Undergraduate Research Symposium

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The Benefits of Exposure to Animals for Persons with Dementia: A Literature Review

Stephanie Bennett

Minnesota State University - Mankato

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The Benefits of Exposure to Animals for Persons with Dementia: A Literature Review

Stephanie J. Bennett
Jeffrey A. Buchanan, Ph.D.
Purpose of Study

• To evaluate the effectiveness of exposure to animals for persons with dementia
• Examine the current amount and quality of existing empirical research
Literature Review

• Sites of exploration:
  – PsycINFO
  – PubMed
  – Ageline

• Search terms:
  – “Pet therapy Alzheimer’s”
  – “Pet therapy dementia”
  – “Animal therapy Alzheimer’s”
  – “Animal therapy dementia”
Literature Review

• Inclusion criteria:
  – Experimental designs (no literature reviews)
  – Articles in English
  – Full-access availability (no abstracts)
  – Articles pertaining to elderly individuals suffering from some form of dementia
Reliability Check

• A secondary literature review was performed by a peer for verification purposes; Identical search criteria were maintained

<table>
<thead>
<tr>
<th>Original search</th>
<th>Reliability search</th>
</tr>
</thead>
<tbody>
<tr>
<td>37 total found</td>
<td>17 articles included</td>
</tr>
<tr>
<td>14 articles excluded; <strong>23 articles included</strong></td>
<td>• 14 articles matched original search</td>
</tr>
<tr>
<td></td>
<td>• 3 original findings</td>
</tr>
</tbody>
</table>
Important Notes

• Wide range in number of participants and duration of studies
• Variety of animals used and various numbers used per study
• Study intent varied
• Domestic and international studies used
• Search terms produced similar results on each academic site therefore high overlap occurred
Literature Outcomes

• Each article found was thoroughly examined—Final inclusion judgments were based on a review of each article and classified based on the study intent, methods, and outcomes
Outcomes Measured

- Social Behaviors (9) - 35%
- Physiological Measures (2) - 11%
- Behavioral (6) - 23%
- Multi-Outcome (6) - 23%
- Other (3) - 8%
Social Behaviors

• Nine studies
• “Social behavior” studies examined attributes of social behaviors (i.e. talking, initiating conversations, touching, etc.) that were effected through use of animal implementation
<table>
<thead>
<tr>
<th>Study</th>
<th>General Outcome(s)</th>
<th>+/-</th>
</tr>
</thead>
</table>
| *A comparison of the effects of toys versus live animals on the communication of patients with dementia of the Alzheimer’s type* | • Initiation performance increased from baseline  
• Average total words increased from baseline to withdrawal                            | +   |
| *Effects of animal-assisted therapy on agitated behaviors and social interactions of older adults with dementia* | • Agitated behavior of participants decreased immediately following intervention  
• Social interaction increased significantly                                          | +   |
| *The use and implications of a canine companion in a therapeutic day program for nursing home residents with dementia* | • Significant increase in the amount of socialization found throughout study                | +   |
| *The evaluation of an animal assisted therapy intervention for elders with dementia in long-term care* | • There was a significant increase in social behavior and a significant decrease in agitated behavior | +   |
| *The effects of pet therapy on the social behavior of institutionalized Alzheimer’s clients* | • There was found to be an increase in social behaviors over time including: smiles, laughs, leans, touches, verbalizations, and total social behaviors | +   |
| *The effects of pet facilitative therapy on patients and staff in an adult day care center* | • Increases found in verbalization, smiling, attention to the pet, increased periods of “awakeness” after sessions. | +   |
| *Comparison of the effect of human interaction, animal-assisted therapy, and AIBO-assisted therapy on long-term care residents with dementia* | • Increased social interaction found in all residents                                     | +   |
| *Using a therapy dog to alleviate the agitation and desocialization of people with Alzheimer’s disease* | • Overall occurrence of agitated behavior decreased significantly with the therapy dog present  
• Therapy dog presence enhanced socialization (increases in verbalization, smiles, looks, lens, and tactile contact) | +   |
| *Defining the role of pet animals in psychotherapy* | • All subjects displayed various degrees of positive response                            | +   |
Physiological Measures

