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Feasibility of Animal-Assisted Therapy in the Treatment of Depression

Depresyon Tedavisinde Hayvan Destekli Terapinin Uygulanabilirliği

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ABSTRACT

The objective of this review is to assess the potential inclusion of animal-assisted therapy practices in the treatment of depression. Given the documented rise in the incidence of depression in recent years, there is a recognized significance in exploring innovative approaches to depression treatments. While previous studies and systematic reviews have investigated animal-assisted therapy in general or in relation to topics like anxiety, no specific study detailing the impact of animal-assisted therapy practices on depression treatment was identified. Consequently, this review was undertaken to fill this gap. The review focused on studies conducted between 2011 and 2022, evaluating a total of 6 randomized controlled studies. The findings from these studies suggest that integrating animal-assisted therapy practices into the depression treatment process can yield positive effects. Despite the observed benefits, it is important to note that systematic application of animal-assisted therapy reveals certain deficiencies. Therefore, there is a recognized need for additional studies to address and refine the systematic implementation of animal-assisted therapy in the context of treating depression.
Keywords: Depression, animal assisted therapy, mental disorders

ÖZ

Bu sistematik derlemenin amacı hayvan destekli terapi uygulamalarının depresyon tedavisi sürecine dahil edilebilirliğinin incelenmesidir. Alanyazında son yıllarda depresyonun görülme sıklığının giderek arttığına dikkat çekilmekte olduğundan, depresyon tedavilerine yönelik yaklaşımların araştırılması önemli görülmektedir. Daha önce yapılmış çeşitli çalışmalarda, sistematik derlemelerde hayvan destekli terapi genel olarak ya da anksiyete gibi konularda incelenmiştir. Ancak hayvan destekli terapi uygulamalarının depresyon tedavisindeki etkisini betimleyen bir çalışmaya rastlanmamış ve bu doğrultuda bir derleme yapılmasına karar verilmiştir. Yapılan derleme kapsamında, 2011 ve 2022 yılları arasındaki çalışmalar incelenmiş ve toplam 6 randomize kontrollü çalışmanın bu derleme çerçevesinde incelenmesine karar verilmiştir. Yapılmış olan çalışmalar incelendiğinde, hayvan destekli terapi uygulamalarının depresyon tedavisi sürecine entegre edilmesinin olumlu etkilerinin olacağı düşünülmüştür. Sonuçlar hayvan destekli terapinin, kontrol gruplarına kıyasla depresyonun azalması veya artmasını önlemesi ile ilişkili görülmüştür. Depresyonun tedavisi açısından hayvan destekli terapi uygulamalarının çeşitli şekillerde faydaları olabileceği görülmüş olmakla beraber, hayvan destekli terapinin sistemli bir şekilde uygulanması ile ilgili eksiklerin olduğu ve bu konuda çalışmaların yapılması gerektiği düşünülmektedir.
Anahtar sözcükler: Depresyon, hayvan destekli terapi, ruhsal hastalıklar

Introduction

Since the earliest known times in human history, animals have been integral to human interactions. Evidence of this enduring connection is found in cave paintings depicting various animal figures, reflecting our profound relationship with animals even in the earliest periods (Fine et al. 2015). As human civilization progressed and communities settled, the significance of animals in our lives increased gradually through the process of domestication (Kruger and Serpell 2010, Alliance of Therapy Dogs 2018). Historical sources reveal that animals held a special place in almost every civilization, spanning from Ancient Egypt to Ancient Greece. Concurrently, throughout history, the bond between animals and humans appears to have been utilized in the treatment of various ailments. In Ancient Greece, for instance, horses were believed to have therapeutic properties for mental disorders, while in Ancient Rome, birds were thought to offer a cure for epilepsy (Verheggen et al. 2017). This historical perspective underscores the enduring and diverse roles that animals have played in human societies, from companionship to therapeutic applications.

