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Journal of Communication Disorders 40 (2007) 215–224

Journal of
**Communication
Disorders**

Case report

The effect of a therapy dog on the communication skills of an adult with aphasia

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Received 13 July 2005; received in revised form 27 April 2006; accepted 8 June 2006

Abstract

Little evidence-based research has been published within the field of communication disorders on the role of dogs as catalysts for human communication. This single participant study, a point of entry into this realm of research, explores the effects of a therapy dog on the communication skills of a patient with aphasia receiving intensive speech and language therapy within a rehabilitation setting. The researchers conclude that the presence of the dog does have the potential to stimulate both overt social-verbal and social-nonverbal communication.

Learning outcomes: As a result of this activity the reader will be able to (1) describe the beneficial role of dogs to serve as catalysts for human communication (2) describe ways in which a person with aphasia may be assisted by a therapy dog and (3) become familiar with an animal-assisted therapy (AAT) program set-up for patients with communication disorders within a rehabilitation setting.

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1. Introduction

Although anecdotal evidence abounds, the beneficial role of dogs to serve as catalysts for human communication has received little attention to date in the field of communication disorders. Outside the formal scope of practice of speech-language

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pathology however, in other areas of research including veterinary sciences, psychiatry, nursing, occupational therapy and psychology, more documented evidence exists.

In our society, dogs serve as companion animals and pets, therapy dogs, assistance (e.g. guide dogs) and service animals. Since the 1980s, published literature, although limited, has documented the positive effects of pets, including dogs. These benefits include increased social opportunities, increased feelings of security, and companionship (Abdill & Juppe, 1997; Lopez, 1996; Willis, 1997). To some degree, of course, these benefits depend on personal preferences and group values within our multicultural society. Not everyone likes dogs. Nevertheless, for those individuals who do like dogs and are not allergic to them, the human-animal bond can be caring, compassionate and powerful.

1.1. The role of dogs as empathic listeners

Although it is not clear exactly how much receptive language ability a dog possesses, dogs are capable of understanding some human communication. No matter whether the training be hand signals or verbal commands or a combination of both, dogs can learn a variety of training commands. More significantly, people who are isolated, lonely or institutionalized often find solace with friendly dogs and view them as empathic listeners.

The literature supports the role of dogs to assist socially withdrawn and psychiatric patients in a listening capacity. A study by Bardill and Hutchinson (1997) explored the role of a dog with 30 volunteer participants, hospitalized adolescents in a closed psychiatric unit. In journal entries of these teenagers, researchers found that the dog served as a sounding board for the hospitalized youths. These young people, by experience, often learned that it was dangerous to talk to others, especially adults. Communication involved risk of criticism, rejection, evaluation, punishment, inattention, judgment and unsolicited advice.

By contrast, the dog (Graham), a 2-year-old cocker spaniel, listened attentively, giving empathetic nonverbal feedback. Teenagers were heard to practice with the dog what they intended to say to their family or doctor. One patient wrote: “Sometimes you can talk to him when you can’t talk to anybody else. He doesn’t judge you. He can’t say, “Oh you’re stupid.” Other patients commented: “When I have problems with people I just sit down with Graham. He’s such a good listener.” (Bardill and Hutchinson, 1997, p. 21.)

In a similar study, questions posed to a psychiatric patient who refused to speak resulted in an increase in words per answer when a ‘canine co-therapist’ was used (Corson & Corson, 1980). This husband–wife team of researchers were early pioneers in the role of dogs as compassionate listeners for troubled individuals who chose to withdraw from human-to-human contact.

1.2. The role of dogs as social catalyst

Churchill, Safaoui, McCabe, and Baun (1999) examined how interactions with an unfamiliar dog in a one-to-one setting improved socialization in patients with Alzheimer’s disease and decreased their agitation. Similarly, Kongable, Stolley, and Buckwalter (1990) found that staff from a special care Alzheimer’s unit reported the presence of a dog provided these patients with a reminiscing focal point of pet ownership memories and a focal point for orientation to the present. Staff also indicated that the animal served “as a

link in the relationship between the Alzheimer's disease client and their family" (Kongable et al., 1990, p. 19). The use of dogs with persons suffering from Alzheimer's disease resulted in positive effects on communicative variables such as smiles, laughs, touches and verbalizations (Kongable, Buckwalter, & Stolley, 1989). Fick (1993) reported the impact of the presence and absence of a dog on social interactions among male nursing home residents. She found twice the number of verbal-person and nonverbal-person interactions occurring when the dog was present.

