Infection control and pet therapy

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Infection Control and Pet Therapy
Prof. J. Scott Weese, University of Guelph
Sponsored by Virox Technologies Inc (www.virox.com)

A Webber Training Teleclass
Hosted by Paul Webber  paul@webbertraining.com
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Can Therapy Dogs Improve Pain and Satisfaction After Total Joint Arthroplasty? A Randomized Controlled Trial

Results

Patients in the treatment group had lower VAS scores after each physical therapy session with a final VAS score difference of 2.4 units (animal-assisted therapy VAS, 1.7; SD, 0.97 [95% CI, 1.4–2.0] versus control VAS, 4.1; SD, 0.97 [95% CI, 3.8–4.4], p < 0.001) after the third physical therapy session. Patients in the treatment group had a higher proportion of top-box HCAHPs scores in the following fields: nursing communication (53 of 36, 92% [95% CI, 78%–98%] versus 29 of 36, 95% [95% CI, 58%–84%], p = 0.035; risk ratio, 1.3 [95% CI of risk ratio, 1.0–1.7]; risk difference, 23% [95% CI of risk difference, 5%–40%]), pain management (54 of 36, 94% [95% CI, 81%–99%], versus 26 of 36, 70% [95% CI, 55%–86%], p = 0.024; risk ratio, 1.3 [95% CI of risk ratio, 1.1–1.6]; risk difference, 18% [95% CI of risk difference, 5%–39%]). The overall hospital rating also was greater in the treatment group (6.6; SD, 0.7 [95% CI, 6.3–6.9] versus 6.6, SD, 0.9 [95% CI, 6.3–6.9], p < 0.001).

Conclusions

The use of therapy dogs has a positive effect on patients’ pain level and satisfaction with hospital stay after total joint replacement. Surgeons are encouraged to inquire about the status of volunteer-based animal-assisted therapy programs in their hospital as this may provide a means to improve the immediate postoperative recovery for a select group of patients having total joint arthroplasty.
### Table 3. Review of Selected References on Animal-Assisted Activities

<table>
<thead>
<tr>
<th>Author, Year, (Ref. No.)</th>
<th>Type</th>
<th>Methodology</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abate SV, 2011 (71)</td>
<td>Hospitalized heart-</td>
<td>Subjects were provided the opportunity to participate in canine-assisted</td>
<td>Distance ambulated increased from 120.2 steps in a randomly selected,</td>
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<tr>
<td></td>
<td>failure patients</td>
<td>ambulation (walking with a therapy dog). Case subjects were compared with</td>
<td>stratified historical sample to 235.07 in the canine-assisted ambulation</td>
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<td>a historical population of 335 controls</td>
<td>study sample (<em>p</em> &lt; .0001). Subjects unanimously agreed that they enjoyed</td>
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<td>canine-assisted ambulation and would like to participate in canine-</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>assisted ambulation again.</td>
</tr>
<tr>
<td>Banks MR, 2002 (72)</td>
<td>Long-term care</td>
<td>Randomized clinical trial, these groups of 15 patients (no animal-assisted</td>
<td>Residents volunteering for the study had a strong life-history of</td>
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<td></td>
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<td>therapy once/week; animal-assisted therapy 3x/week); pre-post assessment</td>
<td>emotional intimacy with pets. AAA significantly reduced loneliness</td>
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<tr>
<td></td>
<td></td>
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<td>scores in comparison with the no animal-assisted therapy group.</td>
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<tr>
<td>Barak Y, 2003 (73)</td>
<td>Psychiatric ward</td>
<td>Randomized clinical trial of 20 patients, 10 with and 10 without animal-</td>
<td>Improvement was noted in both groups compared with baseline scores and</td>
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<td></td>
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<td>assisted therapy</td>
<td>were significantly more positive for the AAA group on both Total Social</td>
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<td>Adaptive Functioning Evaluation scores and on the Social Functions</td>
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<td></td>
<td></td>
<td></td>
<td>subscale.</td>
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<tr>
<td>Barker SB, 2003 (74)</td>
<td>Fear in electroconvulsive therapy (ECT)</td>
<td>35 patients were assigned on alternate days to a 15-min animal-assisted therapy session (intervention), or 15-min session with no therapy (control)</td>
<td>Animal-assisted therapy reduced fear and anxiety but had no demonstrated effect on depression.</td>
</tr>
<tr>
<td>Barker SB, 1998 (75)</td>
<td>Psychiatric patients</td>
<td>Self-reported, pre- and post-treatment crossover study that compared the</td>
<td>Reductions in anxiety scores were found after the animal-assisted therapy</td>
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<td>effects of a single animal-assisted therapy session with those of a single</td>
<td>session for patients with psychiatric disorders, mood disorders, and other</td>
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<tr>
<td></td>
<td></td>
<td>regularly scheduled therapeutic recreation session.</td>
<td>disorders. No significant differences found in reduction of anxiety.</td>
</tr>
<tr>
<td>Beck CI, 2012 (76)</td>
<td>Outpatient veterans</td>
<td>Animal-assisted therapy on Veterans in Transition (N = 24) attending an</td>
<td>Differences were not found between the groups on most measures subjective</td>
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<tr>
<td></td>
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<td>Occupational Therapy Life Skills program; pre-test, post-test randomized</td>
<td>reports of satisfaction with AAA.</td>
</tr>
<tr>
<td>Brodie SL, 1999 (77)</td>
<td>Review</td>
<td></td>
<td>Potential benefits of pet therapy are considerable and nurses are aware</td>
</tr>
</tbody>
</table>
Animals in facilities

