doi:10.1111/j.1479-8301.2006.00156.x PSYCHOGERIATRICS 2007; 7: 8–13

ORIGINAL ARTICLE

Long-term evaluation of animal-assisted therapy for institutionalized elderly people: a preliminary result

Namiko KAWAMURA,[1] Masayoshi NIIYAMA[2] and Harue NIIYAMA[3]

[1]School of Nursing, Sapporo City University, [2]Department of Veterinary Medicine, Rakuno Gakuen University, and [3]Karipu-Atsubetsu Nursing Home, Hokkaido, Japan

Correspondence: Namiko Kawamura, RN, MN, School of Nursing, Sapporo City University, Kita11 Nishi13, Chuo-ku, Sapporo, Hokkaido, 060-0011 Japan. Email: n.kawamura@scu.ac.jp

Received 25 January 2006; accepted 20 March 2006.

Abstract

Background: Many researchers theorize that animal-assisted therapy (AAT) will have an effect on people suffering from the symptoms of dementia by evaluating short-term-effects. The purpose of this research was to evaluate the psychological and behavioral effects of AAT on elderly residents of a nursing home on a long-term basis.

Methods: The subjects consisted of 10 residents of a residential nursing home. Researchers first created each participant's goal in an agreement with the nursing home staff. Visits were made twice a month, and on each occasion three or four dogs were taken. The residents were able to freely feed, hold and play with the dogs, with each dog placed on a separate table. Data collection methods included GBS Scale Japanese Version (GBSS-J) and Mental Function Impairment Scale (MENFIS). Data was collected four times during the period 2003–05. The scores were analyzed using SPSS11.5J.

Results: According to GBSS-J, the scores for intellectual function, spontaneity, emotional function and other mental functions decreased during the first 6 months of the study and then increased until the twelfth month. The score for Motor function increased over the 12 months. When comparisons were made item by item, there were significant decreases in impaired orientation in space, and emotional liability during the first 6 months. According to MENFIS, the overall score tended to decrease during the first 6-month period but increased from 6 months to 12 months. There was a tendency for scores to decrease in impaired emotional function, especially impaired suitability of emotional expression and impaired stability of emotional expression over the 12-month period.

Conclusions: After 6 months of participation in AAT, there were improvements in mental functions, though physical functions decreased. It is suggested that after a 6 month period each subject's needs and goals should be re-examined.

Key words: *activity care, animal-assisted therapy, dementia, elderly people, institutional people, long-term evaluation.*

INTRODUCTION

The elderly population is growing rapidly in Japan. It is estimated that people over 65 years old will constitute one-quarter of the Japanese population in 2020. Care for the elderly is one of the most important problems in Japan today. It is thought to be important for elderly people to lead lives that are as normal as possible. Many elderly become depressed from feelings of grief or loneliness in their lives. In Europe and the United States, animal-assisted therapy (AAT) has been incorporated into medical care since Levinson and Corson *et al.* began to promote the health-inducing benefits of human–animal interaction in psychotherapy in the 1970s.[1–3]

AAT is a goal-directed intervention method in which an animal that meets specific criteria is an integral part of the treatment process. AAT is directed and/or provided by a health/human service professional with specialized expertise, and within the scope of practice of his/her profession. This process has been documented and evaluated.[4]

In recent years, human–animal interaction has been made good use of during times of recreation, and studies in Japan have shown the positive effects of such interaction.[5–7] Research has shown the positive effects of associations between pets and children, families, students, lonely people, hospitalized patients, prisoners, the mentally ill and the physically handicapped.[8,9] Fraser has shown that the relationship between people and pets promotes human physical and emotional well-being.[10] Studies have also demonstrated that such relationships enhance self-esteem and bring out smiles in the elderly. Many researchers theorize that AAT would have an effect on people suffering from the symptoms of Alzheimer's type diseases by keeping their emotions positive, and maintaining their pride or sense of responsibility, motivation and sociability.[11–13]

To date, however, we have very little data that evaluates AAT for the elderly from a viewpoint of long-term effects on psychological or mental functions. In this research, we described the effects of AAT on the institutionalized elderly.

