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Independent Study

Interprofessional Collaboration: AAC

Michelle Bird & Anna Kusior

Definition of AAC

Augmentative and alternative communication (AAC) is defined as “the term used to describe various methods of communication that can ‘add-on’ to speech and are used to get around problems with ordinary speech” (Communication Matters, n.d.). AAC is used so that individuals can communicate what they wish to communicate in the most efficient way and with minimal effort. Examples of AAC devices include switches, dedicated voice output devices, iPads, and communication booklets. Typically, individuals with severe speech deficits use AAC to supplement their speech, replace non-functional spoken language, or serve as their only voice. There are several different ways AAC can be implemented.

Components of AAC

AAC is a system that is made up of four components including symbols, aids, strategies, and techniques (ASHA, 2004). Symbols are used to represent language when an individual wants or needs to communicate. They can include graphic representations, photos, line drawings, tangible objects, sign language, or gestures. Aids refer to the modality which transmits the message. These modalities can be simple and inexpensive such as a page with pictures and words printed on it for an individual to point. They can also be expensive and high tech such as an iPad with a special program on it that will speak for the individual when they activate a button. Strategies indicate the way in which the symbols are conveyed to a listening partner in an efficient and effective way. The way in which buttons are laid out for a person using an AAC device can either aid or deter their communication skills. The last component is techniques; this is the way in which the message is accessed. An individual may use direct selection or scanning in order to convey their message. Direct selection is the faster option; this is when the individual

directly indicates what they are selecting, using active touching or eye gaze. Scanning is when the options, auditorily or visually, are presented to the individual one at a time, or in grouping, and the individual indicates the option they want when it is presented.

People who use AAC

According to the American Speech-Language and Hearing Association (ASHA, 2004), there are approximately two million Americans who have severe communication deficits to the extent that they are unable to communicate using speech or writing. We must therefore consider, how these individuals communicate their needs and wants to those around them. There are several underlying reasons individuals may need AAC in order to communicate. These include congenital impairments that negatively impact communication abilities, such as cerebral palsy, cognitive impairments, autism, and developmental apraxia of speech, in addition to acquired disorders such as stroke, traumatic brain injury, and amyotrophic lateral sclerosis (ALS; ASHA, 2004). Additionally, individuals who are temporarily unable to communicate due to illness or injury may require AAC methods.

Due to the diverse reasons individuals may require an AAC system, it is important for healthcare professionals other than speech pathologists to be aware of the communication needs of these individuals and AAC modalities they use. In the medical setting, these professionals include but are not limited to: doctors, nurses, occupational therapists, physical therapists, and social workers. In the school setting these professionals include but are not limited to teachers, administration, nurses, and paraprofessionals. A patient using AAC will need to be able to communicate with all other professionals/peers.

Evidence Base Practice for AAC

Evidence based practice is the integration of clinical expertise, research, and the patients' and caregivers' perspectives. Both nurses and speech-language pathologists must apply their clinical experience and training when working with their patients. It is each healthcare provider's responsibility to educate the other providers when there are voids in knowledge. This is certainly true when it comes to patients using AAC; not all providers are familiar with using such devices. In addition to professional education, it is important and necessary for the speech-language pathologists to educate the family/caregivers of the patient on the use of the device. In order for the patient to be able to communicate outside of therapy, the primary communication partner(s) need to understand the workings of the device to aid the patient. It is also important so that the patient is able to communicate with other professionals when the speech-language pathologist is not on hand. When choosing the best way to communicate for a patient, it is important to take into consideration the patient's and caregiver's perspectives. The mode chosen needs to be tailored to the individual so that they are able to get their needs met quickly with the least amount of effort. In addition, further research regarding AAC devices may be required in order for the speech-language pathologist to best be able to assist the patient. When looking for research about AAC it is best to search in multiple different journals so that a one-sided approach is not taken. Consulting other professionals who have used different methods so that they can provide an opinion and review can also be beneficial. Evidence based practice is used so that the patient can receive the best and most comprehensive care available (Schlosser, 2014, p.2-3).