- Resident animals
- Animal assisted therapy
- Pet visitation
- Personal pet visitation
- Service animals
- Visiting programs
Animals in facilities

- Resident animals
- **Animal assisted therapy**
- **Animal visitation**
- Personal pet visitation
- Service animals
- Visiting programs
Vet’s Program Sends Unusual Visitor on Rounds

By Kristin Davis
Veterinary Practice News

Telephones ting off the hook at the front desk of Moore Children’s Hospital in Ohio as patients readily flip through magazines in the waiting room.

Evens at Christmas time, it seems like an average day at the hospital—until 200-pound, 3-foot miniature horse-pony mix Petie trots through the revolving door into the lobby.

“Look mom, it’s a horse!” a child says to his mother, who dismisses the idea that a horse could actually be inside a hospital … until she turns around to see for herself. The front desk receptionist smiles knowingly.

Although Petie’s presence once shocked staff members, he’s now a hospital regular—even riding in the glass elevator to make his rounds from room to room to visit with children.

In the lobby, Interior Design Manager Sue Miller introduces the visitor as her “baby boy.”

Petie’s popularity extends to the staff, who decorate his wall with praise and the words “Forever Young.”

People may be startled when they first see Petie, but it doesn’t take long for them to warm up to him, says David Miller, DVM, who provides medical treatment for the miniature horse at Victory Gallop, an equine therapy center and nonprofit organization.

Founded in 1999 by Dr. Miller, his wife Sue Miller and family friend Kim Gastel, Victory Gallop is a therapeutic program for children facing life-threatening illnesses, behavioral issues or emotional challenges.

The center is in Bath, Ohio, and started in David’s backyard with just a single horse and rider. In just 12 years, the program has grown to 10 horses and 35 students per 12-week session.

The program received plenty of attention locally, even earning the founders a “Service Above Self” award from the Lake Erie Sentinel in Port Clinton, Ohio in May.

