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Augmentative and Alternative Communication in the Geriatric Population: A Review of Literature

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Abstract

Speech-language pathologists working in the subacute rehabilitation setting often evaluate and treat patients with complex communication impairments. Many of these patients benefit from the use of Augmentative and Alternative Communication (AAC) to facilitate expression of basic wants and needs. When it comes to implementing an AAC system into a care plan, there are a vast number of options available. A thorough evaluation is crucial when determining the most appropriate AAC system to use. These systems can range from gesturing, to a static overlay board, to a more complex, dynamic high tech device. Implementation of AAC systems has been proven to assist people with severe communication deficits that have been caused by a variety of medical conditions. Numerous studies have documented the efficacy of the use of AAC systems with individuals with traumatic brain injury, Amyotrophic Lateral Sclerosis, and developmental disabilities. However, little has been documented regarding the use of AAC in the dementia, aphasia, and geriatric populations. This article will review the literature regarding the use of AAC with these populations.

Speech-language pathologists working in the subacute rehabilitation setting often evaluate and treat patients with complex communication impairments. Many of these patients benefit from the use of augmentative and alternative communication (AAC) to facilitate expression of basic wants and needs. When it comes to implementing an AAC system into a care plan, there are a vast number of options available. A thorough evaluation is crucial when determining the most appropriate AAC system to use. These systems can range from gesturing, to a static overlay board, to a more complex, dynamic high tech device. Implementation of AAC systems has been proven to assist people with severe communication deficits that have been caused by a variety of medical conditions. Numerous studies have documented the efficacy of the use of AAC systems with individuals with traumatic brain injury, Amyotrophic Lateral Sclerosis, and developmental disabilities. However, little has been documented regarding the use of AAC in the dementia, aphasia, and geriatric populations.

Silverman and Shuyler (1994) suggested several reasons for the lack of information, including the direct correlation between the use of AAC with individuals with dementia and the nature of the communicative impairment associated with dementia. Individuals with dementia often fail to communicate due to problems related to memory and lexical retrieval. Several other explanations for the decreased use of AAC might include the generalization that AAC is not helpful to persons with dementia and that third-party payers might be hesitant to fund services for these individuals.

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It is evident that there is also a lack of available documentation regarding AAC and the aphasia population. Beukelman, Ball, and Fager (2008, p. 245) stated that "language restoration intervention and aphasia has received considerable attention for nearly 70 years; to date, however, AAC strategies have not been widely and/or consistently implemented with persons with severe chronic aphasia." They described language restoration as the ability to restore language functioning with persons with aphasia, while language compensation occurred when a person with aphasia was unable to meet needs through speech. In these instances, AAC might be a viable option to compensate for the natural speech that remains lost.

Lund and Light (2006) stressed the importance of utilization and documenting the use of AAC in the dementia and aphasia populations. They stated, "it is imperative to document the long-term outcomes of AAC interventions to ensure accountability, justify costs, guide clinical interventions, and establish best practices to improve services to individuals with complex communication needs" (p. 284). They further suggested that most of the clinical studies addressing the use of AAC focused on four factors: (a) studies of the frequency of AAC use, (b) reports of consumer satisfaction, (c) case studies, and (d) efficacy studies of specific intervention strategies. Although these studies provided valuable data, they were very limited in providing important clinical information.

Despite limited research, it has been proven that the use of AAC can be helpful in assisting individuals with complex communication deficits. Johnson, Strauss Hough, King, Vos, and Jeffs (2008) looked at functional communication in individuals with chronic-severe aphasia using AAC. They determined that the participants with chronic non-fluent aphasia were able to use an AAC device and that the comparison of pre- and post treatment test results indicated that use of an AAC device in daily life, as well as in treatment, resulted in some improvements in language and cognitive skills. The findings supported previous research demonstrating that individuals with chronic non-fluent aphasia were able to learn symbol meaning in therapy using an AAC device.

