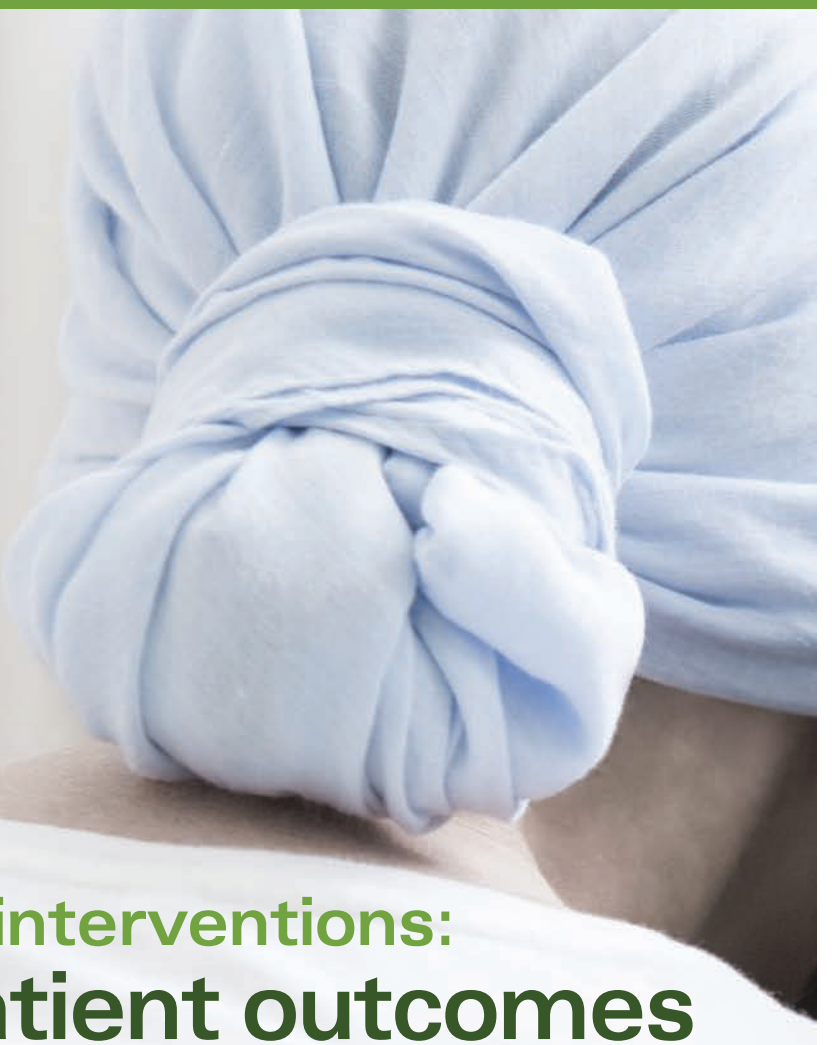
April 30

National Therapy Animal Day



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Animal-assisted interventions:

Impact on patient outcomes and satisfaction

By Julie Miller, BSN, RN, CCRN-K

Animal-assisted interventions (AAI), such as animal-assisted therapy, animal-assisted activities, and animal-assisted education, are goal-oriented interventions that use therapy animals in health, education, and human services for the purpose of improving health and wellness and achieving therapeutic gains.[1] In animal-assisted therapy, healthcare professionals use therapy animals as a tool in structured patient interventions to achieve specific measurable outcomes. Examples include petting, brushing, speech therapy, and ambulation. The most common AAI used in hospitals and long-term-care facilities, animal-assisted activities use therapy animals in less structured activities, such as hospital visitations and stress reduction interventions, to accomplish global goals, such as improving well-

being, providing comfort and joy, reducing anxiety, and improving patient satisfaction. (See *Figure 1.*) Animal-assisted education uses therapy animals in programs to improve literacy and reading.[1]

The evidence regarding the use of AAI in adults and children is positive for improvement in physical functioning, pain reduction, increased emotional well-being, stress/anxiety reduction, socialization, and psychosocial and psychological outcomes. A systematic review of randomized controlled trials noted that the majority of the research and published literature regarding AAI is descriptive, including case studies, nonrandomized interventions with control conditions, and no control conditions with small groups of participants.[2] AAI is in need of randomized controlled studies to validate outcomes and identify which interventions are beneficial for specific populations.[2]

In this article, we discuss how hospitalized patients' interactions with therapy animals reduce stress, improve emotional well-being, and increase physical functioning.