PURPOSE

The purpose of this research was to evaluate the psychological and behavioral effects of animal-assisted therapy (AAT) on elderly residents of a nursing home over the long-term.

METHODS

Setting

Elderly people in a residential nursing home in a large city in northern Japan were visited by volunteers taking small dogs (two papillons, one miniature dachshund, one Yorkshire terrier). Dogs had their nails trimmed and were washed with shampoo before each session. Researchers first created each participant's goal in an agreement with nursing home staff. Visits were made twice a month, and on each occasion three or four dogs were taken. The residents were able to freely feed, hold and play with dogs, with each dog being placed on a separate table and they watched or played with dogs for about 30 min during each 2-hour session. Volunteers and staff helped and guided each subject to play with dogs in accordance with participants' goals.

Subjects

The subjects were 10 residents of a residential nursing home.

Data collection and analysis

Data collection methods included GBS Scale Japanese Version (GBSS-J)[14] and Mental Function Impairment Scale (MENFIS)[15] on 10 residents along with notes from staff reports. In this study, we used the above mentioned scales, which two staff members (a chief nurse and a care worker) and one researcher discussed and completed, based on a nursing chart and a conference chart, for each subject. Subjects could not answer by themselves questions regarding their dementia symptoms or diseases related to recognition. Data was collected four times for each subject in a 12-month period between June 2003 and January 2005. GBSS-J scores and MENFIS scores were analyzed using a two-sample Wilcoxon test in SPSS11.5J. A P-value of <0.05 was considered statistically significant.

Protection of Human Rights

After the research proposal received approval from the college's Human Subjects Review Committee, residents were approached to participate in the study. Researchers asked residents and their families to participate following written and oral explanations. In order to protect confidentiality, no names were included in the study. Subjects were aware that they could withdraw from the study at any time.

RESULTS

Subjects

One subject was male and nine subjects were female. The range of the subjects' ages was 75–95 years. The percentage of attendance for the AAT sessions was 65% or more. Six subjects were diagnosed with vascular dementia; four subjects had senile dementia with impairment in mental function for daily living. All subjects had some psychological and behavioral problems living in their own houses and living with their families. Some subjects had physical problems such as paralysis or aphasia from cerebral infarction.

Nine subjects had symptoms of depression and were suffering from problems such as delusion, apathy and anxiety. One subject often used abusive language and behaved violently to other residents.

Subjects played with the dogs; playing a game where a subject hides food in a small case and a dog looks for it. Some subjects held, petted, watched and talked to the dogs. Some were able to play with the dogs by themselves and some needed a volunteer's help because they were physically or cognitively unable to play with the dogs without help. All subjects were able to call the dog's name or remember that they played with the dogs at the next session.

Evaluation by GBSS-J

According to GBSS-J, the scores were not significantly different. However, the total scores tended to decrease during the first 6-month period but increased from 6 months to 12 months (Fig. 1). The scores for intellectual functions, spontaneous activity, emotional functions and different symptoms common in dementia decreased during the first 6 months of the study and then increased during the final 6 months. The score for motor function increased over the 12 months.

When item by item comparisons were made, there were significant decreases in impaired spatial orientation ($P = 0.047$) and emotional lability ($P = 0.046$) during the first 6 months.

There were significant increases in motor insufficiency in eating ($P = 0.038$) over the 12-month period.

There were significant increases in impaired wakefulness ($P = 0.014$), impaired concentration ($P = 0.034$), and impaired thinking in abstractions ($P = 0.034$) during the last 6 months.

Evaluation by MENFIS

According to MENFIS, the overall score tended to decrease during the first 6-month period but increased from 6 months to 12 months (Fig. 2).

