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Talking the Talk: Barriers to Culturally Responsive Iconographic Selection on Augmentative Alternative Communication Devices

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TALKING THE TALK: BARRIERS TO CULTURALLY RESPONSIVE ICONOGRAPHIC SELECTION ON AUGMENTATIVE ALTERNATIVE COMMUNICATION DEVICES

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Talking the Talk: Barriers to culturally responsive iconographic selection on AAC devices

ABSTRACT

The current study investigated the lived experiences of alternative augmentative communication (AAC) users who are BIPOC (Black, Indigenous, and People of Color) and their caregivers during the AAC assessment and intervention stages of treatment. This study primarily focused on the processes experienced and used to select icons to be used on a client's AAC device. Secondarily the study investigated the lived experiences of Speech-language pathologists in relation to AAC practice at the assessment and intervention stages. The primary investigation centered on icon selection for use on a client's AAC device. A dearth of literature focuses on the AAC process in relation to the BIPOC population. By exploring their lived experiences, it was possible to determine areas of strength and weakness in AAC practice related to BIPOC individuals and icon selection. Furthermore, this study is positioned to identify areas where improvements in training and education could be made to ensure culturally responsive practices are at the forefront of decision-making in AAC services.

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Chapter One – Content and Purpose

Introduction

It is estimated that four million Americans are diagnosed with complex communication deficits requiring augmentative alternative communication (see Table 2) in some form (Beukelman & Mirenda, 2014; Beukelman & Mirenda, 2020). This population includes children and adults with apraxia of speech, autism, or physical limitations related to conditions such as cerebral palsy, amyotrophic lateral sclerosis (ALS), and dysarthria (see Table 1). These conditions limit options to communicate with the broader world and often necessitate using an augmentative alternative communication (AAC) device or system that replaces or supplements expressive communication. These four million Americans represent the vast cultural diversity that makes up the population of the United States, including African American, Latin@, Asian, Middle Eastern, Native American, and White. With such a large and diverse population requiring AAC, professionals continually refine procedures to ensure these individuals have the necessary resources to learn, meet needs, and express their cultural experiences.

Table 1:

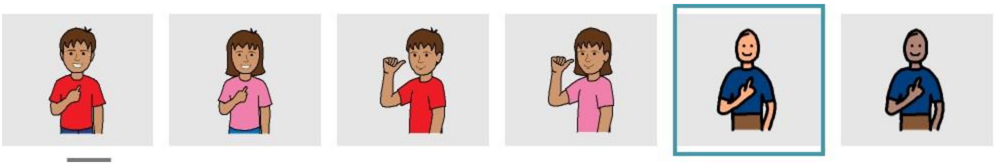
Medical conditions that may require AAC

Condition	Definition
Cerebral Palsy	A medical condition resulting in gross and fine motor impairments, including movement necessary for speech production.
ALS	Amyotrophic Lateral Sclerosis is a medical condition that causes the death of motor neurons resulting in total paralysis.
Apraxia	Medical condition caused by an inability to motor plan fine movements for speech production.
Dysarthria	A medical condition that results in imprecise articulatory movements or an inability to move articulators for speech production
Autism	A neurodevelopmental condition with varying degrees of impact, affecting all areas of development, including communication and social interaction

Language is cultural, and AAC systems serve as an extension or replacement of an individual's natural speech and language. Considering that a large portion of AAC intervention includes the programming of AAC systems around the needs and interests of the client, icon selection during assessment and intervention for those individuals is essential. The importance of culturally responsive practices within the field of speech-language pathology is well documented (Beukelman & Mirenda, 2013). ASHA the American Speech-Language and Hearing Association in their position statement *Cultural responsiveness* (n.d.) concluded that cultural responsiveness is necessary for providing appropriate speech and language services. ASHA's position statement *Cultural responsiveness* (n.d.) contends that the accurate differential diagnosis between language impairment deficits in the use and comprehension of language, language learning deficits in the ability to learn language, and dialectal differences variations of speech and language based on geography and culture requires a focus on culturally responsive practices an approach that accounts for the cultural experiences of the person that uses AAC and the clinician can assist in making more appropriate treatment decisions (*Cultural Responsiveness*, n.d.). ASHA goes further to identify areas where culturally responsive techniques should be employed, including the selection of treatment methods and modalities, incorporation of the families as members of the intervention team, the acceptance of the belief systems of clients related to professional interventions, and a host of additional services that are imperative for the appropriate provision of culturally responsive interventions (*Cultural Responsiveness*, n.d.). While Speech-language pathologists have made strides in adopting culturally responsive services, some service delivery areas have been almost entirely neglected within extant literature. One such speech-language pathology (SLP) practice area where the limited movement toward cultural responsiveness is evident is augmentative alternative communication. This study aims to identify the lived experiences of Black, Indigenous, or People of Color (BIPOC) AAC users, caregivers of BIPOC AAC users, and speech-language pathologists regarding the selection of icons (Figure 1) during the assessment and intervention processes and how they support the cultural experiences of the AAC user.

Figure 1:

AAC Images of me



This study focused on the lived experiences of three populations: BIPOC users of AAC, caregivers of BIPOC users of AAC, and speech-language pathologists engaged in AAC services. The following primary research questions were investigated:

Main questions

R1: What are the lived experiences of speech-language pathologists working with clients that use AAC regarding the selection of AAC iconography for BIPOC clients and their families?

R2: What are the lived experiences of BIPOC users of AAC and their caregivers regarding the selection of AAC icons on their devices that reflect their culture?

Additionally, three similar sub-questions were designed for each type of study participant. These sub-questions allow for further centering within the varied processes that occur when working with AAC. The sub-questions are detailed below.

Sub-questions (SLP):

R1A: How do Speech-language pathologists experience the icon selection phase of assessment?

R1B: How do Speech-language pathologists experience AAC icon selection during the ongoing intervention process?

R1C: What additional considerations do Speech-language pathologists experience when working with users of AAC that are BIPOC?

Sub questions (Families/Caregivers):

R2A: How do caregivers of individuals using AAC experience the icon selection phase of assessment?

R2B: How do caregivers of individuals using AAC experience AAC icon selection during the ongoing intervention process?

Sub questions (Users of AAC):

R2C: How do users of AAC experience the icon selection phase of assessment?

R2D: How do users of AAC experience AAC icon selection during the ongoing intervention process?

R2E: What does cultural representation mean to BIPOC AAC users and families of individuals using AAC?

Table 2:

Terms

Term	Examples	Definition
AAC	Augmentative Alternative Communication	The use of communication using modalities other than natural speech, including sign language, high-tech computer-based devices with voice output, low-tech options like picture exchange and communication boards and binders

Modality	Natural Speech, gestures, high-tech., low-no tech, sign language, facial expressions, etc.	References the method in which a person communicates
High-Tech.	Computers, dedicated AAC devices, dynamic screens, voice out-put	Refers to features of AAC devices that incorporate technology.
Low-no tech.	Printed communication boards, picture exchange	Refers to features of AAC devices that do not incorporate technology or are incorporated in limited ways (recorded voice vs. synthesized speech, static displays
SLP	Speech-language pathology	A licensed provider of speech and language therapy.
Latin@	Person of Hispanic or Latin descent	A term used to denote ethnicity that is considered to represent the wide variety of the diaspora
Programming	Modifying the stock programming of an AAC device	It consists of modifications to iconography and linguistic systems within an AAC device.
Icon/Iconography	Pictures-real or illustrated	The icons that are used to represent language on an AAC device
American Speech-Language and Hearing Association (ASHA)		The national Speech-language pathology accrediting body.
Culturally Responsive Practices		An approach that accounts for the cultural experiences of the client/student and the clinician to make more appropriate treatment decisions
Culture		“a set of factors from multiple dimensions that can describe how one person or a group of people experience life and engage in daily practice” (Hyter & Sallas-Provence, 2019, p. 6)

The following sections will discuss the current study's national, situational, and personal contexts. Following the national, situational, and personal contexts will be a review of the extant literature related to AAC practices, including research on marginalized populations and informative critical research related to cultural representation in chapter two.

National Context

A consistent challenge for users of augmentative alternative communication (AAC) devices and the professionals practicing in this area is device adoption and continued use of such systems (Beukelman & Mirenda, 2013). To address these issues, significant focus has been placed on feature matching. Feature matching involves identifying an AAC system's features that best meet an individual's speech and language needs (Beukelman & Mirenda, 2014). These features include provision for the level of technology needed (low-tech, mid-tech, and high-tech; see (Table 2). Second, the selection method (direct selection via touch with a finger or hand, eye gaze selection using cameras that track the movement of the eyes and eye blinking, or head mouse or sticks where selection is made by moving the head and touching the device with a pole). Additional input methods consist of scanning methods where a switch is used to stop on the selected target after cycling through a predetermined set.

The evidence-based process used by the discipline of speech-language pathology for selecting appropriate and effective AAC is termed feature matching (Beukelman & Mirenda, 2013). Feature matching focuses on a wide range of areas. Potential AAC users are assessed in various ways through standardized assessment to determine cognitive and linguistic skills, interviews with communicative partners, environmental analysis, and an assessment of the barriers to communication in these environments with these communication partners. However, feature matching does not end with these standardized forms of assessment. Also, evaluators and practitioners assess the user's motoric skills to determine selection methods (direct touch-based selection, direct selection using eye gaze tracking, or alternative selection method). Additionally, all aspects of the individual's communicative environments, including those with whom they communicate frequently, are assessed to determine the system that best fits these needs. This focus on the family and communicative partners is rooted in family-centered practice theory, which views the family and widening circles of communicative partners as resources, facilitators, and partners of the person using AAC. Further considerations for AAC practice include the iconography (the icon set chosen to represent language), the linguistic system (wording used and the organization of that language), as well as size (device as well as icon size), and high-tech vs. low-tech options. While feature matching represents an attempt to thoroughly analyze the client's needs and match the device to those needs, limited time and attention have been focused on what this researcher terms *culture matching* and that this matching continues when programming systems across time. Ensuring that a user's cultural identity is reflected in the iconography and linguistic system has not been a focus of the discipline or the existing body of literature, neglecting these cultural aspects of communication. Binger & Light (2006) demonstrate the increasing need for culturally responsive service delivery in AAC in their study of preschool demographics and AAC use. Their findings showed cultural diversity represented in the race of the users of AAC (75% White, 22% Black, 10% Latin@, and 29% female), demonstrating a need for training regarding culturally responsive practices. According to the U.S. Census of 2020, the most significant racial demographic within the United States was White (non-Hispanic), 57.8%, with Latin@ comprising 18.7% of the national population and Black 12.1% (U.S. Census, 2020). This information, coupled with the national demographics of the current SLP workforce (92% White, 4% Black, 6% Hispanic or Latino, and 4% Asian), further demonstrate the importance of practitioners to place focus on understanding the users' of AAC and their caregivers' cultural experiences to best match an AAC system to the user ("A Demographic Snapshot of SLPs," 2019).

Table 3:

Types of AAC

High-Tech.	Computers, dedicated AAC devices, dynamic screens, voice out-put	Refers to features of AAC devices that incorporate technology
Mid-Tech.	Photo albums with audio recording, Touch Talk	Refers to features of AAC devices that do not incorporate dynamic displays or advanced programming and include audio recording
Low-no tech.	Printed communication boards, picture exchange	Refers to features of AAC devices that do not incorporate technology or is incorporated in limited ways (recorded voice vs. synthesized speech, static displays

Situational Context:

My current faculty position as Director of Clinical Education and Instructor is focused on the education and training of students pursuing their degrees in speech-language pathology. This training consists of academic instruction at the graduate and undergraduate levels in my courses (Augmentative and Alternative Communication, Culturally Responsive Practices, Articulation, Phonological Disorders, and Language Disorders). Additionally, I provide clinical instruction within the University's speech and language clinic, supervising and instructing graduate clinicians providing direct therapeutic interventions. This small private midwestern University accepts 40 graduate students per year. I prepare graduate students in their clinical practice and teach several undergraduate and graduate courses as part of this work. While the University has a relatively diverse student body, a limited number of ethnically diverse graduate students enroll in the Communication Disorders program. Currently, within the department, 2.5% of the student body is Black, 5% of Asian descent, and 5% Latin@ with the remainder of the cohort being White. This demographic makeup is reflected across programs within this midwestern area. The limited number of diverse students emphasizes the need to prepare graduate students regarding culturally responsive practices in communication disorders. Most students and soon-to-be graduates are White (80.2%) with limited knowledge of and experiences with cultural differences (*Speech Pathologist Demographics*, 2021). This is further compounded by limited exposure to culturally responsive practices within the coursework (Hyter & Salas-Provance, 2019a).

