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The Use of a *Sensory Resource Guide* in Dementia Care

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Abstract

This single case research study investigates the use of a communication aid, known as a *Sensory Resource Guide*, in persons with Alzheimer's disease and related disorders. A *Sensory Resource Guide* is an external communication aid set-up in the participant's home environment to stimulate conversations about self and family. Four to five participants will be recruited. Through clinician-directed training of a *Sensory Resource Guide*, it is predicted that participants will efficiently and effectively communicate more information about self and family members as measured in a higher rate of verbal and/or gesture responses. Results will be discussed in terms of low technology augmentative communication aids for persons with dementia as a means to promote social communication exchange to reduce social isolation.

Research Description

Introduction and Background Information

Despite an aging population and increased incidence of progressive of memory loss due to Alzheimer's and related diseases, few known studies address ways to maintain communication function in aging adults with dementia. However, evidence supports the potential for positive treatment outcomes (Bourgeois, 1991). Because communication difficulties are observed in most individuals with dementia during the disease process (Nicholas et al., 1985), it makes sense for researchers to explore communication interventions designed to elicit more effective and efficient spoken and gestured responses, while providing external cues for support.

One such communication treatment is the use of external memory aids (e.g. personalized picture and word books; Bourgeois, 1990; 1992; 2003). Bourgeois (1990; 1992) reported improvements in the factual content of conversations of persons with dementia through the use of memory books. Persons with dementia have also demonstrated increased engagement in sensory-based activities when structured in everyday environments (Orsulic-Jeras, Judge, & Camp, 2000; Camp, 1999).

In a related study, participants with possible or probable dementia were observed engaging in activities structured using the Montessori Method of instruction (Judge, Camp, & Orsulic-Jeras, 2000). This method used materials from the natural environment, and activities were matched to each participant's ability. Relative to participants in regular programming, participants involved in Montessori-based activities demonstrated significantly greater amounts of constructive

engagement, defined as motor or verbal behavior exhibited in response to the activity in which the client was participating. This is important because materials that provide sensory and cognitive stimulation may be set-up in home environments to facilitate verbal and gesture responses.

We developed a communication aid, which we call the *Sensory Resource Guide* that combines the work of Bourgeois (i.e., memory books; 1990; 1992; 2003) and Camp (i.e., Montessori-based activities; 1999). The *Sensory Resource Guide* has two major components. The first component is the poster-sized, glass framed family tree. It displays photographs of family members that are outlined in solid colors and connected by simple lines showing family organization. The second component is the real object boxes. Each person on the family tree has a corresponding 'shoe-box' size box. The number of boxes depends on how many family members the family tree features (i.e., about 8-10 members recommended). Further, the solid color outline around each person's photograph on the pedigree matches the color of his or her respective box. Each box contains carefully selected real objects that are based on the family member's reported interests and personality. Objects feature tactile, visual, auditory, and/or olfactory sensory components and can be manipulated by the participant.

Purpose

The aim of the study is to investigate the use of a *Sensory Resource Guide* in persons with Alzheimer's disease and related disorders. A *Sensory Resource Guide* is an external communication aid set-up in the participant's home environment to stimulate conversations about self and family. Data will provide preliminary evidence to support or reject the use of a *Sensory Resource Guide* in assisting individuals with dementia in expressing key information about their family through verbal and gestural communications.

Methods

Participants. Approximately 4-5 individuals over the age of 65 years with memory loss due to Alzheimer's disease and related disorders will participate in the study (i.e., early and middle stages of disease progression). During the initial visit each participant will complete a cognitive screening (i.e., Mini-Mental State Examination; MMSE; Folstein et al., 1975) and language measure (i.e., Western Aphasia Battery-Revised; WAB-R; Kertesz, 2006) to determine participation eligibility.

Data Collection. Data collection will occur over 17 visits during a three-month period. At the first visit, the caregiver will complete the Communicative Effectiveness Index (CETI-adapted from original work by Lomas et. al., 1986) as a measure of the participant's communication effectiveness. For the creation of an individualized *Sensory Resource Guide*, information regarding self and family will be gathered through informal caregiver interviews. Caregivers will also provide materials (i.e., pictures and real-life objects) to be combined with purchased items to construct each participant's *Sensory Resource Guide*.

During the baseline procedure the *Sensory Resource Guide* will be displayed and the participant will be asked to "Tell me about yourself and your family," for up to 10 minutes. Communications regarding about 40 targeted nouns related to self and family will be counted (i.e.,

verbal and/or gesture responses).

After three baseline procedures (approximately 3-4 days apart), the treatment intervention will follow over 10 visits (scheduled 2 times per week) and consist of training the participant to use the *Sensory Resource Guide* as a communication aid in the home environment. Training is clinician-directed, focusing on the sensorimotor experience and social communication exchange that emphasizes the use of targeted nouns. Immediately following the intervention, a videotaped assessment of the participant's communication efficiency and effectiveness regarding self and family will be completed using the same procedure as the baseline.

Following the intervention phase, treatment will be withdrawn. Three maintenance visits will then be scheduled about 3-4 days apart, following the baseline procedure. During the final visit the participant will complete the MMSE for post-measurement. Further, the caregiver will complete the CETI to examine perceived changes in the participant's communication effectiveness from pre- to post-treatment.

Data Analysis. Through visual data inspection, we will examine slope duration to compare the relative efficiency of the treatment. To quantify the magnitude of change between baseline and maintenance performance, we will use the effect-size statistic (Busk & Sterlin, 1992). To measure perceived changes in communication effectiveness, caregivers' CETI responses will be compared between pre- and post-treatment.

Results

Data collection is expected to continue from June 2009 until December 2009. Relative to baseline, it is predicted that participants with Alzheimer's or related diseases will efficiently and effectively communicate more information about self and family members immediately following the *Sensory Resource Guide* intervention as measured in a higher rate of verbal and/or gesture responses (i.e., number of target words produced in speech and gesture divided by talking time in minutes). It is also expected that caregivers will report enhanced communicative efficiency and effectiveness in conversations regarding self and family when utilizing the aid in the home environment.

Conclusions

Results will be discussed as single case studies in terms of low technology augmentative communication aids for persons with dementia as a means to promote social communication exchange to reduce social isolation. The results are expected to show that gesture and verbal language are tightly linked systems, and gesture is used to augment speech when expressive language is impaired. An increased rate of gesture production (i.e. pointing to pictures and iconic production related to real objects) may be facilitated through the composition of the *Sensory Resource Guide*. For conversations centering on a *Sensory Resource Guide*, gesture may augment speech and serve to move the conversation forward when words are unavailable.

Clinical Implications

Many persons with Alzheimer's disease and related disorders experience social isolation given their cognitive-communicative disability. For some, communication lacks content and/or organization, and well-meaning family and friends may lack the necessary skills to structure communication exchange. Clinicians may be able to assist caregivers in designing and implementing a low technology communication aid for individual's experiencing communication challenges. Aside from the home environment, the communication aid may be structured for communicative use in other social networks, such as Senior Center groups or Cognitive-Communication group interventions.

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