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REVIEW

ANIMAL ASSISTED THERAPY AND OCCUPATIONAL THERAPY

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Abstract

The therapeutic relationship between the therapist and the client is considered as a primarily goal for treatment and a significant factor for the programme success. In recent years, the scientific community has brought to light more and more findings concerning the human-animal bond. Many therapists are already incorporating Animal Assisted Therapy into their program as a complementary method. The Occupational Therapist, by introducing an animal to his sessions and using it as a therapeutic tool to achieve communicative, motor, mental, emotional and sensory goals can greatly benefit the patient. Scientific studies should be carried out in Greece in order to draw conclusions that will help all members of the interdisciplinary team to integrate an animal into the pre-treatment process taking into account factors that affect both one's health and ethical use of the animal.

Key words: : Animal Assisted Therapy, Occupational Therapy.

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INTRODUCTION

Animal Assisted Therapy is defined as "the incorporation of an animal into the immediate environment of a person or group as a means of interaction for a therapeutic purpose".[1] The term is also known as "Pet Therapy" and nowadays, it is applied in a wide range of therapeutic benefits, such as developmental disorder centres, special education, nursing homes, rehabilitation centres, psychiatric centres and hostels, as well as hospitals.[2-5]

Occupational Therapy uses the therapeutic relationship as a key therapy. According to Cole and McLean6 there is a great connection between the therapeutic relationship and the positive effects of an intervention. The Occupational Therapist is called upon to utilize the natural bond which humans have with animals, integrating the latter into occupational therapeutic practice both on an individual and on a group basis depending on the goals and structure of the therapy, so as to promote motor, mental, sensory, social and psychological skills of the individual and to adopt functional roles and interests for the benefit of the patients.

THE HUMAN-ANIMAL BOND

Bowlby[7] borrowed the central concept of bond or attachment from the life science. That is to say, human beings, like all mammals, are distinguished from the bond system, a behavioural and self-perpetuating system ensuring the survival of the new-born. This system acts as a genetically determined predisposition, guiding the infant's behaviours to "attach" to people who are able to provide care. An example of such behaviour is crying, which controls and gives feedback when distance to the parent increases threateningly to the infant's bonding system. In recent years, researchers have shown that attachment theory can be extended to individual disciplines, providing a very useful framework for understanding the relationship between people and animals.[8] Early on, Levinson[9] argued that a pet is a natural attachment object, much more suited to lifeless or abstract or symbolic objects. The bond between an individual and a pet clearly demonstrates that it often fulfils all four criteria for an attachment relationship, namely, proximity seeking, safe haven, secure base, and stress reduction.[10]

According to Bowlby,[7] a prerequisite for positive therapeutic change is the ability of the therapist to act as a means of improving safety by acting as an attachment figure. This approach assumes that a pet can facilitate the formation of an attachment bond that may be relatively free of maladaptive predictions and can therefore help therapists revise maladaptive bonding patterns. People tend to experience relationships with a pet in the same way they handle interpersonal relationships.[9] Pets are uncritical, offer unconditional love, they are faithful, and most of the time they pose no threat to humans. According to Cusack,[11] ''love for an animal can be easier than love for a human being, as animal love in general does not require any decision'' (p.9). With a pet, individuals can feel safe, accepted, loved and thus unable to automatically display their maladaptive bonding patterns. Levinson[12] believed for children whose parents did not respond well to their developmental needs, that a pet might be in position to fill some of their needs: "These children have experienced so much harm in the hands of people of their immediate surroundings that when they develop a satisfying relationship with an animal they can make a new start in the development of a genuine human relationship'' (p.35).

THE BENEFITS OF ANIMALS TO HUMANS

Animals and physical health

Pet animals can improve human physical health in the short term, providing health benefits that last for seconds or even minutes. Caressing an animal has repeatedly been shown to cause transient decreases in blood pressure and heart rate.[13-15] Pointing in the same direction was the observation that the presence of a dog helped to lower the increased blood pressure in children who had to read aloud in front of the class.[16] It was also recorded that the presence of a pet dog or cat resulted in lower heart rate and blood pressure compared to that of a friend or spouse for people exposed to psychologically stressful factors.[17]