A colleague and I developed a dual-enrolled course on culturally responsive practices to ensure a stronger focus on these practices in action to address this need. While only an elective and not required of the students, the course provides more than a cursory review of American Speech-Language-Hearing Association (ASHA) best practices related to cultural responsiveness. ASHA's (2013) position statement on culturally responsive practices focuses on the understanding that we live in a culturally diverse world, and these differences can significantly impact the assessment and successful treatment of clients. ASHA recognizes in their statement that behaviors, including linguistic communicative behaviors, are affected by client cultural diversity and that considerations for dialect, vocabulary use, and literacy development must be at the forefront when designing assessments and treatments. However, no connection is made by ASHA to direct actions that can be taken to ensure this culturally responsive practice is actionable for AAC practices; furthermore, in the statement, we see no acknowledgment of AAC devices or their iconography as cultural artifacts. Hyter & Salas-Provence (2019) define culture as:

> a set of factors from multiple dimensions that can describe how one person or group of people experience life and engage in daily practices. Culture is learned and transmitted socially through patterns of behavior driven by such factors as problem-solving strategies, value systems, beliefs, symbols, attitudes, religion, artifacts, and communication. (Hyter & Salas-Provence, 2019)

This definition illustrates that culture involves many aspects of human experience, including communication. Communication disseminates cultural experiences, building and securing the cultural identity of specified groups. As communication acts as a disseminator and demonstrative of cultural performance, the discipline of speech-language pathology focuses on ensuring practices respect those communicative differences. However, no attention has been placed on guaranteeing cultural representation within AAC systems and methods. This may result from how the medical and educational community treats AAC devices. Funding for AAC devices comes primarily from medical insurance, either private or through Medicaid and Medicare, and is identified by these funding sources as durable medical equipment. These funding sources often lock users out of certain features that do not comply with the moniker of durable medical equipment (internet access, access to text messaging, access to social media, etc.). The provider must operate under this conceptualization while balancing the user's unique personal and cultural needs. This view can potentially reduce the cultural context of communication for users of AAC as reflective of the culture and cultural experience.

Personal Context:

As a faculty member at a small private Midwest University within a Communication Disorders department charged with preparing graduate speech-language pathologists (SLPs), I recognize the need for culturally responsive training in all service areas provided by SLPs. Additionally, as an SLP specializing in augmentative alternative communication (AAC), providing the necessary course content that matches the discipline's focus on culturally responsive practices is of great importance.

As a provider, I have experienced a myriad of difficulties throughout my practice regarding appropriate device selection or adoption and continued use. While these difficulties involve the typical issues (fear of the technology, lack of training, concerns for continued speech and language development, one size fits all mentality, and professional reticence), most providers and funding sources continue to treat AAC devices as durable medical equipment with limited consideration for the client's cultural representation through their AAC systems (Beukelman & Mirenda, 2013). This view of AAC as durable medical equipment, in my experience, has had the unfortunate effect of providers viewing these systems as sufficient for any user as they come programmed by the factory. This view reduces the impetus of SLPs and other providers to focus on adjusting the programming at the iconographic (the icons used to exemplify language) level and the organizational principles of the language (color coding and organization of parts of speech). In my practice, I have witnessed students from minority groups using AAC systems with stock programming with all icons representing a mismatch where minority children have been provided devices with iconography, vocabulary, and dialect that solely portray White people through Standard American Vernacular English (SAVE). Consider just two of my past clients, one Latin@ and one Black. The devices that these children brought to therapy from elementary school were programmed with all human characters with White skin tone, including the members of their family; these devices lacked cultural touchstones, including holidays, important family members, cultural food preferences, and other preferred vocabulary situated within the context of cultural experiences.

Furthermore, AAC device manufacturers do not provide services to adjust the iconography at the factory level to match the race and culture of the client purchasing the devices. Additionally, in my experience, this feature and culture-matching issue is compounded by school districts' increasing use of one size fits all AAC provisions. Having worked in four different midwestern school districts where AAC provision consists of an iPad with the same software for all users, it has become clear that school districts are choosing the most financially beneficial approach to AAC while neglecting the needs of individual students. The work of modifying the iconography falls to the provider (SLP). Therefore, these time-intensive changes must be balanced with the competing responsibilities that may stem from high caseloads and limited resources. In my practice, I incorporated discussions of culture as a part of feature matching. I have worked with families to ensure that important cultural touchstones are included, such as holidays, cultural food preferences, dialectal variations used by the family, and what icons to modify to ensure they represent the people in the client's life. However, not all practitioners consider culture as a component of feature matching, relying heavily on the device itself and its functionality, with programming adjustments being secondary, if at all.

Conclusion:

Communication is inherently cultural; language transmits and reinforces cultural norms within a group and society. The complexities of communication, when augmented or supplemented, require a focus on the cultural representations present and possible within AAC devices. I have witnessed the lack of focus on client cultural expressions in AAC practices and devices in my practice. The following chapter will review the extant literature on culturally responsive AAC practices and media research focused on cultural representation in print and visual media.

Chapter Two – Literature Review

Introduction

This chapter will identify the existing literature that has application to the current study. Research that focuses on caregivers' perceptions of those who use AAC devices is limited, especially when considering the perspectives of marginalized groups (BIPOC, Latin@, LGBTQ+IA, Asian). The existing research has focused primarily on areas of support and training with limited consideration for the cultural identities of the users and their caregivers. Furthermore, the body of research has focused primarily on the perceptions of White parents due to the ease of research recruitment. This limited scope can be seen in the research of Pope et al. (2022) in their study of the disparities in the provision of AAC to Black children. These disparities in the research and the provision of AAC, coupled with the overwhelming demographic make-up of speech-language pathologists as a discipline (predominantly White), have limited the current body of research.

The process of assessing and providing interventions for AAC is rooted in family systems theory. Family systems theory posits that families comprise interconnecting and interdependent members (Minuchin, 1985). This interconnectedness can be conceptualized as spheres of influence and responsibility associated with an individual’s place within the family system. Family systems theory is comprised of 4 subsystems; the microsystem (person with complex communication needs, immediate family members, extended family members, caregivers, and non-biologically related members of the family system), the mesosystem (consisting of peers, providers of service, and teachers), the exosystem (interconnected settings such as home and school), and the macrosystem (societal views and beliefs) (Mandak, K. et al., 2017). Family systems theory provides a critical framework that lends itself well to guiding AAC practices, utilizing the interconnected sub-systems as informants, partners in assessment and intervention, and comprising those individuals with whom the user of AAC interacts and communicates. The combination of the tenets of critical theory and family systems theory provides a viable route to investigate the lived experiences of users of AAC, parents/caregivers, and the SLPs with whom they interact.

An overview of the existing literature regarding caregivers', AAC users', and speech-language pathologists' perceptions of AAC services is required to understand the nature of culture and its representation within AAC systems and practices. Furthermore, literature focusing on AAC practices and research on cultural representations through visual mediums like AAC iconography is necessary. Limited research has focused explicitly on the representation of culture via AAC systems both at the iconographic level and within the linguistic systems of these devices. The following chapter will focus on the current literature on AAC practices related to culture, including users, caregivers, and SLP perspectives. Critical media research focused on cultural representation through visual mediums will also be explored.

Furthermore, research on the stakeholders' perspectives above is scant, with limited focus on the cultural aspects of AAC provision and service delivery. The current study will aid in addressing ASHA's best practices concerning cultural responsiveness and AAC services from assessment through intervention and offer organizational improvement in the training and education of graduate communication disorders students, in-service SLPs, AAC researchers, and AAC device manufacturers. The current state of ASHA's best practices includes recognizing that all people represent culture and that these cultures affect actions, including the language we use and how we respond to treatment. As professionals, we must be aware of and incorporate the cultural aspects of the client's identity into the services provided (Rhodes & Washington, 2016; *Service with culturally diverse individuals*, 2013).

Literature

There is a dearth of literature about culturally responsive AAC practices, with most relegated to a review of ASHA best practices and some studies on family perceptions of AAC devices and interventions (Mindel, 2020; Kulkarni & Parma, 2017; Mandan et al., 2017; McCord & Soto, 2004; Townsend & Bland-Stewart, 2012; Parette & Toya, 2002). These focus on the areas that ASHA has emphasized as culturally responsive and are wholly situated on the need to explore client culture and demonstrate understanding within the acts of intervention and assessment addressed in the previous introduction. However, this research is limited due to a lack of emphasis on AAC devices and systems as demonstrative of a client's culture, including their iconography and linguistic systems. Without a clear understanding that language and communication are tied to culture and a primary means of disseminating one's culture, speech-language pathologists may continue to neglect aspects of assessment and treatment design that should be at the forefront when operating from a culturally responsive framework.

Solomon-Rice et al.'s (2018) review of the results of Project Building Bridges, a federally funded program developed to train SLPs in culturally responsive practices, agrees. This program is a training program designed to provide evidence-based training in AAC services for diverse populations in assessment and treatment. Data from this program indicated improvements in providing culturally responsive practices amongst those enrolled. These programs are needed to ensure adequate training in culturally responsive techniques. Beukelman & Miranda (2013) contended that increased cultural understanding within the practice area is necessary and requisite due to the country's quickly changing demographics and the clients to whom SLPs provide service. Additional research by King et al. (2020) further stressed the need for culturally responsive practices when working with children from the Latin@ diaspora. King et al. (2020) demonstrated the need for incorporating primary cultural language with the language being learned during AAC interventions, and this experimental strategy showed improved language learning within both languages. Not only is there evidence that cultural considerations for language and language preferences can improve client outcomes but also, leaning into the client's culture (primary language) improves outcomes (Hyter & Salas-Provence, 2019). Mindel (2020) echoes the sentiments of improved client outcomes in her meta-analysis, contending that improved cultural awareness leads to the embedding of cultural norms and touchstones within AAC practices and systems, has the potential to reduce communicative breakdowns within families when the home language or dialect is different from those within AAC systems, fosters ownership of the AAC system by allowing the client to see themselves and their culture reflected back to them, and the building of rapport and trust with treating professionals. These benefits are tied to the tenets of feature matching espoused by (Beukelman & Mirenda, 2013 and Beukelman & Mirenda, 2020).

Perceptions of Caregivers and Users of AAC

Limited research focuses on parental or caregiver perceptions of AAC, and even less research reflects the client's or user's perceptions of AAC. Research that does exist has focused primarily on the barriers related to the adoption and continued use of AAC devices. These barriers include attitudes, parent training, professional skills and training, the intimacy of the language in AAC devices, and the time commitments involved in AAC, particularly concerning caregiver time constraints. Many of these studies focused primarily on White users, utilizing purposive samples that reflected participants' availability and a less concerted effort to avoid race and culture. Heur (2000, 2003) studied how people from diverse cultural and ethnic backgrounds perceive the symbols utilized on AAC devices. Within this study, Huer identified "significant main effects for ethnicity, significant differences for symbol sets, and non-significant ethnicity symbol set interaction (Huer, 2002, p. 137). The study's conclusion indicated that culture and ethnicity impact the perceptions of iconographic transparency (Huer, 2000, 2002). Additional research on caregiver perception is limited to small sample sizes of diverse users and their families, like those by Bailey et al. (2006). In their study of family members' perceptions of augmentative and alternative communication device use, a limited sample size was predominated by White and one Black participant. The findings of Parette et al. (1999) make salient the impact of AAC professionals as the primary source for iconographic selection. Results indicated a multitude of issues faced by diverse users of AAC and their families, including higher levels of concern for the dual stigmatization of a child that is both Black and disabled with a visible identifier of that disability in the form of the AAC device (Parette, H. et al., 1998). The researchers also identified that these systems lack Black female voices, a concern identified by the study participants. Black families identified that AAC language needs to reflect their family and, in turn, culture. This reflection of culture extends through the language system of the AAC device, including syntax (sentence structures and grammaticality) and semantics (vocabulary). Additionally, as AAC systems represent language through iconography, these images are an inextricable visual representation of language and are ripe for consideration for these systems.

Furthermore, the need to speak with multiple people within the home and community was of concern to the caregivers of Black children who use AAC. This need to communicate with a variety of communicative partners is important, allowing the individual to code switch (changing the dialectal form of language based on communicative partners and environments) between their home dialect and that of the wider community. The study also looked at perceptions of Latin@ families, identifying the need for language to reflect their culture and identity within their community (Parette et al., 1995). Additionally, Latin@ families expressed the need to work with the extended members of a child's family (Parette et al., 1995). Across the two demographics, it was made clear by the results that AAC users see differences between the language variations used between the school and the home. Both groups identified the benefits of AAC as a means to promote communication and provide an opportunity for academic success. However, both groups noted discrepancies in the nature of the language structures, vocabulary, and iconography and their own familial and cultural experiences.

Additional research focused on the perceptions of those using AAC regarding their academic success (Rackensperger, 2012). Placing a primary focus on the user experience and perceptions of AAC users yielded multiple themes related to their use and success. These themes included:

> (a) the impact of the family in seeking appropriate education, (b) homework, a challenge made easier through family involvement, (c) the family's role in communicating the importance of education, (d) mothers as the driving forces of support, and e) family encouragement to be self-determined. (Rackensperger, T., 2012 p. 110)

The small sample of research rooted in the perceptions of users of AAC and caregivers provides valuable insight into the overall views of the AAC process. However, most of this research does not consider the AAC system and its components and their effect on the adoption and continued use of AAC by caregivers and users of AAC. This research demonstrates that when diverse groups are incorporated into this research, we see additional areas of concern that the studies with solely White participants do not identify. While similar concerns are addressed across groups unrelated to culture, the single identifying characteristic that differentiates this research is the unfortunate over-exploration of the perceptions of White caregivers and users of AAC that lack a perceived understanding of the unique needs of diverse cultural groups like those of the BIPOC community.