The scores for impaired cognitive functions, impaired motivational functions and impaired emotional functions decreased during the first 6 months of the study and then increased during the final 6 months as also seen in the GBSS-J scores. There was a tendency for scores to decrease in impaired emotional functions, especially in impaired suitability of emotional expression ($P = 0.047$) and impaired stability of emotional expression ($P = 0.047$) over the 12-month period.

Case histories

The case histories of two of the 10 subjects are detailed below. The first subject improved in her abusive behavior. The second subject displayed improvement in his depressive symptoms over the 12 months of AAT.

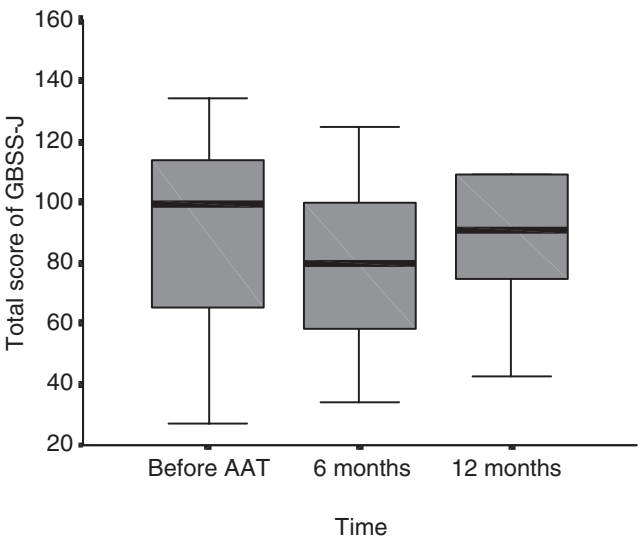

Figure 1 The total score of GBS Scale Japanese Version (GBSS-J) during long-term animal-assisted therapy ($n = 10$).

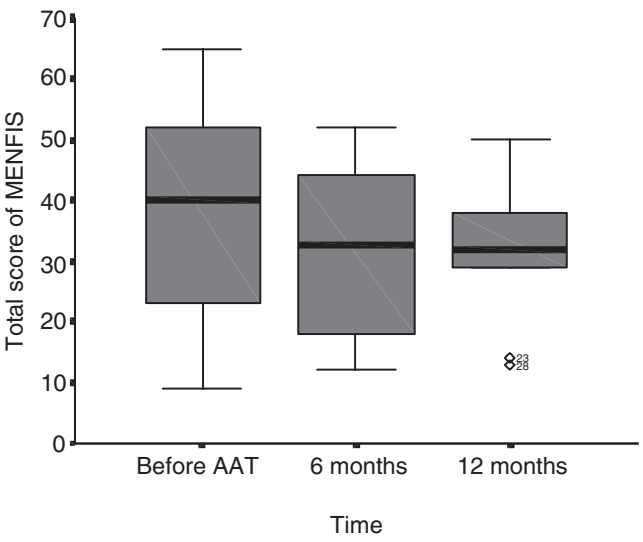

Figure 2 The total score of Mental Function Impairment Scale (MENFIS) during 12 months of animal-assisted therapy ($n = 10$).

Case A

This subject was a 76-year-old woman. She was diagnosed with vascular dementia and she was aphasic. She had problems with her sleep pattern and displayed abusive behaviors toward other residents and staff. She sometimes got angry and grabbed other residents when she saw them and said 'Da, da, da da, da . . .'. She refused staff members' help in changing her clothes.

When she met the dog (miniature dachshund) for the first time, she held the dog's leg and body very tightly. She did not want to release it. A volunteer helped her to hold and pet gently and taught her how to hold the dog in her arms. The volunteer allowed her to hold the dog for as long as she wanted. Over a few sessions, she began to release the dog and put it on the table and pet it when a volunteer suggested she should do that. She could change the dog's clothes, change ribbons and comb the dog with the volunteer's help. She could hand the dog to a resident who was next to her after she held the dog enough. After 6 months, although she got angry once a day, she began to calm down more easily. She began to eat meals without stealing food from other residents eating at the same table. She did refuse staff members' help over the 12 months. However, she began to spend sessions watching other participants peacefully. Before AAT, her day and night sleep cycles were reversed and she slept on a sofa in a hall. However, she was able to sleep in her bed during the 12 months of AAT.

