The Role and Impact of Animals with Pediatric Patients

Anna Tielsch Goddard and Mary Jo Gilmer

Animal-facilitated therapy (AFT), more specifically known as animal-assisted therapy (AAT) or “pet therapy,” has had an increased presence in the literature with a surge of recent research methodologies exploring this complementary alternative medicine (CAM) intervention. However, limited studies have been conducted in the pediatric population, with many articles anecdotal in nature. A literature review included primary data sources PubMed, PsychINFO, Medline, and CINAHL, and yielded positive and beneficial outcomes to be gained through AAT in the pediatric population. Primary outcome variables of decreased anxiety and pain are the most commonly reported results. Further research studies are indicated to include the effects of AFT with children with different diseases and diagnoses. Exploration of other psychosocial and physical variables, such as self-esteem, would be useful.

Interdisciplinary strategies are needed to develop interventions to help reduce patient symptoms and treatment-associated stress, as well as to facilitate healing and wellness beyond traditional medical treatment plans. Complementary therapies are of continued interest to the health care community, especially for pediatric nurses. Effective use of animals to facilitate conversation, lead discussion, or break communication barriers has been demonstrated through both research and anecdotal reports.

History of Animal-Assisted Therapy

Dr. Boris Levinson is often credited as a pioneer in use of animal-assisted therapy (AAT) (Rossetti & King, 2010). A practicing child psychologist in the 1960s, he theorized that his patients were less anxious and had less resistance to therapy when his dog, Jingles, was involved in the sessions (Levinson, 1965). Levinson noticed that one of his child patients, who had previously refused to speak during sessions, would interact and speak to Jingles prior to his sessions. Levinson conjectured that Jingles allowed him to build a sense of rapport with his patients and felt Jingles was an “extension” in therapeutic milieu (Fine, 2006; Levinson, 1969). Jingles was a transitional object to facilitate the relationship between Levinson and his pediatric patient (Levinson, 1969). Levinson then began to bring Jingles to sessions with other pediatric patients and later coined the term “pet therapy” in 1964.

Succeeding Dr. Levinson’s work was Dr. Samuel Corson who used dogs...
to implement his biophysical research with in-patient psychiatric patients. Dr. Corson continued this work through his career and was labeled the “father of pet-assisted therapy” after his death in 1998 (Thomas, 1998). Dr. Corson was a professor of psychiatry and biophysics at Ohio State University who originally focused his research on the effects of stress on dogs. Corson recalled a case of an adolescent with selective mutism who was unresponsive to treatment who opened up and began speaking when a dog was brought to his room (Corson, Corson, Gwynne, & Arnold, 1977). Corson then began focusing his work on pet-assisted therapy and the effects pets had in psychotherapy with patients. He started to publish manuscripts reporting the positive social interactions and influences on the patients and the staff when dogs were brought to the psychiatric inpatient and milieu with the psychiatry profession (Corson et al., 1975, 1977). This research has been credited as a catalyst for interest into the use of animals, particularly dogs, in therapy with people (Thomas, 1998).

Other therapists have labeled animals as having a “social lubricant” effect with patients; humans with animals are sometimes seen as more approachable and provide a topic for conversation (Fine, 2006; Nimer & Lundahl, 2007; Rossetti & King, 2010). For example, patients who are more withdrawn may engage in increased communication with new acquaintances in the presence of a dog (Rossetti & King, 2010).

Florece Nightingale also used what she called “animal-companion therapy” for her patients who were sick and disabled (Snyder & Lindquist, 2010). Nightingale described the benefits of an animal-companion as a source of therapy to her patients. She used pets with wounded soldiers in the early 19th century and found that pets were companions in the healing process (Chu, Liu, Sun, & Lin, 2009). Sigmund Freud has been credited with recognizing the role of animals in therapy and stated that his dog had a “special sense.” Freud believed the calming presence of his canine was especially useful with children and would bring his Chow Chow, “Jo-Fi,” to therapy sessions (Fine, 2006).

Pet Partners, formerly known as the Delta Society, is the international non-profit professional organization for volunteers interested in AAT. The organization provides professional resources, training programs, and research for volunteers interested in animal-based therapeutic services (Pet Partners, 2012a). Pet Partners has trained over 10,000 handler/animal teams in both their companion animal and therapy animal programs. The organization is funded through individual, foundation, and corporational financial support (Pet Partners, 2012a).