Ho, Weiss, Garrett, and Lloyd (2005) studied the efficacy of the use of communication books with individuals with global aphasia. Results indicated that the use of these books facilitated increased communication with the study's participants. In addition, the participants were more active and responsive in treatment, which was determined by overall increased topic initiation and instances of joint attention. They appeared to enjoy the sessions more when a book was incorporated and appeared more frustrated when there was no communication book available during treatment sessions. It was determined that communication books that contained remnant symbols (an actual object or photograph depicting recent or past events) caused more effective use of the communication book than did graphic symbols. The SLPs who acted as the participant's communication partner in the study were interviewed 3 years later. They had continued to use communication books but were found to develop and use remnant books rather than pictographic books. This seems to indicate that the use of real objects and photographs engaged the individual and family in communication that was more meaningful and allowed the patient to experience more success during treatment.

In addition to efficacy studies that document success with the dementia and aphasia populations, numerous studies have documented ways to implement AAC into a care plan to increase the chances of achievement. Arguably, the successful implementation of any AAC system relies fundamentally on allowing as much access to an AAC system as possible. Higginbotham, Shane, Russell, and Caves (2007, p. 244) defines AAC access as "any characterization beyond the individual and a particular type of AAC technology to incorporate a broader range of communication tasks, partners, and contexts within which communication interactions occur." In other words, providing an individual with AAC access means providing opportunities to converse with others, obtain information and request desired or needed items. However, proficiency in use of the AAC system does not occur by simply providing access for

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the individual. As stated by Light, Binger, Agate, and Ramsey (1999), providing access to an AAC system will not ensure the development of communicative competence in individuals who have severe speech impairments. They explained, "Assurance of competency of individuals who use AAC relies not only on the acquisition but also the integration in a variety of skills including linguistic, operational, social and strategic abilities" (p. 241). Linguistic skills are defined as the competency of the individual using AAC in the native languages spoken in the community. Operational skills referred to the technical skills required to operate the AAC system. Social skills referred to pragmatic skills of social interaction. Strategic skills referred to the individuals' ability to compensate for the functional limitations in the linguistic, operational, and social domains. It stands to reason that each of these domains is essential for successful and long term use of any AAC system.

Instructing caregivers to facilitate access and integrate the four domains is perhaps the most crucial component of successful implementation of AAC systems. Caregivers include, but are not limited to, spouses, family members, clinicians, nursing staff, and aides. Johnson, Inglebret, Jones, and Ray (2006) found that among the numerous factors that led to successful use of AAC systems, support was a noteworthy component. Lack of training for AAC users and caregivers was one of the factors that resulted in abandonment of AAC systems. They also discovered that it was essential to consider a family's perspectives in AAC implementation as family members can positively or negatively influence the use of AAC over time. Light, Dattilo, English, Gutierrez, and Hartz (1992, p. 865) found that "Historically, intervention to improve the communication skills of people using AAC systems has focused on the individual, with little attention on their speaking partners." They also stated that "service delivery should include (a) intervention with the person to ensure communication access (e.g., the linguistic, social, and system operation skills required for effective communication as stated above), and (b) intervention with the partners in the environment to ensure communication opportunities" (p. 865). Because there is a limited amount of documented research which has focused on training and incorporating conversational partners, Light et al. (Light, Binger, Agate, & Ramsey, 1999) sought to investigate the effect of caregiver training on the long-term maintenance of partner-focused questions (i.e., questions about communication partners and their experiences) by individuals who use AAC. Their reasoning was that, unlike competent, natural speakers who focus on others during conversation rather than self, individuals who use AAC do not ask appropriate questions in conversation or typically demonstrate an interest in others' experiences or feelings. Thus, the perception is that individuals who use AAC are less competent conversational partners. They determined that, with proper instruction, individuals who use AAC systems were able to produce spontaneous partner-focused questions in conversation and that those questions carried over to new communicative partners in new environments. Overall, they determined that most of the subjects in the study became competent communicators as a result of proper training and instruction in a variety of settings. It was determined that, for the AAC user and communicative partner, role-playing was an effective technique that provided opportunities for repeated practice and was determined to be effective for positive clinical implications. However, role-playing was effective only if the AAC user and communication partner replicated the real world as closely as possible, incorporated natural cues, and provided natural results. Proper caregiver instruction in the appropriate use of the AAC system not only facilitated and increased functional communication and initiation, but also seemed to encourage long-term use of the AAC system.