Caregiver and client perceptions are an integral aspect of culturally responsive practices across the spectrum of services SLPs are certified to provide (Mindel, 2020; Kulkarni & Parma, 2017; Mandan et al., 2017; McCord & Soto, 2004; Townsend & Bland-Stewart, 2012; Parette & Toya, 2002). Research focusing on the perceptions of AAC and AAC interventions is imperative to explore to fully understand the need and impact of cultural responsiveness within the field. The extant literature has explored a variety of cultural groups, including the Latin@, African American, White, and Asian cultural diasporas, about their perceptions of not only AAC practices but also SLP practices in general (Mindel, 2020; Kulkarni & Parmas, 2017; Mandan et al., 2017; McCord & Soto, 2004; Townsend & Bland-Stewart, 2012; Parette & Toya, 2002).

In the article “Talk like me: supporting African American students using AAC communication” the researchers investigated the supports necessary for working with ethnically or culturally diverse children. In their respective articles, Mindel (2020) and Townsend et al. (2012) focused on the perceptions and support needed to provide appropriate AAC interventions to African American children. The authors contended that a cross-disciplinary meta-analysis allowed open discussions about the necessity of culturally responsive practices within AAC interventions. Townsend et al. (2012) focused on the perceptions of African American mothers of children that use AAC. Townsend and colleagues determined that the mothers who viewed AAC positively found interventions beneficial and a means of achieving independence but neglected the perceptions of culture related to AAC. Mindel (2020) found that incorporating family systems and their beliefs (AAC, language, religion, etc.) moves closer to culturally responsive practices within the discipline. Lending evidence for the need to embed cultural representation into AAC devices visually and linguistically.

Further evidence of this need to adopt culturally responsive practices can be seen in Kulkarni & Pramar's (2017) study that focused on the culturally and linguistically diverse student and how family perspectives impact AAC. The authors contend that it is imperative to consider culture in AAC practices due to the dramatically changing demographic makeup of schools and society. Within their study, Kulkarni & Parmar (2017) identified several themes that impact AAC adoption and use, including device limitations, lack of support, family and professional dynamics, cultural perceptions, language support, and home-based support. Fannin et al. (2015) investigated the communication differences between race, gender, and socioeconomic status and found distinct differences in the communicative functions of families and children of different cultural groups. This is further illustrated in Bliss et al.'s (1999) study of African American children's narratives comparing this population's narratives to those of their White peers. The difference identified (use of topic-associated narrative structures) represents cultural preferences and should be considered when planning and implementing assessments and interventions and programming potential AAC systems. Johnston & Wong (2002), Mendez et al. (2015), and Hammer et al. (2007) also illustrated differences in how families from different racial groups implement learning strategies. Johnson & Wong (2002) found that some groups (African American and White parents) use reading to children, talking about non-shared events, utterance expansion, and prompting personal narratives. In contrast, others focus on vocabulary development through flashcards and picture books (Asian).

Hammer et al. (2007) identified differences in the learning practices of mothers of Puerto Rican children highlighting differences in home literacy practices in families that use or do not use their primary language. Mendez et al. (2015) identified the need to incorporate familial language to improve the learning of linguistically diverse children (Lantin@ community). All these studies highlight the need for consideration of family systems and culturally responsive practices and an indication of the lack of research regarding cultural representations within AAC systems. While necessary in their focus, these studies neglect consideration for the programming of AAC devices when investigating culturally responsive practices. Arguably, this is the case due to AAC devices and systems being viewed as a-cultural durable medical equipment, when in fact, these systems, by their very nature as a mode of communication, center them squarely in the realm of culture, including the iconography used to represent language as well as the linguistic systems as programmed (Hyter & Salas-Provance, 2019).

Mandak et al. (2017) further investigated culturally responsive practices and the use of family systems frameworks by identifying actions that can be taken to ensure practices reflect the culture and needs of clients and their families. In their meta-analytic study, Mandak et al. (2017) found that necessary focus must be placed on micro and mid-level family systems and how they support disabled family members. Mandak also identified the need for speech-language pathologists to be trained to use family systems frameworks to identify the support families need when working with individuals that use AAC. Mandak et al. (2017) posited that focusing on family systems can support the adoption and continued use of AAC systems. Arguably, what Mandak and colleagues are referencing with family systems frameworks is culture and reflective of culturally responsive practices. This is true when a deeper analysis of culture centers practitioners on a family systems perspective, accounting for the client's beliefs, language, family dynamics, and natural supports, representing aspects of or reflecting the client's culture.

Additional research in culture, race, and SLP (speech-language pathology) practices can be seen in ethnographic studies conducted by Parette et al. (2002) and Townsend et al. (2012) investigating the perceptions of African American children and their parents regarding AAC. Further fleshing out of family roles, stress, communication partners, cultural mistrust, needs and values, language use patterns, communication style, and community social values is seen in the literature. African American families make all of the aforementioned considerations when confronted with the need for augmentative or alternative communication (Parette et al., 2002). Townsend et al. (2012) further illustrate that African American families see AAC as beneficial for communication and social instruction and view the systems as a means for obtaining independence for their children. These supports must reflect the clients' cultural experiences to develop socially within their community. Additional studies have focused on culturally diverse families' perceptions of AAC. McCord & Soto (2004) investigated the perceptions of Mexican American families with children with complex communication needs. Their primary focus was determining the barriers impacting the adoption and continued use of AAC. Through ethnographic interviewing, the authors identified the varied roles of family members in providing AAC. AAC was seen as valuable, but family members viewed AAC as not equivalent to verbal speech and, therefore, less intimate. Family members stressed the importance of the language structure, with most identifying the language system as too formal. They identified a need for adequate knowledge to help. AAC was viewed as helpful at school but not used in the home. While further evidence of the need for culturally responsive practices in AAC, these studies neglect aspects of ongoing programming of linguistic forms and iconography that makeup up these AAC systems. This research is demonstrative of the nature of the existing literature in its treatment of AAC systems as a-cultural, which certainly can lead to what can be termed an AAC cultural mismatch which can impact device selection, adoption, and continued use.

Media Representations of Race and Culture

To provide best practices in AAC that are culturally responsive practitioners must understand the relationship between culturally reflective iconography and linguistic systems and the communication needs of their client. To do this these practitioners must examine the body of research focusing on culture's visual and linguistic representations. A surfeit of literature identifies the nature of racial or cultural representations in various media. Still, none currently focuses on the visual and linguistic representations found within AAC systems. Large portions of the extant literature focus on print media, with expansions overtime to incorporate video representations, as well as those that occur in video games (Schug et al., 2017; Villenas & Angeles, 2013; Mayo et al., 2005; Thompson, 2015; Arendt et al., 2015; Upright, 2015; Godbold Kean & Prividera, 2007; Jiwani, 2005; Skidmore, 2011; Walsh, 2008; Behm-Morawitz, 2014; Daalmans & Odink, 2019; Li-Vollmer, 2002; Porter & Wood, 2016; Rubie-Davies et al., 2013; Bristor et al., 1995; Plous & Neptune, 1997; Banjo & Jennings, 2016). Over time media research has grown and expanded analysis from simply counting the number of representations in data sets to analyzing the nature of the representations present for stereotypical or non-stereotypical representations (Schug et al., 2017; Plous & Neptune, 1997; Mindel, 2020; Fannin et al., 2018).

A large body of research has investigated how the media within a society portrays race. This literature can explain how culture is and should be represented visually and linguistically. This body of research focuses on various groups, primarily ethnic and racial minorities. Godbold et al. (2007), through their content analysis of advertising within the food and beverage, vitamin, and supplement industries, identified disparate representations across magazines published with different readerships of varying cultures. The authors contended that not only do these advertisers respond to what they perceive are the interests of their readership, but when these interests are developed and produced through the lens of their hegemonic White norms, the interests may not reflect cultural realities and provide an incomplete cultural picture (Godbold et al., 2007). The contemporary literature is replete with similar research focused on media representations of race and culture that argue such representations serve not just the interests of the consumer being targeted but also serve as a lens through which culture, particularly dominant hegemonic culture (the dominant culture, maintained through its culture and ideology), disseminates cultural norms (Jiwani, 2005; Mercado, 2018; Porter et al., 2016). This can be further evidenced by Thompson's (2015) study examining advertising in the Canadian market. Imported images of Aunt Jemima, a well-known stereotypical mammy portrayal of Black femininity, were analyzed. While not inherent to Canadian culture, the authors contend that these portrayals have infiltrated the nation disseminating United States racial antipathy, particularly those views and characterizations that stem directly from the long history of the enslavement of African Americans within the U.S. This exemplifies how images and language are used by society to disseminate cultural norms. However, these norms are derived from the hegemony that disregards the myriad cultural representations within the United States. Through this research, we see the importance of developing a means to ensure that the AAC device's visual representations and linguistic forms are adjusted accordingly to match the client’s cultural experiences. Additionally, care must be taken when the practitioner’s culture differs from that of the person using AAC, as the potential to default to hegemonic cultural principles currently appears as the norm within the discipline.

Further support for disseminating culture through visual and textual representation can be seen in the extant literature. Jiwani (2005) examined how print news media covered the 9/11 attack on the United States to identify the representations of Muslims in Canadian newspapers. The author suggests hegemonic norms to support a national morality (Jiwani, 2005). Portrayals that feminize male Muslims serve to portray Muslim men as outside the hegemonic norm and, as the authors indicated, support the terror through socialization (Jiwani, 2005). Mercado (2018) investigated hegemonic representations within media and their relationship to social justice. The author contends that cultural hegemony accepts the dominant social group's cultural norms and results in consent or acceptance by out-groups of the dominant culture through its power and social status. The authors clearly explain how a hegemonic worldview can impact how the practitioner perceives their role as an interventionist, extending to the iconographic and linguistic choices made when programming AAC devices for client use. Mercado (2018) further identifies how hegemony can be actively instructed to improve our understanding of cultural hegemony. Representations described within the article consisted of traditional suit-wearing, White maleness, middle-aged, married to a woman, upper-middle-class homes, luxury cars, and a lack of any identifiable disability. As analyzed, the author indicates that these representations identify the norms to viewers and disseminate the hegemonic White cultural standards of success. Porter et al. (2016), in their study of interracial families, conducted a two-part study analyzing how interracial families were represented in political advertising during Barack Obama's presidency. With the aid of political media specialists, the researchers developed four commercials with a Black male candidate, with the candidate’s child's race being the only variance. Viewers of these advertisements were surveyed regarding the representations, and these surveys demonstrated that the Black candidate with a White son was viewed more favorably than the others. The authors contended that these results are tied to the concepts of hegemony and neoliberal racism, a view that society has moved beyond racism or that it is a thing of the past, not seeing color while ignoring the impact that skin color has on those groups, in that the White son pulls the Black candidate closer to the White hegemonic norm. Within the literature, there is an overarching theme of hegemonic cultural norms being disseminated to socialize or indoctrinate society into these dominant cultural norms. This theme can be extended to SLP practices and particularly to AAC practices. The practitioner operates from their hegemonic norm (typically Whiteness given SLP demographics), which, if not checked and worked against, can result in cultural mismatch disseminating White culture through AAC and serving as a somewhat insidious form of hegemonic indoctrination.

This cultural dissemination and the ubiquity of the hegemony have been shown to impact policy decisions and laws. Further evidence of the concepts of hegemonic cultural norms and their interplay within the media can be seen in Banjo & Jennings's (2016) study that examined how White characters were portrayed in Black-oriented films. The authors analyzed two decades of Black-oriented films to determine the salience of their hypothesis; do race-focused media representations perform an essential function of understanding racial discourse, and how do Black creators use the medium to resist hegemonic cultural norms? Of all movies analyzed, the authors found no support for their hypothesis; however, the concerted representation of Whites in Black-oriented films appears to reflect the internalization of White norms, which is then reflected in the depictions. Racial awareness and bias were related in instances where White characters were shown less favorably. This representation of Whiteness in Black-oriented films can also be seen in the stock and continued programming of AAC systems, with limitations in how diverse clients can be represented, as seen in a pilot study focused on the analysis of the stock iconography of AAC devices and their cultural appropriateness for an increasingly diverse clientele (Doubet, 2022).

Mastro (2015) and Mastro & Kipacz (2006) furthered the body of literature on cultural representations extending the investigations to incorporate the role of media in race and ethnicity and the representations of media and how these presentations have impacted policy decisions through the support of voters. Mastro (2015) contends that since our society is still racially segregated (schools, neighborhoods, etc.), this segregation makes valid conceptualization of other races or ethnic groups difficult. Due to such segregation, reliance is placed on media representations to conceptualize race and ethnicity. Stereotyped portrayals of minorities were identified by Mastro, including those of the Latin@ and African American communities, representing this group in a negative light and an absence of representation of

Asian peoples and Native Americans. Therefore, Mastro argued that a fully representative depiction of these groups is lacking. With the preponderance of SLPs representing White females, we see within Mastro's research how practitioners' perceptions of culturally diverse groups are rife with stereotypes caused by stereotypical and limited media representations of diverse groups due to the highly segregated nature of our society. These practitioners are limited in worldview and accurate understanding of cultures beyond their own.

As cultural representation research has grown over the years, increasingly complex designs with deeper analyses focused on the nature of representation have occurred. Consequently, an accurate conceptualization of these groups prevents minority groups and the dominant culture from having an accurate understanding. Mastro & Kopacz (2006) go further by testing a model developed by Tam Fujioka (2000) that argues that media is an external factor that predicts the policies designed on race and allows for rationalizing these policies by White people.