Based on evidence reported in a questionnaire distributed by Lane, McNicholas and Collis (1995) to individuals with service dogs, 92% reported that when their dog accompanied them, people stopped to talk to them more often than when they did not have a dog. Similar studies (Eddy, Hart, & Boltz, 1998; Hart & Bergin, 1987; Mader, Hart & Bergin 1989) compared persons using wheelchairs with and without service dogs and measured the number of social acknowledgments. They found that in a variety of different settings, social acknowledgments were consistently higher for people using wheelchairs if they were accompanied by a service dog. The literature supports the view that social facilitation and increased communication occur in the presence of a service dog.

1.3. The role of dogs to assist people with aphasia

Little published research is available on the role that family pets and working dogs may play to improve the quality of life of men and women with aphasia, although anecdotal evidence suggests their role may be significant. For instance, among the participants at a spring 2004 Walk and Talk-A-Thon, sponsored by the Aphasia Centre of Ottawa-Carleton, Canada was a middle-aged man with a severe non-fluent aphasia whose life had been enhanced by his volunteer job of training young, potential guide dogs. The training suited his communication style, a combination of short verbal commands and simple hand signals. The severity of his aphasia had prevented any possible return to the work force.

A native Canadian aboriginal with aphasia, whose spirituality included a worship of nature, was distant with his Caucasian stroke service rehabilitation therapists but actively participated in this rehabilitation centre's animal-assisted therapy (AAT) program with the dog. A woman with a fluent aphasia in this same AAT program, embarrassed by her pattern of jargon, avoided contact with strangers initially but continued to enjoy the friendly companionship of her pet.

A single case study from a speech-language pathologist's perspective (Adams, 1997) examined the impact of two therapy dogs on the communication skills of a 72-year-old woman with an apraxia of speech following two cerebral vascular accidents. It concluded that the therapy did have a positive effect. Her anecdotal observations included a dog-walk activity at the end of each session, noting that other residents and staff were drawn to this activity and spoke to the patient about her canine companion.

1.4. The canine role disputed: the novelty factor

Critics argue that the positive effects of pet-facilitated programs within institutionalized settings may simply be due to the introduction of a novel and exciting stimuli, in this case a visiting dog, and may wane as familiarity grows.

An investigation by [Hall and Malpus \(2000\)](#), a research design on which this research is modeled, was carried out in a long-term psychiatric nursing home in England. Researchers examined the presence of the dog handler as a possible confounding variable. Perhaps, they questioned, it was the handler and not the dog that sparked communicative attempts by the residents.

Their investigation incorporated an A-B-C-A reversal design. It involved 10 clients, all men, with severe and enduring psychiatric illness who displayed institutionalized behavior including a reluctance to initiate interaction, a lack of conversational ability and little expressed interest in their environment. The dog (Phoenix) was part of the Pets as Therapy (PAT) program and trained to high standards of obedience.

Initially, observations of the social-verbal and social-nonverbal behaviors of the clients were noted without dog or dog handler present (condition A). Observations were then undertaken with the handler present (condition B). The dog was then introduced for a period of 14 weeks (condition C). Finally, in the last part of the study, both dog and dog handler were removed (condition A).

The researchers concluded that the effects on social behavior among the participants were greater with the presence of a handler and dog than with the handler alone. The authors concluded that pet visitation did yield beneficial effects within a population with severe mental health problems. “The findings of this study support the notion that it is indeed the pet, not the human handler, which promotes social interaction” ([Hall & Malpus, 2000](#), p. 2225).

2. Purpose

The purpose of this study was to explore the impact of the presence of the dog and handler during walks back to the ward on the overt social-verbal and social nonverbal communication skills of a sole participant with aphasia. Its design was modeled on the Hall and Malpus study described above.

