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# The Healing Power of the Human-Animal Connection

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# The Healing Power of the Human-Animal Connection

By Margo A. Halm, RN, PhD, APRN-BC, CCRN

The role that animals play in creating optimal healing environments has gained recognition in all kinds of health care settings. Animal-assisted therapy (AAT) is an intentional healing modality used to achieve therapeutic goals through a facilitated interaction between patients and trained animals (as therapist) accompanied by human owners or handlers. Animals involved are commonly dogs and cats, but use of fish and guinea pigs in the hospital setting has been reported. As long ago as 1860, Florence Nightingale commented that "a small pet is often an excellent companion for the sick, for long chronic cases especially."[1(p103)]

More than 100 years later, the immediate and long-term human health benefits of animals on the mind, body, and spirit continue to be documented. Effects of AAT are primarily attributed to "contact comfort," a tactile process whereby unconditional attachment bonds form between animals and humans, inducing relaxation by reducing cardiovascular reactivity to stress. Social support theory provides additional backing that animal companionship helps humans buffer stress. This clinical review synthesizes current evidence related to the effect of AAT on biopsychosocial outcomes of hospitalized patients.

## Methods

The search strategy included MEDLINE, CINAHL, the Cochrane Library, and Turning Research Into Practice (TRIP). Key words included *pet therapy, animal-assisted therapy, critically ill,* and *intensive care unit* (ICU). All types of evidence (case study, expert opinion, experimental, systematic reviews) were included, but only if related to hospitalized children or adults. Studies on persons with disabilities or psychiatric diagnoses were excluded, although much of the early research on human-animal bonds was focused on these populations.

## Results

Nine pediatric[2-6] and adult[7-10] studies, 1 mixed study,[11] and 1 case study with a geriatric vascular patient[12] were located. Sample sizes ranged from 10 to 424. Studies were limited to alert English-speaking patients with no history of aggressive or developmentally delayed behavior, allergies, prior trauma with animals, or immunocompromise.

Pediatric studies examined clinical effects or staff attitudes toward AAT. Ages ranged from young infants to teenagers. All interventions involved dog visits (10-20 minutes, 8-16 hours, patient-controlled) and were evaluated through vital signs, pain ratings, salivary cortisol levels, emotions, activity/rapport, perceived benefits, child/parental satisfaction, and impact on environment via self-report, interview, or observation and videotaping. Adult studies investigated the impact of pet ownership on physiological indices of survival[7,8] and of AAT[9,10] on hemodynamics, neurohormone levels (epinephrine/norepinephrine), and mood (Table 1).

## Physiological Effects

In both male and female cardiac patients, pet ownership has been significantly correlated with 1-year survival. Of the 84% of survivors, 58% had 1 or more pets.[7] In another study,[8] owning a pet was predictive of 1-year survival independent of physiological severity or psychosocial factors, with dog owners significantly less likely to die than patients without a dog.

In the 1 randomized controlled trial,[10] AAT was associated with improved hemodynamics in patients with advanced heart failure. During visits, patients



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**Table 1**
**Evidence summary for hospitalized patients receiving animal-assisted therapy (AAT)**

| Study | N | Design/population | Results[a] | Level of evidence, class |
|---|---|---|---|---|
| **Pediatrics** | | | | |
| Wu et al[2] | 30 | Descriptive (10-20 minutes of AAT)<br>Cardiology | 0 Heart rate<br>0 Respiratory rate<br>0 Oxygen saturation<br>+ Distraction, normalization<br>+ Child/parental satisfaction | IIb |
| Kaminski et al[3] | 70 | Quasi-experimental (pet therapy n = 30 vs child-life therapy visit n = 40)<br>Hospitalized children >5 years old | – Heart rate<br>0 Blood pressure<br>0 Salivary cortisol<br>+ Affect-happiness<br>+ Touching | IIa |
| Gagnon et al[4] | 30 | Descriptive (8-16 hours AAT)<br>Oncology, 16 parents, 12 nurses | + Parental satisfaction<br>+ Nurse satisfaction<br>+ Work organization | IIb |
| Sobo et al[5] | 25 | Pre-post (patient-controlled dog visit)<br>Postoperative | + Physical pain<br>+ Emotional distress<br>+ Calming<br>+ Happiness<br>+ Distraction/entertainment | IIb |
| Moody et al[6] | 160 | Descriptive survey<br>Interdisciplinary team | + Patient outcomes (relaxing, distracting)<br>+ Nurse outcomes (acceptance of AAT)<br>+ Unit outcomes (happier, interesting environment) | IIb |
| **Adults** | | | | |
| Friedmann et al[7] | 96 | Prospective cohort (pet ownership)<br>Cardiac | + 1-year survival | IIa |
| Friedmann and Thomas[8] | 424 | Prospective cohort (pet ownership)<br>Cardiac | + 1-year survival | IIa |
| Cole and Gawlinski[9] | 10 | Pre-Post (fish)<br>Cardiac transplant | + Cognitive stimulation<br>+ Soothing<br>+ Sense of control<br>– Affect<br>+ Distraction<br>+ Communication<br>+ Humanization | IIb |
| Cole et al[10] | 76 | Randomized controlled trial (12-minute AAT vs 12-minute volunteer visit vs control)<br>Cardiac observation/intensive care unit | 0 Heart rate<br>0 Blood pressure<br>+ Right atrial pressure<br>+ Pulmonary artery pressure (systolic/diastolic)<br>+ Pulmonary capillary wedge pressure<br>+ Cardiac index<br>+ Systemic vascular resistance<br>+ Neurohormones<br>+ State anxiety | I |
| **Mixed** | | | | |
| Stoffel and Braun[11] | 65 | Qualitative (AAT)<br>Pediatric (n = 40); adult (n = 25) | + Temperature<br>+ Respiratory rate<br>+ Pain<br>+ Arousal/energy<br>+ Relaxation<br>+ Calmness/peace<br>+ Attitude | IIb |

[a] Key: +, positive impact; –, negative impact; 0, no impact.