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The origins of modern animal-assisted practices in treating mental illnesses can be traced back to the 1790s. During this period, farm animals were introduced into hospital treatments at the York Retreat hospital in England, aiming to enhance the behavior and conditions of hospitalized patients. However, it wasn't until the 20th century that the integration of animal-assisted therapy practices gained prominence in psychotherapy processes, garnering attention for its potential effects (Macauley 2006). A pivotal moment occurred in the 1960s when Boris Levinson observed the interaction between his normally introverted child client and a dog during therapy sessions. Intrigued by the positive impact of the dog's inclusion in the therapeutic process, Levinson penned an article titled "A Dog" as a co-therapist. Presented at the American Psychological Association meeting, this article marked the beginning of a growing emphasis on utilizing animals in psychotherapy, as documented by Levinson in 1962. The article highlighted the potential benefits of a dog's presence during therapy, emphasizing its capacity to offer comforting and non-judgmental support to clients. While this study laid the groundwork for the notion that interaction with animals can be beneficial in treating mental health disorders, it is acknowledged that more research is needed to support its widespread use.

Over the years interest in the inclusion of animals in the therapeutic process increased and studies were conducted on the integration of animal-assisted therapy practices into psychotherapy practices in the treatment process of various mental health disorders (Fine 2010, Berget and Ihlebaek 2011). There are studies evaluating whether animal-assisted therapy is ethical. Kamioka et al. (2014) and Maujean et al. Studies such as (2015) aimed to discern which disorders animal-assisted therapy is effective for.

Upon examination of these studies, it becomes evident that animal-assisted therapy exhibits efficacy in the treatment of various conditions, including addictions, schizophrenia, depression, and anxiety disorders. Furthermore, literature reveals that animal-assisted therapy practices contribute positively to the treatment of post-traumatic stress disorder and eating disorders (Chirico et al. 2022, Fennig et al. 2022). Beyond the realm of mental health disorders, research suggests that engaging in animal-assisted therapy not only benefits individuals in managing their mental well-being but also exerts positive effects on stress levels, thereby enhancing overall individual well-being (González-Ramirez et al. 2013, Hund and Chizkov 2014). Additionally, animal-assisted therapy has been linked to a reduction in depression and anxiety symptoms, playing a constructive role in improving the quality of life and interpersonal relationships (Kamioka et al. 2014, Maujean et al. 2015, Chirico et al. 2022, Fennig et al. 2022).

The World Health Organization (WHO 2017) drew attention to the increase in depression and stated that despite the increase in depression rates, many people cannot get help from a specialist. The organization published various booklets to increase the competence of healthcare professionals outside the field of mental health on depression (Evans-Lacko et al. 2018). In addition, there has been an increase in depression and anxiety disorders in relation to the Covid-19 pandemic (Ettman et al. 2020). Firat et al. (2021) supports these findings, claiming that there was an increase in depression and anxiety disorders in Turkey. Additionally, WHO (2022) reported that there was an increase of around 25% in depression and anxiety disorders due to the excessive stress experienced during the pandemic.

Due to animal-assisted therapy having a positive effect on individuals' stress levels (González-Ramirez et al. 2013, Hund and Chizkov 2014), it can be presumed that these practices might be effective in the treatment of anxiety and depression levels. A closer look into practices that alleviate or assist in reducing anxiety and depression is warranted due to an increase in both anxiety and depression over the last years. Parbery-Clark et al. (2021) found animal-assisted therapy practices to reduce anxiety levels. However, Parbery-Clark et al. (2021) state the need to investigate its impact on depression levels. Thus, this review examined animal-assisted therapy use in the treatment of depression and aimed to contribute to the limited literature in this area.

Method

Within the framework of this review, the aim was to examine the effects of using animal-assisted therapy practices as a support in the treatment of depression. For the literature review, Web of Science, Google Scholar, Scopus, Sciencedirect and ResearchGate databases were used. To determine the effectiveness of animal assisted therapy on depression, randomized control studies were utilized.