Augmentative and Alternative Communication

ASHA (2005) defined AAC as follows:

Augmentative and alternative communication (AAC) refers to an area of research, clinical, and educational practice. AAC involves attempts to study and when necessary compensate for temporary or permanent impairments, activity limitations, and participation restrictions of individuals with severe disorders of speech-language production and/or comprehension, including spoken and written modes of communication (p. 1).

AAC represents a wide array of non-speech methods of communication. Individuals who produce unintelligible speech or are unable to speak may benefit from this type of intervention. Users of AAC come from all age groups, socioeconomic groups, and ethnic and racial backgrounds (Beukelman, 2012). The only characteristic that joins this population is their need for an adaptive system to communicate effectively. There are several underlying reasons individuals may need AAC in order to communicate. These include congenital impairments, such as cerebral palsy, autism, and developmental apraxia of speech, in addition to acquired disorders such as stroke, traumatic brain injury, and amyotrophic lateral sclerosis (ALS; ASHA, 2005). This does not take into account individuals who are temporarily unable to communicate due to illness or injury. AAC is used to address the complex communication needs of individuals with such impairments.

According to the National Institute on Deafness and Other Communication Disorders (2015) there are an estimated 46 million people in the United States who suffer from some form of disordered communication. In addition, there are even more people who have limited English proficiency, limited health literacy, and other unspecified differences that can hinder their effectiveness to communicate. These disorders and differences can make it difficult for these

individuals to communicate efficiently, especially during medical encounters. AAC intervention can help any of these individuals communicate more effectively.

Communication is necessary in all aspects of a person's life. For a patient to receive the best care possible they must be able to communicate with their providers and vice versa. "When communication barriers are not addressed, the patient may be at risk for potential adverse effects. Poor patient-provider communication often was a contributing factor to preventable harms" (Zubow & Hurtig, 2013, p. 80). Using alternative communication is one step healthcare providers can take in improving care and communication for patients.

Types of AAC

AAC is best thought of as a system; it is ever evolving in order to meet the patient's needs. According to Beukelman (2012), the ultimate goal of AAC is not to find a technological solution to communication problems but to enable individuals to efficiently and effectively engage in a variety of interactions and participate in activities of their choice. One must consider the individual, the listeners, environments, patient's physical limitations, patient's cognitive language level, and accessibility, among other things when choosing an AAC system.

AAC can be broken down into two major types of systems, aided and unaided. Unaided refers to non-verbal, natural communication, relying on the user's body to convey messages. This includes gestures, body language, facial expressions, sign language, or manual signs (ASHA, 2002). Aided communication systems require external support equipment in addition to the individual's body. There is a wide array of aided systems ranging from low tech to high tech. Aided systems include computers, handheld devices, tablet devices, communication boards, letter board, just to name a few.

Given the wide assortment of choices when it comes to AAC, providers must choose a system that is most effective for the patient to use. If technology seems to be the best option, there are several apps which can be downloaded. Appendix A shows cost effective apps which can be accessed in the hospital setting on devices most hospitals already own. Most of these programs can be tailored to each unique patient. If high level technology is not the best option, there are several lower technological communication systems patients can use. Aided systems can be used to provide general communication to all; these types of aids can be kept in each patient room. They can also be specifically tailored to the patient's needs. Appendix B goes into further detail about these aided communication systems.

AAC in the Medical Setting

Healthcare providers need information from the patient in order to provide them with the best care possible; it is difficult to provide appropriate care if the patient is unable to communicate. "Effective patient-provider communication is fundamental to patient-centered care and correlates strongly with better patient outcomes, as well as increased patient safety and patient satisfaction" (Wilson-Stonks & Blackstone, 2013, p.69).

