



## Background

### Cerebral Palsy

- Cerebral palsy is the most common physical disability in the child population, occurring approximately in every 2 to 2.5 per 1000 live child births (Reddihough & Collins, 2013)
- Cerebral Palsy is an encompassing term for sensorimotor disorders in children with or without communicative and cognitive deficits (Bhatnager, 2013)
- The four types of cerebral palsy include: spastic, dyskinetic, ataxic and mixed type.

### Augmentative and Alternative Communication (AAC)

- Individuals who are unable to communicate effectively by using conventional speech are in a situation where an AAC system could help to compensate for lack of speech or to replace unintelligible speech (Ganz et al., 2011)
- Types of AAC include both unaided and aided systems
  - Unaided: gestures, body language, facial expressions, sign language
  - Aided: basic or high-tech, speech generating, communication boards, etc.

## Purpose

Previous research studies have examined parent and patients with cerebral palsy views of AAC use, in conjunction with prevalence of use. Further research is required regarding encompassing aspects of AAC use including training programs, utilization of AAC, and overall view or opinion. This current research paper investigates these important facets related to cerebral palsy and AAC systems present today.

## Methods

A comprehensive search of four electronic databases included: Academic Search Complete, CINAHL Plus with Full Text, eBook Academic Collection (EBSCOhost), and MEDLINE with Full Text

Preliminary search terms included “cerebral palsy” and “AAC”.

- A total of 228 studies were found using these search terms and databases.

To limit the amount of studies:

- search terms of “children” and “use/ usage” were included
- studies were only considered if they were published after 2010.

A total of 34 studies were identified using these additional search terms and requirements.

- Final inclusion considerations were studies that were written in English and contained all four of the search terms.
- In addition, studies were limited to only those that included research about AAC utilization of children with cerebral palsy.
- Studies focused on creation of new programing and those not focused on the specific population of investigation were excluded.

The search process uncovered 15 studies published from 2010 to 2019.

## Results

Individuals with cerebral palsy may need an AAC device to communicate all the time, while others may only need the device to communicate in settings with unfamiliar partners. Consequently, it is important that these individuals can use their device to communicate when they need and want to.

- Research of this topic found five studies ranging from 2010 to 2015.

Exploration of studies uncovered that numerous children who are provided an AAC, or could benefit from one, are either not provided an AAC or do not utilize the device to communicate in specific settings.

- Benefiting from an AAC device involves helping the child with communication deficits to communicate basic wants and needs, as well as communicating to both familiar and unfamiliar individuals.
- A theme regarding specific deficits of individuals that could benefit from AAC was uncovered through investigation of several studies.

While it is imperative that the individuals using the device understand how to manage, manipulate and navigate the system, the caregivers and other individuals interacting with the AAC user require knowledge of how to use the systems as well.

An individual who is familiar with a system is more equipped and confident to engage with an AAC user. Training programs are a consideration for parents, teachers, therapy providers, and other peers’ success in communicating with individuals who use AAC systems.

- These factors would improve the use of devices in all communication settings. Six studies investigating assistance of using AAC devices were uncovered ranging from 2010 to 2015.

A positive view of using AAC devices should be present in users and communication partners so that implementation is high.

- Review of literature found six studies ranging from 2011 to 2019.

With several AAC devices available to choose from, it is necessary to determine a specific AAC device ideal for the communication needs of an individual with cerebral palsy. These devices then need to be used by the individual to improve the ability to communicate in different settings. To assist with the communication process, children require support from individuals such as parents, teachers, and peers. Education for communication partners in regard to navigation and simple access methods of systems would benefit both sides. It is necessary to analyze all of these aspects when discussing the use of AAC devices for individuals with cerebral palsy.

## Discussion

Through thorough investigation of literature, three common themes emerged:

1. Results revealed that children who would benefit from AAC, do not use the device.
  - Individuals do not utilize their devices to their full ability due to communication barriers and unfamiliar users not being able to understand the devices. The decreased understanding by outside communicators was due to a lack of education regarding the AAC systems. Children using the devices were stuck in communicating with only familiar people due to the knowledge of complications attempting to engage with other, unfamiliar partners.
2. Further education of the systems need to be assembled to inform individuals who interact with these children.
  - Education about using these devices could benefit both the children using the devices and the communication partners (e.g., parents, doctors, community members). Acquiring more information of how to use a difficult device will allow for a smoother communication interaction and greater knowledge and understanding of how a device will benefit a child in communicative actions with other individuals.
3. Overall positive view of AAC devices from children and parents.
  - An overall positive view was reported. The contrasting view occurred when high tech devices were implemented, when features of the devices were difficult to use, and when parent opinions negated the utilization of an AAC device. The lack of education and personal regard resulted in a negative view of the device and is a possible reason why systems are not being utilized in unfamiliar settings.

## Conclusions

Three main themes of this study can be analyzed and compared with one another. It is evident that a generally positive view is held by the AAC users and communication partners. This is contradictory of a constant occurrence of children not using their devices in communication opportunities. If a positive view is held by partners and children with cerebral palsy, this should consequently increase and encourage device use. However, this is not apparent. The main indicator of why a system is denied and rejected to interact constantly circles back to lack of knowledge and education. If this disconnection was repaired, increases in usage and a greater positive view by all would result.

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