Along with providing access and opportunities for use of the AAC system in functional conversational environments, choosing the most appropriate system can be an important decision. Speech-language pathologists play a vital role in this process. Within the past 20 years, the advancement of AAC technology has resulted in a vast array of choices. Higginbotham et al. (Higginbotham, Shane, Russell, & Caves, 2007) stated, "Because of recent technological advances in the areas of scanning and direct selection, access to appropriate AAC systems has significantly increased in recent years" (p. 243). Dynamic AAC systems are able to

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make more sophisticated interpretations of the AAC user's intended message and are better able to adapt to meet an individual's increased usage and performance. Some examples of these technologies are adaptive scanning, eye tracking, brain interface, and automatic speech recognition (ASR). As a result of the advancing technology, requirements to be technologically savvy have also increased. Higginbotham et al. concluded, "Current and emergent access technologies continue to place significant physical and cognitive/linguistic demands on individuals with communication impairments and their communication partners" (p. 243). The manufacturers of dynamic AAC devices share in the responsibility of providing access to the most appropriate AAC system. Higginbotham et al. stated that of importance is the "ability of particular technologies to meet the social interaction demands associated with intended communication tasks and contexts" (p. 245). When considering a dynamic AAC device, several factors need to be considered. Preferences can differ depending upon whether someone has intact or developing language skills, wants to use e-mail or engage in face-to-face interactions, is ambulatory or uses a wheelchair, needs to interact with a few family members and caregivers at the end of life, or wants to participate in social gatherings (Higginbotham et al.). Also, comfort level and familiarity with a device is as important as the above considerations. For instance, speech-generating devices oftentimes produce speech that can sound unnatural and robotic, which can lead to decreased understanding by communicative partners, particularly older caregivers such as spouses. Differences exist with young and old listeners of synthetic speech produced by speech generating devices Sutton, King, Hux, and Beukelman (1995). They suggested that older persons could have a more difficult time understanding synthetic speech because of the physiological changes in auditory acuity that is associated with advanced age. The increased rate as well as the higher frequency of synthetic speech could lead to communicative breakdowns and result in frustration and eventual abandonment of AAC systems. Elder caregivers, such as spouses, could benefit from contextual, topic specific cues when communicating with dysarthric speakers (Jones, Mathy, Azuma, & Liss, 2004) and nonverbal gestures and first letter cues (similar to ones found on alphabet boards) could significantly affect speech intelligibility. Their study concluded that caregivers having to process severely dysarthric speech resulted in decreased attention over time which was particularly concerning with older communication partners. This shows that training caregivers to request semantic cues during conversation can be a critical component of a treatment plan. Again, the importance of caregiver training cannot be overstated.

Other studies have focused on training caregivers to facilitate AAC usage in various settings. Bourgeois, Dijkstra, Burgio, and Allen-Burge (2001) determined that the quantity and quality of communication interaction improved when individuals were provided with memory books and nursing aides and were trained to use the memory aide during care interactions and throughout the day. Ambiguous utterances, communication breakdowns and perseverative behaviors decreased with consistent use of the memory aide. In a case study by Lasker and Bedrosian (2001), it was determined that a community based approach to training a person with aphasia to use AAC is very effective. This community-based approach involved extensive evaluation and training to determine the most appropriate AAC device for the individual and caregivers. Extensive training in the use of the device both in the community and with as many unfamiliar partners as possible was the most significant factor impacting the individual's enthusiasm about using the device.