Not to be deterred, researchers further advanced their analyses to include the concepts of intersectionality. Intersectionality is a critical theoretical framework that seeks to identify how multiple identities (gender, race, sexuality, disability, etc.) intersect and act as either mediators or agitators of cultural representation and social dynamics (Schug et al., 2017; Plous & Neptune, 1997; Mindel, 2020; Fannin et al., 2018; Skidmore, 2011; Daalmans & Odink, 2019). Given this understanding, a similar concern for cultural representation within the media of AAC devices (iconography and linguistics) programmed on AAC systems should be considered.

Gender and Child Representations in Media Research

It is essential to recognize how culture can be represented in visual images; this allows the SLP practitioner to determine what is possible in an AAC user's device. The preceding pilot study *Walking the Walk: Culturally Responsive Practices in Augmentative Alternative*

Communication (Doubet, 2022), looked at the variety of ways that culture can be represented in an AAC device given the manufacturers’ iconographic sets. This pilot study identified similar results found in other visual media research on cultural representation. While diverse cultures can be represented within AAC devices, the quantity and quality of these representations for BIPOC persons were extremely limited, with a predominance of ways to represent White individuals. Daalmans & Odink (2019) analyzed the portrayals of gender, age, and race in television advertising, focusing on two types of advertising those nominated for favorable awards (Gouden Loki award) and those selected for adverse awards (Loden Leeuw award). Racial phenotypes (physical characteristics shared within a group of people of a specific race) were included as a coding system incorporating the color of the actors' skin, eye shape, hair texture, name, clothing, and accent. Voiceovers were analyzed for gender and work vs. parenting, and the elderly were coded for frailness or needing help. Daalmans & Odink (2019) termed this a recognition analysis, assessing the number of representations, quantifying, and comparing them to the current national demographics giving rise to a respected analysis that looks at the quality of the representations. These two analyses provide a path forward for analyzing the cultural representations inherent in AAC devices. The study showed that while minorities were not underrepresented in the number of portrayals, they were more likely to be portrayed in exaggerated ways providing further evidence of a more profound means of analyzing media representations that can be utilized to analyze the cultural representation inherent in AAC systems.

The Hegemony of Media Creators

Finally, it is also important to highlight the nature of hegemonic cultures and cultural norms concerning visual media. As AAC devices incorporate icons to reference linguistic information, it is crucial to understand these icons as visual media capable of disseminating and maintaining the status quo culturally. Mayo et al. (2005) took a deeper approach to their analysis, looking at the skin tones represented within magazine advertising. Research of advertising representing Black athletes and models found in fashion and sports magazines was conducted using the Pantone Matching System (PMS) to code for skin color. While the analysis showed that more medium to dark-brown actors were portrayed, they argued that this might result from closely tying representation to the hegemonic norms of how Black athletes and models should look—posing an essential area of focus for a discipline like speech-language pathology, which is saturated with practitioners from the cultural hegemony. These findings contradict previous research on the topic. This discrepancy may result from skewing magazine selections due to sports magazines' portrayals fitting a more Eurocentric (a focus on European culture to the exclusion of other cultures) views of sports and African American athletes. The extant literature demonstrates that the closer a presentation is tied to the hegemonic norm, the more acceptable it will be. The presentations are then used to sell products; however, they also disseminate Eurocentric standards of social acceptability, serving as a cultural lens for socialization. A similar consideration could be made regarding AAC systems and practices where the programmers are operating from the hegemonic norm, programming devices with images and languages that reflect only that hegemony, neglecting the very cultural nature of communication necessary to disseminate and perform one's culture.

Further supporting these concepts of hegemony, deeper analysis, and the effects of negative stereotypes within media is a study by Arendt et al. (2015). The authors argued that media representations could automatically activate stereotypes that are unconsciously applied regarding the qualities and behaviors of a group of people. However, individuals can reject these stereotypes at the micro-level (Arendt et al., 2015). Four exposures to racial stereotypes were analyzed using an experimental design, indicating that all treatment groups showed stronger implicit stereotypes than the control condition. With a quick onset of an effect, the number of implicit stereotypes predicted the strength of automatic associations. Dampening effects were noted but were far smaller than expected and less significant. Their study demonstrated a strong relationship between media representation and subsequent bias activation, representing how media disseminates stereotypes and cultural norms. This posits the need for AAC practitioners to be aware of the cultural implications of the symbol sets provided on AAC systems as they impact their selection process of icons and incorporate the cultural views of the client and caregiver. This is important in AAC practices when the discipline is comprised of practitioners from the dominant group.

Additional research by Cianetti & Lončar (2018) and Plous & Neptune (1997) investigated the changes in race representation and gender bias in advertising. Both studies are positioned within the premise of a more profound analysis, counting the nominal representations and the quality of these representations. As with the above-referenced studies, both found that changes have occurred in the number of minority representations (increases) but demonstrate continued negative quality within these representations. This can be seen in current AAC systems concerning their iconography, with limited ways to represent people of color outside a binary skin tone choice of White or brown (Doubet, 2022). Furthermore, these representations of people of color in AAC iconography lack quality in terms of visual cultural referents, such as the variety of hair textures found in the BIPOC community, ways of dressing, and facial characteristics, all limited by the number of BIPOC icons found in these devices. These negative representations do not always reflect overt racist stereotypes. Still, they represent these cultures' hegemonic views, limiting how minorities see themselves and how the dominant culture is socialized to understand race and culture. The overall preponderance of the extant literature indicates that demographically, some minorities demonstrate greater parity in the number of representations; however, these representations are a fabrication of the dominant culture in which stereotypes are abundant (Walsh, 2008). This, too, is seen in AAC systems with an abundance of permutations to represent a White person versus the limited number of those to represent members of the BIPOC community.

Media research on culture and race representation extends far beyond the advertising media subjected to society. Research has expanded to incorporate ways in which classroom media (children's books, college textbooks, classroom instructional methods) represent race and culture (Desai, 2010; El-Burki, 2017; Childs, 2014; Clawson & Kepler, 2000; Hendricks et al., 2010; Villenas & Angela's, 2013; Upright, 2015;). Research in this vein focuses on neo-liberal color-blind racism, defined as how a dominant culture has represented itself as post-racial. Researchers argue that this color blindness further limits how minorities and their culture can be represented, ignoring the lived experiences of minorities, which include experiences of overt and covert racism (Desai, 2010; El-Burki, 2017; Villenas & Angeles, 2013). A similar problem presents itself with AAC devices where the very nature of the system as durable medical equipment creates the framework for programming the system with hegemonic representations and neglecting how clients and families experience their cultural lives. Without analysis, issues may be engendered in AAC devices and practices intentionally and unintentionally. Desai (2010) investigated the challenges of color-blind ideologies to identify how color blindness shapes societal perceptions of race and culture. Indeed, a limited study with analysis of the concepts of color-blind racism (the belief that one does not see color or race, therefore neglecting the impact that race has on everyday life) is defined as a covert discourse on race. The author posits that the dominant White culture's avoidance of racial terms reorients that culture as the norm (Desai, 2000). Particularly of concern in AAC systems and practices where the selected iconography can reorient the user and family to dominant cultural norms, reducing the users' ability to maintain cultural connections, experience, perform, and disseminate their culture. El-Burki (2017) echoed such sentiments in analyzing contemporary media representations of race within college classroom experiences. The author argued that White students from small nondiverse universities' perceptions of race and color are created and maintained through media consumption. Their limited experiences with people of other races limit these students' ability to develop a robust understanding of people of color. Analysis of local small-town print media conducted by Villenas & Angeles (2013) attempted to identify racial tensions and create spaces for honest public discourse on race. The authors identify the concept of benevolent liberal race talk that draws a direct line to neo-liberal color-blind racism and how the interplay with hate-speech related to police in non-educational settings serves to "mutually reinforce the logic of white [sic] dominance" (Villenas & Angeles p. 510, 2013). As stated previously, an abundance of media research focused on print and video advertising is available that identifies how culture is represented, and norms are disseminated. However, advertising is not the only source that has been researched. Media utilized in primary/secondary schools and universities have been a research focus for culture representation through textbooks and lesson design.

Education and Colorblind Racism

Additional research in education, both in higher education and public schooling, focuses on the representations of culture and race in textbooks and ways in which teachers and professors can incorporate artifact analyses to teach about color-blind racism (Upright, 2015; Hendricks et al., 2010; Clawson & Kepler, 2000; Childs, 2015). Upright (2015) explored the presentations of minorities on T.V. Guide covers published between 1953 to 1997 as a classroom activity to instruct on color-blind racism and its perpetuating effect on systemic racism. College students attending a course taught by the author were tasked with analyzing the covers of T.V. Guides for their representations of race and culture, demonstrating longitudinally that the number of minority representations improved over time. However, the quality of representation was not shown to have improved significantly. Upright (2015) demonstrated how simple instructional activities like artifact analysis can assist in teaching about media representation, its importance, and how the dominant culture has reoriented to incorporate increased numbers of representation but continues to limit those presentations of minorities in other ways. Presenting a critical area of instruction that can be adopted by Communication Disorders graduate programs providing the skills necessary for culturally responsive practices by targeting students' ability to reflect on cultural images to determine appropriate AAC iconography based on client culture. This process could be adopted by speech-language pathology training programs to provide critical reflective skills when engaged in modifying the programming of AAC systems, allowing greater focus on the client, the client's culture, the representation of culture, and selecting appropriate images and linguistic modifications.

While the research mentioned above focused on the perceptions of users of AAC and their caregivers and media representations of culture and race, the following sections will focus on the investigative stance of the current study, the theoretical framework of the current study, and conclusions drawn from this chapter.

Investigative Stance

The current study is an action-based study with a phenomenological focus that emphasizes identifying shared or universal experiences (Creswell & Poth, 2018). By identifying commonalities in experiences, the researcher can identify these shared experiences concerning a phenomenon (van Manen, 1990). Phenomenological research focuses data collection on the experiences of those being studied and "develops a composite description of the essence of the experience of all individuals" (Creswell & Poth, 2018, p. 75). Such an approach can aid in identifying the experiences of users of AAC from marginalized groups as they relate to assessment and treatment. Furthermore, a more granular understanding of how the assessment and treatment processes are experienced by users of AAC from members of underrepresented groups, caregivers of users of AAC, and speech-language pathologists who practice in AAC can be derived.

This phenomenologically informed research adopted the approach Moustakas (1994) developed, termed transcendental or psychological phenomenology. This type of research consists of the researcher's phenomenon of interest, the development of themes through inductive and deductive coding, a summary description of the experiences related to the topic studied, re-focusing on the phenomenon during the analytical process, and positioning of the researcher. Within this type of research, the primary focus is on describing the experiences of three major stakeholders actively engaged in the treatment and support of individuals with complex communication needs (CCN). The study used bracketing to ensure the researcher "sets aside beliefs, feelings, and perceptions to be more faithful to the phenomenon (Creswell & Poth, 2018, p. 352; Colaizzi, 1978; Streubert & Carpenter, 1999).

Theory

Research focusing on the representation of marginalized groups (race, gender, sexuality, religion) is rooted in critical theory. The current study focused on understanding the nature of the phenomenon by using the tenants of critical race theory that focus inquiry on linking the issues of race, representation, and the impacts of cultural hegemony on marginalized groups and the broader society (De La Garza & Kent, 2016). De La Garza & Kent (2016) in their article represent critical race theory as a means to identify how hegemonic cultures and politics serve as means to reinforce cultural hegemonic norms. In a discipline like speech-language pathology white practitioners predominate, it is therefore important to understand how the actions of this hegemonic group impact the provision of treatment for non-white individuals. This understanding provides a framework with which to identify how the hegemonic norms of the dominant SLP culture impact the recommendations and actions of service providers, particularly when considering the cultural performative nature of language (Hyter & Salas-Provance, 2019a). These considerations are even more important in relation to AAC practices like the selection of iconography and vocabulary where language is visually represented through icons. Critical race theory posits that treatment decisions including the selection and use of culturally reflective iconography and vocabulary within AAC practices are impacted directly and indirectly by the hegemonic norms of the dominant culture of the profession (Hyter & Salas-Provance, 2019a). When considering the visual representations critical race theory also incorporates the concept of intersectionality, or how multiple identities function in tandem, allowing a broader understanding of representation, race, and lived experiences as they relate to AAC. Intersectionality informs this study by framing the impact of various identities that a service provider holds and their impact either positive or negative on treatment outcomes (Hyter & Salas-Provance, 2019a). These identities can act as reinforcers of hegemonic norms or as a mitigating factor when considering the needs of marginalized groups (Hyter & Salas-Provance, 2019a).

This study was also informed by family systems theory which is well situated as a lens with which to further understand the experiences of family members as well as the ever-widening spheres of influence that users of AAC experience (Beukelman & Light, 2020a). Family systems theory posits that families are an interconnected framework consisting of the microsystem (parents, siblings, non-related family members, and extended family), the mesosystem consisting of service providers, peers, and teachers, the exosystem which consists of the wider community in which the individual lives, and the macrosystem or the wider society and the rules and norms of the society (Bronfenbrenner, 1979). In AAC practices these systems are integral to the information gathering and decision-making processes made by SLPs that engage in AAC services (Beukelman & Light, 2020). This study placed primary focus on the microsystem and mesosystem as they are identified by Beukelman & Light (2020) as the main sources of information needed to make appropriate treatment decisions. Additionally, the microsystem and mesosystem represent the primary informants that SLPs consult to make appropriate and culturally relevant assessment and treatment decisions (Beukelman & Light, 2020a). Family systems theory also served as the framework for developing the organizational improvement plan by centering the plan around the microsystem and mesosystem to improve pre-service SLP training, provide additional trainings to in-service SLPs, and the dissemination of the results of the study, and development of improved AAC simulated cases detailed in chapter five.

