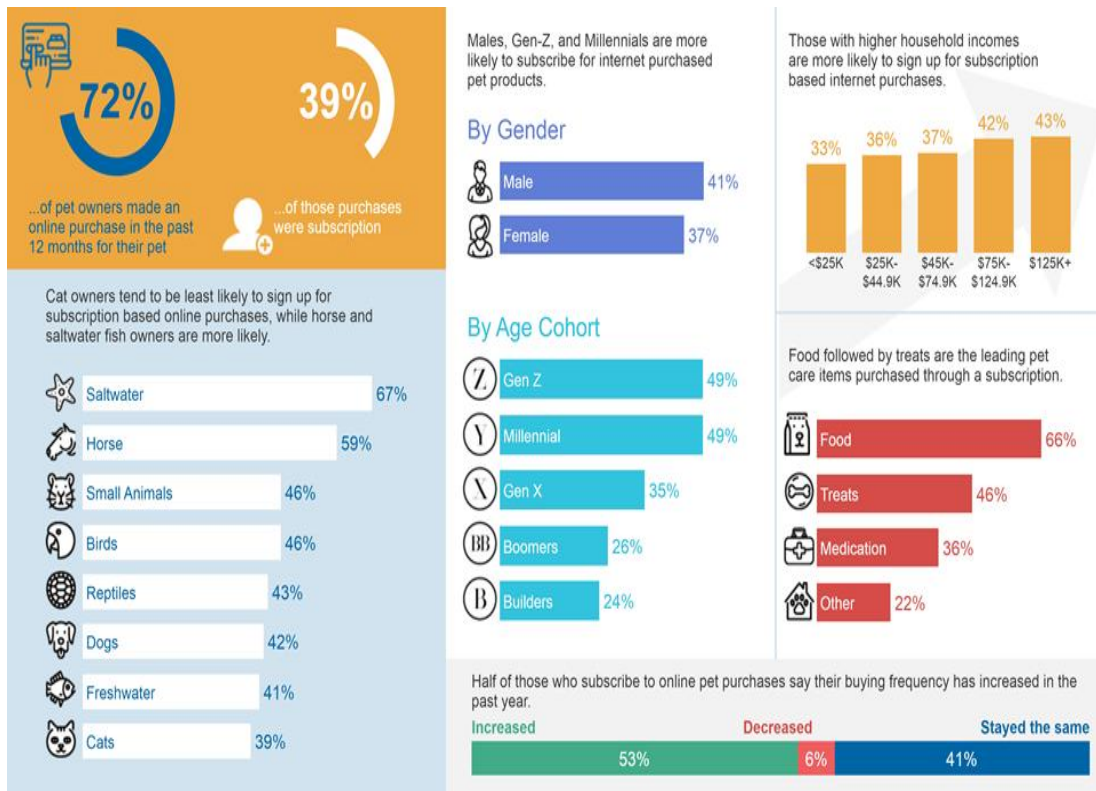


Fig. 1. Consumer segments of pet owners
 Source: APPA National Pet Owners Survey Data Portal 2021

helping them to stay mentally and physically fit. When combined with the feeling of friendship that adds value, animals become indispensable for humans with the happiness and unconditional love they provide.

Although it is not known how long the Covid-19 period will last, maybe it will continue with some relief. People have started to see pets as friends who will share their loneliness in this uncertainty and support them in this process if social isolation is necessary. Therefore, as researches show, 85% of people experience that their interactions with pets reduce their loneliness and make them feel safer, and 76% of people will not give up on having animals and making friends with them, as they experience that these interactions support them in the social isolation process.

It is a fact that keeping pets, which has both financial and moral support, is becoming more common day by day. In addition, the fact that 95% of animal owners see their animals as members of their families can be interpreted as a positive development for animals and animal

friends. The pandemic has made people realize how useful animals are and the need to be sensitive to the environment and nature.

The pandemic has shown to all humanity that happiness is not always in money, that living things that give their unrequited love also make people happy and are useful.

Since the Covid-19 pandemic has worrisome effects on individual and collective health, emotional and social functionality, it is very important to take measures to benefit from factors and living things that reduce these effects.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Bojdani E, Rajagopalan A, Chen A, Gearin P, Olcott W, Shankar V, Chang G. COVID-19 pandemic: impact on psychiatric