Even movie screening with animals can serve as a viable alternative to stressful situations.[18] Pet animals in general, contribute to human health. Evidence showing that animals are capa-

ble of improving long-term physical health (i.e. health benefits that last for weeks, months or even years) is less than in the short term. However, the few studies conducted in this field seem to show that pets can provide long-term therapeutic benefits and help facilitate recovery from serious physical illnesses. A number of studies have examined the relationship between pet ownership and physical well-being in an attempt to determine if pets can prevent poor health. For example, it has been found that pet owners visit the doctor less often compared to people who do not have pets.[19]

Animals and Mental Health

Pets can also contribute to people's psychological well-being. Research has shown that animals can improve the effects of potentially stressful life events (e.g. mourning, divorce), help reduce levels of stress, loneliness, and depression,[20] and enhance emotions of autonomy, responsibility, and self-esteem.[21] Pets can facilitate social interaction between people. Pets, and especially dogs, have long been popular for their important role in socialization. For example, walking with a dog significantly increases the chance of having conversations with total strangers in comparison to walking alone.[22] Hunt, Hart, and Gomulkiewicz[23] found that a woman sitting in a park was approached by passers-by significantly more each time she was accompanied by an animal, such as a rabbit or a turtle, than when she was simply sitting alone. Bernstein and his colleagues[24] found that animal therapy in the form of visits by specially trained dogs and cats greatly facilitates social interactions (especially long discussions) among patients in various health facilities. Similar positive results in hospitals have been reported by other researchers.[25]

Animals and family function

The family as a system benefits from having a pet. Pets provide care, selfless love, respond to many human needs and provide psychological and social support.[26] Children in single-parent families have significantly higher levels of attachment to pets than children living in families with two parents. Children without siblings are also more strongly attached to their pets. Pets provide companionship of vital importance and a sense of safety to children.[27] People with senile dementia may possibly become anxious or confused at family gatherings. So, caressing a pet can have calming and soothing properties.[28]

ANIMAL ASSISTED THERAPY AND OCCUPATIONAL THERAPY

Animals as a form of treatment to perform an occupation

According to Nelson,[29] a functional therapeutic occupation makes sense for the individual when it is purposeful and leads to accurate evaluation, positive adjustment, and successful compensation. A well thought out action of a competent Occupational Therapist is to propose projects that can be fully integrated into an individual's life and function therapeutically and proactively, improving their quality of life.

Caring for of an animal is also a therapeutic functional occupation.[30] Taking care of an animal is a project that can contribute to the emotional state of an individual and to the structuring of a daily routine. It also acts as a means of social integration as it reduces 'stigma' and provides opportunities for social interaction. The social environment sees an animal owner rather than a person with a disability, and there are more opportunities for interaction, even only through eye contact.[31,32]

Owners of animals have a sense of responsibility for someone else and their daily schedule is structured around routines which involve feeding, watering, cleaning equipment and space, training and medical care of the pet.[33] Even fish, birds, turtles, rabbits or hamsters can easily be used in classrooms or treatment rooms with the disadvantage of the small life span they may have. The programme ''Puppies Behind Bars'' is one of many programmes in prisons and penitentiaries which integrate animals in an effort to teach inmates the value of offering to the community.[34] In other programmes, it has been found that the care offered by inmates to rescued horses improves psychological function and reduces prison recidivism rates.[35]

Animals as a means of developing skills

The positive effects of horse-riding date back to early European history, when therapists used them as a means of treatment for physical ailments and for psychological well-being.[36] Horse therapy is based on scientifically documented practice and

Occupational Therapists, Physiotherapists or Speech Therapists utilise the 3D motion of the horse to achieve sensory, neuromuscular and cognitive goals in order to improve the functioning of the individual.[37] Studies on the efficacy of horse riding and therapeutic riding have focused mainly on children with motor difficulties,[38,39] social/emotional behaviour difficulties,[40,41] speech and learning difficulties,[42] as well as on facilitating psychotherapy.[43] These studies examined changes in walking, body posture, muscle strength, coordination, self-esteem, depression, pain, communication skills, self-esteem, anxiety, and quality of life. In most studies, some level of efficacy was reported although the quality of the studies varied significantly. There are several systematic post-analyses on the positive effect of horse-riding and therapeutic riding on children with cerebral palsy.[44,45]