• Two studies
• “Physiological Measures” included measures of variables such as heart rate or weight fluctuation
## Physiological Measures

<table>
<thead>
<tr>
<th>Study</th>
<th>General Outcome(s)</th>
<th>+/- 0</th>
</tr>
</thead>
</table>
| *The effects of a ‘pet as therapy’ dog on persons with dementia in a psychiatric ward* | • The experimental group showed a slight drop in the mean diastolic blood pressure over the 12 week period  
• A significant reduction was found in heart rate in the experimental group from pre- to post-assessment | + |
| *Animal-assisted therapy and nutrition in Alzheimer’s disease* | • A significant increase in nutritional intake when residents were exposed to the aquariums  
• There was a significant increase in weight the month the aquarium was introduced | + |
Behavioral Problems

• Six studies
• “Behavioral” studies examined improvements (or worsening) of behavioral problems (i.e. biting, hitting, etc.) that occurred during or after animal therapy introduction
## Behavioral Problems

<table>
<thead>
<tr>
<th>Study</th>
<th>General Outcome(s)</th>
<th>+/- 0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Animal assisted therapy for people with dementia</strong></td>
<td>• All participants found to have a significant improvement in their apathy state</td>
<td>+</td>
</tr>
</tbody>
</table>
| **Resident dog in the Alzheimer’s special care unit**                | • Sustained decrease in behavioral problems during the day as compared to the evening shift; Overall behavioral problems significantly less during the evening shift than day shift  
  • A significant drop of behavioral problems took place               | +     |
| **A pet therapy intervention with geriatric psychiatry inpatients**  | • A majority of subjects showed improvement in self-care functioning, irritable behavior, and withdrawn behavior but none were significant  
  • Majority of subjects in each group showed improvement or stable scores on three MOSES subscales: self-care functioning, irritable behavior, withdrawn behavior | +     |
| **The impact of different dog-related stimuli on engagement of persons with dementia** | • Positive attitude was found toward all stimuli; Mean attitude and interest positive for dog activities  | +     |
| **A day care program and evaluation of animal-assisted therapy (AAT) for the elderly with senile dementia** | • Significant decreases were found across many symptoms of the Behave-AD examination (e.g. aggressiveness, anxieties and phobias) | +     |
| **Can agitated behavior of nursing home residents with dementia be prevented with the use of standardized stimuli?** | • Increase was found in mean attitude and mean engagement scores                                         | +     |
Multi-Outcome Studies

- Six studies
- “Multi-outcome” studies had two or more unique focuses
### Multi-Outcome