Literature review

Cole and colleagues conducted a randomized controlled trial using a 12-minute intervention with patients with advanced heart failure. Patients were assigned to one of three groups: volunteer/therapy dog team visit, volunteer-only visit, or no visitors. Significant reductions in norepinephrine, epinephrine, and pulmonary artery systolic and occlusive pressures were noted in the volunteer/therapy dog team visit group compared with the no visitors group. Reductions in anxiety scores from baseline were also seen in the volunteer/therapy dog team visit group.[3] Another study looked at patients hospitalized with heart failure who ambulated with a dog. These patients were noted to ambulate farther and have lower ambulation refusal rates compared with the patients who didn't ambulate with a dog.[4]

Research shows that using distraction during procedures to reduce stress and anxiety can be effective.[5,6] Using AAI as a before, during, and postprocedural distraction may be a way to minimize the experience of procedural anxiety for a variety of stressful and painful procedures, such as venipuncture and MRI. Studies in adults and children have demonstrated that a therapy dog intervention before and during MRI has a positive effect on anxiety reduction.[7,8] One study that randomized hospitalized children to either AAI or working on an age-appropriate jigsaw puzzle noted reductions in anxiety in the children who participated in AAI compared with those who worked on the puzzle.[9] Children diagnosed with cancer who had regular visits with a therapy dog over a 4-month period showed significant reductions in State-Trait Anxiety Inventory scores compared with the control group. Parents of those children also showed significant reductions in stress.[10]

Using AAI to minimize or reduce the experience of pain has mixed results in the literature. A meta-analysis of AAI to reduce pain, anxiety, and stress showed improvements in all factors; however, the impact may have been related to social distraction. The authors concluded that methodologies to study the impact of AAI on pain, anxiety, and stress need to be improved.[11] The study using AAI compared with an age-appropriate jigsaw puzzle activity noted no changes in pain levels for either group.[9]

In a study of pediatric oncology patients, reductions in pain,

Figure 1: Stress reduction

stress, and irritation were noted as a result of implementing an outpatient animal-assisted therapy program in which children and caregivers interacted with the therapy dogs for three 30-minute sessions. Improvements in caregiver anxiety, tension, and mental confusion were also noted.[12]

The use of therapy animals in an outpatient pain management clinic saw significant improvements in pain and stress levels in patients who interacted with the therapy animals compared with waiting room controls.[13] A randomized controlled trial of patients after total joint arthroplasty using AAI for 15 minutes before physical therapy noted significant reductions in pain compared with patients who received standard physical therapy procedures.[14]

Table 1: AAI patient exclusion criteria[18]

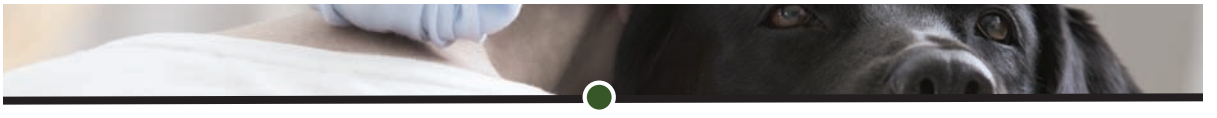
- Fear of or allergic to the animal
- Isolation precautions of any kind
- Immunocompromised based on institutional guidelines
- Open wounds that aren't covered during the animal visit
- Aggressive, violent behavior

for improving social and emotional well-being.[15] A systematic review of randomized controlled studies also noted that AAI may benefit adults with cognitive disorders, including schizophrenia, and children with autism.[2]

A randomized trial evaluated the effect of therapy animal visits on patients with head and neck cancers during radiation and chemotherapy treatment. Despite significant decreases in scores for physical and functional well-being, the patients who received therapy dog visits showed significant increases in scores for social and emotional well-being.[16] Because patients on CCUs and their families experience significant levels of pain, anxiety, and stress, AAI may offer significant benefits for both patients and families in critical care by reducing stress and anxiety and improving emotional well-being.