The following key words were used: "animal assisted therapy and depression", "animal assisted therapy for depression", "animal assisted therapy" and "depression". As a result of the search, initially 538 studies were reached. Subsequently, only randomized controlled studies were searched with the following keywords: "animal assisted therapy and depression randomized controlled", "depression and animal assisted therapy randomized", and "ATT and depression randomized". This resulted in 71 studies. This was followed by adding a year limitation,

choosing studies that focused on depression utilizing a randomized controlled study between the years 2011-2022. This resulted in 67 studies. Upon examination based on the inclusion criteria, six studies were selected. These six studies directly mentioned the use of animal-assisted therapy in the treatment of depression, used randomized controlled trails, and did not use any other supportive practices other than animal assisted therapy. The details can be seen in Figure 1.

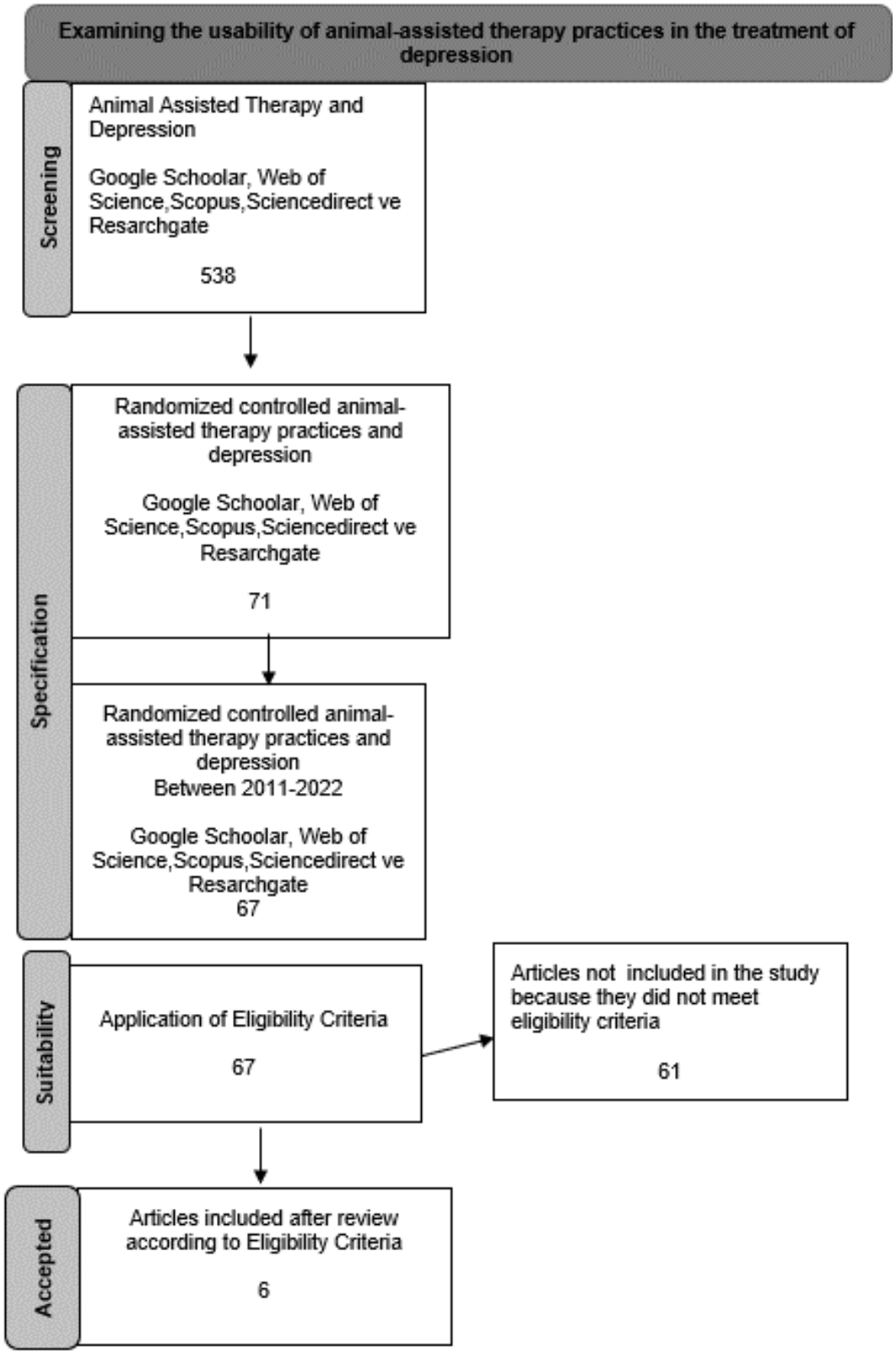

Figure 1. PRISMA flow chart

Sample

The aim of the review as to determine the usability of animal-assisted therapy in the treatment of depression. The samples of the included studies covered a wide age range, working with different groups. The samples of the studies examined within the study ranged from young adults to older individuals. The samples comprised the following: university students (Pendry et al. 2019), adults diagnosed only with depression (Pedersen et al. 2012), adults with depression along with other mental disorders (Berget et al. 2011), elderly individuals with depression (Ambrosi et al. 2019), and elderly individuals diagnosed with dementia (Majic et al. 2013, Olsen et al. 2016).

Number of Participants

The number of participants varied depending on the content and context of the study. The study with the least number of participants included in the study (Pedersen et al. 2012) had a sample of 29 people, the study with the highest number of participants (Pendry et al. 2019) had a sample of 192 people.

Measurement

A total of 22 measurement tools were used. A large number of measurement tools were used due to the varying age groups and samples. Furthermore, in some studies aside from depression, other mental disorders were also assessed.

Techniques Used

All of the studies included in this review were randomized controlled and used pretest and posttest measures. Each of the studies used experimental and control groups. However, the diversity of the studies resulted in variations in the techniques applied depending on the content of the research. For example, while one study examined patients for 6 months (Berget et al. 2011), another study examined students during a10 minute interaction (Pendry et al. 2019). In addition, in some studies, follow-up measurements were used to examine the effect of the animal-assisted therapy. The diversity of the studies provides an advantage in comprehensively examining the effect of animal-assisted therapy on depression.

