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Background

A developmental disorder common in the world today is ASD. ASD is characterized as a developmental disorder diagnosed by assessing specific impairments related to communication, language, and emotion (Ravet & Williams, 2017). ASD is common, affecting 1 in 59 children born in the United States (Centers for Disease Control and Prevention, 2019). In recent years, the prevalence of ASD has increased greatly. According to the Centers for Disease Control and Prevention (2019), this increase in the ASD population is likely due to a combination of many different factors. Some factors influencing the prevalence of ASD are the increase in research over the years, a more general definition of ASD, and more public awareness of ASD (Centers for Disease Control and Prevention, 2019).

Individuals with ASD exhibit deficits in the areas of communication and social interaction. According to Saulnier and Klin (2007), although some individuals with ASD have strong cognitive abilities, their social and communication skills are often lacking. They found “adaptive communication and socialization skills do not keep pace with chronological development” (Saulnier & Klim, 2007, p. 788). In regards to communication, individuals with ASD may display difficulties understanding and using language, following directions, and following along in conversations. They may also be difficult to understand, repeat things they have heard, and use little language (ASHA, 2020). In regard to social skills, individuals with ASD may display difficulties engaging in conversations with others, making friends, engaging with peers or friends, and understanding emotions and feelings of others (ASHA, 2020). These deficits can make it difficult for individuals with ASD to form relationships as well as communicate their wants and needs with others.

For individuals who are unable to communicate using speech, many different forms of augmentative and alternative communication (AAC) are available to help improve their communication abilities. AAC is defined as, “an integrated set of components, including symbols, communication ancillaries, strategies, and techniques used by one individual to support communication” (Gorenflo & Gorenflo, 1991, p. 19). AAC comes in a variety of different forms and can be suited to best fit an individual and their communication needs. The purpose of AAC is to utilize the abilities the individual does have in order to compensate for their limited verbal communication (Chirvasiu & Simion-Blândă, 2018). AAC gives those with limited communication a way to interact with those around them.

Within the field of AAC, there are three distinct categories of different forms of intervention available. Each form of AAC in these categories aims to assist and promote communication for those who do not have the ability to do it on their own. The three categories are no-tech (i.e., sign language or gestures), or unaided AAC, aided low-tech AAC (i.e., written words, picture exchange), and aided high-tech AAC (i.e., speech generating devices, iPads) (Chirvasiu & Simion-Blândă, 2018). Within each category, there are various forms of AAC that can be used to aid in communication and interactions with others.

Purpose

As stated previously, Autism spectrum disorder (ASD) is defined as, “a neurodevelopmental disorder characterized by persistent deficits in social communication and social interaction, and restricted, repetitive patterns of behavior, interests or activities” (Feng et al., 2018, p. 2). Due to the wide range of symptoms present across individuals with ASD, it is important for researchers and other professionals to understand what interventions are appropriate for this population. A common type of intervention used for individuals with ASD is augmentative and alternative communication (AAC). AAC is a group of interventions designed to help or replace language when a person is unable to fully use language on their own (Chirvasiu & Simion-Blândă, 2018). AAC may be an appropriate intervention for promoting communication skills for this population, especially considering the number of individuals with ASD who do not have enough speech to meet their daily needs. AAC may provide more resources and opportunities for individuals with ASD to communicate with people and the world around them. The purpose of this research is to determine appropriate types of AAC that benefit individuals with ASD.

Methods

In order to find evidence-based literature, the following databases were used: Academic Search Complete, CINAHL, EBSCOhost, PubMed, and MedLine. When searching in each database, the following terms were used: Autism Spectrum Disorder (ASD) AND communication, ASD AND social interaction, ASD AND Augmentative and Alternative Communication (AAC), ASD AND low tech AAC, ASD AND high tech AAC, ASD AND no-tech AAC, ASD AND family interaction. Studies were included based on the following criteria: published in English, published in peer reviewed journals, and researched individuals with ASD and their communication or AAC.

Results

Results of the research found that there are advantages and disadvantages associated with each form of AAC. When selecting a form of AAC for an individual, it is necessary to weigh the options to find out what best works for the individual to maximize their communication abilities.