Conclusion

The need for culturally responsive practices continues to remain an essential aspect of any service provided by a speech-language pathology. The extant literature is clear on this point. The preponderance of the literature demonstrates the need for additional cultural awareness when working with users of AAC that are members of marginalized groups. This call for increased cultural awareness needs to go further as it is insufficient only to be aware of cultural diversity, as can be seen in the current media research. Still, this awareness must lead to appreciable changes in the actions of speech-language pathologists. Cultural awareness primes the service provider to act on their understanding of culture and cultural differences. This awareness should result in cultural exploration through the assessment and therapeutic process, resulting in culturally appropriate modifications to AAC systems. Focus on cultural awareness and the subsequent actions limit any misconceptions that AAC systems are a-cultural durable medical equipment.

What is clear from research on parental perceptions of AAC, culture, and cultural expression is of great importance and significantly impacts the efficacy of any intervention program. Language and linguistic systems are one aspect of a people's cultural experience and expression; as AAC systems are the voices of these clients, these voices should represent the clients' culture. Furthermore, media research regarding cultural representation demonstrated how media artifacts are constructed and maintained or re-center the dominant culture. As an artifact of culture, a visual medium for communication, and a tool for teaching language, AAC systems can be identified as cultural representation and expression from the user's perspective. By seeing oneself via cultural representation, a user and family may accept AAC, select devices and programming that are a cultural match, and maintain use over time and in various contexts. The following chapter will discuss the methodology for the current study.

Chapter Three – Methodology

Given the demographic changes present within the United States and the increase in members of underrepresented groups using AAC devices, a clear need to understand these systems as cultural referents and cultural disseminators are necessary. Furthermore, it is necessary to understand how the culture of service providers interacts with the culture of the caregivers and users of AAC regarding assessment and treatment decisions. To identify the experiences of all three stakeholders (SLPs, caregivers of users of AAC, and users of AAC) in the AAC process regarding culture and its impact on assessment and treatment decisions the following research questions were developed.

Main questions

R1: What are the lived experiences of speech-language pathologists working with clients that use AAC regarding the selection of AAC iconography for BIPOC clients and their families?

R2: What are the lived experiences of BIPOC users of AAC and their caregivers regarding the selection of AAC icons on their devices that reflect their culture?

Sub-questions (SLP):

R1A: How do Speech-language pathologists experience the icon selection phase of assessment?

R1B: How do Speech-language pathologists experience AAC icon selection during the ongoing intervention process?

R1C: What additional considerations do Speech-language pathologists experience when working with users of AAC that are BIPOC?

Sub questions (Families/Caregivers):

R2A: How do caregivers of individuals using AAC experience the icon selection phase of assessment?

R2B: How do caregivers of individuals using AAC experience AAC icon selection during the ongoing intervention process?

Sub questions (Users of AAC):

R2C: How do users of AAC experience the icon selection phase of assessment?

R2D: How do users of AAC experience AAC icon selection during the ongoing intervention process?

R2E: What does cultural representation mean to BIPOC AAC users and families of individuals using AAC?

In the previous chapters, a review and synthesis of the extant literature about culturally responsive practices in AAC, caregiver perceptions of AAC, and cultural representation in media have illuminated the lack of focus by the discipline of speech-language pathology (SLP) on the cultural representations and implications of the iconography of AAC devices. The following research questions were developed to target the lived experiences of these three stakeholders: What are the lived experiences of speech-language pathologists working with clients that use AAC regarding the selection of AAC iconography for BIPOC clients and their families? What are the lived experiences of families of individuals using AAC regarding the selection of AAC icons on their devices that reflect their culture? Additionally, three similar sub-questions were designed for each type of study participant and are addressed later in this chapter. To add to the body of literature and fill in some of these gaps, the following chapter will detail the actions and methods undertaken to study the perceptions and lived experiences of BIPOC uses of augmentative and alternative communication (AAC), caregivers of BIPOC users of AAC, and SLPs engaged in AAC practices with BIPOC clients.

Study Setting and Participants

The present study focused on the lived experiences of BIPOC users of AAC, caregivers of users of AAC, and SLPs engaged in providing AAC services to the BIPOC population of AAC users. Requests for study participants were provided to a variety of sources for dissemination within the United States, including AAC device manufacturers, AAC support groups from around the country, online AAC research consortiums based in the U.S., as well as local midwestern SLPs across practice settings (schools, hospitals, skilled nursing facilities, and rehabilitation centers) located in a moderately sized midwestern city. Participants were selected based on the following criteria: a. adult AAC users communicating using generative language that identify as members of minority groups that fall within the BIPOC community, b. non-associated caregivers of BIPO users of AAC, and c. Speech-language pathologists engaged in AAC practices with BIPOC clients. Requests for participation yielded a sample of three generative users of AAC, three caregivers (unrelated to the users of AAC), and four speech-language pathologists actively engaged in providing AAC assessment and treatments. Participants were selected based on their availability and interest in participation, caregivers of BIPOC users of AAC regardless of the race of the caregiver, the BIPOC identity of the users of AAC, and the professional practice (in AAC services) of speech-language pathologists. Participants completed informed consent prior to beginning their participation in the study. Once study participants were identified, and consent was completed, a schedule of interviews was developed with the study respondents. Participants took part in interviews and one mixed focus group online via conference calling using a HIPPA-compliant Zoom account, attended by study respondents and this researcher from multiple locations within a Midwestern city, including the researcher's home and the researcher's office at a local private university. Participant data were deidentified using a random number generator, and all research products were securely held within a biometrically secured computer, as well as any printed research data and documents housed in a locked office and filing cabinet only accessible by the primary researcher. Participants were given a $20 gift card to an online retailer for their time.

Researcher Role

As a licensed speech-language pathologist specializing in AAC practices, the researcher has direct knowledge of the inner workings of AAC, familiarity with the production and distribution of AAC devices, and the provision of therapeutic services to support AAC. This expertise and experience have informed and guided the development of the study and research questions. It is vital to ensure that the researcher's role and biases are addressed when conducting qualitative research. While this prior knowledge and experience informs this study, care must be taken to avoid inserting prior biases and experiences into the interview process, questions asked, and data analysis. Utilizing a three-person dissertation committee review process, all research questions and interview scripts were reviewed to address question bias and modify study questions and interview scripts to reduce such bias. Additionally, inter-coder reliability aids in ensuring that the coding and subsequent data analysis were reliable and free of bias. Addressing the researcher’s position within the study provides not only the reader with vital information to consider about the study results but also serves to center the researcher in such a way as to ensure active engagement in eliminating bias insertion.

This researcher served as the primary investigator, conducting the in-depth interviews and the focus group, primary data collection, and coding, with secondary coding conducted by 11 graduate student researchers to ensure inter-rater reliability before analysis. Finally, this researcher provided the primary analysis of the coded data, including data entry into Taguette (qualitative data analysis software) for final analysis.

Action/Innovation

The present study represents action taken to understand the lived experiences of BIPOC users of AAC, caregivers of BIPOC users of AAC, and SLPs practicing in AAC with BIPOC clients. This research will aid in identifying feasible ways to ensure direct practices in AAC (assessment and intervention) truly consider cultural differences. Furthermore, this study provides innovation in how the discipline investigates aspects of practice that are impacted by cultural differences. This represents an action that has not been fully explored in the literature. Through experience, knowledge, and review of the literature, a deeper understanding of cultural representation in AAC systems and a disciplinary shift to viewing AAC as cultural referents and disseminators is necessary to further the culturally responsive practices of the discipline. To do this, exploration of the lived experiences of users of AAC, caregivers, and SLPs engaged in AAC practices will identify the perceptions of these three stakeholders as they apply to the iconographic representations programmed on AAC systems. The results will yield valuable information that will direct the discipline's practice when working with marginalized groups that use augmentative alternative communication.

Instruments

The current study used Taguette (Rampin et al., 2021) a free, open-source software designed for tagging or coding qualitative research data to code and track all data collected from the in-depth interviews as well as the mixed focus group. Inductive coding was utilized in a bottom-up -up approach to identify themes within the data consistent with grounded theory, where analysis begins with no codes, codes develop through multiple pass-through coding, and themes emerge (Burkholder et al., 2020). These themes were developed and managed using Taguette for later analysis. This system functioned as the storehouse for the data and the system in which data were analyzed. All collected data, including interview videos, recordings, transcripts, and the Taguette system, were housed on a computer only accessible by the primary research via biometric security. Printed copies of all research data and products were kept in a locked desk and office only accessible to the primary researcher.

Data Sources and Data Collection

In-depth qualitative interviews utilizing three stakeholder groups and one mixed focus group served as the two primary data sources for this study. For each in-depth interview and the one mixed focus group, responses were recorded and transcribed into word processing software for later coding resulting in 11 individual transcripts that were analyzed and coded with qualitative data management software Taguette. Inductive coding was utilized in conjunction with Taguette software to develop codes across participant data; these codes continued to be monitored and revisited throughout the process to ensure accurate capture of all codes present through secondary and tertiary analysis. Axial coding was used to collapse codes into interconnected thematic categories for later narrative development. Study participants that use AAC were provided interview questions ahead of time to allow users of AAC to construct responses. Additionally, to ensure the researcher was prepared for the variance in AAC communication prior to interviewing study participants, two non-BIPOC users of AAC participated in practice interviews. These practice interviews were instructive on ways in which to reflect to study respondents that are users of AAC what they had stated and to determine accurate meaning was identified. Neither practice interview was transcribed, nor data from the practice interviews were included in this study. This was necessary due to the slow nature of communication through AAC systems and the variance in the ways in which users of AAC communicate. While inconsistent with the process for SLP and caregiver participants, modifications to the interviews and the mixed focus group process were necessary for this population.

Due to a dearth of literature on cultural representation in AAC practices, it was imperative to consider various data sources when investigating cultural representation in AAC devices. Doing so allows the researcher to determine the entirety of stakeholders' perceptions regarding how cultural representation is embedded into AAC devices and practices. This data will aid in answering the main study questions detailed previously and the sub-questions that follow:

Sub-questions SLP:

R1A: How do Speech-language pathologists experience the icon selection phase of assessment?

R1B: How do Speech-language pathologists experience AAC icon selection during the ongoing intervention process?

R1C: What additional considerations do Speech-language pathologists experience when working with users of AAC that are BIPOC?

Sub-questions Caregivers:

R2A: How do caregivers of individuals using AAC experience the icon selection phase of assessment?

R2B: How do families/caregivers of individuals using AAC experience AAC icon selection during the ongoing intervention process?

Sub-questions Users of AAC:

R2C: How do BIPOC users of AAC experience the icon selection phase of assessment?

R2D: How do BIPOC AAC users experience AAC icon selection during the ongoing intervention process?

R2E: What does cultural representation mean to BIPOC families of individuals using AAC?

The data collected from each interview and focus group was analyzed for the development of themes across participants. These themes were used to develop a coding or tagging system within Taguette for further analysis using a secondary and tertiary analysis of the collected data to ensure the accuracy of the coded themes.

Data Analysis

Data collected from each interview and focus group were inductively coded and analyzed for themes related to the selection of AAC iconography across the practice continuum (assessment through ongoing treatment). This thematic data analysis was organized based on the category of study participant (user, parent/caregiver, or SLP) and type of interaction (interview vs. mixed focus group), resulting in three discreet data sets from the interviews and one combined mixed data set to analyze further. As thematic codes emerged, the portions of the transcripts associated with these thematic codes were tagged as applicable using Taguette software. The themes from these data sets were then compared to determine differences and similarities associated with each demographic. The themes consistent across all three data sets were identified as the overarching thematic concerns related to cultural representation in AAC systems.

Conversely, those themes deemed disparate between data sets were analyzed for prevalence within the group to determine a hierarchy of concerns for each participating group. Finally, all themes were coded in association with known barriers to AAC adoption and continued use (knowledge barriers, practice barriers, policy barriers, etc.) Association to currently accepted AAC barriers provided a framework to conceptualize changes in graduate student training in speech-language pathology.

Threats to Reliability and Validity

To ensure the reliability of this study, the researcher used 11 graduate speech-language pathology students as alternate coders. Each coder was trained in the coding scheme using the developed code book from Taguette (Rampin et al., 2021), software. A sample of the interview data was selected from the data sets for initial analysis. Based on researcher training and coding between the primary researcher and 11 research assistants, interrater reliability of 90% on the first pass was achieved; after retraining and consensus-building, interrater reliability increased to 95%. The Hawthorne effect poses a threat to the validity of this study as additional coders were current students taught by this researcher. Current students may have a personal stake in providing responses they view as beneficial to the faculty researcher. To avoid this, the training of coders included a discussion of the Hawthorne Effect and its impact on research. Students were assured that their coding had no impact on their university programming. Further threats to validity included the primary researcher’s background as an AAC specialist and speech-language pathology. Including the researcher’s positioning within the study provided additional surety regarding the final analysis's validity, as Hesse-Biber & Leavy (2004) detailed.

Conclusions

This chapter focused on the methods used by the current study. These methods included a detailed description of the data sources, sample, sample selection, instrumentation, data collection methods, and coding schemes used for data analysis. These methods were used to gain insights into the perceptions of the three stakeholders (BIPOC AAC users, caregivers of users of AAC, and SLPs engaged in AAC practices) regarding the cultural representation of clients within AAC devices. The subsequent chapter will focus on the results of the data analysis.