3. Method

3.1. The participant

The participant was a 61-year-old male assessed by a speech-language pathologist and found to have a non-fluent aphasia secondary to a left cerebral vascular accident (CVA) sustained in November 2002. The participant was admitted to The Rehabilitation Centre, an affiliate of The Ottawa Hospital, in Ottawa, Canada 1-month post-onset for a full multidisciplinary inpatient treatment program that included speech and language therapy. Upon admission, he had difficulty carrying out simple directions (WAB, Sequential Commands 4/80). His yes–no responses were no greater than chance (WAB, Auditory Verbal Comprehension 33/60). He had difficulty pointing to real objects (WAB 0/6), forms (WAB 1/6), letters (WAB 2/6), numbers (WAB 2/6), and furniture (WAB 0/6). Word finding problems were evident (WAB 40/60). An initial Content Unit Analysis revealed

severe deficits with 10 words/min and six correct information units. Initially, he was unable to write or use a keyboard. Reading was nonfunctional. Visual neglect, visual perceptual deficits and language deficits interfered with reading skills. Math skills were severely compromised.

He was seen by the same speech-language pathologist for the duration of his rehabilitation stay. This gentleman received hour-long speech therapy sessions five times weekly, Monday through Friday, for the 12-week inpatient stay. Subsequently, he was followed twice weekly as an outpatient for 7 weeks until discharge. At discharge, functional improvement was significant and measurable. He was able to follow sequential commands (WAB 80/80). His yes–no responses were considerably improved (WAB 57/60). He was better able to point to real objects (WAB 6/6), drawn objects (WAB 6/6), forms (WAB 6/6), letters (WAB 6/6), numbers (WAB 6/6) and furniture (WAB 6/6). Expressively, word finding problems improved considerably (WAB Object Naming 60/60). A repeat Content Unit Analysis resulted in a word per minute count of 82.7. His Correct Information Unit Count (CIU) was 27. The percentage of CIUs was 60%.

3.2. The therapy dog

The therapy dog was a friendly, 5-year-old Nova Scotia Duck Tolling Retriever named Paugan. Prior to initiating the AAT program, the dog and handler (the treating speech-language pathologist) were evaluated together by a recognized evaluator for Ottawa Therapy Dogs (OTD), a local chapter of Therapy Dogs International (TDI). This organization, based in the United States, provides standards of excellence and training to therapy dog handlers and dogs, as well as insurance protection for its volunteers, like similar therapy dog organizations. TDI tests an animal primarily for temperament, carefully assessing the dog's potential to work safely and comfortably within an institutionalized setting. Evaluation also includes a veterinary check, proof of vaccinations and good health. In addition, for insurance purposes because the handler was a professional, the dog was registered as a volunteer at the hospital, identified to passersby with a standard photo identification badge.

3.3. The handler

The handler was dual qualified as a speech-language pathologist and certified therapy dog handler with TDI. As handler, she was obliged under TDI rules to be in full and direct control of the dog at all times. Outside of the treatment room, the dog was required to be leashed. The dog and handler worked as a team. She could not 'lend' the dog to another therapist for a treatment session.

3.4. The animal-assisted therapy (AAT) program

Speech therapy sessions on Fridays at The Rehabilitation Centre involve the option of participation in animal-assisted therapy (AAT), a program created and carried out by this same clinician. Like all patients with potential to participate in the program, the participant was carefully screened to determine his suitability. Screening included a set of questions

provided in both spoken and written form asking whether or not the participant liked dogs, had allergies to dogs, had fears of dogs and would be interested in speech therapy with the dog.

Upon completion of this screening tool, signed by the participant and witnessed by his wife, he was deemed appropriate for AAT. He willingly consented to participate in once-weekly hour-long AAT sessions involving this clinician, accompanied by her therapy dog.

AAT sessions, like traditional speech therapy, are individual sessions that are client-based, goal-directed and charted. Sessions are intended to be enjoyable and relaxed, with an element of fun provided by the presence of the dog. For research purposes, the participant agreed to data collection on Fridays only during the walk back to the ward following AAT sessions.

Typically, patients at this rehabilitation centre return to the ward with the assistance of a porter. AAT sessions typically end with the dog handler and therapy dog accompanying each patient back to the ward. No porter is involved.