In order to have patients in command of their own healthcare they must be able to effectively communicate with providers and loved ones. A demographic study was conducted by the University of Iowa at one local hospital in order to determine the number of patients who require AAC or assistive technology to communicate effectively. Based on this study's criteria, it was found that 7% of the hospital's total inpatient population and 33% of ICU patients met the candidacy criteria for AAC services. In addition, 14% of the inpatient population and 33% of the ICU population met the assistive technology candidacy criteria (Zubow & Hurtig, 2013, p.84).

These data are limited to one hospital, but it shows that there is a significant need for patients to have access to alternative communication devices and technology.

There is an absence of awareness among healthcare providers for a wide array of reasons. Wilson-Stonks & Blackstone (2013) state that “This lack of awareness, limited time given to communicate, and poor utilization of available resources all contribute to a health system, that, despite the movement towards “patient-centeredness”, is fundamentally not focused on the patient’s need for effective communication” (p.74). Although hospitals may have certain communication resources available to them, they are of no use if providers do not know how to implement them. Speech-language pathologists need to raise awareness and knowledge about effective communication strategies.

Reflection of Simulation Labs

We made our video keeping our simulations in mind. Both a nurse and a speech-language pathologist are present in the video just like in the simulations. Our video depicts a patient post-stroke who has lost the ability to communicate verbally and their sister. The simulations we did for the first part of this experience helped get us out of our comfort zone and gave us the opportunity to work with nurses. It also allowed us to gain understanding of what it would be like to work with real patients and family members. I would have preferred if we had more feeding knowledge along with knowledge about the patient’s disorder. In doing our own video we were familiar with the use of AAC devices and how we could help patients who are unable to communicate verbally. In our simulations we did not possess enough knowledge to effectively help the patients or the nurses. When making our video we were able to depict how to and how not to approach patients. I wish that during our simulations we would have been given more guidance about how to properly approach patients. I feel confident working with other healthcare

professionals and patients who require AAC devices, but I don't feel confident when it comes to other special needs and disorders. I believe that getting more information and guidance through the simulations would have been beneficial to our learning.

Interprofessional Education (IPE)

In order for speech-language pathologists to raise awareness, interprofessional education (IPE) is necessary. Barr, Koppel, Reeves, Hammick, and Freeth (2005) define interprofessional education as "...instruction that transcends siloed, discipline-specific methodologies by emphasizing learning alongside and from members of other disciplines. Its primary objective is improved practice and patient/client care." (as cited in Ogletree, 2015, p. 67). Most professions that work with patients requiring speech services do not have any background or knowledge regarding AAC and how to work with patients that use this method of communication. Therefore, IPE should be occurring every day in the medical field. Professionals would have a better understanding of AAC and, as a result, enhance their ability to better serve their patients. However, most professionals, including speech pathologists, have not learned about this IPE until they are already in the field. As such, in order to better incorporate this into the medical setting, higher education curriculum needs to include IPE to be introduced before students graduate.

Training Students in Higher Education

Providing an opportunity to learn about IPE and practice the use of it in higher education can enable students to generalize their learning of IPE in the workplace. Some patients have deficits in several areas and require services from multiple professionals. In order to better service patients and their families, all professionals involved in the care of the patient have to

collaborate with one another to make sure the best services are being provided. As stated previously, each professional works together to teach and learn from each other about their respective professions. This enables the team of providers to better help their patients. The concept of interprofessional education in higher education programs is a more recent topic being discussed in the medical profession. Billy Ogletree (2015) from Western Carolina University suggests that interprofessional education should be implemented into speech-language pathology graduate programs:

A broad-based commitment to IPE will require graduate programs in speech-language pathology to re-think traditional approaches to education. New training paradigms will have to emerge predicated on cross-disciplinary interaction and sharing of core disciplinary content. All of this must occur while graduate programs continue to train discipline-specific competencies required for accreditation and needed for recommended practice (p. 70).