Application

There was diversity in the application of animal assisted therapy practices due to the variability in the samples and the assessed environments. Pendery et al. (2019) focused on the use of animal-assisted therapy in a university and examined the results of a one-time, 10-minute interaction with a therapy animal. Pedersen et al. (2012) examined individuals diagnosed with clinical depression alongside other mental disorders. Berger et al. (2011) studied individuals visiting farms for animal-assisted therapy. Moreover, in the three studies that examined the elderly, the intervention of animal-assisted therapy took place in the nursing home (Majic et al. 2013, Olsen et al. 2016, Ambrosi et al. 2019).

Results

All articles examined within the scope of the review can be divided into the following two categories: Findings from studies with adults and findings from studies with the elderly. All articles and their explanations are summarized in Table 1.

Findings of Adult Studies

Three of the six studies examined within the framework of this study conducted their research with an adult sample group (Berget et al. 2011, Pedersen et al. 2012, Pendry et al. 2019). One of these three studies included young adults, one included adults diagnosed with clinical depression, and one included adults diagnosed with clinical depression and other psychiatric disorders. One of them focused on individuals with different psychiatric disorders in addition to depression.

In their research Pendry et al. (2019) found the animal visit program to be effective for students experiencing clinical depression at a research university. The study showed that 10 minutes of interaction with cats and dogs caused a decrease in students' negative affect, including those experiencing clinical depression. In addition, the study found that waiting in line while interacting with animals triggered negative affect in students with

depression although it did not impact students who did not have depression. This situation shows the importance of regulating the environmental conditions in intervention studies for depression.

Pedersen et al. (2012) examined the effects of interacting with farm animals during the treatment process of individuals with clinical depression. At the end of the 12-week study, 6 people from the 16-person experimental group dropped below 9 points on the Beck depression scale and returned to normal. Only 1 person out of 13 in the control group got same result. The effect of animal-assisted therapy continued in the follow-up measurements made after 3 months.