Clinicians working to incorporate AAC into treatment must become familiar with evidenced based practice and develop knowledge of what is available. With the increasing amount of information and technologies out there, it is the SLP's responsibility to stay current so as to better provide service delivery. In addition, most studies have concluded that further research and documentation of the effectiveness of the use of AAC with individuals with aphasia, dementia and geriatric populations are needed. Documented efficacy of AAC with these populations will help justify costs for third-party payers and guide clinical interventions. Of the existing documentation, it is clear that effective treatment starts with providing access

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to the individual who could potentially use AAC and continues with extensive user and caregiver training. Role playing for the user and caregivers was established as an effective intervention strategy as long as the treatment was functional and realistic. Also, training caregivers to obtain semantic cues in order to determine the context of the conversation decreases frustration and the inevitable communication breakdowns. In addition, decreased communication breakdown leads to a decreased abandonment of AAC systems and facilitates long-term use of the systems. With adequate training, selection of an appropriate system and caregiver support, AAC can be a viable tool for individuals with complex communication impairments.

References

Beukelman, D., Ball, L. J., & Fager, S. (2008). An AAC personnel framework: Adults with acquired complex communication needs. *Augmentative and Alternative Communication, 24*(3), 255-257.

Bourgeois, M. S., Dijkstra, K., Burgio, L., & Allen-Burge, R. (2001). Memory aids as an augmentative and alternative communication strategy for nursing home residents with dementia. *Augmentative and Alternative Communication, 17*(3), 196-210.

Higginbotham, D., Shane, J., Russell, S., & Caves, K. (2007). Access to AAC: Present, past, and future. *Augmentative and Alternative Communication, 23*(3), 243-257.

Ho, K., Weiss, M., Garrett, K. L., & Lloyd, L. L. (2005). The effect of remnant and pictographic books on the communicative interaction of individuals with global aphasia. *Augmentative and Alternative Communication, 21*(3), 218-232.

Johnson, J. M., Inglebret, E., Jones, C., & Ray, J. (2006). Perspectives of speech language pathologists regarding success versus abandonment of AAC. *Augmentative and Alternative Communication, 22*(2), 85-99.

Johnson, R. K., Strauss Hough, M., King, K. A., Vos, P., & Jeffs, T. (2008). Functional communication in individuals with chronic severe aphasia using augmentative communication. *Augmentative and Alternative Communication, 24*(4), 269-280.

Jones, W., Mathy, P., Azuma, T., & Liss, J. (2004). The effect of aging and synthetic topic cues on the intelligibility of dysarthric speech. *Augmentative and Alternative Communication, 20*(1), 22-29.

Lasker, J. P., & Bedrosian, J. L. (2001). Promoting acceptance of augmentative and alternative communication by adults with acquired communication disorder. *Augmentative and Alternative Communication, 17*(3), 141-153.

Light, J., Dattilo, J., English, J., Gutierrez, L., & Hartz, J. (1992). Instructing facilitators to support the communication of people who use augmentative communication systems. *Journal of Speech and Hearing Research, 35,* 865-875.

Light, J., Binger, C., Agate, T., & Ramsey, K. (1999). Teaching partner-focused questions to individuals who use augmentative and alternative communication to enhance their communicative competence. *Journal of Speech and Hearing Research, 42,* 241-255.

Lund, S. K., & Light, J. (2006). Long-term outcomes for individuals who use augmentative and alternative communication: Part 1-what is a “good “outcome? *Augmentative and Alternative Communication, 22*(4), 284-299.

Silverman, F. H., & Schuyler, H. J. (1994). Can AAC help persons with dementia? Augmentative *and Alternative Communication, 10*(1), 60.

Sutton, B., King, J., Hux, K., & Beukelman, D. R. (1995). Younger and older adults rate performance when listening to synthetic speech. *Augmentative and Alternative Communication, 11*(3), 147-153.

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