Chapter – Four Analysis

Introduction

The preceding chapter detailed the methodology utilized within the present study. The purpose of the preceding methods and subsequent analysis was to answer the present study's primary research questions (R1 and R2) as well as the sub-questions (R1A, R1B, R1C, R2A, R2B, and R2C, R2D, and R2E) as seen in Table 4.

Table: 4

Research Questions

Research Questions	**Speech-language pathologists**
R1	What are the lived experiences of speech-language pathologists working with clients that use AAC regarding the selection of AAC iconography for BIPOC clients and families?
R1A	How do speech-language pathologists experience the icon selection phase of assessment?
R1B	How do speech-language pathologists experience AAC icon selection during the ongoing intervention process?
R1C	What additional considerations do speech-language pathologists experience when working with users of AAC that are BIPOC?
Research Questions	**Caregivers and Users of AAC**
R2	What are the lived experiences of BIPOC users of AAC and their caregivers regarding the selection of AAC icons on their devices that reflect their culture?
R2A	How do caregivers of individuals using AAC experience the icon selection phase of assessment?
R2B	How do caregivers of individuals using AAC experience AAC icon selection during the ongoing intervention process?
R2C	How do users of AAC experience the icon selection phase of assessment?
R2D	How do users of AAC experience AAC icon selection during the ongoing intervention process?
R2E	What does cultural representation mean to BIPOC AAC users and families of individuals using AAC?

The following chapter details the data analysis, including the procedures used for the analysis. The following section identifies the lived experiences of all three stakeholder groups engaged in AAC practices. Using the shared information from each informant's in-depth interviews and results from the mixed focus group allowed for developing a narrative of the experiences, answering the research questions noted above.

Data were organized and analyzed based on participant group (speech-language pathologist, caregiver, and augmentative alternative communication (AAC) user. Results are organized in three parts based on the participant group. A final analysis combines data from all groups, including responses from the mixed focus group, to compare themes across study participants. This chapter will also provide a conclusion of the analysis of all data.

Qualitative data was obtained using in-depth qualitative interviews from three stakeholder populations and one stakeholder combined focus group. Interviews were conducted with four speech-language pathologists, three caregivers of BIPOC (Black indigenous people of color) users of AAC, and three BIPOC users of AAC, with ten participants. Three SLPs, three caregivers, and two BIPOC users of AAC participated in the focus group, with eight focus group participants. Data from these ten interviews and one focus group were uploaded to Taguette (Rampin et al., 2021), a qualitative research analysis software allowing for primary and secondary data coding. All interviews and the focus group took between 45 and 60 minutes each. Interviews and the focus group were transcribed using transcription services provided by video conference calling software and then revisited for corrections based on the audio recording compared to the yielded transcripts. Once the transcripts were reviewed for audio and transcription accuracy, each transcript was uploaded to Taguette (Rampin et al., 2021) for coding. Interviews were coded using inductive coding, allowing the researcher to identify codes and overarching themes without predetermined parameters consistent with a grounded theory approach (Buss et al., 2014). These initial codes were then analyzed to identify overarching themes using axial coding by collapsing codes into interconnected themes (Corbin & Straus, 1998). The following sections of this chapter detail the analysis of each stakeholder group and a final comparison of the data across these groups, including the analysis of the mixed focus group.

Speech-Language Pathologist Analysis

Speech-language pathologist participants were identified by sending out requests for participation to a variety of locations detailed below, to answer the primary research questions: What are the lived experiences of speech-language pathologists working with clients that use AAC regarding the selection of AAC iconography for BIPOC clients and families? How do speech-language pathologists experience the icon selection phase of assessment? How do speech-language pathologists experience AAC icon selection during the ongoing intervention process? What additional considerations do speech-language pathologists experience when working with users of AAC that are BIPOC? This researcher sent out participant requests for speech-language pathology study participants to five AAC listservs, two regional AAC support groups, and three school districts. Additionally, participant requests were posted in online forums, including the Midwest Clinic Directors Conference (MWCDC). Interested SLPs expressed their willingness to participate through email. Each potential participant was screened via phone interview to determine that adequate experience in AAC, work with the BIPOC population, and experience with AAC assessment and intervention were present in the participants' backgrounds. A total of four participants were selected based on the criteria. All SLP participants identified as White females. All participants had worked with BIPOC AAC users in the past, ranging from children aged five to adults in their 70s.

Additionally, all SLP participants had experience with AAC assessment and intervention during their careers. Two participants were AAC specialists based on their current occupational title and experience, and one participant worked at a local university. The final SLP participant worked for community medical agencies contracted by school districts and skilled nursing facilities.

Transcripts of each interview and focus group were inductively coded using the software Taguette (Rampin et al., 2021),. Using this bottom-up coding approach, codes were developed by the researcher. Initial inductive codes were developed through this process, with new codes identified through ongoing analysis. Secondary pass-through coding yielded additional codes, and themes began to emerge. The initial inductive codes were collapsed using axial coding into interconnected themes. The use of open and axial coding is rooted in the grounded theory approach to qualitative research; by doing so, the researcher can identify the salient themes across participant data that reflect the participants' lived experiences (Creswell & Poth, 2018). Consistent themes from the SLP data included barriers, support, culture, and team input. Identified themes within the SLP respondent data were used to answer the research questions; Table 5 below describes these themes.

Table 5

SLP Themes

Barriers	They were exemplified by comments relating to any issue that interfered with adequate and appropriate service delivery.
Support	It is typified by comments relating to supporting families and others and notations indicating a need for support.
Culture	It is evidenced by comments relating to culture, including cultural voices, iconography, and cultural touchstones like holidays and meals.
Team Input	Demonstrative comments of either receiving input from team members or not receiving input from team members.

A final data review was conducted as themes emerged, and the data was organized visually based on thematic relationships. Visualization of the data allowed the development of narratives related to each theme as told by the five participants. The following sections will provide exemplars of this analysis for each theme, narrating the lived experiences of the SLP participants.

Research Question One: Experiences of SLPs selecting Icons for BIPOC Users of AAC

The first theme identified within the SLP respondent data (barriers) consisted of a variety of perceived issues that prevented or limited their ability to focus on the icon selection process, and these barriers related to research question one: What are the lived experiences of speech-language pathologists working with clients that use AAC regarding the selection of AAC iconography for BIPOC clients and families? Four SLPs were asked to describe their experiences working with BIPOC clients using AAC and to discuss their views and work on selecting iconography and vocabulary to program on their clients' devices. Participants noted varying experience and training in AAC when they first started working. SLPs indicated that at the outset of their career in AAC, they had limited knowledge and training to assess and treat individuals that use AAC. Respondents indicated that this lack of training and knowledge extended to limited awareness of whom to involve in the icon and vocabulary selection process. Respondents also indicated they had limited training in culturally responsive practices and did not feel equipped to consider culture during the AAC process. This lack of training is typified by respondents that stated: "I didn't have a lot of experience…" and "I don't ask [BIPOC] users what they want on their devices." Before starting work with individuals that use AAC, the SLP respondents learned AAC practices on the job in a trial-and-error manner consisting of self-learning as typified by one respondent who stated: "It's a lot to keep up with like when you have kids on multiple systems," and another respondent who stated "I really had to teach myself quite a lot, reaching out to others I knew that worked with AAC. You start to acquire like a portfolio to use with AAC work." However, these respondents noted that this on-the-job training did not include considerations for culture and the selection of iconography and vocabulary. One participant who reported adequate AAC training due to a concentration in AAC during her graduate program also noted a need for ongoing learning across the SLP scope of practice, including AAC, when working with clients of varied cultural backgrounds. Given the participants' comments, these SLP respondents did not feel prepared to work with AAC when no options for AAC specialization were offered at the graduate level. The limited training and support reported by SLP respondents aided in answering research question one: What are the lived experiences of speech-language pathologists working with clients that use AAC regarding the selection of AAC iconography for BIPOC clients and their families? The SLP respondent data demonstrated that for these respondents, their experiences working with BIPOC clients did not extend to the consideration of the client's cultural needs or the selection of AAC iconography and vocabulary. The respondent data suggested that culture was not a factor in their decision-making processes which extended from their identified lack of training in this area.

Research Questions One A and One B: How SLPs Select Icons in Assessment and Intervention

SLP respondents were asked to describe their experiences working with BIPOC clients that use AAC during the assessment and intervention phases of treatment and included additional follow-up questions targeting how they navigated cultural variances such as icons, vocabulary, and dialect. The data collected assisted in answering the research questions: How do speech-language pathologists experience the icon selection phase of assessment? How do speech-language pathologists experience icon selection during the ongoing intervention process? The varied barriers identified by the SLP respondents regarding AAC practices, including the selection of icons and vocabulary for programming on AAC devices, were identified within the respondent data. The barriers SLP respondents reported included a lack of training, time, engagement, and limited referral information provided to them by other providers (teachers, therapists, and caregivers). Additionally, SLP respondents' consideration for culture, including icon and vocabulary selection, was also evident across the assessment and intervention stages of treatment.

Training. SLPs reported a lack of training and education in culturally responsive AAC assessment and intervention practices. Within the respondent, data SLPs reported limited to no focus on the importance of the cultural experiences of clients and were therefore neglected. This lack of training and knowledge limited the SLPs' understanding of the client's cultural needs and inhibited their consideration of culture when selecting AAC icons and vocabulary. This was particularly evident within the assessment phase of treatment as four participants indicated similar comments typified by one participant "Are we really worrying about what is on the pictures." This comment illustrated the respondent's lack of care and attention in selecting AAC icons, particularly when follow-up questions were asked regarding their views on modifying icons to reflect the client's culture. One respondent indicated that client culture was not a consideration because she prefers to use photos of people in place of the stock iconography stating, "I like to use real photos; that way it doesn't matter if dad is Black the picture is of him, I don't need to modify the icon." While assistive in maintaining cultural saliency, this strategy did remove a need to consider cultural variance in the respondent's mind. In this respondent's case, there is evidence that some modification to iconography took place. However, these modifications were not rooted in the client's culture but were made based on photos of actual family members, friends, and interventionists.

Limited referral information. From assessment to intervention, SLP participants also indicated barriers regarding the information provided at the outset of assessment and continued intervention that have impacted their exploration of the culture of the family system and the selection of AAC iconography, as stated by one respondent:

> A lot of our kids come in with devices already from early childhood. Where did you guys leave off? [Is there] an assessment of, you know, where [sic] are they performing at that moment? I just don’t understand her [needs], so I think that was something that was important to me.

For the SLP respondents, receiving adequate actionable referral information provided time-saving that could allow them to explore further the cultural needs of their clients. In the data, this issue of insufficient information occurred mainly when the SLP participants received referrals during transitions between grade levels and between elementary school and secondary levels (middle school and high school). These issues were identified as an important information-gathering point that would aid in determining the client’s needs, including their needs for culturally reflective iconography and vocabulary, during their initial assessment work with new clients. Issues were noted by participants working in medical and university settings where the referral source did not provide adequate information to plan assessments or ongoing interventions. The lack of adequate referral information limited the time the SLP respondents had to focus on the cultural needs of clients and shifted their focus to the process of device selection and standardized assessments. SLP respondents identified that this shift in focus and time limitation prevented them from engaging in a dialogue with their clients and client caregivers, limiting the engagement of the family system and the cultural needs of the client, including asking the client and caregiver what icons and vocabulary they wanted to be programmed on their devices. Additionally, SLP respondents indicated that at the assessment stage of treatment, the lack of referral information necessitated a cycle of trials to determine the AAC users’ communication level, interests, communicative partners, communicative environments, cultural needs, and communication barriers.

Time. Time constraints represented the most frequently cited barrier discussed within the SLP respondent data and assisted in answering the research questions: How do speech-language pathologists experience the icon selection phase of assessment? How do speech-language pathologists experience AAC icon selection during the ongoing intervention process? SLP respondents indicated that time constraints impacted their ability to focus on the family systems of their clients and limited the time and attention paid to the cultural needs of their clients, particularly the selection of AAC iconography as typified by one respondent's statement, "There is just so much to do, and not enough time, worrying about icons just adds another thing." When asked follow-up questions regarding variance between the assessment and intervention stages of treatment, the respondent indicated no differences when considering iconography during both stages (assessment and ongoing intervention).

Time constraints were identified as the primary reasons for the lack of focus on the family system, the cultural needs of the client, and the selection of AAC iconography, which aided in answering the following research questions: How do speech-language pathologists experience the icon selection phase of assessment? How do speech-language pathologists experience AAC icon selection during the ongoing intervention process? Participants indicated additional problems with the time constraints placed on them by their work environments and the time required to provide best practice AAC assessment and intervention. While discussing the amount of time necessary for assessment and intervention and its impact on icon selection one participant indicated:

> He has a lot of needs, and it's taken me all this time; it takes a lot of time to teach her kids their devices, and it takes a lot of time to come up with engaging and fun activities. I just don't have time to do things like ask about icons or things like that.