Positive results of horse therapy have also been observed in children with autism spectrum disorders.[46,47] The therapeutic effects of riding for children with autistic spectrum disorders appear to stem from the relationship developed with the horse over time, as well as with other human interactions that were not existent prior to the experience with horses.[48] In addition, it has been reported that on the one hand, the social functioning of autistic children, who participated for a period of 12 weeks in a programme of therapeutic riding, improved significantly while on the other hand, an improvement in sensory behaviours, higher levels of social motivation and an improved ability to concentrate were recorded for the children who participated in the programme.[49] In addition, human-animal interactions were investigated by examining only the biomechanical functions of horse riding, and the improvements in movement, executive skills, and sensory functions were reported following the participation of children in the autism spectrum in a 20-week intervention programme.[50]

Sams and his colleagues[51] compare the efficacy of Occupational Therapy with the use of standard techniques in relation to Animal Assisted Occupational Therapy, in particular with lamas and farm animals, on autistic children. The results showed significantly better speech use and more social interaction in sessions that incorporated animals. Some of the therapeutic activities were: riding a lama, driving wagons pulled by lamas, combing, feeding, carding wool, loading and unloading a lama, cleaning the equipment, guiding a lama to a competition, interacting with the animal, discussing about the animal and joint attention with the therapist, observation, interpretation and response to lama 'messages', responding, adapting to the animal's natural behaviours, participating in lama competitions, applauding and encouraging other children in the group, expressing thoughts and feelings to the animals. These activities promote therapists' sensory, communicative, and cognitive goals.

Occupational therapists from Thailand have used the elephant as a therapeutic tool for their research on children in the autistic spectrum. With Kielhofner's Model of Human Occupation and the Ayres Sensory Integration model, they developed an Occupational Therapy programme that included eight activities: information about the animal, guiding the animal, animal feeding and care, animal riding, interaction playing with the animal, arts and crafts with the elephant as the main topic and relaxation. Results showed improvement in all areas of functionality, adoption of a new functional role and increased parental satisfaction.[52]

Some researchers claim that dolphins can be used therapeutically in a wide range of disorders, including depression, Down syndrome, autistic spectrum disorders, blindness, AIDS and cancer. Treatment may include both dolphins that are controlled in a pool as well as those that are free. People treated are often children or adults with psychological or physical disabilities[53] Nevertheless, dolphins are large, strong, and unpredictable animals, even when they are well-trained. For this very reason, there should always be dedicated trainers to oversee the therapeutic process. In addition, there is the possibility of their transmitting certain diseases to humans if not adequately examined and controlled prior to treatment.[54]

The introduction of a dog into a psychodynamic therapeutic session as an assisted means has received particular attention.[55] The dog is an animal that can be easily incorporated into the Occupational Therapist session. In a study involving a dog in the treatment of a child in the autistic spectrum, the results showed that supervised interaction with the dog increased positive social behaviour, reduced self-absorption, and

reduced stereotypical behaviours.[56] Similarly, children in the autistic spectrum were found to have increased intrinsic motivation for play, common attention, and social interaction in the presence of the dog in the therapeutic context.[57] In addition, dogs play such an important role in a child's social and communication development, that a carer may not be able to provide to such a degree because the child and the dog often interact in ways that are not recognizable by adults.[58] The alternative intervention in the therapy with the introduction of the dog seems to be effective in improving a child's social skills. The presence of the dog also helps to improve the physical, social, emotional and cognitive function of the child.[59]

DISCUSSION

The therapy techniques with the contribution of animals can be used for the development of a therapeutic relationship and skills that improve the functionality and, as a result, the quality of life of the individual. However, not all individuals are suitable candidates for such therapy, as not all interventions are organized in such a way as to include an animal. In addition, not all animals are eligible for participation in an occupational therapeutic intervention programme and what is more, both the health and the behaviour of the candidate animals to be used for treatment should be assessed and certified by a specially trained assessor.[59] Occupational therapists who are interested in animal therapy should be properly trained to deal with any possibility of risk, avoid any problems that may arise, and manage ethical issues properly.

Levinson[60] pointed out that animal assisted therapy is not a panacea. Not everyone responds to it in the same way, and in some cases, it is not the preferred treatment. As a result, it is necessary for the therapist to include in the first interview, questions about allergies to certain types of animals, phobias, and information relevant to previous animal experiences. This kind of information should be included in the individual therapy programme and should be used to properly assess and evaluate the case. It should be borne in mind that pets, and especially dogs, have the potential to put human health in danger, as they can spread certain diseases, cause allergies, bites, and, in extreme cases, even death. All of these factors should definitely be taken into consideration and should be evaluated in order to prevent various risks before using any animal in a treatment session.[61]

Although there is evidence for a direct causal relationship between human well-being and pets, there is still ample room for research in the field of Occupational Therapy. The literature developed above supports to a great degree the widespread belief that animals can greatly benefit humans. Unfortunately, not all studies conducted in this field are methodologically robust to allow generalized conclusions. Many of them, for example, have dealt exclusively with short-term changes in an individual's well-being and relatively few have used very large or random samples. The lack of some standardized measures and designs that can assess different areas of an individual's functionality makes it difficult to draw conclusions and much more research is needed to ensure their reliability and validity. Further quantitative research is needed to support practical relevance to the theoretical background in order to be widely applied in the future.