Case B

This subject was a 75 year-old-man. He was diagnosed with vascular dementia and he had aphasia and hemiplegia by subarachnoid hemorrhage. He had symptoms of depression and apathy. He did not seem to want to move his unaffected arm. He began to move his arm and throw toys for his favorite dog (papillon). Staff members had had no idea that he was able to throw before AAT. He laughed many times during AAT sessions and freely held out his hand to shake hands with volunteers. He played games with his favorite dog; he sometimes spontaneously threw a toy to the space where the dog had not been waiting. He began to be interested in many things around him and express his emotions to staff members little by little in his daily life at the nursing home. Before AAT, he often tended to sleep for a few minutes sitting in a chair, but after the sessions he began to be awake more and was increasingly able to concentrate on something for about 1 h or more over the 12 months.

DISCUSSION

After 6 months of participation in AAT, there were some improvements in mental functions but a decrease in motor functions. The total scores of GBSS-J and MEMFIS (not including the motor function item) decreased during the first 6 months and then increased during the final 6 months. In other words, patients improved initially and then became slightly worse. In the emotional function item in MENFIS, the scores decreased over the entire 12 months showing continuous improvements in patients' emotional well-being.

An analysis of the motor function in GBSS-J, shows the score continuously increased over the 12 months. The researchers believe this was due to the advanced age of many of the patients who suffered from the passage of time. In addition the AAT program had neither an occupational therapist nor a physical therapist. It is assumed that because of this, the content of the AAT program was geared more towards mental, rather than physical growth. This was reflected in the results.

These results affirmed research results that have been published previously. Gammonley showed some residents expressed pleasure and joy and they behaved actively at the pet visits,[16] and she advocates the importance of care plans focused on the response of the residents. According to Mano's research,[7] which analyzed sessions that were conducted once a week for 12 weeks, dementia residents improved in areas of anxiety, concentration and conversation in the first 4 weeks, and after 4 weeks, residents tended to improve in areas of motivation, wakefulness and sleeping condition. Our research showed that improvement of emotional comfort was a significant effect of AAT sessions for elderly people, as the above research also stated. Moreover, although conducting sessions only twice a month might not be the most advantageous arrangement, this research showed that positive long-term effects were possible, especially for in emotional functions. It is expected that AAT would be continued as a part of various other therapies with evaluation and re-examination as a long-term strategy. Research into making AAT sessions more effective is needed

however, and staff will have to re-examine the goals or the focus for individual patients.

The results show stagnation in improvement at the 6 month mark. One possible explanation is that after 6 months AAT was no longer 'fresh stimulation' for the subjects. Also, the subjects in this research have various mental or cognitive problems (depression, violent behaviors, etc.) and they could not play with dogs without support. It is important that staff and volunteers help promote communication between subjects and the dogs and observe the reactions of subjects in each session in order to more fully understand their needs. It is suggested that at the 6-month mark, each subject's needs and goals should be re-examined. New goals, specifically tailored to individual subjects, could give subjects fresh stimulation and help prevent the stagnation seen in this study.

From the results, the researchers considered that the improved group would have hidden high-level capabilities, as was also considered by Mano.[7] The researchers suggest that AAT could be an effective tool in which medical and care staff assess each resident and expand each resident's abilities to augment medical treatment. It is better for the residents of the nursing home to look not only at medical treatment; it is important for staff to assess the mental and physical function of each resident.

It is felt that there were some limitations to this research. In the future, a control study is needed to more precisely examine the effects of AAT for elderly residents. Furthermore, a large group of subjects is needed, because elderly people in nursing homes have a wide variety of backgrounds, levels of impairment and combinations of different problems. Moreover, it is possible that the results depend on how much time the subjects have spent with the dogs. A more detailed analysis of the reactions of each subject to stimuli could lead to a more effective AAT program. The role of the staff and volunteers must also be examined. For elderly people, active participation in AAT promotes mental functions and improves communication with other residents and staff in nursing homes. More effective tools to evaluate AAT are needed in order to evaluate mental health more accurately.

