

Animal-Assisted Intervention for People with Depression

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About This Document

HABRI Central Briefs are peer-reviewed summaries of particular applications and issues within the field of human-animal interaction. Each Brief presents an overview of the subject matter, assesses the current state of research, then highlights unresolved questions or issues. Key resources are identified for further reading.

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Overview

Depression is a mood disorder characterized by a persistent feeling of sadness, lack of interest in activities, and fatigue. Most people will feel sad or depressed at times, but when these feelings last for weeks and interfere with normal daily activities, it may be a more serious condition requiring treatment. Depression is pervasive in the United States; as many as 21% of women and 12% of men will experience a depressive episode at some point in their life (Depression, 2014).

Many anecdotes relate the use of animal-assisted interventions (AAI) in treating depression, but few studies which use scientific methodology to evaluate treatment effects have been published. Consequently, the efficacy and role of AAI as an adjunct therapy for people with depression is neither well understood nor appreciated. This brief addresses the gap by first summarizing the current knowledge on depression, including what depression is, who gets depression, what causes depression, and treatment options. Second, the role of AAI in treating people with depression is discussed. Finally, recommendations are made for future research, and key resources are identified.

State of the Current Knowledge

WHAT IS DEPRESSION?

Depression is a real illness that affects the brain (Depression, 2014). It is more than merely feeling “blue;” it is a serious illness with accompanying changes in brain chemistry. People with depression experience a variety of symptoms impacting their thoughts, emotions, behavior, and physical health. According to the 5th edition of the Diagnostic and Statistical Manual for Mental Disorders, a major depressive episode occurs when five or more of the following symptoms occur during the same 2-week period:

- A depressed mood during most of the day
- Markedly diminished interest or pleasure in all, or almost all activities
- A significant weight loss or gain
- Insomnia (inability to sleep) or hypersomnia (excessive sleepiness)
- Restlessness or moving slowly (observable by others, not just subjective feeling)
- Fatigue or loss of energy almost every day
- Feelings of worthlessness or guilt almost every day

- Impaired concentration, indecisiveness
- Recurring thoughts of death or suicide (not just fearing death) (American Psychiatric Association, 2013)

WHO GETS DEPRESSION?

People of all ethnicities, ages, races, and sex are susceptible to depression. Once a person has a depressive disorder, they are more likely to have a recurrence. Factors that contribute to depression include genetics, changes in hormone levels, certain medical conditions, stress, grief, and difficult life events (Depression, 2014). These factors alone or in combination can trigger changes in the brain chemistry that lead to depression.

HOW IS DEPRESSION TREATED?

Clinical depression is treated with a variety of therapies, lifestyle changes, and medications. Additionally, as many as 50% of people with depression will try a complementary therapy, such as AAI (Pedersen, Nordaunet, Martinsen, Berget, & Braastad, 2011).

AAI AND DEPRESSION

Depression is often comorbid with other conditions, such as anxiety. Because of this, the majority of studies evaluate depression and other mental health conditions rather than depression alone. Since there are relatively few studies that evaluate depression in isolation, this review will include studies which evaluate depression in conjunction with other mental health conditions. Where possible, the effects of AAI on depression will be isolated. Meta-analysis is a statistical method that integrates the data from multiple studies in order to develop a single conclusion. Two meta-analyses relevant to AAI and depression have been conducted (Nimer & Lundahl, 2007 and Souter & Miller, 2007). The meta-analysis by Souter and Miller (2007) was specific to depression and AAI, while the analysis by Nimer and Lundahl (2007) reviewed animal-assisted therapy (AAT) generally. Because meta-analysis is a widely-used technique for synthesizing the results of multiple studies, these reviews will inform the findings of this brief.

The use of AAI for depression has been studied in children, adults, and the elderly. Since the study type and setting varies by age, it is important to consider the effects of AAI by age group.