Method of Review

This literature review provides a synthesis of the current state of the science of animal therapy in pediatric patients. A comprehensive database search was conducted in October and November 2012 to accessible library databases, including PubMed, PsychINFO, Medline, and CINAHL. The main search terms used were animal-assisted therapy, animal-assisted activities, animal therapy, pet therapy, and canine therapy. The literature search was specifically focused on the use of animals as therapeutic agents within pediatrics identified with search terminology of pediatrics, youth, child, children, and adolescents. In PubMed, medical subject headings (MeSH) terms were used with Boolean operators. Secondary searching of journal manuscripts not found in the primary search was also reviewed for additional references. Expert recommendations were sought through email inquiry to Pet Partners and the AVMA. Limitations to the literature search were the various uses of and definitions for the terms “animal-assisted therapy” or “pet therapy.” Only studies available in English were explored. Results were not restricted to date. Identified database manuscripts were critically analyzed for quality research design and methodology.

Terminology related to the types and titles of pet therapy differs among the literature reviewed. Therapeutic animal interactions have been interchangeably referred to as “animal-facilitated therapy,” “pet therapy,” “animal-assisted activities,” “animal-assisted therapy,” and “animal-assisted interactions.” Upon reviewing scientific studies and results using these interventions, distinguishing among terminologies may be necessary to properly evaluate the researchers’ claims of study results. For instance, Sobo, Eng, and Kassity-Krich (2006) reported positive benefits after “canine visitation therapy” as an AAT intervention. However, on review of specific intervention methodology, the therapeutic visit consisted of spending time with the child, sleeping with the child, allowing the child to pet her, and performing tricks for the child (Sobo et al., 2006). This specific intervention actually describes AATs that, although are therapeutic to the patient, are not classified under Pet Partner’s classification of animal-assisted “therapy.” Although the variety of animal interactions may differ in actual definition, benefits have been found among all substitute terms for these animal-facilitated interactions in both adult and pediatric patients.

Animal-Facilitated Therapy

Animal-facilitated therapy (AFT), also referred to as “pet therapy,” is the overarching term that refers to both animal-assisted activities (AAA) and animal-assisted therapy (AAT) (Urbanski & Lazenyb, 2012). AAA and AAT are sometimes used interchangeably in the literature, but significant differences exist. Table 1 provides a comparison summary of AAA and AAT. AAA refers to activities that involve pets visiting the patient or client, often use the same activity, and do not use specific treatment goals. Detailed notes on the AAA visit are often unnecessary, and the visit content is spontaneous (Pet Partners, 2012b). In contrast, AAT can be a significant part of treatment for people with a physical, social, emotional, or cognitive diagnosis through the use of an animal (Rossetti & King, 2010). AAT requires stated goals for each session, and the treatment is often individualized to the patient. Progress notes in the patient’s chart should be recorded after each session, and visits are usually scheduled with a predetermined length of time based on the patient’s needs (Pet Partners, 2012a). Pet Partners provides AAT on its website. For instance, a therapist may have a child manipulate buckles, clasp on leashes, or collars in order to improve the patient’s fine motor skills. Additionally, a therapist may have a child open a container of treats and feed small pieces of food to the cat in order to work on the child’s ability to...
sequence events. The more general animal-assisted activities may include volunteers taking their dog or cat to a nursing home to visit or bringing an animal to a children’s facility to “play” with the patients. AAT visits are performed by volunteer services and are a cost-saving intervention to the hospital (Marcus, 2012).

### AAT Goals

A variety of goals may be incorporated into AAT and focus on physical, mental, educational, or motivational objectives. Physical goals may include improving fine motor skills, wheelchair skills, or balancing while standing. Mental health goals may range from increasing verbal interactions among group members, increasing attention skills, developing recreation skills, increasing self-esteem, to reducing anxiety or loneliness in a child. Educational goals are often based on increasing vocabulary or improving knowledge of concepts (e.g., color, size). Finally, examples of motivational goals refer to improving a child's willingness to be involved in group activities, improving interactions with others, or simply exercise (Pet Partners, 2012b). See Table 2 for examples of potential AAT interventional goals.