IPE is not easy to implement and will take time to integrate into higher education programs. Faculty, students, and other parties involved must dedicate time and commitment in order for IPE to be successful. A suggested starting point from Ogletree (2015) is the use of:

cross-disciplinary goal-setting and planning. Examples include bringing others together to establish instructional themes, plan curricular emphases (e.g. separate and joint classes, case studies, discussion groups, grand rounds, etc.) and generate or modify existing clinical training opportunities. Meaningful IPE planning is more likely to occur if instructional faculty members are well-versed in the core competencies of IPE. (p. 70)

Seton Hall University is an example of a school that has started the process of incorporating IPE into their curriculum. Activities related to IPE were integrated into both undergraduate and graduate programs. Examples of activities include small group interdisciplinary discussion, observation of IPE in the workforce, attending lectures with guest speakers, video case analysis in interdisciplinary groups, and volunteer opportunities involving IPE. To measure the quality of the IPE activities, students and faculty filled out a pre and post survey about their experiences with IPE. Students commented that through the experiences they participated in, they gained a better understanding of IPE and its importance. The task force behind this project is continuing to refine the program and include specific populations.(Neubauer, Dayalu, Shulman, & Zipp, 2014)

The end result of incorporating IPE in higher education is increased preparedness and competence for students when they graduate their respective programs. Schools like Seton Hall University are implementing this education, but it is not changing quickly or vastly enough to equally meet the needs of all patients (Robert W. Johnson Foundation, 2011).

Research on Interprofessional Education

Although the topic of interprofessional education is relatively new, ASHA and others (e.g. Ogletree, Braddock, Robert Wood Johnson Foundation) recommend implementing this concept into higher education. Currently, there is no formal research to measure the effectiveness of interprofessional education, but a committee from the Institute of Medicine (IOM) has been convened to further look into this matter. Additionally, the Advisory Committee on Interdisciplinary Community-Based Linkages (ACICBL) wrote in their 13th annual report (October 2014) about the benefits of interprofessional education. Advantages include lower care cost, improved patient care, and improved safety for patients. Consequences for poor

collaboration include repetitive testing/services, under or over served patients, high costs, and several medical mistakes.

AAC and Interprofessional Education

Patients with AAC will most likely require the services of professionals outside of speech-language pathologists such as physical therapists and nurses. As a result, interprofessional education is important for this population to provide effective services. Downey and Happ (2013) explain that in order for the patient to have equal opportunity in services, SLPs need to train other professionals about the use of AAC to “meet the communication needs of all their patients” (p. 115). An SLP has knowledge on how to use AAC with patients that have complex communication needs. Other professionals however have not necessarily learned about AAC in their higher education curriculum. Professionals may have patients that require AAC and therefore the professional will need basic AAC training to communicate effectively.

If SLPs do not train nurses and other professionals on how to use AAC with their clients, it will be much more difficult for the other professionals to execute their job properly because the communication between patient and professional will be impaired. The professional that works with the patient has to understand what the patient is trying to communicate to them in order to fulfill their needs. Therefore, the professional needs to understand how to use AAC with the patient in order for the patient to understand what is being said to them. Other authors, such as Ogletree (2015), also highlight the importance of interprofessional education with AAC. Specifically, Ogletree noted IPE training that occurs in higher education and beyond could “...ease transitions to AAC service delivery by contributing to professional prepared for collaborative practice.” (pp. 72-73)

With successful interprofessional education, all members involved in the team can further enhance their patient's treatment through proper communication with AAC. Professionals can better communicate with their patients and use their patient's input to determine whether current treatment is effective or not. With that patient input, the professional can adjust treatment if necessary to better serve the patient. Interacting with different professions will give professionals practice in collaboration and they will become more knowledgeable of other professions. Having better collaboration and more knowledge about other professions provides extra support for the professional to work with the patient in areas outside of their scope of practice. Braddock (2015) remarks: "It is through interprofessional collaboration that SLPs work tirelessly to promote family goals to more completely meet the needs of individuals with severe communication disabilities" (p. 65). This can also be applied to other professions. Each individual member of a multidisciplinary team plays a role in the care of a patient and executes that role to the best of their ability. Working with the rest of the team will expand on what other individual members can do on their own and this will in turn help the patient more than the one member could do individually.