Table 1. Detailed description and organization of the assessed articles

Study	**Berget et al. 2011**	**Pedersen et al. 2012**	**Majic et al. 2013**	**Olsen et al. 2016**	**Pendry et al. 2019**	**Ambrosi et al.2019**
Definition	No definition of depression was provided; however, the study was conducted with psychiatric patients diagnosed according to the ICD-10.	Depression was defined as a score of 14 or above on the Beck Depression Inventory (BDI-IA), and a DSM-IV diagnosis of depression according to the mini-international neuropsychiatric interview. BDI-IA ≥ 14	Depression was defined as a score above 17 on the DMAS measurement scale which was developed for patients with dementia. Participants had to be residing in the nursing home for 4 weeks to be considered. DMAS >17	No definition of depression was provided. Inferences were made based on the CSDD pre-test, post-test, and follow-up test results. To be considered for the study, Individuals had to be residing in nursing homes, be 65 or older, and have dementia.	No definition of depression was provided. The Beck Depression Scale was taken as the basis. University students studying at the research university were considered for the study.	Depression was defined as a score of 5 points or higher on the Geriatric Depression Scale (GDS-15). Individuals who were between 65 and 90, who were residing in the nursing home for at least two months, and who also scored 19 or higher in the mental status examination were considered. GDS-15 ≥ 5
Measures	IV VI VII VIII	VI XXI XXII	I II III	IX X XII XIII	VI VII	I XV XVI XVII XVIII XIX XX
Method	Randomized controlled with a 6-month follow-up	Randomized controlled with a 4 week, 8 week, 12 week, and 3 month follow-up	Randomized controlled	Randomized controlled with a 3-month follow-up	Randomized controlled	Randomized controlled
Exclusion Criteria	C D E F G	C L	A B	I J	H	K
Number of Participants	90	29	75	51	192	31

Psychiatric Disorder Examined	Depression and Anxiety	Depression, Anxiety, and Self-efficacy	Dementia, Aggression, and Depression	Depression, Aggression, and Satisfaction/Quality of Life	Depression	Depression, Anxiety, and Perception of Illness
Animals Used	Farm Animals	Farm Animals	Cat/Dog	Cat/Dog	Dog	Dog
Conclusion	There was no significant change in depression levels between the experimental and control groups. This result is attributed to the fact that the sample group had been receiving psychiatric treatment for various psychological disorders for a long time.	In the 12-week study, 6 out of the 16 people in the group who received animal assisted therapy returned to "normal", scoring less than 9 points on the Beck Depression Scale. Among the participants in the control group, only 1 out of the 13 people met the same criterion and returned to normal. It was also observed that there was a significant change in the self-efficacy perceptions of individuals who received animal assisted therapy. In the 3-month follow-up measurement, the effects of animal assisted therapy continued.	The DMAS scores of the individuals with dementia in the experimental group decreased from 26 to 22 points. The control group, although started with a score of 17, experienced an increase up to 30 within the 10-week span.	There was no significant change in the depression levels of the participants according to the CSDD pre-test and post-test results. However, when the pre-test and follow-up test results were compared, a significant change was observed in the depression levels of the participants. It was also stated that a positive change occurred in the participants' quality of life.	10 minutes of interaction with cats and dogs led to a reduction in the negative affect of students, including those with clinical depression.	After 10 weeks of animal-assisted (dog) therapy, the scores on the GDS-15 decreased by 33.5%.
Study	Berget et al. 2011	Pedersen et al. 2012	Majic et al. 2013	Olsen et al. 2016	Pendry et al. 2019	Ambrosi et al.2019

Exclusion Criteria for Studies: A: Axis I Disorders (Majic et al. 2013); B: Somatic Symptom Disorder (Majic et al. 2013); C: Individual being younger than 18 years of age (Berget et al. 2011, Pedersen et al. 2012); D: Diagnosis of Acute Psychotic Disorder (Berget et al. 2011); E: Mental Retardation (Berget et al. 2011);F: Severe Drug Dependence (Berget et al. 2011);G: Being employed for 6 months prior to the start of the intervention (Berget et al. 2011); H: Non-students at the university where the research was conducted (Pendry et al. 2019); I: Fear of Dogs (Olsen et al. 2016); J: Dog Allergy (Olsen et al. 2016); K: Multiple Sensory Disorder (Ambrosi et al. 2019); L: Undiagnosed depression (Pedersen et al. 2012).