CHILDREN

Although the studies of children and AAI tend to focus on developmental disabilities, learning disabilities, and/or behavioral disorders, some researchers have included measures of emotional well-being or depression. Comparatively few studies have evaluated the effects of AAI on depression in children, but the positive effects of AAI for depression in children are more consistent than the results for other groups (Nimer & Lundahl, 2007). This could either be because the study designs were better able to demonstrate effects, or because AAI is actually more effective with children. Animals are viewed as being a non-judgmental source of social support (Allen, 2003), which could be particularly beneficial to children experiencing emotional distress. Children may also be more accepting of the presence and influence of an animal, while animals may actually respond well to children who are withdrawn, because they do not act excitable or aggressive towards the animal (Winston, 2015). A therapist's office is a foreign environment, and children and adolescents may be mistrustful of the therapist and the therapeutic process. An animal provides a neutral subject to discuss and can help children feel welcome and facilitate the building of rapport between the child and therapist (Winston, 2015). Thus the presence of an animal can help children to feel less stressed and more willing to engage in the process (Fine, 2010). Winston (2015) reports that while children may be reluctant to discuss their own traumatic past, they frequently project their own histories or concerns onto the animals, which gives the therapists insights into how the child is feeling. Future studies which more directly examine AAI and depression in children could further describe the effects and elucidate the mechanisms of action.

ADULTS

While the majority of studies on AAI and depression have shown a positive effect, several studies showed no effect or even a negative effect (Nimer & Lundahl, 2007). The studies with negative effects frequently have small sample sizes and less rigorous methodology. It is therefore possible that due to design limitations, these studies were incapable of demonstrating an effect, even if it was there. Among the studies which show positive outcomes, effect sizes vary from low to medium. The equivocal results and the variation in effect sizes could be explained by differences in gender and marital status. Studies which examined gender and marital status found that dog ownership is associated with greater wellbeing in women (Cline, 2010).

(Cline, 2010). Further studies have shown that unmarried women with pets have the lowest levels of depression, while unmarried men with pets have the highest levels of depression (Tower & Nokota, 2006). This may be because women place greater value on relationships with pets than men do (Cline, 2010), such that for women these relationships add social richness to their life. In light of studies that demonstrate different levels of depression based on gender and marital status, future studies should control for gender and marital status in their analysis.

An interesting approach to the treatment of depression is the use of care farms to facilitate interaction with farm animals. A care farm is a farm that promotes human mental, physical, and social well-being (J Hassink, Zwartbol, Agricola, Elings, & Thissen, 2007). Participants come to the farms and, under the supervision of the farmer and staff members, perform livestock oriented tasks. Care farms strive to integrate clients into society, provide meaningful work, and focus on clients' potential rather than limitations. Several care farms exist in the United States, however, care farms are much more common in the Netherlands, with 800 in operation as of 2008 (Jan Hassink, Elings, Zweekhorst, van den Nieuwenhuizen, & Smit, 2010). Working on care farms has been shown to increase self-efficacy, coping strategies, and quality of life (Berget & Braastad, 2011; Berget, Ekeberg, & Braastad, 2008; Pedersen et al., 2011). Several studies have also shown a decrease in depressive symptoms (Berget & Braastad, 2011; Pedersen et al., 2011). However, due to the way the studies were designed, it is not possible to say if the positive effects were due to interaction with animals or due to the work participants engaged in. In fact, one study found that interaction with animals via work tasks was beneficial, while pure animal contact was unfavorably associated with all mental health measures (Pedersen et al., 2011). A study where participants are randomly assigned to a group that interacts with animals while performing complex work tasks and a group that performs complex work tasks but does not interact with animals might elucidate the source of the effects.

OLDER ADULTS

The majority of the research on the use of AAI to ameliorate depression in the elderly focuses on residents in nursing facilities, likely due to ease of access. It should be noted that Elderly persons in nursing homes face many issues, including cognitive deficits, loneliness, and depression. Research on AAI in nursing facilities

has employed a variety of animals, including birds, dogs, fish, cats, and even robotic animals. The variables measured were generally anxiety, depression, and/or loneliness. Each study found that the presence of animals significantly reduced measures for one or more of these variables. Although some of the differences have been less demonstrable, there have also been improvements noted to the residents' quality of life. Holcomb, Jendro, Weber, and Nahan (1997) placed an aviary in the activity room of a Veterans Administration medical day facility. In addition to reducing depressive symptoms as reported by the participants, a number of participants requested that their chairs be placed in close proximity to the aviary for their afternoon nap. They reported that the sound of the birds was calming, and that it helped them to relax and be able to sleep in the otherwise noisy facility.