Reflection of Simulation Labs

I was very nervous at first when we started the simulation labs. I have never done anything like this before and I did not know the nursing students at all. I felt uncomfortable for the first simulation because I did not know what to do or what to expect and it was hard to collaborate with one another. However, the simulation got better after the first time because I knew what to expect and I felt more comfortable working with the nursing students. Overall, I like the idea of working with the nursing students and the simulations were a great way to practice interprofessional collaboration. The actors were great and very friendly. I never realized

how fast paced the hospital setting is until we did the simulation. I wished I had more time to look at their chart in detail for each simulation, but in the hospital setting, you do not get very much time to look over their chart before seeing the patient. There were some basic things that I never thought of while in the simulation labs. Something as simple as talking to the person at eye-level or shaking the patient's hand that was not affected by their stroke did not cross my mind. I feel more prepared for the hospital setting after completing these simulation labs.

I did not like the classes because I felt like the information being covered was repetitive of what I have already learned. The collaboration activities were fun and meaningful, but in terms of slideshow content, I have already learned most of it. I think it would have been more beneficial to have a class for speech students to learn more about nursing and vice versa. I learned a lot about collaboration with not only the nursing students, but also my fellow peers. Having the nursing student work on one thing with the patient while I work on something else was difficult to coordinate, but I know it is more beneficial for the patient and saves time for the nurse and myself. Although I enjoy the topic I chose for the paper, I wish we had learned more about AAC in the hospital setting through a class or as part of a simulation lab. It would have been beneficial for the nursing students to learn about it because they will have clients that require AAC and the SLP will not always be there to provide guidance/resources in order to use AAC with a patient.

Appendices

Appendix A

This is by no means a comprehensive list of apps available. Here are just a few cost effective options hospitals and providers can look into trying with patients. A simple search in the app

store or online will turn up a plethora of AAC options. It is important to keep the patient in mind, making sure the app suits their needs appropriately.

App	Price & Description
Yes/No	Free – A simple app that allows patients to click yes or no in response to questions.
Verbally	Free (Premium Version \$99) – This app offers preloaded words and phrases. In addition, there is a textbox which provides a text-to-speech option for the patient.
Alexicom AAC	Free – Provides 15 demo pages, the ability to create your own pages, record your voice, text-to-speech, and add your own photos into pages. There are paid upgrades available which will provide additional pages.
SmallTalk	Free – this company provides multiple apps for different contexts. There is an app for daily activities which provides phrases and words needed to participate in such activities. Other SmallTalk apps include: conversational phrases, common phrases, pain scale, intensive care, aphasia, and dysphagia.
2CanTalk	\$14.99 – This app is customizable to convey the patient’s wants, needs, and preferences. It combines pictures of objects and corresponding voice recordings.
Go Talk Now	\$79.99 – Provides adjustable page layouts, customizable navigation, recorded speech, and text-to-speech. It also allows for picture scenes. Picture scenes are a picture one can upload to the app and make certain things in the photo ‘hot spots’, when the user clicks on one of these it says the programmed phrase.

*All information retrieved from the App Store on Apple iTunes.

Appendix B

These aided communication systems do not require technology and are very affordable.

Hospitals can have such systems stored in each room or at the nurses station so that they are easy accessible for patients who need assistance communicating.