Tools Used: I: Mini-Mental State Examination (MMSE: Majic et al. 2013); II: Cohen-Mansfield Agitation Inventory (CMAI: Majic et al. 2013) ; III: Dementia Mood Assessment Scale (DMAS: Majic et al. 2013) ; IV: Spielberger State Anxiety Inventory (STAI: Berget et al. 2011); VI: Beck Depression Inventory (BDI: Berget et al. 2011, Pedersen et al. 2012, Pendry et al. 2019); VII: Participant Questionnaire (Pendry et al. 2019, Berget et al. 2011); VIII: Therapist Questionnaire (Berget et al. 2011); IX: Cornell Scale for Depression in Dementia (CSDD: Olsen et al. 2016); X: Brief Agitation Rating Scale (BARS: Olsen et al. 2016); XII: Quality of Life in Late-stage Dementia (QUALID: Olsen et al. 2016); XIII: Clinical Dementia Rating Scale (CDR: Olsen et al. 2016); XV: Geriatric Depression Scale (GDS-15: Ambrosi et al. 2019); XVI: Generalized Anxiety Disorder 7 (Ambrosi et al. 2019)); XIX: Numeric Pain Rating Scale (NPRS: Ambrosi et al. 2019); XX: Participant satisfaction questionnaire Ambrosi et al. 2019); XXI: State-Trait Anxiety Inventory-State Subscale (STAI-SS: Pedersen et al. 2012); XXII: Generalized Self-Efficacy Scale (GSE: Pedersen et al. 2012).

Berget et al. (2011) conducted an animal-assisted therapy intervention for patients diagnosed with depression as well as different disorders. There was no significant change in depression levels between the experimental and control groups. However, it was stated that the result obtained in the study contradicts the literature and this contradiction can be explained by the fact that the sample group included in the study was not homogeneous and they had been receiving psychiatric treatment for a long time due to different mental disorders. The study stated that different results would be expected if patients only receiving depression treatment were studied.

Findings of Elderly Studies

Three of the six studies examined within the framework of the review study focused on animal-assisted therapy intervention with the elderly (Majic et al. 2013, Olsen et al. 2016, Ambrosi et al. 2019). While two of these three studies focused on animal-assisted therapy in elderly individuals diagnosed with dementia as well as depression, one study focused on animal-assisted therapy in elderly individuals with depression.

Majic et al. (2013) and Olsen et al. (2016) examined the effect of animal-assisted therapy on elderly individuals diagnosed with dementia. In both studies, there was no statistical significance between the animal-assisted therapy group and the control group. However, Olsen et al. (2016) state that, in the follow-up measurements made in their study, the depression levels of individuals who received animal-assisted therapy experienced a significant difference compared to the control group. There was a significant change in the quality of life of the animal-assisted therapy group.

Majic et al. (2013) found a small decrease in the depression levels of the animal-assisted therapy group at the end of the 10-week period (the average score of the Dementia Mood Assessment Scale decreased from 26 to 22). The conditions of the participants in the intervention group remained largely stable. However, the condition of the control group deteriorated considerably (the average score of the Dementia Mood Assessment Scale increased from 17 to 30) during the same period. Thus, animal-assisted therapy can help in keeping depression levels stable in elderly individuals diagnosed with dementia, improving their general health levels.

Ambrosi et al. (2019) studied individuals between the ages of 65 and 90 in their research. At the end of 10 weeks, the scores of the group receiving animal-assisted therapy decreased by 33.5% on the geriatric depression scale. This shows that there was a significant decrease in the depression level of the animal-assisted therapy group. In addition, a participant satisfaction survey was applied to the experimental group during the research process. The elderly in the experimental group received extremely positive feedback and stated that they wanted to continue with the animal-assisted therapy.