Witt's study[62] highlighted the importance of intervention by occupational therapists and the importance of their specialization in the creation of a professional identity that relates exclusively to animal assisted therapy. Something equally important to note is that in order for an individual to be considered functional and autonomous, therapists should gradually withdraw the means they have used. The reassessment will show whether the targets have been achieved and generalized in the absence of the animals used as a medium. Interestingly, a study by El-Alali and his associates[63] found no connection between the bond with the pet and the quality of human life. The sample consisted of young university students who were not socially isolated, or depressed, or suffering from a serious disease. This leads to the conclusion that a pet may be of vital importance for people in vulnerable groups or for those going through a difficult phase in their lives.

Finally, just as humans want to feel safe, so pets need protection and proper regulation of their needs for survival. In addition, they are also affected by disorders such as separation, abandonment, and loss. Therefore, they also need to feel connected with people, protected and secure.

CONCLUSION

Therapists who integrate an animal into the therapeutic process aim to improve the motor, sensory, mental, functional, emotional and social lives of the individuals they serve. We are in the midst of a change that makes it necessary for occupational therapists to educate themselves on human-animal bonding, the various issues related to animal ownership and their integration into therapeutic planning.[64] Existing studies appear to confirm the efficacy of animal assisted therapy.[5] Studies should be carried out in Greece as well, in order to draw conclusions which will help all members of the interdisciplinary team to integrate an animal into the preliminary treatment process taking into consideration factors which affect an individual's health such as allergies or injuries caused by the animals themselves or the hygiene of the environment.

REFERENCES

1. Willis DA. Animal therapy. Rehabil Nurs 1997;22(2):78–81.
2. Barba BE. The positive influence of animals: Animal-assisted therapy in acute care. Clin Nurse Spec 1995;9(4):199–202.
3. Barker SB, Dawson KS. The effects of animal assisted therapy on anxiety ratings of hospitalized psychiatric patients. Psychiatr Serv1998;49(6):797–801.
4. Jorgenson J. Therapeutic use of companion animals in health care. Image J Nurs Sch 1997;29(3):249–254.
5. Velde BP, Cipriani J, Fisher G. Resident and therapist views of animal-assisted therapy: Implications for occupational practice. Aust Occup Ther J 2005;52:43-505.
6. Cole BM, McLean V. Therapeutic relationships re-fined. Occup Ther Mental Health 2003;19(2):33-56.
7. Bowlby J. A secure base. New York: Basic Books; 1988.
8. Zilcha-Mano S, Mikulincer M, Shaver PR. An attachment perspective on human–pet relationships: Conceptualization and assessment of pet attachment orientations. J Res Pers 2011;45(4):345–357.
9. Levinson BM. Pet-oriented psychotherapy. Springfield, IL: Charles C. Thomas Publisher, LTD;1969.
10. Ainsworth MDS. Attachment and other affectional bonds across the life cycle. In: Parkes CM, Stevenson-Hinde J, Marris P, editors. Attachment across the life cycle. New York: Routledge; 1991. p. 33.
11. Cusack O. Pets and mental health. New York: Haworth Press;1988.
12. Levinson BM. Pets and human development. Springfield, IL: Thomas Publisher, LTD;1972.
13. Wilson C. The pet as an anxiolytic intervention. J Nerv Ment Dis 1991;179(8):482 – 489.
14. Katcher AH, Friedmann E, Beck AM, Lynch JJ. Looking, talking, and blood pressure: The physiological consequences of interaction with the living environment. In: Katcher AH, Beck AM, editors. New perspectives on our lives with companion animals. Philadelphia: University of Pennsylvania Press;1983. p. 351.
15. Vormbrock JK, Grossberg JM. Cardiovascular effects of human-pet dog interactions. J Behav Med 1988;11(5):509 – 517.
16. Friedmann E, Katcher AH, Thomas, SA, Lynch JJ, Messent PR. Social interactions and blood pressure: Influence of animal companions. J Nerv Ment Dis 1983;171(8):461–465.
17. Allen KM, Balscovich J, Mendes WB. Cardiovascular reactivity and the presence of pets, friends, and spouses: the truth about cats and dogs. Psychosom Med 2002;64(5):727–739.
18. Wells DL. The effect of videotapes of animals on cardiovascular responses to stress. Stress Health 2005;21(3):209 – 213.
19. Headey B. Health benefits and health cost savings due to pets: Preliminary estimates from an Australian national survey. Soc Indic Res1990;47(2):233–243.
20. Folse EB, Minder CC, Aycock MJ, Santana RT. Animal-assisted therapy and depression in adult college students. Anthrozoös 1994; 7(3):188–194.
21. Triebenbacher SL. The relationship between attachment to companion animals and self- esteem. In: Wilson CC, Turner DC, editors. Companion animals in human health. London: Sage; 1998. p. 135.
22. McNicholas J, Collis GM. Dogs as catalysts for social interactions: Robustness of the effect. Brit J Psychol