According to the respondent, the significant time requirement for AAC practices coupled with limited surety that caregivers and users of AAC will follow through with support for in-home use reduced the SLP's impetus to do the additional work of exploring the family system and client's cultural needs such and engaging them in the selection of AAC iconography and vocabulary. Regarding time constraints, one participant noted, "Keep in mind getting this info can be difficult and time-consuming, and sometimes you have parents that just are not involved enough to be reliable in making changes." As described by the participants, the information-gathering process for AAC assessment and the ongoing development of interventions required significant time. The participants indicated within the data that in most work environments, those employers, through policy decisions, placed time constraints on the SLPs, negatively impacting the assessment and intervention process, including limitations on scheduling, limitations on what environments they can observe (onsite vs. offsite), caseload size, and number of users of AAC on their caseloads, having an additional impact on the available time for SLP respondents to explore the family system and cultural needs limiting the process of selecting icons to be used on their client's AAC systems. One respondent stated: "I think the biggest issues I experience and others I talk to come down to how much time it takes to do a good assessment for aac vs. the caseload, time, and staffing of the work site." Another participant characterized the time constraints in this way:

> There just isn't enough time in the week to contact all the people involved, do site visits, conduct observations, etc. When we do these things, it typically is off-contract time, so it becomes this choice: Do I preserve my time for me, or do I forego that time and time with family to ensure I have all this information? I think we all know the answer to that question; at least eventually, after a few years, those boundaries are set, and we just get what we can during the time we are contracted.

This statement was demonstrative of the time constraints faced by SLPs. These time constraints impacted their ability to focus on the cultural needs of the client and family system. During the assessment or ongoing intervention stages, they did not engage the family system and the User of AAC in selecting both AAC iconography and vocabulary.

Engagement. In addition to time constraints, the SLP participants noted barriers regarding parent and co-worker engagement impacting their experiences of icon selection during the assessment and intervention stages of AAC. As identified by the SLP respondents, engagement barriers also aided in answering the research questions: How do speech-language pathologists experience the icon selection phase of assessment? How do speech-language pathologists experience AAC icon selection during the ongoing intervention process?

During the assessment and intervention stages of AAC treatment, participants noted the lack of AAC knowledge of their co-workers, the fear that some co-workers and parents exhibit that manifests as refusal to use or allow the use of the device, and co-workers' and parents' lack of awareness of the purpose of AAC contributed to limited consideration for icon selection during the assessment and ongoing intervention stages. SLP respondents noted that without engaged and knowledgeable service providers and caregivers, icon selection was viewed as not possible, as caregivers and coworkers would not engage in discussions regarding icon selection. The SLP respondents viewed these issues as increasing the time necessary to focus on training those co-workers lacking AAC background. Additionally, the lack of engagement of caregivers in the use of AAC within the home (buy-in) took away time they could spend on identifying the cultural needs of their clients and the selection of icons to be used on AAC devices. One respondent noted:

> Adding things [icons and vocabulary] to a device, I would say sometimes [I do]. You know, depends on the student and the parent. How involved they are in the student, and things like that. Have you bought into this or not? You know, and maybe that's also part of my job [to engage them], But you know, it's like, well, if you're [going] to use it at home, I'll do it. But if you're not, I'm not [going] to put this on there…They just don't use it at home like at all, and [sic] as much as we encourage, and tell them [to].

Overall, the participants' data showed a relatively optimistic view of the support SLPs receive when working with users of AAC devices, "I love our district. I feel like we're very supportive in that area of AAC." However, this positive view of support from the SLP respondents' employers did not result in focused icon and vocabulary selection, nor did they engage the caregivers or users of AAC in the process of icon and vocabulary selection either during assessment or ongoing intervention.

Support. While clear barriers related to policy decisions were noted by SLP respondents (limitations on time, caseload size, location of observations, and timing of educational assessments and IEP development), employers were providing support by trusting the SLP as a professional qualified to make AAC decisions. The employers developed streamlined processes that reduced some of the time constraints the participants identified. However, this support came at a price, including shortcuts to AAC assessment, particularly the use of agency-wide policies that require the provision of the same system and software to all users of AAC. While viewed positively by the SLP respondents, these shortcuts to AAC assessment and a one-size-fits-all approach to providing AAC did not result in time savings that fostered a process for icon and vocabulary selection. One of the SLP participants made it clear when asked follow-up questions regarding how a one-size fits all approach impacted her inclusion of icon and vocabulary selection in her assessment and intervention practices stated:

> And holy crap, our kids are not one size fits all whatsoever. So, we're all just [going] to do this one [sic]. That's a barrier [sic]. You have to think outside the box more than just doing LAMP (Language Acquisition Through Motor Planning). Like, guys, this is supposed to be individualized. And why does everyone that I've worked with have LAMP?

The respondent continued to note that if her employer accepts a one-size fits all approach to AAC through their policy decisions, which focused on a specific system (Language Acquisition Through Motor Planning) where icons by design are relatively static, it reduced the need to consider the selection of icons and vocabulary across assessment and ongoing intervention.

Additional areas of support that SLPs indicated included support in the information-gathering process for AAC assessment and intervention. Lack of support from stakeholders in this information-gathering process was viewed as inhibiting the SLP's ability to obtain culturally relevant information and engage the caregivers and users of AAC in icon and vocabulary selection, particularly when caregivers were not forthcoming with the needed information. One response that typifies this need for support:

> Actually, write it down, and stuff like, here's what this kid actually likes and doesn't like, and maybe, that would help us with that icon selection. Do they need a real picture? Are they okay with just the stock photo and maybe trying things like that? Like, do they like these?

Team Input. The theme of team input assisted in answering the research questions: How do speech-language pathologists experience the icon selection phase of assessment? How do speech-language pathologists experience AAC icon selection during the ongoing intervention process? Team input is necessary to obtain the information needed to make appropriate iconographic and vocabulary selections; SLP respondents noted that this input was lacking and viewed such information as something that caregivers and users of AAC were responsible for, even when SLP respondents did not engage these stakeholders in the process as noted by one respondent when asked if she seeks input from caregivers and users of AAC when selecting icons and vocabulary to program on AAC devices:

> I feel like with the Icons, I get no [input]. We miss, like, I don't ask them what picture they like. We think, oh, well, they don't care what they choose. Maybe that could be a weakness probably of all of ours that we're not including [them].

When considering icon selection, the SLPs did not seek out the input of the users of AAC, caregivers, or other professionals limiting the selection of potential culturally salient iconography and vocabulary. However, they did seek input in other areas: "I know at different IEP meetings I've asked like, are you using this at home? What do they ask for the most at home? You know we're happy to put that on there." Similar responses sought input on how the device was used at home, what items and people needed to be programmed for use in the home, and what support caregivers and other professionals needed regarding device training. However, as noted previously, caregivers', users' of AAC, and other professionals' input was not always readily provided nor actively sought out by the SLP respondents.

The SLP respondent data was clear regarding research questions: What are the lived experiences of speech-language pathologists working with clients using AAC when selecting AAC iconography for BIPOC clients and families? How do speech-language pathologists experience the icon selection phase of assessment? How do speech-language pathologists experience AAC icon selection during the ongoing intervention process? SLP respondents placed culturally responsive practices and the selection of culturally salient icons and vocabulary at the bottom of the hierarchy of activities to do for AAC assessment and ongoing interventions, if this occurred at all. SLP respondents had limited awareness or understanding of culturally responsive practices and actions they could take to practice in a culturally responsive way. The barriers of time coupled with workplace limitations, lack of coworker knowledge and input, lack of caregiver and user of AAC engagement and input regarding culturally appropriate iconographic and vocabulary selections coupled with the assumption that these individuals would proffer such information unsolicited all worked in tandem to limit or inhibit the process of selecting icons and vocabulary that are salient to the cultural experiences of the user of AAC and their caregivers.

Research Question One C: Additional Cultural Considerations of SLPs

Culture. Cultural identity is complex and comprises ideas, beliefs, and associations. For a profession where cis-gendered White females predominate, it is vital to understand their lived experiences working with culturally diverse populations such as the BIPOC population. This provides valuable information on how these SLPs consider cultural differences and ensure they commit to culturally responsive practices, such as selecting culturally relevant vocabulary and icons for AAC systems. The aspects of culturally responsive practices identified by SLP respondents provided insight into answering the research question: What additional considerations do speech-language pathologists experience when working with users of AAC that are BIPOC?

Participants noted that they consider the race and ethnicity of their clients. However, this consideration did not occur when selecting icons and vocabulary for AAC devices for clients identified as BIPOC. SLP respondents indicated that they did not explore with users of AAC and caregivers their cultural needs. This included selecting iconography and vocabulary for client AAC systems that were culturally salient for BIPOC users of AAC. The SLP respondent data demonstrated concern regarding the availability of culturally appropriate voices, but this concern did not extend to icon and vocabulary selection, as evidenced in one respondent's statement.

> I don't ask them, you know like I just pick for you. Maybe that could be a weakness probably of all of ours that we're not including [them]. We think, oh, well, they don't [sic] care what they're choosing. I think that's one of the barriers or challenges is that, a lot of times, our users have very little cognition, and I have a hard time making choices as it is. That's why we're giving them.

A consistent refrain regarding cultural and AAC icon selection was represented as though the culture was not a required consideration when selecting iconography and vocabulary as demonstrated by one SLP respondent, "Are we really worrying about who's on the picture?" SLP respondent data demonstrated that limited to no consideration was given to icon selection regardless of its cultural saliency. SLP respondents also placed primary responsibility on the caregivers to either make iconographic changes themselves or to request them from the treating SLP; one respondent noted:

> I would say sometimes, you know, depends on the student and how, [sic] the parent, how involved they are in the student, and things like that. I typically don't edit the icons that come on the system. That much I really try not to change, [I] try [not] to change them too much. [sic], I haven't gone in and like changed all the skin colors and things like that. That you're kind of relying on family and caregivers.

It was clear from the SLP respondent data that SLP respondents viewed themselves as culturally responsive, however, the treatment decisions and actions did not always align with these practices regarding iconographic and vocabulary selections that were culturally salient as demonstrated by another SLP respondent who stated, “I just pick for them, I don’t ask what they want on the device”, aiding in answering the research question: What additional considerations do speech-language pathologists experience when working with users of AAC that are BIPOC? The SLP respondent data indicated a lack or limited process of icon and vocabulary selection in general, which extended to the BIPOC clients they provided services to. SLP respondents indicated that they do not consider modifications to icons on AAC systems, except for using photos of real people. Due to a lack of focus on icon and vocabulary selection in their general AAC practice, they did not engage caregivers of BIPOC users of AAC and BIPOC users of AAC in an icon and vocabulary selection process. SLP respondents indicated that they are considerate of the cultural differences of BIPOC users of AAC, but no specificity regarding these considerations was noted within the data. Still, this consideration did not extend to an icon and vocabulary selection process that engaged the views of the BIPOC users of AAC and their caregivers. SLP respondent data also indicated that the SLPs relied on the caregivers to request or make iconographic and vocabulary changes to their family members’ AAC systems, mainly when those changes were related to culture.

Caregiver Analysis

Caregivers of persons that use augmentative alternative communication represent, from a family systems perspective, one of the most influential primary groups of information and support for family members that use AAC. To understand the lived experiences of caregivers of BIPOC users of AAC, three caregivers were selected to participate in the present study. Caregiver respondents were asked questions regarding their experiences during the assessment and ongoing intervention stages of the AAC process. Additionally, caregivers were asked questions to identify their current understanding of culturally responsive practices and what they consider to be culturally responsive practices in AAC services. Exploring caregivers' experiences is tantamount to answering the research questions: What are the lived experiences of BIPOC users of AAC and their caregivers regarding the selection of AAC icons on their devices that reflect their culture? How do caregivers of individuals using AAC experience the icon selection phase of assessment? How do caregivers of individuals using AAC experience AAC icon selection during the ongoing intervention process? What does cultural representation mean to BIPOC AAC users and families of individuals using AAC? To answer these research questions, requests for caregiver study participants were submitted to 3 web-based AAC support groups, 7 Midwest communications disorders graduate programs, and 12 local school districts. The requests yielded an initial total of four participants who expressed interest in participating. During the scheduling process, one caregiver moved away from the area and self-selected to be removed from participation. Additional participant requests were submitted to two agencies that provided AAC services and AAC specialist programs at two universities outside the Midwest. These requests went unanswered and additional participants were not located, resulting in the total participation of three caregivers. The three caregiver respondents participated in one in-depth interview, utilizing remote meeting software with transcription support. These respondents also participated in one mixed (SLP, Caregiver, User of AAC) focus group facilitated through the same software. Interview transcripts were then uploaded to the qualitative analysis software Taguette with primary inductive coding allowing the researcher to identify codes within the textual data. Secondary axial coding was used to develop themes by collapsing the initial inductive codes into broader thematic categories to answer the above research questions. The themes within the caregiver data mirrored those of the data of the SLP participants. These themes and their corresponding comments formulated the caregiver narrative that follows, and these themes can be seen in Table 6 below.

Table 6

Caregiver Themes

Barriers	They were exemplified by comments relating to any issue that interfered with adequate and appropriate service delivery.
Support	It is typified by comments relating to supporting families and others and notations indicating a need for support.
Culture	It is evidenced by comments relating to culture, including cultural voices, iconography, and cultural touchstones like holidays and meals.
Team Input	Demonstrative comments of either receiving input from team members or not receiving support from team members.

Research Question Two: Experiences of BIPOC users of AAC and Caregivers in Icon Selection

One participant that obtained AAC services through a medically based site (hospital) stressed the issues of time and professional perceptions of AAC readiness within the medical community.