### AAT Dogs

The most common AAT animal is the dog. AAT dogs have rigorous requirements that are often set forth by the Pet Partners. The dogs must undergo initial temperament tests, obedience class training for basic commands, and then additional AAT training for appropriate behavior in a facility (Pet Partners, 2012a; Rossetti & King, 2010). The dogs must be able to ride on elevators; be calm around wheelchairs, walkers, or other ambulation-assistance devices; and not be sensitive to loud noises (e.g., alarms, IVs, children screaming or speaking loudly). The dog must not startle around the sudden and sometimes erratic movements of children in the rooms or hallways. The dog must be of good physical health, current on all vaccinations, and have yearly veterinary health checks (Marcus, 2012; Pet Partners, 2012a). Certifying agencies, such as Pet Partners, provide insurance for dogs if they have passed and abided by the certification program (Marcus, 2012). See Figure 1 for exam-

### Table 1.

**Differences between Types of Animal-Facilitated Therapies (AFT): Animal-Assisted Activity (AAA) and Animal-Assisted Therapy (AAT)**

<table>
<thead>
<tr>
<th></th>
<th>Animal-Assisted Activity (AAA)</th>
<th>Animal-Assisted Therapy (AAT)</th>
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<tbody>
<tr>
<td><strong>Definition</strong></td>
<td>• Activities that involve pets visiting people</td>
<td>• Integrated part of treatment plan</td>
</tr>
<tr>
<td></td>
<td>• Often “meet and greet” in nature</td>
<td>• Often for people who have physical, social, emotional, or cognitive needs</td>
</tr>
<tr>
<td><strong>Goals</strong></td>
<td>No specific treatment goal</td>
<td>Specific treatment goal for each session</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
<td>Same activity with many patients</td>
<td>Individual treatment activity for each patient</td>
</tr>
<tr>
<td><strong>Charting</strong></td>
<td>Unnecessary</td>
<td>Required</td>
</tr>
<tr>
<td><strong>Visits</strong></td>
<td>Spontaneous</td>
<td>Scheduled</td>
</tr>
<tr>
<td><strong>Length of time</strong></td>
<td>Spontaneous</td>
<td>Pre-determined to best fit the patient’s needs</td>
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<tr>
<td><strong>Example</strong></td>
<td>• Dog performs tricks in patient’s room</td>
<td>• Goal = sequencing of events: have the child open a container of treats, break treats into pieces, feed to cat</td>
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<tr>
<td></td>
<td>• Child holds/pets visiting cat in a long-term care facility</td>
<td>• Goal = increase ambulation skills with a physical therapist; child walks the dog short distance around facility</td>
</tr>
</tbody>
</table>

**Source:** Adapted from Pet Partners, 2012.

### Table 2.

**Animal-Assisted Therapy Goals**

<table>
<thead>
<tr>
<th>Type of Goal</th>
<th>Examples</th>
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</thead>
<tbody>
<tr>
<td>Physical goals</td>
<td>Improving fine motor skills</td>
</tr>
<tr>
<td></td>
<td>Improving wheelchair skills</td>
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<td></td>
<td>Balancing while standing</td>
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<tr>
<td>Mental goals</td>
<td>Increasing verbal interactions between group members</td>
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<td></td>
<td>Increasing attention skills</td>
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<td></td>
<td>Developing recreation skills</td>
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<td></td>
<td>Increasing self-esteem</td>
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<tr>
<td></td>
<td>Reducing anxiety or loneliness</td>
</tr>
<tr>
<td>Educational goals</td>
<td>Increasing vocabulary</td>
</tr>
<tr>
<td></td>
<td>Improving knowledge of concepts (e.g., color, size)</td>
</tr>
<tr>
<td>Motivational goals</td>
<td>Improving child's willingness to be involved in group activities</td>
</tr>
<tr>
<td></td>
<td>Improving interactions with others</td>
</tr>
<tr>
<td></td>
<td>Exercise</td>
</tr>
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</table>
A larger study conducted in an outpatient tertiary care pain management clinic was designed to explore potential benefits in using therapy dogs in a chronic pain facility (Marcus et al., 2012). Rigorous methodology, such as the use of a single therapy dog and handler for all 295 therapy dog visits, was used to control for confounding variables. Pain severity was significantly reduced in 23% of patients. Among patients with a pre-AAT pain score greater than 5 (with numeric pain ratings of 5 or higher correlating with substantial pain-related interference and disability), clinically meaningful pain relief occurred in 26.2% of patients with the visiting therapy dog. Among patients with primary mood disorders (to include depression and anxiety), significant improvements in anxiety were found after the AAT intervention ($p = 0.001$) (Marcus et al., 2012). Investigators also included qualitative themes verbalized by the therapy dog participants, with overarching themes reported as time with the dog reduces discomfort; time with the dog is relaxing; the dog provides a positive distraction from symptoms; patient comments on overall positive impression of the dog. Patient comments included “this dog is like a sanctuary to me” and “this dog helps me to forget my misery and pain” (Marcus et al., 2012, p. 53).