Creating a more humanized ICU using AAI has been proposed as a nonpharmacologic method to improve the patient experience and engage patients in their recovery.[17] In 2015, the Society for Healthcare Epidemiology of America (SHEA) suggested that therapy animals should be restricted from visiting ICUs but offered no rationale for this guidance.[18] Therapy animals have successfully been used on ICUs by following appropriate policies and procedures, as well as ensuring patient safety and therapy animal well-being.[3,17,19]

Therapy animals may also improve palliative care in the pediatric population. A literature review described the potential physical and psychological benefits, as well as the limitations, of implementing AAI with this vulnerable population.[20] The review emphasized the need for more quality longitudinal studies of AAI in pediatric populations.



Nursing is well positioned to contribute to the growing body of evidence regarding the use of AAI for improving patient outcomes and satisfaction.

AAI programs may affect patient satisfaction. The study of post-joint arthroplasty patients who received AAI before physical therapy saw significant improvements in Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores for nursing communication and pain management compared with controls. The overall hospital HCAHPS rating was significantly higher in the therapy dog intervention group compared with the control group.[14] A systematic review of the literature confirms that AAI is useful

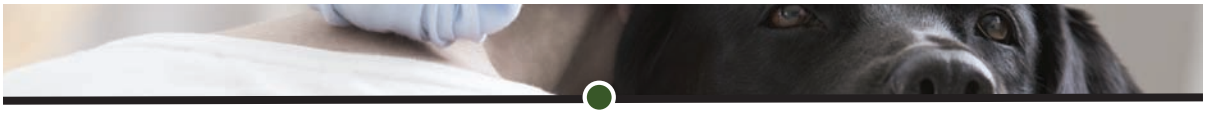
Policies and procedures

Comprehensive policies are essential for the successful implementation of AAI for improving patient outcomes. Policy and procedure development for AAI programs must cover measures for infection prevention and ensuring patient safety and animal well-being. The following items should be included in policy development: patient exclusion criteria (see *Table 1*), infection prevention practices (see *Table 2*), therapy animal and human volunteer requirements and training prac-

tices, and governance activities. Although it's beyond the scope of this article to go into detail of all the policy and procedures needed to implement AAI, more information can be found in the SHEA guidance document, in the article "Animal-Assisted Intervention in the ICU: A Tool for Humanization," and the text *Animal-Assisted Interventions for Health and Human Service Professionals* currently due to publish in May 2020.[17-19]

of therapy dog decolonization procedures should be included in policy development. Recent studies have evaluated the impact of AAI on therapy animals' stress response measured with salivary cortisol samples and observations of behavioral stress response. AAI didn't significantly increase the therapy animals' physiologic or behavioral stress response.[22] Evaluation of and management practices for therapy animal stress response

his wheelchair. The patient indicated considerable pain of 9 out of 10 while standing despite receiving maximal doses of pain medication. The healthcare professional working with the patient suggested standing at the table where a Golden Retriever therapy dog named Huck was lying down, along with his handler who was positioned in a chair at his head and holding his leash. The patient agreed and stood to pet and brush Huck.



"I instantly felt new life breathed into my soul. I was smiling and interacting with the animals. Even today, I feel better than I did yesterday emotionally."

Therapy animal health and response to stress must also be considered when implementing AAI. A pilot study noted that the risk of methicillin-resistant *Staphylococcus aureus* colonization was lower when therapy dogs were decolonized before patient contact.[21] Consideration should be included in policy and procedure development.

Case exemplars

After total hip joint arthroplasty, a patient was working on standing balance but was only able to maintain standing for less than 10 seconds before sitting back in his wheelchair. The patient indicated considerable pain of 9 out of 10 while standing despite receiving maximal doses of pain medication. The healthcare professional working with the patient suggested standing at the table where a Golden Retriever therapy dog named Huck was lying down, along with his handler who was positioned in a chair at his head and holding his leash. The patient agreed and stood to pet and brush Huck.

The first time standing, the patient was able to maintain the position for 5 minutes. Following a brief rest, the patient stood and was instructed to place hairclips in the dog's hair. (See *Figure* 2.) The patient stood and began placing tiny child's hairclips in the fur along the dog's back from head to tail. After completing placement of about 50 hairclips while standing, the patient was instructed to remove all of the clips. When all clips were removed, the patient asked if he could sit. The patient reported that he believed he had stood for 10 minutes. The healthcare provider informed the patient that he had been standing for 25 minutes. The patient expressed disbelief, reported his pain level now at a 2, and credited the interaction with the therapy dog as the reason for being able to stand for an increased duration.