CONCLUSION

Although the scores for psychological functioning decreased while attending AAT during the first 6 months, it tended to increase a little after 6 months according to results from GBSS-J and MENFIS.

On the item concerning the feeling function of MENFIS, the score significantly decreased over 12 months. This suggests AAT helped elderly people with their behavioral problems.

It is suggested that the 6-month mark is a point at which each subject's needs and their goals should be re-examined in AAT.

ACKNOWLEDGMENTS

The author would like to deeply thank the 10 participants who were the subjects of this study, as well as the helpful staff at the facility who made this research possible.

This research was funded by a Grant-in-Aid (2003/2005, Exploratory Research, Grant #: KAKENHI 15659526) from the Ministry of Education, Culture, Sports, Science and Technology of Japan.

This research was shown in a poster presented in the 20th Annual Meeting of the Japanse Psychogeriatric Society. It has been revised and corrected for this paper.

REFERENCES

1 Levinson BM. The dog as co-therapist. *Med Hyg* 1962; **47**: 59–65.
2 Corson SA, Corson EO, Gwynne PH *et al.* Pet-facilitated psychotherapy in a Hospital Setting. *Curr Psychiatr Ther* 1975; **15**: 277–286.
3 Iwamoto T, Fukui I. *Animaru Serapi No Riron To Jissai*. Tokyo: Baifukan Inc., 2001. (In Japanese.)
4 Delta Society. Standards of practice for animal-assisted activities and animal-assisted therapy, The A.D. Henderson Foundation and The Max and Victoria Dreyfus Foundation, Inc., 1996.
5 Motomura N, Yagi T, Ohyama H. Animal-assisted therapy for people with dementia. *Psychogeriatrics* 2004; **4**: 40–42.
6 Kanamori M, Suzuki M, Yamamoto K *et al.* Evaluation of animal-assisted therapy for elderly with senile dementia in day care program. *Jpn J Geriatr* 2001; **38**: 659–664.
7 Mano M, Uchizono M, Mishimura T. A trial of dog-assisted therapy for elderly people with Alzheimer's disease. *J Jpn Soc Dement Care* 2003; **2**: 150–157.
8 Mallon G. Some of our best therapists are dogs. *Child Youth Care Forum* 1994; **23**: 89–101.
9 Reichert E. Play and animal-assisted therapy: a group-treatment model for sexually abused girls ages 9–13. *Fam Ther* 1994; **21**: 55–62.
10 Fraser C. Companion animals and the promotion of health. *Compr Nurs Q* 1990; **2**: 2–17.
11 Frick KM. The influence of an animal on social interactions of nursing home residents in a group setting. *Am J Occup Ther* 1993; **47**: 529–534.
12 Zisselman MH, Rovner BW, Shmuely Y *et al.* A pet therapy intervention with geriatric psychiatry inpatients. *Am J Occup Ther* 1996; **50**: 47–51.

13 Robb S, Boyd M, Pristash CL. A wine bottle, plant, and puppy-catalysts for social behaviour. *J Gerontol Nurs* 1980; **6**: 721–728.
14 Homma A, Niina R, Ishii T *et al.* Behavioral evaluation of Alzheimer disease in clinical trials: development of the Japanese version of the GBS Scale. *Alzheimer Dis Assoc Disord* 1991; **1** (Supple 1): S40–S48.
15 Homma A, Niina R, Ishii T *et al.* [Development of a new rating scale for dementia in the elderly: Mental Function Impairment Scale (MENFIS).] *Rhonen Seishin Igaku Zasshi* 1991; **2**: 1217–1222. (In Japanese.)
16 Gammonley J, Yates J. Pet projects: animal-assisted therapy in nursing homes. *J Gerontol Nurs* 1991; **17**: 12–15.