### Canine Therapy With Children

In experimental studies within the pediatric population, physiological, psychological, and emotional benefits have been supported. For example, a pilot study on canine visitations with children in pain showed overarching themes that were often based on reducing anxiety (Sobo et al., 2006). These themes included providing distraction from the pain and/or situation, bringing pleasure and happiness, entertainment, reminding the child of home, enjoyment of snuggling and contact with the dog, providing company, calming, and pain easement (see Figure 2) (Sobo et al., 2006).

In a quasi-experimental study in 3- to 17-year-old hospitalized children who had AAT with a dog, a significant decrease in pain reports was found among subjects (Braun, Stangler, Narveson, & Pettingell, 2012). Group selection to the AAT intervention group ($N = 18$) was determined by eligibility requirements (including ability to use FACES pain scale, 3 to 17 years age range, not fearful or allergic to dogs, not in isolation) along with...
the dog being present when child was hospitalized. Designation to the control group (N = 39) was mainly dictated by a child’s fear or allergy to dogs. AAT sessions were 15 to 20 minutes each. The AAT intervention group reported significant decrease in pain level compared to the control group (p = 0.006).

An earlier study focusing on children hospitalized on a pediatric oncology unit found 89% of the children who received canine therapy had increased independence and appetite, as well as decreased fear and pain from treatment and procedures (Gagnon et al., 2004). A descriptive pilot study in hospitalized post-operative 5- to 18-year-olds showed a significant decrease in physical pain and emotional distress as measured on a 1 to 10 scale with happy and sad faces on a ruler strip (p = 0.01) (Sobo et al., 2006). The AAT intervention in this study involved a therapy dog spending time with the child postoperative-ly. Activities included watching television with the child, being petted by the child, and doing tricks on command for the child. Researchers referred to this AAT intervention as “canine visitation therapy.” Limitations to the study include a small convenience sample size (N = 25). This research involved post-intervention interviews and the investigators also analyzed the qualitative data obtained. Emerging themes reported by researchers included 1) the animal providing a distraction, pleasure, or entertainment; 2) the animal reminding the child of home; 3) snuggling; 4) providing company; and 5) easing pain (Sobo et al., 2006).

Anecdotal evidence from child psychologists show that AAT is especially useful in helping children who have been abused or neglected with subsequent insecure attachments (Parish-Plass, 2008). Clinical examples show that using AAT with these children helps foster trust and increases communication in children who otherwise have a strong distrust in adults (Parish-Plass, 2008). No experimental studies have been published to further explore these clinical exemplars in this population.

A case study of a 12-year-old boy with autism reported increased participation in the presence of a therapy dog (Silva, Correia, Lima, Magalhaes, & de Sousa, 2011). The autistic child was exposed to two treatment conditions: a 1:1 structured activity with a therapist and certified therapy dog, and a 1:1 structured activity with the same therapist without the dog. On videotaped review, researchers and the therapist noted improvement was found when the child was with the therapy dog. These positive behaviors included smiling, increased positive physical contact, and less frequent and shorter durations of negative behaviors, such as aggression or outbursts (Silva et al., 2011).

An additional benefit reported from one study was improved staff moods on an inpatient unit. A pediatric oncology study using AFT on an inpatient floor also collected self-administered questionnaires from hospital staff. These results not only showed a change in the mood for the patients, but found reported improvements in hospital morale and motivation of the registered nurses on the floor (Gagnon et al., 2004).

### Additional Benefits To Patients

Although many research studies and prior literature show the importance of AAT with therapeutic goals and a more regimented visit, animal-assisted activities (AAA) also benefit patients. A randomized control trial conducted in a large psychiatric institution with participants diagnosed with schizophrenia showed significant improvements (p = 0.005) in self-esteem, self-determination, positive psychiatric symptoms, and emotional symptoms after an 8-week animal-assisted activity intervention (Chu et al., 2009). Investigators noticed that the touching and accompaniment of dogs had positive effects on the patients’ health (Chu et al., 2009). Therefore, the therapeutic benefit of animals on the human patient should not be disregarded if the interaction was not formally presented in the AAT format.