Discussion

According to the American National Mental Health Institute data (NIMH 2022), depression is among the most common mental disorders in society and the most likely to be experienced by a person throughout his life. In recent years, there has been an increase in the incidence of some mental disorders, including depression (Ettman et al. 2020, Fırat et al. 2021, WHO 2022). This increase, especially for depression and anxiety, has reached a very serious rate of 25% (WHO 2022).

In this regard, it can be stated that animal-assisted therapy practices can be beneficial (Fine 2015), can be used together with different therapy theories and perspectives (Bruneau and Johnson 2016), and can lead to positive effects in the psychotherapy process (Maujean et al. 2015). Animal-assisted therapy is a type of therapy that involves the use of various animals (such as dogs, cats and horses) to help individuals experiencing physical, cognitive or emotional difficulties (Fine 2010, Berget and Ihlebaek 2011). Kamioka et al. (2014) and Maujean et al. (2015) both refer to the effectiveness of animal-assisted therapy practices.

Parbery-Clark et al. (2021) conducted a systematic review on the effectiveness of animal-assisted therapy practices and stated that they show to be effective for anxiety. However, they stated that more studies are needed to examine the effectiveness of animal-assisted therapy in the treatment of depression. In this regard, within the framework of the compilation, it was aimed to examine the effects of animal-assisted therapy practices in terms of depression and to contribute to the literature. Within the framework of this review, different age groups were examined and the study groups were consisted of three groups: elderly people with depression and dementia living in nursing homes, elderly people living in nursing homes with depression, and university students with depression.

Within the framework of this review study, one of the important findings identified is that animal-assisted therapy practices have a preventive role in the worsening of depression levels of individuals with dementia. Both

Majic et al. (2013) and Olsen et al. (2016) worked with an elderly sample group, and it was observed that there was no significant difference between the experimental and control groups, but there were significant differences between the experimental and control groups in follow-up studies. It is important to note that the deterioration that occurred in the control group for Majic et al. (2013) may have been a result of the normal course of dementia and that the difference between the control group and the experimental group may have occurred due to different factors. For the Olsen et al. (2016) study, there was no significant difference between the pre- and post-tests in the intergroup scores of the participants in the experimental and control groups. However, there was a significant decrease in the depression levels of the participants in the experimental group and a positive change in their quality of life when the pre-test and follow-up measurements were compared. In line with these results, it can be stated that animal-assisted therapy practices can positively affect the lives of individuals with dementia and be beneficial in their treatment processes.

In elderly individuals without a diagnosis of dementia, Ambrosi et al. (2019) stated that after the animal-assisted therapy intervention, there was a 33.5% decrease in depression levels. It was also reported that participants gave positive feedback in the participant satisfaction survey and stated that they wanted to continue with animal-assisted therapy. Ambrosi et al. (2019) study can be said to be compatible with the literature (Fine 2015, Maujean et al. 2015). When this study is evaluated together with the two studies conducted with elderly individuals with dementia mentioned above, it can be stated that adding animal-assisted therapy to depression treatment or prevention practices with elderly individuals may have therapeutic contributions and lead to positive contributions to the lives of elderly individuals.

There may be many explanations for why animal-assisted therapy is effective. Attachment theory is one of the main explanations offered in the literature (Bowlby 1982). Attachment theory emphasizes the importance of bonding in humans. Close contact with animals can provide the sense of self-confidence that humans need. Animals can be a stepping stone to helping people build trusting relationships. Communicating with animals, receiving unconditional love, and creating a safe foundation contribute to a person's health. This may be particularly important for individuals with “rejecting or unavailable” attachment figures (Zilcha-Mano et al. 2011). Similarly, Levinson (1969) claims that animals can be important attachment objects. More research is needed in this area. Rockett and Carr (2014) discussed the role of animals in aiding human-to-human bonding beyond the bonding of humans and animals. However, most studies on animal-assisted therapy do not appear to be based on theory and do not explain the reasons for its benefits (Serpell et al. 2017).