- care in the United States. *Psychiatry Res.* 2020;289:113069.
2. Çakıcı A. Evcil Hayvan Beslemenin İnsan Sağlığı Üzerindeki Olumlu Etkileri -Positive Effects of Pets on Human Health. *Atlas Journal.* 2019;518-528.
 3. Altınçekiç ŞÖ, Koyuncu M. Çiftlik Hayvanlarında Refahın İyileştirilmesinde Yetiştiricinin Rolü -The Role of Breeders in Improvement of Welfare in Livestock. *U.Ü. Ziraat Fakültesi Dergisi.* 2012;26(1):131-141.
 4. Coleman GJ, Hemsworth PH, Hay M. Predicting Stockperson Behaviour Towards Pigs from Attitudinal and Job-Related Variables and Empathy. *Applied Animal Behaviour Science.* 1998;58(1-2):63-75.
 5. Doğan Ö, Özkul T, Özen A. Fırat ve Uludağ Üniversitesi Veteriner Fakültesi. *Ankara Üniversitesi Veteriner Fakültesi Dergisi.* 2011;58(2): 85-91.
 6. APPA. Pet Industry Market Size, Trends & Ownership Statistics-Total U.S. Pet Industry Expenditures. APPA;2021.
 7. APPA. Press Releases-American Pet Products Association Releases Newest Edition of National Pet Owners Survey;2021. APPA. 9 15, 2021 tarihinde Available:https://www.americanpetproducts.org/press_releasedetail.asp?id=1242 adresinden alındı
 8. Suna AH. Türkiye’de yaşayan evcil hayvan sahiplerinin bütüncül psikoterapi perspektifinden analizi. *Türkiye Bütüncül Psikoterapi Dergisi.* 2019;2(3):131-153.
 9. Guthrie MF, Marshall PH, Hendrick SS, Logue E. Human love styles and attitudes toward pets. *Anthrozoös.* 2018;31(1):41-60. DOI:https://doi.org/10.1080/08927936.2018.1406200
 10. Andreassen G, Stenvold LC, Rudmin FW. My dog is my best friend: Health benefits of emotional attachment to a pet dog. *Psychology & Society,* 2013;5(2):6-23.
 11. Antonacopoulos D, Pychyl TA. Examining the role of pet ownership, human social support, pet attachment in psychological health of individuals living alone. *Anthrozoös,* 2010;23:37-54. DOI:https://dx.doi.org/10.2752/175303710X12627079939143
 12. Garrity TF, Stallones L, Marx MB, Johnson TP. Pet ownership and attachment as supportive factors in the health of the elderly. *Anthrozoös.* 1989;3(1):35-44. DOI:https://doi.org/10.1080/08927936.2018.1406200
 13. Friedmann E, Katcher AH, Lynch JJ, Thomas SA. Animal Companions and One-year Survival of Patients after Discharge from a Coronary Care Unit. *Public Health Reports.* 1980;95(4):307-312.
 14. Kaya A. *Karşılıksız sevgi ister misiniz?* ODTÜ Mavi Tasma;2017. Available:https://mavitasma.wordpress.com/gorusler-oneriler/karsiliksiz-sevgi-ister-misiniz/ adresinden alındı
 15. Mallon G. Utilization of Animals as Therapeutic Adjuncts with Children and Youth: A Review of the Literature. *Child and Youth Care Forum.* 1992;21(1):53-67.
 16. Tsai CC, Friedmann E, Thomas SA. The Effect of Animal-Assisted Therapy. *Anthrozoös,* 2010;23(3): 245-258.
 17. Vidović VV, Štetić VV, Bratko D. Pet Ownership, Type of Pet and SocioEmotional Development of School Children. *Anthrozoös.* 1999;12(4):211-217.
 18. Covert AM, Whiren AP, Keith J, Nelson C. Pets, Early Adolescents, and Families. *Marriage & Family Review,* 1985;8:95-108.
 19. Carmack B. The Role of Companion Animals for Persons with AIDS/HIV. *Holistic Nursing Practice.* 1991;5(2):24-31.
 20. Özkul T. Türkiye’de Hayvan Destekli Terapi Uygulamalarından Örnekler. *Mersin Üniversitesi Tıp Fakültesi Lokman Hekim Tıp Tarihi ve Folklorik Tıp Dergisi.* 2014;1:36-36. tarihinde Available:http://lokmanhekim.mersin.edu.tr/index.php/lokmanHekim/article/view/418.a dresinden alındı
 21. Beetz A, Uvnäs-Moberg K, Julius H, Kotscha K. Psychosocial and Psychophysiological Effects of Human-Animal Interactions: the Possible Role of Oxytocin. *Frontiers in Psychology.* 2012;234-234.
 22. Boehringer Ingelheim. Evcil hayvanlar pandemiye nasıl dayanılır kıldı? Boehringer-Ingelheim;2021. Available:https://www.boehringer-ingelheim.com.tr/hayvan-sagligi/pet-hayvanlar/evcil-hayvanlar-pandemiye-nasil-dayanilir-kildi adresinden alındı
 23. Royal Canin. Hayvanların Varlığı ile Daha Sağlıklı ve Mutluyuz. Royal Canin; 2021. Available:https://www.royalcanin.com/tr/ab-out-us/news/hayvanlarin-varligi-ile-daha-saglikli-ve-mutluyuz adresinden alındı

24. Cumhuriyet. Hayvanlar için daha iyi bir dünya yaratabilmek. Cumhuriyet;2020. Available:<https://www.cumhuriyet.com.tr/haber/hayvanlar-icin-daha-iyi-bir-dunya-yaratabilmek-1770839> adresinden alındı
25. Öztürk İ, Akalın S, Özgüner İ, Şakiroğlu M. Covid-19 Salgınının ve Karantinanın Psikolojik Etkileri. Turkish Studies, 2020;15(4):885-904.
26. Tsai CC, Friedmann E, Thomas SA. The Effect of Animal-Assisted Therapy. Anthrozoös. 2010;23(3): 245-258.

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Peer-review history:

*The peer review history for this paper can be accessed here:
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