2000;91(1):61–70.

23. Hunt SJ, Hart LA, Gomulkiewicz R. Role of small animals in social interactions between strangers. J Soc Psychol 1992;132(2):245-256.
24. Bernstein PL, Friedmann E, Malaspina A. Animal-assisted therapy enhances resident social interaction and initiation in long term care facilities. Anthrozoös 2000;13(4):213–224.
25. Moody WJ, King R, O'Rourke S. Attitudes of pediatric medical ward staff to a dog visitation programme. J Clin Nurs 2002; 11(4):537–544.
26. Beck L, Madresh EA. Romantic partners and four-legged friends: An extension of attachment theory to relationships with pets. Anthrozoös 2008;21(1):43–56.
27. Bodsworth W, Coleman GJ. Child companion animal attachment in single and two-parent families. Anthrozoös 2001;14(4):216–223.
28. Baun MM, McCabe BW. Companion animals and persons with dementia of the Alzheimer's type: Therapeutic possibilities. Am Behav Sci 2003;47(1):42–51.
29. Nelson DL. Therapeutic occupation: A definition. Am J Occup Ther 1995;50(10):775-782.
30. American Occupational Therapy Association. Occupational Therapy Practice Framework: domain and process. Am J Occup Ther 2014;68 (1 Suppl):S1-48.
31. Allen JM, Kellegrew DH, Jaffe D. The experience of pet ownership as a meaningful occupation. Can J Occup Ther 2000;67(4):271–278.
32. Zimolag U, Krupa T. The occupation of pet ownership as an enabler of community integration in serious mental illness: A single exploratory case study. Occup Ther Mental Health 2010;26(2):176-196.
33. Dembicki D, Anderson J. Pet ownership may be a factor in improved health of the elderly. J Nutr Elder 1996;15(3):15–31.
34. Walsh F. Human-animal bonds I: The relational significance of companion animals. Fam Process 2009; 48(4):462–480.
35. Strimple EO. A history of prison inmate-animal interaction programs. Am Behav Sci 2003;47(1):70–78.
36. Burch MR. Volunteering with your pet: How to get started in Animal-Assisted Therapy with any kind of pet. New York: Howell Book House;1996.
37. McGibbon NH, Benda W, Duncan BR, Silkwood-Sherer D. Immediate and long-term effects of hippotherapy on symmetry of adductor muscle activity and functional ability in children with spastic cerebral palsy. Arch Phys Med Rehabil 2009;90(6):966–974.
38. Davis E, Davis B, Wolfe R, Raadsveld R, Heine B, Thomason P et al. A randomized controlled trial of the impact of therapeutic horse riding on the quality of life, health, and function of children with cerebral palsy. Dev Med and Child Neurol 2009;51(2):111–119.
39. Drnach M, O'Brien PA, Kreger A. The effects of a 5-week therapeutic horseback riding program on gross motor function in a child with cerebral palsy: A case study. J Altern Complem Med 2010;16(9):1003–1006.
40. Bass MM, Duchowny CA, Llabre MM. The effect of therapeutic riding on social functioning in children with Autism. J Autism Dev Disord 2009; 39(9):1261–1267.
41. Schultz PN, Remick-Barlow GA, Robbins L. Equine-assisted psychotherapy: A mental health promotion/intervention modality for children who have experienced intra-family violence. Health Soc Care Community 2007;15(3):265–271.
42. Macauley BL, Gutierrez KM. The effectiveness of hippotherapy for children with language-learning disabilities. Comm Disord Q 2004;25(4):205–217.
43. Rothe EQ, Vega BJ, Torres RM, Soler SM, Pazos RM. From kids and horses: Equine facilitated psychotherapy for children. Int J Clin Hlth Psy 2005; 5(2):373–383.
44. Tseng SH, Chen HC, Tam, KW. Systematic review and meta-analysis of the effect of equine assisted activities and therapies on gross motor outcome in children with cerebral palsy. Disabil Rehabil 2013;35(2):89–99.
45. Zadnikar M, Kastrin A. Effects of hippotherapy and therapeutic horseback riding on postural control or balance in children with cerebral palsy: a meta-analysis. Dev Med Child Neurol 2011;53(8):684–691.
46. Gabriels RL, Agnew JA, Holt KD, Shoffner A, Zhaoxing P, Ruzzano S et al. Pilot study measuring the effects of therapeutic horseback riding on school-age children and adolescents with autism spectrum disorders. Res Autism Spectr