Another key factor that can be either positive or negative when associated with AAC selection is the level of family involvement. For AAC communication to be most effective, there must be involvement from the family to assist the individual (ASHA, 2019). Family members are the most common communication partners of individuals using AAC. With increased family involvement, individuals become more successful at using their AAC device (Blacstone & Williams, 1994). If there is a difficulty in using a specific form of AAC, a minimally verbal individual likely will not be able to express difficulties they may have. If family members are involved, they can advocate for the individual to help optimize AAC use, which can lead to an increase in communication. If the family is not involved, issues with AAC use may not be noticed. With no one to advocate for the minimally verbal individual, difficulties present when using AAC cannot be resolved. If an individual is unable to correctly use a form of AAC, their communication attempts may go unnoticed. If others are not responding to an individual’s communication attempts, that person may decrease the amount of attempts they use. According to Rankin et. al., (2019), familial involvement in ASD intervention can reduce feelings of stress for the parents. Family involvement can greatly impact the use of AAC use for minimally verbal individuals with ASD.

Individuals with ASD may benefit from the use of AAC for multiple reasons. Around 30% of individuals with ASD are unable to express their wants and needs using verbal communication (Lorah, 2016). Without spoken language abilities, these individuals have no way to express their wants and needs. AAC can replace the spoken language and give these individuals the opportunity to communicate with those around them (Dundon, et. al., 2013). AAC can give these individuals a voice which they would not otherwise have. Individuals with ASD may have both receptive and expressive language difficulties (ASHA, 2019). According to Chirvasiu & Simion-Blândă, AAC can benefit individuals who “require augmented language” (2018, p. 31). These individuals may not fully understand language and may have difficulty understanding or producing language through spoken language.

Another reason AAC benefits individuals with ASD is because they are visual learners (Manitoba Education, Citizenship and Youth, 2005). AAC provides a visual representation of language to better help them communicate with others. Most forms of AAC have visual words or pictures on display to aid in communication. When the individual with ASD is able to see the visual of the word or concept they want to communicate, they have more support from the device than they would otherwise (Manitoba Education, Citizenship and Youth, 2005). AAC helps to facilitate language by providing visuals for the individuals.

The results of this research showed aided AAC had a positive impact on communication skills for individuals with ASD. They also found these forms of AAC also promoted social skills and help to decrease the occurrence of troublesome behaviors (Ganz et al., 2011). Although there were disadvantages to both aided low-tech, and aided high-tech AAC, research showed different forms of AAC promoted positive communication and behavioral skills in individuals with ASD who were minimally verbal.

Discussion

As the prevalence of ASD increases, it is important for the general population, as well as clinicians to have a greater general understanding of the difficulties and needs these individuals may need. For nonverbal individuals, AAC is a way to increase communication and social interactions with others. AAC can increase language in individuals with ASD (Ganz et al., 2011). Teaching manual sign can lead to an increase in communication (Leech & Cress, 2011). Studies showed PECS promoted an increase in communication and was beneficial for individuals with limited joint attention skills, a desire to explore and understand objects, and poor motor imitation skills (Simpson, 2011). When given the choice of an AAC system, studies indicated individuals typically chose a SGD over another form of AAC, but typically showed gains in each form (Lorah, 2016).

Although there are pros and cons to the different forms of AAC, many different types of AAC may work for different people. An individual can use unaided, aided low tech, and aided high tech AAC systems. Within each system, there are advantages and disadvantages. Unaided AAC methods require nothing except for the communicator and their partner, but it may be more difficult to know what the individual is trying to communicate (Sigafos & Drawgow, 2001). With aided low tech, the individual has additional visuals to help easier facilitate language (Leech & Cress, 2011). In order to use aided low-tech however, the individual must bring it with them at all times when they want to communicate (Chirvasiu & Simion-Blândă, 2018). With aided high tech AAC, the individual can have a vocal output as well as visual concepts with their device (Nam et. al., 2018). A disadvantage to high tech AAC is that it is often very expensive for the user (Chirvasiu & Simion-Blândă, 2018). Each form of AAC may benefit an individual based on their needs and preferences.

As a Speech-Language Pathologist (SLP), it is important to find what works for each individual when deciding what AAC system would be benefit them. SLP’s should be aware of the different factors that play into choosing and using an AAC device for an individual. The SLP should incorporate family involvement. As seen in the research, preference for each form of AAC depends on the individual. If there is a possibility an individual with ASD may need some form of AAC, it is important for the SLP trial different forms and techniques to find what best works for the individual. They must find out what the individual needs to communicate most, what their interests are, and what type of display will work for the individual. Each form of AAC can promote speech in individuals with ASD, but it is important to figure out what will best benefit that individual.

Conclusions

There is a substantial amount of research available related to various types of AAC and its relation to ASD; however, AAC is always improving and evolving, and it is important for research to be current and accurate. Although previous studies have yielded plenty of findings, it would be beneficial for future research to explain more current pros and cons of each form of AAC from the perspective of individuals who interact with these materials and devices on a daily basis.

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