A double-leash walking technique is used to ensure the safety of the patient and dog. This technique is as follows: two leashes are attached to the therapy dog's collar. The patient is given one leash and is requested to hold onto it and be responsible for walking the dog back to the ward. The second leash, held by the dog's handler, is a precaution, should the patient lose control of the dog. Because many AAT patients are non-ambulatory, the therapy dog was trained to walk on the left-hand side of a wheelchair.

The goal of this walk is to encourage patients in the AAT program to communicate to staff, other patients and passersby, therefore affording opportunities for social interaction and transfer of therapeutic goals.

3.5. Design

Research was carried out on 11 consecutive Friday mornings. The study lasted the duration of the participant's inpatient stay at the centre and continued as part of his outpatient program. Each condition was designed to examine the influences on the interaction levels of the participant in the presence of a porter, the dog handler (the speech-language pathologist), or both the dog handler and dog.

Before initiating any data collection, an observer familiarized herself with the environment and familiarized patients (including the participant) with her presence. She met the patient following a speech treatment session and accompanied the patient back to the ward. Data collection phases of the study began following this initiation portion that was intended to minimize interference factors.

Condition A of the study occurred during the first two Friday mornings following an AAT session with the participant. Following completion of the treatment session, the porter returned the participant to the ward.

Condition B, which constituted weeks 3 and 4 of the study, involved only the dog handler (e.g. the speech-language pathologist alone, without the dog) who returned the participant to the ward.

Condition C involved both the dog handler and therapy dog accompanying the participant back to the ward using the double-leash walking activity described earlier.

This condition continued for approximately 5 weeks, from week-5 to week-9, in part to reduce any novelty effect of the dog.

During the last 2 weeks of the study, both dog and handler were removed. This was intended to increase confidence in the effects being directional to the imposed conditions and also to dispel any effects of the patient's intensive, daily speech therapy program as well as any spontaneous recovery. This last stage, weeks 10 and 11 of the study, returned to condition A. The porter alone returned the participant to the ward. Throughout the duration of this investigation, within the four phases (A-B-C-A), the participant was accompanied by the observer who walked to the right and slightly behind the participant's wheelchair. All walks with the participant throughout the duration of these 11 weeks occurred at the same time and on the same day of each week at the hospital. All observations used the same route through the centre, from the therapy room on the lower setting of the hospital through a fixed route of hospital corridors back to the ward.

Observations focused on the overt social-verbal and social-nonverbal behaviors of the participant only, not conversation partners. Behaviors were chosen on the basis of the participant's willingness to communicate freely as per the [Hall and Malpus \(2000\)](#) study. Social-verbal behaviors included: laughing, attempts to verbalize, automatic speech, production of single words, production of utterances and production of sentences. Social-nonverbal behaviors included: smiling, gestures to communicate, head nods, eye contact and attention directed towards the handler, staff or other patients.

Observations were timed and lasted between 2 and 3 min, the duration of time it took to walk from the therapy room to the ward. Tallies were made of all behaviors observed.

Data were plotted on graphs and analyzed descriptively.

4. Results

The results of the number of verbal and nonverbal behaviors per minute can be found in [Table 1](#) as well as a graphic representation in [Fig. 1](#). A small increase in verbal behaviors was noted when the dog handler was introduced in condition B but a marked increase in

Table 1
Observed behaviors per minute and collective means for each experimental condition

Condition A	(baseline)		Condition B (with dog handler)		Condition C (with dog and dog handler)					Condition A (no dog; no dog handler)	
	1	2	3	4	5	6	7	8	9	10	11
Verbal	0	.5	.67	1.67	1.67	2.67	4.67	3	4.67	2	.5
Mean	0.25		1.17		3.34					1.25	
Non verbal	0	0	0	0	1	1	1.33	1	1.33	.5	0
Mean	0		0		1.13					0.25	