Aided System	Explanation of System
Communication Board	A simple paper with words or phrases written on it. The patient points to what they want to say. There are several different ways these can be designed: just text, just pictures, text and pictures, phrases, sentences, etc. For bilingual patients these boards can be made in their primary language and a duplicate board can be made in English so that they can communicate using their native language and the direct translation will be located on the English board.
Letter Board	This is a simple print out of the alphabet. The patient will point to the letters to form words to communicate with others.
Yes/No Switches	Two different colored switches that say ‘yes’ and ‘no’ when pressed. This may be a good option for clients with poor fine motor skills.
Visual Schedule	This is a schedule either of the day or it can be steps to a procedure. Most patients are weary of the unknown, having a schedule of what will be happening that day or of what steps occur during a procedure can help put a patient at ease. These schedules can contain either text or pictures or both.
Dry Erase Board	Certain patients understand better when given visual prompts. Reading instead of listening may be a better option for some. A dry erase board can also be used to write choices for patients and have them point to the item they desire.
Pain & Body Chart	Most hospital rooms provide patients with a pain chart, but a body chart will take it to the next level. Using both a patient can point on the body chart to the part of their body that is hurting them and use the scale to communicate how much pain they are in.

Video Takeaways

This video depicts a post-stroke patient, who cannot communicate verbally. The patient’s sister is present; she helps the patient communicate with medical staff. The video is divided into 2 parts: what not to do and what to do. The first “what not to do” video depicts both the nurse and the speech-language pathologist (SLP) communicating solely with the patient’s sister. The healthcare providers are not trying to communicate with the patient at all and act as though the patient is not in the room since they are unable to communicate on their own.

In the second “what to do” video both healthcare providers address the patient and the patient’s sister. When asking questions they directly address the patient despite their inability to communicate verbally. The SLP provides the nurse with multiple low-tech ways of communication. Providing the patient with a pain scale and a body chart they can better communicate their pain levels and where exactly their pain is located. A simple print out of a communication board allows the patient to point to words and communicate with the world around them. If the patient has the ability to write a dry erase board can be provided so that they can communicate thoughts that they are unable to using the communication board exclusively. In addition, the dry erase board can be used to write choices for the patient to choose from and to write out the patient’s schedule for the day. Writing a schedule for the patient may lessen the anxiety of not knowing what they will be doing and it will allow them to better plan their day. This video emphasizes the importance of communicating with the patient and providing them with a means of communication.

The viewer would follow a simple worksheet while watching each section of the video. The questions are the same for both videos. The questions are meant for the viewer to analyze the healthcare provider’s actions along with the reactions of the patient and family member. In addition, the viewer can input their own thoughts and address any changes they think should be made. It is our hope that the viewer can use this video as a guide for how to properly work with patients and their families in a hospital setting.

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Video 1	Video 2
<ul style="list-style-type: none"><li data-bbox="250 300 659 331"><input type="checkbox"/> Describe the nurse's actions <li data-bbox="250 558 683 625"><input type="checkbox"/> Describe the speech-language pathologist's actions <li data-bbox="250 852 704 919"><input type="checkbox"/> How did the patient react to the healthcare provider's actions? <li data-bbox="250 1146 781 1251"><input type="checkbox"/> How did the patient's family member react to the healthcare provider's actions? <li data-bbox="250 1444 615 1476"><input type="checkbox"/> What are your thoughts? <li data-bbox="250 1665 626 1696"><input type="checkbox"/> What would you change?	<ul style="list-style-type: none"><li data-bbox="868 300 1278 331"><input type="checkbox"/> Describe the nurse's actions <li data-bbox="868 558 1300 625"><input type="checkbox"/> Describe the speech-language pathologist's actions <li data-bbox="868 852 1321 919"><input type="checkbox"/> How did the patient react to the healthcare provider's actions? <li data-bbox="868 1146 1398 1251"><input type="checkbox"/> How did the patient's family member react to the healthcare provider's actions? <li data-bbox="868 1444 1232 1476"><input type="checkbox"/> What are your thoughts? <li data-bbox="868 1665 1243 1696"><input type="checkbox"/> What would you change?