Table 2: AAI infection prevention practices[18-21]

Infection prevention policy for AAI to be developed in collaboration with the infection prevention practitioner:

- implement standard precautions for patient contact
- restrict therapy animal teams from patients on isolation precautions of any kind
- perform handwashing procedures before and after patient contact
- place a barrier, such as a towel or disposable impermeable barrier, on the patient's bed if the animal is to contact the bed
- approach the patient from his or her injury-free side and/or with the least amount of invasive devices
- evaluate the risk of zoonotic disease transmission
- perform therapy animal handler and therapy animal health screenings, ensure immunization, and determine frequency of evaluation
- perform therapy animal hygiene, including consideration of decolonization procedures
- develop a procedure for accidental animal waste elimination and waste disposal.

A patient reported feeling lonely and missing his family and pets after being hospitalized for 7 days. The nurses suggested visits from therapy dogs who were making their regularly scheduled rounds in the hospital. The patient agreed and, following placement of a towel on his bed and the use of hand hygiene with alcohol-based sanitizer, the therapy animal team entered his room. The patient spent approximately 2 to 3 minutes each with the four different therapy dogs. Following the visits, the patient expressed the following sentiment, "I instantly felt new life breathed into my soul. I was smiling and interacting with the animals. They even have a Boxer named Jake that's around the same age as my Boxer at home. Even today, I feel better than I did yesterday emotionally. I'm so glad this program exists. It's more helpful and therapeutic than many know." In a different scenario, a patient commented, "When I was sick in the hospital without a lot of hope, a big, old Golden Retriever came and put his nose on my bed. It changed my whole attitude. I will always be thankful to the owner and his Golden Retriever."

AAI can also have a positive impact on family members. A patient was transferred to the hospital from the long-term-care facility where he resides. His family reported that the patient was depressed due to the need for hospitalization. After a visit with a therapy dog (see *Figure 3*), the patient's wife remarked, "This brought tears to my husband's eyes and filled him full of joy today. Thank you all for the amazing things you do. Being in

Figure 2: Standing balance with hair clips

Figure 3: Emotional well-being

a hospital bed and confined to it really is hard, but this really lit up my husband's face. I can't thank you enough. God bless you all."

Implications for nurse managers

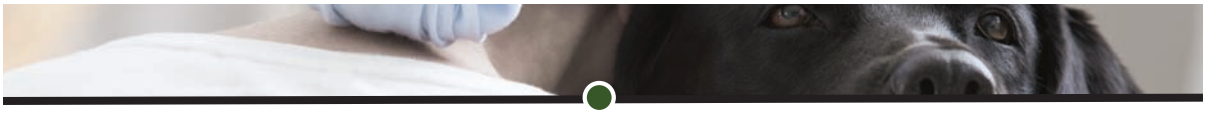
Nurse managers wanting to implement an AAI program on their units need to collaborate with infection prevention practitioners, administration, and nursing governance councils to develop the policies and procedures to ensure safe AAI practice. The goal of and population for using AAI should be stated as part of the establishment of the practice. For example, staff, family, and patient stress reduction may be the main goal for the program.

Therapy animal organizations, such as Pet Partners and Therapet, usually provide AAI services via volunteer animal handler teams and offer consultation and educational information for setting up AAI programs. Collaborating with a therapy animal organization as policies are developed is essential to ensuring a successful program. Be sure to verify with the organization providing the service that the therapy animal teams are certified by passing a temperament evaluation and are covered by liability insurance. Reputable therapy animal organizations don't provide mail order certificates.

Once the AAI program is approved, education should be provided for staff members to help them identify appropriate patients and when to use this service. First and foremost, the patient has to agree to the therapy animal intervention.

Nurses and animals working together

Evidence demonstrates improved social and emotional well-being, reduced stress and anxiety, and more satisfied patients with AAI. Therapy animals have the potential to reduce the experience of pain and improve physical function outcomes. Continued efforts to develop randomized controlled trials and longitudinal studies are needed to expand the evidence supporting the use of AAI. Nursing is well positioned to contribute to the growing body of evidence regarding the use of AAI for improving patient outcomes and satisfaction. NM