Nursing facilities focus a great deal of effort on decreasing the loneliness and apathy felt by residents and increasing social interaction and social behaviors (Berry et al., 2012). Animals have consistently been reported to increase the meaningful aspects of life for residents (Baldacchino & Bonello, 2013; John, 1996), and several studies have shown that AAI is more effective than other activities at increasing social interaction (Haughie, Milne, & Elliott, 1992; Holcomb & Meacham, 1989). In the Veterans Administration medical day facility with the aviary, the staff noted that the aviary became a social catalyst to spur conversation between participants and their families and to improve the atmosphere of the facility. Family members were curious about the aviary and would pause for long periods of time in the activity room. Consequently they spent more time interacting with the participants (Holcomb et. al, 1997). Le Roux and Kemp (2009) also found that the presence of dogs spurred social interaction, and that the participants made spontaneous comments that they had discussed the dog with each other, while Berry et al. (2012) reported a time-dependent increase in cortisol levels and an increase in social behavior following the implementation of a dog visitation program.

The transition into a nursing facility can be a particularly difficult time in the life of an elderly person, particularly if they have been forced to relinquish a pet. The retention of an animal or the presence of facility animals could help to ease the transition. Jessen, Cardiello, and Braun (1996), found that individuals who were assigned a pet bird upon admission reported less depression during their first 10 days in the facility than those not assigned a pet bird.

Areas for Future Investigation

In addition to self-report measures of depression, future studies should incorporate objective measures of health such as blood pressure, resting pulse, and cortisol levels. These physiological measures can help to further establish the beneficial effects of AAI.

The length of time necessary for the beneficial effects of AAI to appear is unclear. Future research should incorporate both short-term and long-term measures in order to determine both the length of intervention necessary for beneficial effects to appear and the duration of the observed effect after the termination of treatment.

It is unclear if there is a plateau effect with AAI or if supplemental AAI could have additional beneficial effects. Future studies which conduct interventions with the same individuals at different time intervals could help determine whether or not additional amelioration of depression symptoms can be achieved through subsequent intervention.

The effects of AAI for depression in different age groups are not well understood. Although studied less frequently, young children seem to consistently benefit from AAI. However, the results for adults (particularly the elderly) are less consistent. Future research should consider age as a variable in order to clarify the effects of AAI for different age groups.

Conclusion

Research studies have demonstrated that AAI for reduction of depression is as at least as effective as other types of complementary therapy, and in some cases is superior (Nimer & Lundahl, 2007). The meta-analysis by Souter and Miller (2007) found that AAI has a moderately beneficial overall effect on demonstrable depression symptoms. Even though the difference in depressive symptoms may not be dramatic when quantified, individuals are likely to experience noticeable relief. This speaks to the practical significance of AAI for depression (Souter & Miller, 2007). Additionally, AAI has been shown to improve quality of life and social interaction.

For AAT in general, the effects demonstrated by studies without control groups do not differ significantly from

those with a control group. This indicates that the reported effects are likely due to the AAT rather than chance occurrence (Nimer & Lundahl, 2007). Moderate evidence shows that a non-directed group therapy is more effective than facilitator-directed group therapy, and that an individual setting may be more effective than group setting (Folse, Minder, Aycock, & Santana, 1994). However, the current literature is inconclusive as to which practice settings or for which groups of people AAI might be more successful (Nimer & Lundahl, 2007). This is either because the practice and participant characteristics are not significant variables, or because these variables have not been studied sufficiently. Although a variety of animal types have been used for AAI, a meta-analysis found the largest effects in studies employing dogs. Studies employing horses and aquatic animals had more ambiguous results (Nimer & Lundahl, 2007). As dogs became domesticated, they became more perceptive to the communicative cues and moods of humans (Cirulli, Borgi, Berry, Francia, & Alleva, 2011). This trait may make them more adept at responding to the needs of an individual in a therapy setting. However, this phenomenon has not been studied well enough to make any concrete conclusions about which types of animals might be more effective for persons with depression.

Several studies failed to find an effect during the intervention, but found significant differences in the AAI group at the follow up. This indicates that it may take some time for the effects of AAI on depression to become measurable. The reason for the delay is unknown, but may be due to the complex nature of both depression and the relationship between human and animals. It is important for future studies to consider that there may be a temporal lag before treatment effects become apparent. Thus studies with only short-term intervention and measurements may fail to find an effect simply because the duration of the study is insufficient.