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had significant reductions in right atrial pressure, systolic/diastolic pulmonary artery pressure, pulmonary capillary wedge pressure, and neurohormone levels. After visits, patients exhibited lower systolic pulmonary artery pressure, pulmonary capillary wedge pressure, neurohormone levels, and state anxiety. In a different investigation, AAT was associated with lowered temperature, slowed respiratory rate, matched breathing between the child/therapy dog, and reduced pain—all physiological changes that indicate a relaxation response.[11] Sobo et al[5] verified that pain was significantly less after 10 to 20 minutes of AAT in postoperative pediatric patients, and Cole and Gawlinski[9] reported cognitive stimulation in adults.

### Psychological Effects

Among hospitalized children, AAT was associated with more positive affects, including greater perceptions of happiness.[3,5] Heart rates, however, were significantly higher before and after AAT in 1 study,[3] perhaps attributable to excitement in anticipation of the animal's visit. A predominant emotional benefit reported by pediatric and adult patients was relief or distraction from their pain/situation.[2,5,9] In other studies, cardiac patients who named and fed their fish expressed a sense of delight and control.[9] In a comparison of pediatric and adult responses, children exposed to AAT were more likely to report relaxation and calmness.[11] Children also mentioned the importance of AAT in giving unconditional love and providing motivation to get better.[2,5]

### Social Effects

Children and parents shared that the snuggling contact associated with AAT was beneficial to healing.[2,5] For adults, social benefits included bridging communication,[9,12] providing company late at night,[9] and connecting with and touching the outside world.[12]

Additionally, both children and adults perceived that AAT not only normalized the hospital environment, but humanized the ICU environment for adult patients awaiting cardiac transplantation.[2,5,9] Such positive perceptions were not limited to patients and families. Nurses believed the presence of animals made the work environment happier and more interesting,[3] with no negative impact on space or work flow.[4] As Fila[12] observed, the unspoken healing bond between the patient and animal radiated back and absolutely affected other members of the health care community.

Research on the human-animal bond has implications for health care professionals that go beyond clinical practice. Research at the University of Pennsylvania Veterinary Hospital showed that people who own companion animals report a highly significant reduction in minor health problems and significant improvements in psychological well-being in the first month after acquiring the animal.[14] Households with dogs also showed an increase of 400% to 500% in walking.[14]

## Recommendations From Current Evidence

The current AAT evidence represents Class IIa-IIb evidence (Table 2), suggesting that this intervention may contribute to optimal healing environments that promote harmony of mind, body, and spirit.[15] An American College of Critical Care Medicine's guideline suggests AAT supports a patient-centered ICU.[16] Several examples of critical care AAT programs can be found.[17-20] For units interested in developing AAT programs, interdisciplinary involvement, including infection control colleagues, is essential. Guidelines from the Centers for Disease Control and Prevention recommend that AAT animals be healthy, clean, well-groomed, fully vaccinated, and free of enteric parasites.[21]

Critical decisions in protocol development include specifying inclusion/exclusion criteria of patients, planning options for AAT (family pet visits vs trained therapy dogs), and components for program evaluation.[18,22] Experts recommend that visiting animals—whether personal pets or certified animals—be under the direction of persons who know the animal's health status and temperament.[16,18,21] By attending to such principles, AAT can promote healing through intentionality, personal wholeness, relationships between patients, animals, and interdisciplinary staff, and environmental spaces that are truly transformational for both patients and staff.[15]

**About the Author**
**Margo A. Halm** is a clinical nurse specialist and director of nursing research and quality at United Hospital in St. Paul, Minnesota, where she leads and mentors staff in principles of clinical research and evidence-based practice.

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None reported.



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**Table 2**
**Levels of evidence**

| Class | Criteria | Definition |
|---|---|---|
| **Class I**<br>Definitely recommended | Supported by excellent evidence, with at least 1 prospective randomized controlled trial | Interventions always acceptable, safe, effective; considered *definitive standard of care* |
| **Class IIa**<br>Acceptable and useful | Supported by good to very good evidence; weight of evidence and expert opinion strongly in favor | Interventions acceptable, safe, and useful; considered *intervention of choice* by most experts |
| **Class IIb**<br>Acceptable and useful | Supported by fair to good evidence; weight of evidence and expert opinion not strongly in favor | Interventions also acceptable, safe, and useful; considered *optional or alternative* by most experts |
| **Indeterminate**<br>Promising, evidence lacking, premature | Preliminary research stage; evidence shows no harm, but no benefit; evidence insufficient to support final class decision | *Treatment of promise,* but limited evidence |
| **Class III**<br>May be harmful; no benefit documented | Not acceptable or useful; may be harmful | Interventions with *no evidence of any benefit*; often *some evidence of harm* |

Adapted from: "Part 1: Introduction to the International Guidelines 2000 for CPR and ECC,"[13] with permission.


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