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Veterinary Practice News 2006
Survey of all Ontario, Canada hospitals, 2004
- 96.5% response rate
- Parallel survey of visitation dog owners
- 90% (201/223) hospitals permitted animal visitation
  - 27% of facilities not aware of all origins of animals
Screening Protocols*

- “Core” vaccination: 93%
  - Canine parvovirus, canine parainfluenza, distemper, hepatitis, rabies
- Additional vaccination:
  - Leptospirosis (11%), ‘kennel cough’ (7%)
- Deworming: 2%
- Temperament testing: 47%

* Owner reported

Patient Contacts*

- 73% allowed on bed
- 79% allowed to lick patients

* Owner reported
Observational Study

- Temperament issues
  - Husky too aggressive to examine
  - Pomeranian bite on upper lip
  - Chihuahua bite on hand*
  - Labrador scratch on arm*

- Visitation of patients in ICU and under contact precautions
- Physicians petting dog then immediately touching patients in ICU
- Touching animals while eating
- Feeding dog a treat by mouth
- Dogs drinking from toilets
• Hand hygiene
  ◦ 0/75 healthcare workers that handled dogs performed hand hygiene before or after
  ◦ ~4% (n>400) of patients practiced hand hygiene before handling dogs
  ◦ Only 5% after

• About half of observed dogs licked patients

• ~25% of handlers held patients’ hands
  ◦ <4% of handlers performed hand hygiene between patients
Do animals involved in visitation programs carry zoonotic pathogens?
• C. difficile: 58%
  ◦ Including ribotype 027/NAP1
• Salmonella: 3%
• Extended spectrum cephalosporin resistant E. coli: 4%
• Giardia: 7%
• Toxocara canis: 2%
• Pasteurella canis/multicida: 22% / 7%

Lefebvre et al J Hosp Infect 2006

• Group A streptococci: 0%
• MRSA: 0%
• VRE: 0%
• Ringworm: 0%
• Cryptosporidium spp: 0%
**Incidence of acquisition of methicillin-resistant* Staphylococcus aureus, Clostridium difficile, and other health-care-associated pathogens by dogs that participate in animal-assisted interventions**

Sandra L. Lefebvre, DVM, PhD; Richard J. Reid-Smith, DVM, DVS; David Waltner-Toews, DVM, PhD; J. Scott Weese, DVM, DVS, DACVIM

- Dogs enrolled before starting visitation careers
  - Healthcare facilities (n=100)
  - Other facilities (ie schools) (n=100)

- Monthly sampling for MRSA, VRE, *E. coli*, *Salmonella*, *C. difficile*
Results

- 9% of exposed dogs acquired MRSA
  - 1% unexposed
  - All naturally decolonized by next visit
- C. difficile acquisition by
  - 15 unexposed dogs
  - 28 exposed dogs \( (P=0.025) \)
- 1 exposed dog acquired VRE

- MRSA risk factors
  - Healthcare centre visitation: OR 6.3
  - Visitation of children: OR 7.1

- C. difficile risk factors
  - Healthcare contact: OR 3.3
  - Visitation of children: OR 3.5
  - Antimicrobial treatment: OR 2.2
  - Antimicrobial treatment of someone in the house: OR 3.2
Nested Case-Control Study

- Positive/negatives in healthcare group

- MRSA
  - Licked patients: OR 13.5
  - Fed treats by patients: OR 12.3

- C. difficile
  - Licked patients: OR 2.9
  - Sat on beds: OR 2.9
  - Ate feces: OR 0.12

Do visitation animals actually cause disease?
There have been no reported outbreaks of disease attributed to visitation programs.....

but would the current system realistically detect animal involvement in disease?
Infec&on	Control	and	Pet	Therapy
Prof.	J.	Scott	Weese,	University	of	Guelph
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Guidelines for animal-assisted interventions in health care facilities

Animals in Healthcare Facilities: Recommendations to Minimize Potential Risks

A Webber Training Teleclass
Hosted by Paul Webber paul@webbertraining.com
www.webbertraining.com
Recommendations

• Facilities should have:
  ◦ Written policy
  ◦ Designated liaison
  ◦ Training/program requirements

• Species
  ◦ Domesticated species
  ◦ Good and predictable temperament
  ◦ Good knowledge about infectious disease carriage
  ◦ Ability to test/assess
  ◦ House trained
  ◦ Living in households
  ◦ Dogs
A. Allow only domestic companion dogs to serve as animal-assisted activities animals. Cats are not included in the recommendation due to concerns for increased potential allergenicity, potential increased risk of bites and scratches, and lack of data demonstrating advantages over dogs.