<table>
<thead>
<tr>
<th>Study</th>
<th>Study Intent</th>
<th>General Outcome(s)</th>
<th>+/- 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effects of animal-assisted therapy on behavioral and/or psychological symptoms in dementia: A case report</td>
<td>Single case study: Investigate effects of AAT on pharmaceutical treatment; behavioral/psychiatric symptoms; ADLs; cognition/orientation; quality of life; pain/fall risk</td>
<td>Mrs. Johnson exhibited varying improvements and regressions before, during, and after treatment. Because this study focused on one individual it may be inappropriate to make generalizations.</td>
<td>+/- 0</td>
</tr>
<tr>
<td>Animal-assisted activity and emotional status of patients with Alzheimer’s disease in day care</td>
<td>Assess the effect of AAA on cognition, behavior, psychological status, emotional status, motor activity in severe Alzheimer’s disease (AD)</td>
<td>• Significant decrease found in NPI anxiety; Significant increase of pleasure/general alertness found during AAA sessions; Significant decrease in sadness • Motor activity increased across the study (motion, vocal expression, and attraction to the environment)</td>
<td>+</td>
</tr>
<tr>
<td>Long-term evaluation of animal-assisted therapy for institutionalized elderly people: A preliminary result</td>
<td>Evaluate psychological and behavioral effects of AAT on elderly residents of a nursing home on a long-term basis</td>
<td>• Improvements in impaired spatial orientation/emotional ability; Improved motor function • After 6-12 months increases in motor insufficiency in eating, increases in impaired wakefulness, impaired concentration, and impaired thinking in abstractions • Continuous emotional improvements occurred</td>
<td>+</td>
</tr>
<tr>
<td>The effect of a therapy dog on socialization and physiological indicators of stress in persons diagnosed with Alzheimer’s disease</td>
<td>Examined the effect of the presence of a therapy dog on socialization and physiological indicators of stress in individuals with Alzheimer’s disease.</td>
<td>• No significant interaction found for blood pressure, mean blood pressure, pulse, or peripheral skin temperature • Significant differences found when the dog was present for the socialization variables: Frequency scores of smiles, tactile contact, looks, physical warmth, praise, duration of leans toward stimulus, smiles, tactile contact, looks</td>
<td>+</td>
</tr>
<tr>
<td>Pet therapy in elderly patients with mental illness</td>
<td>Evaluate effects of pet therapy on cognitive function, mood, and perceived quality of life on elderly inpatients affected by dementia, depression and psychosis.</td>
<td>• A positive effect on self-perceived quality of life was observed in participants</td>
<td>+</td>
</tr>
<tr>
<td>Association with companion animals and the expression of noncognitive symptoms in Alzheimer’s patients</td>
<td>Determine effect association with a companion animal had on the progression of cognitive decline</td>
<td>• Alzheimer’s patients who spent more time interacting with pets did not experience the following: Anxiety, hyperactivity, verbal aggression, hallucinations</td>
<td>+</td>
</tr>
</tbody>
</table>
Other

• Three studies

• “Other” studies did not have an obvious category they seemed to belong to thus they received a miscellaneous category of their own
<table>
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<th>Study Intent</th>
<th>General Outcome(s)</th>
<th>+ / 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal-assisted activity: Experiences of institutionalized Japanese older adults</td>
<td>Perception of animal-assisted activity (AAA) and how perceptions may be relevant to clinical nursing practices in the AAA context.</td>
<td>Six themes found: Positive feelings about dogs, confidence in self, recalling fond memories about dogs, a break from the daily routine, interacting with other residents through dogs, enhanced communication with volunteers</td>
<td>+</td>
</tr>
</tbody>
</table>
| Are pets a source of support or added burden for married couples facing dementia? | Impact of dementia on relationships among pets, caregivers, and care recipients was examined using content analysis of questions in a telephone survey. | • Generally more positive responses evident when caregivers described relationship with their pets  
• Generally the only negative changes reported about their relationships was having less time for/devoting less attention | +     |
| An evaluation of dog-assisted therapy for residents of aged care facilities with dementia | Attempted to address shortcoming of if dog-assisted therapy is beneficial for people with dementia living in an aged-care facility. | • Increased quality of life scores found in testing group  
• Dog-assisted therapy may address unmet needs of participants by providing meaningful activity, stimulation, pleasurable social interaction, and comfort by physical contact | +     |
Summary of Findings

• General positive effect on participants
  – The majority of studies found positive results on the outcomes measured
  – A majority of participants enjoyed their experience and report they would like to continue their interaction with therapy animals
Limitations of Current Literature

- Multiple definitions of animal or pet therapy
- Poor standardization
- Intervention implementation varied widely across studies
  - Length of intervention (days to months)
  - “Dose” of intervention (number and length of sessions)
  - Type of animal used
- Other studies may exist that were not found in this review
Limitations of Current Literature

• Variety in study quality
  – Single subject to large group studies; difficulty implementing random assignment; varying use of control groups; generally small sample sizes
  – Quality of outcome measures: Qualitative vs. Quantitative; Use of psychometrically sound measures; Use of study-exclusive measures
  – Fluctuating length of follow-ups

→ Difficult to make conclusions about the literature when interventions and the quality of assessment instruments vary so much across studies
Future Research

• Successful studies should be limited to one area of specific examination

• **Create more standard guidelines for implementation of therapy**
  – The field should specify further what specific outcomes/benefits are theoretically expected
  – Create guidelines that specify appropriate measurement tools of different outcomes to allow for comparisons across studies