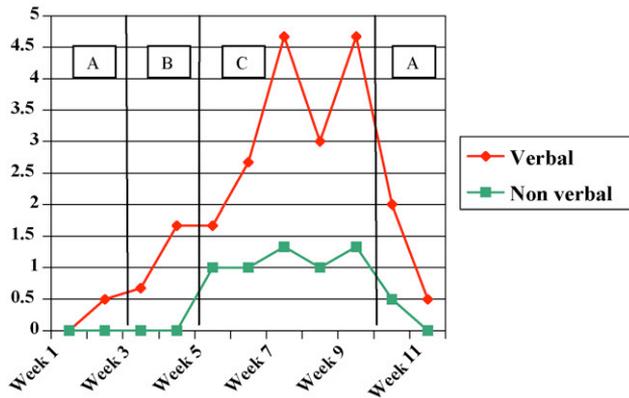


Fig. 1. Verbal and nonverbal scores per minute.

both verbal and nonverbal behaviors is observed in condition C, following the introduction of the dog. Both observed verbal (3.34) and nonverbal behaviors (1.13) were highest in condition C. The observed social verbal behaviors ranged from 0/min in week-1 up to 4.7/min during weeks 7 and 9. Similarly, social nonverbal behaviors ranged from 0/min throughout weeks 1–4 and week-11 to 1.3/min in weeks 7 and 9. A slight dip occurred for both social verbal and nonverbal behaviors in week-8. Despite this decline, scores remained higher or equivalent to those observed in those other weeks when the dog did not accompany the participant. With the introduction of the dog in week-5, the participant's overt social verbal and nonverbal behaviors increased notably. Behaviors declined during the last 2 weeks when the dog no longer accompanied the patient.

The presence of the therapy dog during the walk back to the ward yielded beneficial effects for communication, increasing both social-verbal and social-nonverbal behaviors for the participant. Walking with the leashed dog increased the participant's opportunities to communicate with passersby who would pause to pat the dog and chat. The presence of the dog also seemed to improve the participant's general sense of cheerfulness and well-being, a characteristic that was noted in his collective mean of nonverbal behaviors during condition C.

5. Discussion

The results of this small-scale study suggest that dogs may, as in other areas outside the field of communication disorders, serve as catalysts for human communication. The participant, a shy, quiet gentleman, tended generally not to initiate conversation or to chat to strangers. In the presence of the therapy dog, impressions are that he became more animated and outgoing; he willingly introduced the animal to curious strangers who approached to pat the dog or ask questions about the dog's breed or personality. He was notably less passive in his approach to communication during these double leash walks back to the ward.

Interestingly too, a hospital slowdown, caused by a winter infectious disease, occurred during at least 1 week during condition C when dog and dog handler walked the participant back to the ward. Despite fewer visitors to the hospital, scores during this period remained consistently higher than during other experimental conditions.

It is interesting to speculate as well on the patterns of these selected behaviors for investigation in an environment outside of institutionalized settings, such as this rehabilitation setting. Would a passerby display the same interest and stop to chat to a person with aphasia or another speech disorder in a more natural environment, such as a park or street corner, where dogs are permitted and sometimes are plentiful? In these circumstances, the role of the dog would be much more far reaching than simply being a companion. Kagan proposes that a person with aphasia can experience a perceived lack of competency because he is unable to expose his cognitive and social competencies through the medium of conversation. Kagan (1995) and Kagan and Gailey (1993) suggest that this occurs due to an interaction of: (1) diminished conversational skills and (2) a diminished amount of opportunities to engage in conversation. As a result, this lack of ability and opportunity contributes to hiding their competency and this perceived lack of competency by others excludes them even more from conversations and social activities. A negative cycle is therefore created, isolating the person with aphasia (Kagan, 1995). The case study reported here gives impetus to a field of research where dogs may be studied as catalyst for breaking this negative cycle of social interaction in persons with aphasia.

6. Conclusion

Although evidence exists outside the field, little research to date has been carried out within the area of communication disorders on the role that companion and working dogs offer to individuals with aphasia. This single subject study, carried out in a Canadian rehabilitation setting with a stroke survivor receiving speech and language therapy, suggests that the presence of a therapy dog may be a catalyst to improve both verbal and nonverbal communication skills.

Acknowledgements

This study was completed in partial fulfillment of the degree of Master's of Health Science, given to the first author. The authors would like to thank the participant with aphasia who took part in this project.

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