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REFERENCES

1. Pet Partners. Terminology. https://petpartners.org/learn/terminology.
2. Maujean A, Pepping CA, Kendall E. A systematic review of randomized controlled trials of animal-assisted therapy on psychosocial outcomes. *Anthrozoös.* 2015;28(1):23-36.
3. Cole KM, Gawlinski A, Steers N, Kotlerman J. Animal-assisted therapy in patients hospitalized with heart failure. *Am J Crit Care.* 2007;16(6):575-585.
4. Abate SV, Zucconi M, Boxer BA. Impact of canine-assisted ambulation on hospitalized chronic heart failure patients' ambulation outcomes and satisfaction: a pilot study. *J Cardiovasc Nurs.* 2011;26(3):224-230.
5. Sahiner NC, Bal MD. The effects of three different distraction methods on pain and anxiety in children. *J Child Health Care.* 2016;20(3):277-285.
6. Bukola IM, Paula D. The effectiveness of distraction as procedural pain management technique in pediatric oncology patients: a meta-analysis and systematic review. *J Pain Symptom Manage.* 2017;54(4):589-600.
7. Perez M, Cuscaden C, Somers JF, et al. Easing anxiety in preparation for pediatric magnetic resonance imaging: a pilot study using animal-assisted therapy. *Pediatr Radiol.* 2019;49(8):1000-1009.
8. Pullen LC. Animal-assisted therapy can decrease anxiety before an MRI. Medscape. 2011. www.medscape.com/viewarticle/742933.
9. Barker SB, Knisely JS, Schubert CM, Green JD, Ameringer S. The effect of an animal-assisted intervention on anxiety and pain in hospitalized children. *Anthrozoös.* 2015;28(1):101-112.
10. McCullough A, Ruehrdanz A, Jenkins MA, et al. Measuring the effects of an animal-assisted intervention for pediatric oncology patients and their parents: a multisite randomized controlled trial. *J Pediatr Oncol Nurs.* 2018;35(3):159-177.
11. Waite TC, Hamilton L, O'Brien W. A meta-analysis of animal assisted interventions targeting pain, anxiety and distress in medical settings. *Complement Ther Clin Pract.* 2018;33:49-55.
12. Silva NB, Osório FL. Impact of an animal-assisted therapy programme on physiological and psychosocial variables of paediatric oncology patients. *PLoS ONE.* 2018;13(4):e0194731.

13. Marcus DA, Bernstein CD, Constantin JM, Kunkel FA, Breuer P, Hanlon RB. Animal-assisted therapy at an outpatient pain management clinic. *Pain Med.* 2012;13(1):45-57.
14. Harper CM, Dong Y, Thornhill TS, et al. Can therapy dogs improve pain and satisfaction after total joint arthroplasty? A randomized controlled trial. *Clin Orthop Relat Res.* 2015;473(1):372-379.
15. Lundqvist M, Carlsson P, Sjödahl R, Theodorsson E, Levin LÅ. Patient benefit of dog-assisted interventions in health care: a systematic review. *BMC Complement Altern Med.* 2017;17(1):358.
16. Fleishman SB, Homel P, Chen MR, et al. Beneficial effects of animal-assisted visits on quality of life during multimodal radiation-chemotherapy regimens. *J Community Support Oncol.* 2015;13(1):22-26.
17. Hosey MM, Jaskulski J, Wegener ST, Chlan LL, Needham DM. Animal-assisted intervention in the ICU: a tool for humanization. *Crit Care.* 2018;22(1):22.
18. Murthy R, Bearman G, Brown S, et al. Animals in healthcare facilities: recommendations to minimize potential risks. *Infect Control Hosp Epidemiol.* 2015;36(5):495-516.
19. Miller J. Nursing use of animal-assisted interventions. In: Driscoll CJ, ed. *Animal-Assisted Interventions for Health and Human Service Professionals.* Hauppauge, NY; Nova Science Publishers; 2020 [in press].
20. Gilmer MJ, Baudino MN, Tielsch Goddard A, Vickers DC, Akard TF. Animal-assisted therapy in pediatric palliative care. *Nurs Clin North Am.* 2016;51(3):381-395.
21. Dalton K, Ruble K, Delone A, et al. Reduction in the spread of hospital-associated infections among pediatric oncology patients in an animal-assisted intervention program from a canine decolonization procedure. 2018. https://idsa.confex.com/idsa/2018/webprogram/Paper72940.html.
22. McCullough A, Jenkins MA, Ruehrdanza A, et al. Physiological and behavioral effects of animal-assisted interventions on therapy dogs in pediatric oncology settings. *Appl Anim Behav Sci.* 2018;200:86-95.

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