C. Only dogs should be used (ie, exclude cats and other animals). Cats should be excluded because they cannot be trained to reliably provide safe interactions with patients in the healthcare setting.
• Sources
  ▫ Not from shelters, pounds, pet stores
  ▫ In household for at least 6 months
• Age
  ▫ Dogs: ≥ 1-2 years
• Temperament
  ▫ Passed objective, standard temperament test conducted by trained personnel
• Animal health screening
  ◦ Rabies vaccination
  ◦ Annual veterinary examination
  ◦ No deworming recommendations
  ◦ No specific pathogen screening (ie MRSA, *Salmonella* …)

• Diet
  ◦ No raw food or treats

◦ Restricted for ≥ 1 week following
  • Diarrhea
  • Vomiting
  • Sneezing, coughing
  • Antimicrobial, immunosuppressive therapy
  • Skin disease, SSTI
  • Potentially painful disorders
  • Fleas, external or internal parasites
• Temporary animal removal (re-assess)
  ◦ Negative behavioural changes since last temperament test
  ◦ Fearful response noted during visitation
  ◦ Loss of sight or hearing

• Permanent animal removal
  ◦ Any bite
  ◦ Any aggressive behaviour
• Handlers
  ◦ Undergo formal hospital volunteer training
  ◦ Vaccination requirements consistent with those for healthcare workers at the facility
  ◦ Training program regarding visitation activities
  ◦ Syndromic restriction: self screening

• Pre-visit
  ◦ Self-screen pets (syndromic)
  ◦ Check for external parasites
  ◦ Bath if visibly soiled coat
  ◦ Clean leash/collar
    • Leashed ≤ 2 metres in length
  ◦ Method to identify animals (ie scarf, badge, collar)
• Visitation procedures
  ◦ Hand hygiene
  ◦ Proper contacts
    • Safety, disease transmission
  ◦ Only on beds with impermeable, disposable barrier
  ◦ No contact with invasive devices, wounds, bandages…
  ◦ No visitation of patients under enhanced precautions

• No visitation when patient is eating
• Explicit patient (and roommate) permission before entering room
  • Physician designation?
• Restrict to 1 hour (dog fatigue)
- No entrance to
  - ICU
  - Food preparation areas
  - Medication preparation areas
  - OR
  - Isolation
  - Neonatal nurseries
  - Potentially frightening areas
• Hand hygiene
  ◦ Patients: Before AND after animal contact
  ◦ Handlers: Between rooms
  ◦ Handlers carry hand sanitizer

• Contact tracing
The End
Questions?

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September 22  HARDWARE OR SOFTWARE? INTERVENTIONS FOR A SUSTAINABLE INFECTION CONTROL PROGRAM  
Prof. Joost Hopman, Radboud University, The Netherlands

September 26  (Free Teleclass – Broadcast live from the annual conference of the Infection Prevention Society – www.ips.uk.net)  
E.M. COTTRELL LECTURE  
Dr. Mary Woods, Academy of Social Sciences and Academy of Medical Sciences, UK

September 28  (Free Teleclass – Broadcast live from the annual conference of the Infection Prevention Society – www.ips.uk.net)  
USING SCIENCE TO GUIDE HAND HYGIENE SURVEILLANCE AND IMPROVEMENT  
Prof. Eli Perencevich, University of Iowa

September 29  ADHERENCE ENGINEERING TO REDUCE CENTRAL LINE ASSOCIATED BLOODSTREAM INFECTIONS

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