Disord 2012;6(2):578–588.

47. Kern JK, Fletcher CL, Garver CR, Mehta JA, Grannemann BD, Knox KR et al. Prospective trial of equine assisted activities in autism spectrum disorder. Altern Ther Health Med 2011;17(3):14–20.
48. Dingman A. Hoof prints: Equine therapy for children with autistic children. Encounter: Education for Meaning and Social Justice 2008;21(4):11–13.
49. Bass MM, Duchowny CA, Llabre MM. The effect of therapeutic riding on social functioning in children with Autism. J Autism Dev Disord 2009;39:1261–1267.
50. Wuang YP, Wang CC, Huang MH, Su CY. The effectiveness of simulated developmental horse-riding program in children with autism. Adapt Phys Activ Q 2010; 27(2):113–126.
51. Sams MJ, Fortney EV, Willenbring S. Occupational therapy incorporating animals for children with autism: A pilot investigation. Am J Occup Ther 2006;60(3):268-274.
52. Satiansukpong N, Pongsaksri M, Sung-U S, Vittayakorn S, Tipprasert P, Pedugsorn M et al. Thai Elephant-assisted Therapy Program: The Feasibility in Assisting an Individual with Autism. WFOT Bulletin 2008;58(1):17-26.
53. Brakes P, Williamson C. Can you put your faith in DAT? A report for WDCS, the Whale and Dolphin Conservation Society. 2007.
54. Marino L, Lilienfeld SO. Dolphin Assisted Therapy: More Fawed Data and More Flawed Conclusions. Anthrozoös 2007;20(3):239–249.
55. Fine AF. Handbook on Animal-Assisted Therapy: Theoretical Foundations and Guidelines for Practice. San Diego: Academic Press; 2000.
56. Redefer LA, Goodman JF. Brief report: Pet facilitated therapy with autistic children. J Autism Dev Disord 1989;19(3):461–467.
57. Martin F, Farnum J. Animal-assisted therapy for children with pervasive developmental disorders. West J Nurs Res 2002; 24(6):657–670.
58. Melson GF, Fine AH. Animals in the lives of children. In: Fine AH editor. Animal assisted therapy: Theoretical foundations and guidelines for practice. 2nd ed. San Diego: Academic Press; 2006. p. 207.
59. Chandler CK. Animal assisted therapy in counseling. New York: Routledge;2005.
60. Levinson BM. Pets, child development and mental illness. J Am Vet Med Assoc 1970;157(11):1759–1766.
61. Baxter DN, Leck I. The deleterious effects of dogs on human health: 2. Canine zoonoses. Community Med 1984; 6:185 – 187.
62. Witt C. Animal-assisted therapy: An investigative study to define what it is, address its benefits, and describe the role of the occupational therapist in its use. Unpublished Study. Greenville, NC: East Carolina University; 2002.
63. El-Alaylin A, Lystad AL, Webb SR, Hollingsworth LS, Ciolli LJ. Reigning cats and dogs: A pet enhancement bias and its link to pet attachment, pet-self similarity, self-enhancement, and well-being. Basic Appl Soc Psych 2006;28(2):131-143.
64. Winkle MY, Jackson LZ. Animal Kindness. Best Practices for the Animal-Assisted Therapy Practitioner. OT Practice 2012;17(9):10-14.