Although the current study examined the positive contributions of animal-assisted therapy, one major finding was the need for the standardization of animal-assisted therapy practices. Currently there is no standard guideline on how animal-assisted therapy practices should be implemented. A lack of regulation may result in complications when implementing animal-assisted therapy. For instance, Pendry et al. (2019) found that waiting in line to access the therapy animals negatively affected depressed students even though it had no impact on students without depression. In this vein, Pendery et al. (2019) study shows that animal-assisted therapy practices should be regulated in terms of both the environmental conditions and the utilized methods.

When the results of all these studies are evaluated together it can be said that if animal-assisted therapy practices can be standardized, this type of therapy can have a positive impact on both the therapy process and the daily lives of individuals with depression. Its use as an additional component in the treatment of depression may lead to positive results, providing the needed physical contact with another non-judgmental living being.

Recent research indicates that animal-assisted therapy practices play a role in diminishing anxiety, depression, and stress, offering potential benefits for enhancing social skills, cognitive abilities, and motor skills. Additionally, these practices contribute to providing feelings of comfort and companionship, which are particularly crucial for individuals living alone or experiencing isolation (Fine 2015, Maujean et al. 2015).

Studies in the literature highlight the inadequacy of current treatment practices in the face of rising depression rates (WHO 2017, Evans-Lacko et al. 2018, Ettman et al. 2020, Fırat et al. 2021, WHO 2022). Some studies advocate for an overhaul of depression treatment practices (Jakobsen et al. 2019, Cuijpers et al. 2020, Kaiser et al. 2022). Consequently, there is a need for research to explore the optimal integration of diverse therapy practices into depression treatment, assess their strengths and weaknesses, and discuss strategies to enhance treatment accessibility.

The incorporation of animal-assisted therapy has demonstrated promising results. However, further research is essential to delve into the potential of animal-assisted therapy practices. For instance, the integration of animal-assisted therapy into various therapeutic approaches, as proposed by Bruneau and Johnson (2016) and others (González-Ramirez et al. 2013, Allen et al. 2021, Fullenwiley-Jones 2021), warrants thorough investigation.

Additionally, there are ongoing studies examining the integration of animal-assisted therapy practices into fields like physical therapy and speech therapy (Çakıcı and Kök 2020).

Various studies have explored the application of animal-assisted therapy, indicating that its incorporation into treatment processes can yield positive outcomes. Promising results have emerged from these studies, emphasizing the potential benefits of integrating animal-assisted therapy. Nevertheless, there remains a need for further research in this area. For instance, Bruneau and Johnson's (2016) study suggests the exploration of how animal-assisted therapy can complement various therapeutic approaches (González-Ramirez et al. 2013, Bruneau and Johnson 2016, Allen et al. 2021, Fullenwiley-Jones 2021). Additional research is also warranted to investigate the integration of animal-assisted therapy into specialized fields such as physical therapy and speech and language therapy, as evidenced by studies like that of Çakıcı and Kök (2020). Given these considerations, it is advisable to undertake similar studies to advance our understanding in this domain.

The most notable limitation in this study was the scarcity of relevant studies in the literature. For this reason, a limited number of articles could be examined during the compilation process. As a result, since a limited study pool had to be used for the compilation, it should be re-examined in the future as research in this field increases. Another limitation of this review is the diversity of the measurement tools and protocols used to assess-assisted therapy. The lack of standardization on these issues can lead to inconsistent results and unclear interpretations. Thus, more standardized protocols are necessary to generalize animal-assisted therapy findings and evaluate their reliability.

Conclusion

A growing body of research has highlighted the therapeutic benefits of incorporating animal-assisted therapy into the treatment of various mental disorders (Levinson 1962, Fine 2010, Kruger and Serpell 2010, Kamioka et al. 2014, Maujean et al. 2015). The examination of studies in this review suggests that integrating animal-assisted therapy into depression treatment processes could yield positive effects. However, despite these potential benefits, animal-assisted therapy practices have not yet gained widespread acceptance and require standardization. Consequently, there is a clear need for further research to explore and establish standardized approaches for the implementation of animal-assisted therapy practices.

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