The use of AAI for persons with depression has been well studied, and no significant adverse events have been reported. As such, where appropriate, AAI should be incorporated as an adjunct therapy for individuals with depression. Over time, the use of AAI is likely to reduce depressive symptoms and improve the quality of life for the individual.

Key Resources

Berget, B., & Braastad, B. O. (2011). Animal-assisted therapy with farm animals for persons with psychiatric disorders. *Annali dell'Istituto Superiore di Sanità*, 47(4), 384-390.

Berget and Braastad review and discuss literature on animal-assisted therapy (AAT) with farm animals for people with psychiatric disorders. Several studies show a decrease in depressive symptoms after AAT with farm animals. However, other studies have ambiguous results, and some show improvement only when the individuals are assigned complex tasks. Overall, AAT with farm animals appears to be beneficial, although the effects may take time to appear and are sometimes found after the intervention, such as at the six-month follow-up.

Le Roux, M. C., & Kemp, R. (2009). Effect of a companion dog on depression and anxiety levels of elderly residents in a long-term care facility. *Psychogeriatrics*, 9(1), 23-26.

LeRoux and Kemp assign 16 residents of a long-term care facility to either receive animal-assisted activities or a control group. Both groups take a pre- and post-tests to measure depression and anxiety symptoms. Prior to the intervention, there are no differences between the depression and anxiety scores for the two groups. After six weeks of intervention, there is a significant difference in the depression scores of the AAI group. The authors conclude that AAI can make a difference in the depression levels of residents in long-term care facilities.

Nepps, P., Stewart, C. N., & Bruckno, S. R. (2014). Animal-Assisted activity: Effects of a complementary intervention program on psychological and physiological variables. *Journal of Evidence-based Complementary & Alternative Medicine*, 19(3), 211-215.

Nepps, Stewart and Bruckno randomly assign 218 patients hospitalized in a mental health unit of a community hospital to either receive one-hour of animal-assisted activities or one-hour of a stress management program. The researchers collect self-report ratings of depression, anxiety, and pain, and measure blood pressure, resting pulse, and salivary cortisol before and after each treatment session. The group participating in animal-assisted activities exhibits significant decreases in depression, anxiety, pain, and resting pulse compared to those in the stress management program.

Souter, M. A., & Miller, M. D. (2007). Do animal-assisted activities effectively treat depression? A meta-analysis. *Anthrozoös*, 20(2), 167-180.

Souter and Miller conduct a meta-analysis to determine whether or not AAI effectively treats depression. They begin by reviewing the peer-reviewed literature on depression and AAI. While they find 165 articles, the majority are summaries, editorials, or anecdotal papers. Only five studies meet their inclusion criteria of random group assignment, use of a control group, use of AAI, and a measure of depression. The aggregate effect size of studies on AAI and depression is medium and statistically significant. This indicates that AAI is associated with amelioration of depression symptoms. Their analysis reveals gaps in the research on AAI and depression, which they identify and discuss.

Winston, E. (2015). Animal-assisted psychotherapy in the healing of childhood depression. In S. L. Brooke & C. E. Myers (Eds.), *The use of the creative therapies in treating depression* (pp. 291-309). Springfield, IL: Charles C. Thomas.

Winston gives an introduction to the use of animals to treat mental health issues in children, which includes a rationale for her preferred

terminology of animal-assisted psychotherapy (AAP). Next, Winston gives a comprehensive overview of depression in children, including the prevalence, signs, and symptoms. She then discusses theoretical and practical explanations for the efficacy of AAP in treating children with depression. These include the animal as a social lubricant and the ability of an animal to turn therapy into play. Examples for incorporating animals into treatment for children with depression are given. These include having the child project emotions onto the animal, using the animal to teach principles of self-care, playing with or walking the animal, building self-confidence by teaching the animal a new trick, and incorporating the animal into role play scenarios. For those who have constraints that prevent the use of live animals, Winston discusses the use of indirect animal representatives, such as puppets, stuffed animals, costumes, and pictures. Finally, Winston presents three case studies where AAP is used to treat children with depression.

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