Studies conclude that individuals report improvement in social interactions with dogs. In individuals with...
disabilities, service dogs not only help their owner, but also normalize interactions with other people (Guest, Collis, & McNicholas, 2006; Wells, 2009). An earlier study on self-esteem in adolescents showed that teenagers ranked a companion animal, or pet, below parents but above other social acquaintances when listing what made them feel satisfaction or good about themselves (Juhasz, 1985).

**Contraindications to AFT**

In some cases, the child may not be interested in dogs or might even be allergic to certain animals (Rossetti & King, 2010). Some children may have conditions that are agitated in the presence of certain animals, such as asthma or a pet-dander allergy (Morrison, 2007). Some children or families may actually be fearful of dogs or other animals. Therefore, individual assessment of the patient and possible contraindication to using an animal to facilitate therapy or treatment should be considered. Most facilities have policies not allowing AAT visits with patients who are colonized with methicillin-resistant *Staphylococcus aureus* or Clostridium difficile (Marcus, 2012).

**Clinical Nursing Implications**

The nursing profession is often noted for seeking out additional interventions to help patients reduce symptoms and treatment-associated stress as well as facilitate healing and wellness beyond traditional medical treatment plans. Complementary therapies are of continued interest to the nursing community. Most studies completed in the pediatric population report both physical and psychological benefits or emotional benefits to the patients. Research studies show systematic benefits of animal-facilitated therapies to reduce pain, decrease psychological distress, and decrease anxiety (Braun et al., 2009; Gagnon et al., 2004; Sobo et al., 2006). The use of an animal to facilitate conversation, lead discussion, or break communication barriers has been demonstrated through both research and anecdotal reports (Chu et al., 2009; Gagnon et al., 2004; Parish-Plass, 2008; Silva et al., 2011; Sobo et al., 2006).

Optimal pain management in patients, especially in pediatrics, is of continued interest to the health care provider. Exploration of interventions for pain relief remains a primary goal for pediatric nurses and researchers. Nurse researchers have explored complementary therapies to potentially provide evidence of pain reduction through areas of CAM, including AFT. Although further research is needed that involves the role of AFT in children, decreased pain reports and decreased anxiety related to pain both seem to be surfacing as outcomes from canine-assisted therapies and activities.

Some facilities and hospitals have policies on pet visits that AAT programs must follow. For example, requiring hand sanitizer use by the patient and the handler before and after visits, placing a clean towel or fresh linen on the bed before the visit, or discouraging feeding treats to the dog during visits (Fine, 2006; Marcus, 2012). Some facilities that allow animal service or therapy visits require parents to sign a canine consent form for the dog to visit while the child is hospitalized (Sobo et al., 2006). Nurses should be familiar with infection control policies as it relates to animal visits at their facilities.

**Areas for Additional Research**

Although there has been a recent surge in literature related to AFT and benefits to pet companionship over the last 10 years, further study of AAT, especially in teens and youth, is indicated. For example, several pilot studies explored AAT in children with cancer. Studies exploring the usefulness and comparison of similar outcomes, such as decrease in stress or anxiety, would be useful in pediatric participants with different disease states and diagnoses. Additional outcomes, such as self-esteem, activities of daily living, or the overall impact of AFT visits, could also be explored in different pediatric populations. Further, most experimental and research designs have focused aims on the use of canines in AFT with children. Explorations of AFT with the use of cats, rabbits, or even birds as a therapeutic milieu for children have yet to be explored heavily in research.

There is also a lack of scientific data defining a specific protocol for these animal-facilitated intervention procedures. Delivery of animal interventions may differ from study to study, and specific details of the therapies need to be explored in research.

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apatic procedure are often not reported. When evaluating outcome data from experimental studies, analysis of the animal interaction between the animal and child should be recognized.

A widespread belief exists that the child-animal interaction is beneficial to children's development on both a social-emotional and cognitive level (Melson, 2003). However, there is a lack of rigorous and peer-reviewed published studies showing this connection. The human-animal bond continues to be explored across multiple disciplines, such as veterinary medicine and clinical psychology with a variety of variables under investigation.

Finally, due to lack of financial support for most experimental studies evaluating AAA or AAT, many studies are done with small convenience samples. Further, no longitudinal studies have been completed with AAT in pediatrics. Many studies that have been done with animals have been conducted in the adult or geriatric population. Therefore, a broad and general need for experimental studies examining the influences, role, and different psychosocial variables that AFT interventions can contribute to the pediatric population are warranted. In conclusion, rigorous intervention studies that examine the role and impact of animals with children are needed as we strive to alleviate children's symptoms and treatment-associated stress.

References