> I felt frustrated with the device progression in the medical community because I've been pushing for it for a long time, and they just kept saying, no, no, he's not ready. They trialed him several times, and I didn't feel like it was a fair trial because they tried multiple devices in one half-hour intervention. And then they just said, 'He's not ready,' and so I feel like people didn't want us to do AAC. But that leaves me with nothing right, and that's not a good place to be.

This respondent's experience caused frustration with the AAC process and prevented the timely implementation of AAC for her son. This wait-and-see approach to AAC did not consider the caregiver's concerns related to AAC. The respondent's concern for ongoing AAC services and incorporating preferred iconography and vocabulary was seen as inextricably tied to the dismissive nature of the caregiver's needs. The respondent was, therefore, confident that those assessing her child would disregard her concerns, including those related to culture, icons, and vocabulary selection, when probative questions were asked regarding the impact of this experience on the selection of AAC icons and vocabulary.

Research Questions Two A and Two B: Caregiver Icon Selection in Assessment and Intervention

Barriers. Barriers within the AAC process were the most prevalent within the caregiver sample and were assistive in answering the research questions: How do caregivers of individuals using AAC experience the icon selection phase of assessment? How do caregivers of individuals using AAC experience AAC icon selection during the ongoing intervention process? Most of these perceived barriers were directly related to the assessment and intervention stages of treatment. One caregiver respondent characterized her experience with AAC processes within the medical community as a process of weighing the time necessary (taking the family member to appointments) when the speech-language pathologists were refusing to address family concerns regarding the provision of AAC, including icon and vocabulary selection. The caregiver struggled with determining how much she should or could push back against the medical speech-language pathologists regarding the provision of AAC and icon and vocabulary changes she believed were necessary, noting, “My experience, not the best, but I had to push for AAC, and the response during this time made me feel that my input was not respected or taken into consideration.” When asked probative questions regarding how this impacted her participation in icon and vocabulary selection once AAC was provided, she indicated a reduced willingness to participate in additional AAC processes, including icon and vocabulary selection, as she felt her views would not be acted upon. Additional barriers that inhibited caregiver participation in the AAC process, including icon and vocabulary selection, were noted by another caregiver supporting a medically complex family member. This caregiver noted the existence of a cost-benefit to determine if the assessment results and subsequent interventions were worth the time and money expended. When asked probative questions regarding how this consideration impacted her willingness to engage in AAC processes, including icon and vocabulary selection, the caregiver identified the cost-benefit analysis regarding both time and money expended as an inhibitory factor on caregiver engagement, as it related to sharing cultural information that would aid in selecting icons and vocabulary that were culturally salient.

> I go to the appointment in the medical community [at] a speech [center], and I feel like [sic], nothing is done, and he doesn't want to go. He cries, and so I'm dragging him. And that's important to me, telling me he doesn't want to go. And then I'm forcing him to go. So, then you're arguing [pushing back]. But [I'm told] no, we're not going to do anything about it until you go [to these other medical appointments]. So I'm in this, like, how much do I fight to drag him? Fight my time and spend my money when they're just gonna say, wait! I just don't engage, just sit there and smile.

Caregiver participants commented on the time it took to obtain private and public funding for their family member's AAC device. Additionally, participants indicated difficulty with how long it took to obtain an AAC device due to regulations placed by funding sources and site processes. This time extended any potential considerations for selecting iconography and vocabulary as the process of AAC personalization did not begin until the AAC device was obtained. A caregiver respondent stated:

> [User Name] never [sic] got to use the device, [sic] so once we got the device, it took a while to get the device, I will say that. [sic] With the device, I think we would have jumped in and started using it. But by the time we got the device, he had already kind of been in therapy for a while, a little bit like, and so we depended a lot on the therapist to help him a lot, and then he left the hospital.

When this caregiver and AAC user were discharged from the hospital, they were eventually provided AAC after waiting for funding source approval. However, even with the device, no exploration of the cultural needs of the user of AAC and the caregiver were addressed. Additionally, no iconographic and vocabulary selection was undertaken when the caregiver was asked probative questions regarding how this experience impacted their participation in icon and vocabulary selection.

Additional concerns regarding receiving ongoing therapy services after obtaining an AAC device were noted in the caregiver respondent data. Respondents indicated that their insurance provider only paid for a few therapy sessions for their situation. However, their insurance company required ongoing treatment to obtain funding for the AAC device. This need for continued therapy but a lack of adequate funding placed a financial burden on the family until they began receiving services from a free university speech and language clinic. Two respondents identified limited therapy sessions after obtaining AAC as an inhibitory factor in exploring caregiver and user culture. Respondents noted insurance coverage that only funded five to fifteen sessions was not seen as enough time to identify the preferences and cultural needs of the user and family system. Without this information, respondents indicated that preferences for iconography and vocabulary were not identified until they began receiving treatment at a free university clinic. One respondent noted:

> There are issues with the insurance on paying for therapy. We need three days a week at the max, and [it] only pays for two, capped at 15 per year. When [University Clinic] came along, it was like, hey, we’re doing this full at least 4 or 5 days a week, and we’re like getting ready to go, at no cost. SLP there is great, she asks every week what needs to change on the device.

The respondent noted that it wasn’t until they began receiving free services from the university clinic that they were engaged in choosing the vocabulary and icons programmed on their AAC system.

Caregiver participants also identified barriers within educational settings related to AAC practices. Caregivers that interfaced with educational departments (school districts, state educational consortiums, and AAC lending programs) indicated primary barriers to school use versus home use and ongoing communication from their school-based SLPs. One respondent identified the issue regarding where the AAC device could be used and the lack of follow-through from their school-based SLP. Caregiver respondents noted that they could not have the AAC device sent home for use in that environment when the device was funded through the school district. Additionally, one caregiver respondent noted that they purchased a device for home use, but the school district would not allow the family to send it to school. Limiting the location where an AAC device can be used was seen by caregiver respondents as reducing their engagement in the process, and they did not feel that advocating for iconographic and vocabulary preferences was necessary as these aspects of communication were centered within the home.

> School is using it. There’s no communication from that. I mean, I know he’s using it [sic]. [SLP says] [sic], We tried, you know, we worked on the app or on prepositions. They said they could maybe think about money if the district bought the device [but] then can’t bring it home. But they didn’t [do it], but it wouldn’t be able to stay with him after he [left school], so there just needs [follow through] there’s not a lot of follow-through [sic].

This caregiver respondent's experience drew attention to the difficulties with getting the school district to fund their child's AAC device and the problematic nature of where the AAC device could be used. Districts must provide the necessary services and support to meet the child's educational needs. In this case, the district restricted those supports by limiting the location where the child could use their district-purchased AAC device. To mitigate this barrier, the family purchased their own AAC system out of pocket to have a system to use at home and school. However, this caregiver noted how difficult it was to ensure that preferred icons and vocabulary were consistent across both devices. This was particularly problematic for this respondent as the school SLP would change the district-purchased device regarding vocabulary and iconography without notifying the caregiver of these changes. Other caregivers also indicated issues with AAC devices purchased by the school district and home use. Caregiver participants commented that they must sign a statement of responsibility requiring them to pay for repairs and replacement if damaged. These caregivers were reticent to do so due to the cost of the AAC systems. To financially protect their families, caregivers made difficult decisions to accept limited AAC use across locations. This limited access reduced the connections between caregiver and user culture within the home and the users' communication through their AAC system. This disconnection further pushed caregivers away from participating in the AAC process, causing disengagement and inhibiting the exploration of preferred iconography and vocabulary.

Caregiver participants also identified barriers to communication with educational staff resulting in a perception of not being treated as integral members of the AAC team even when the parent was actively engaged in the AAC process. This perception limited the engagement of caregivers in the AAC process, including the selection of icons and vocabulary to be programmed on their AAC devices. These issues related primarily to the lack of input from school staff regarding changes made to their family member’s AAC device, the therapeutic targets used within school-based therapy, and absent attempts by school staff to obtain necessary information from the caregiver to plan appropriate individualized services that were considered culturally relevant including culturally salient vocabulary and preferred iconography. One respondent noted:

> I’m not a typical parent, but I feel like I get no communication from the school people. No, I mean, she does find me in the hallway when there, but I get no, there’s nothing like that sent home. There’s nothing that’s written; I mean, I get a thing about his goals in our progress quarter, or whatever that he you know [is doing], [there is] one person that I can get information from but no details and they don’t ask me what to put on his talker.

Further support for the issues related to school-to-family communication can be seen in additional statements by caregiver participants. These comments also included concern regarding how caregivers can adequately support their family members that use AAC.

> It’s, I’ve had a rough time, again I’m picking my battles with them, and it’s [sic] the first year. I don’t want to like burn bridges right out of the gate. So yeah, there’s no communication. I have no idea what they’re doing. I don’t know if they’re doing that [making changes to icons and vocabulary] or what I should do since [I’m] not getting that communication.

Additional comments by caregiver respondents related to additions and changes to their family member’s AAC devices without their input or knowledge were identified within the data. Caregivers were clear regarding the impact of these changes and the lack of acceptance of input from caregivers. When caregivers were not consulted regarding AAC changes, important culturally relevant information was absent to guide these vocabulary and icon changes. Preferred icons and vocabulary were either not selected for these changes, or those existing relevant icons and vocabulary were removed and replaced by SLP-selected iconography and vocabulary. One respondent noted, “They had like a dinosaur, [it] is not open. I said. Oh, that’s one of the favorite things to talk about, like unlock that”. This comment demonstrated how simple changes in access to highly preferred language impact the user of AAC. Not engaging the caregiver in the process limited the professionals’ understanding of salient information that benefits the client and the family system. When addressing changes without caregiver input, another caregiver responded that they were asked for input at the outset of the assessment, but this ended after the AAC system was received and intervention commenced. By not seeking caregiver input on the programming needs of the user of AAC prior to making changes to the iconography and vocabulary, the cultural needs of the user were not met. The respondents also identified these changes as inhibiting their engagement in the AAC process and reducing their willingness to participate in ongoing changes to vocabulary and icons.

Support. Throughout the data, caregivers indicated aspects of support they received or sought regarding AAC, including using and selecting icons and vocabulary. These supports consisted of the assistance they received from family members and friends when communicating and selecting the icons and vocabulary for use in the users’ AAC systems, aiding in answering research questions: How do caregivers of individuals using AAC experience the icon selection phase of assessment? How do caregivers of individuals using AAC experience AAC icon selection during the ongoing intervention process? Caregivers noted difficulty accessing or being supported by professionals working with their family members using AAC, including selecting and programming icons and vocabulary. One caregiver noted her background and preexisting knowledge of AAC as a beneficial support for her and her family member that uses AAC. “I come from a special needs background. So, I was aware of a lot of choices and devices. And so, then we started doing research. And I started making pictures." However, this respondent continued to indicate that even with her special education background, she did not feel that her input regarding icon and vocabulary selection would be acted upon, based on her experiences with changes made to her son's AAC device without her knowledge.

The caregiver data clearly showed that by not demonstrating adequate levels of support to respond to caregiver concerns at both the assessment and intervention stages, their needs as a family system, including their cultural needs, were unmet. The caregivers consistently noted that when their input was not accepted or acted upon by their SLPs, they did not continue to proffer information regarding preferred iconography or vocabulary. Barriers regarding the cost of AAC, even when funding through private or public insurance and self-funding, ability to take the device home, fear of signing paperwork holding them responsible for AAC equipment, and the continued lack of engagement with caregivers on behalf of the treating SLP worked together to reduce caregiver engagement and inhibit sharing information regarding their cultural needs as they relate to icon and vocabulary selection.

The provision of some support was identified within the data. Caregiver participants indicated that the school district provided most of their services. "The school provides all his services. There is no audiologist, but the district contracted with one shortly after he started to support his hearing concerns; you need those professionals and adults to support." Caregiver participants also identified receiving support from school faculty through training when necessary to support the use of AAC. Still, there was no indication from the data of the nature of this training or its efficacy. Additionally, concerns for vocabulary and icon selection salient to the cultural experiences of the user and caregiver were not addressed in training. Within the data, it was clear that the caregivers received the most training during the initial stages of treatment, starting during assessment and the beginning stages of intervention. However, this training did not appear to continue throughout interventions within the data collected. It did not reflect a focus on culturally responsive practices or the selection of preferred iconography and vocabulary according to the caregiver respondent.

Support, as identified by the caregiver participants, is not just a service provided by speech-language pathologists or other professionals. Caregivers noted the importance of their family system, including their primary family group, and extending outwards towards their local community in supporting their family members using AAC. One caregiver noted how important it was for the family unit or system to actively communicate with the AAC user, assisting with programming and providing positive feedback.

> At the time, because you all right for your family and your friends, and you know your tribe kicked in because they know what you like, and they kind of still know you. And so you don’t really, maybe, need much. So, everybody who really really knows [User Name], they’ll come here with them [and work] extremely well [with the user] because they can still communicate with [the user] extremely well.

Caregiver participants of family members that use AAC systems recognized the benefit of the family system and broader community social supports that friends and family members provide. Other caregivers also noted supportive family members that engaged both communicatively with the person using AAC and on the programmatic side of these systems, including selecting icons and vocabulary, “My husband works in tech, so he uses that understanding, makes changes so much easier.” This reliance on family and social systems supports provided the caregiver respondents opportunities to address concerns regarding the preferred vocabulary and iconographic needs of the user of AAC when the professionals did not engage them in sharing such information.

Caregiver data analysis demonstrated the strengths and weaknesses of the support they were provided. The participants were clear that there is a need for increased levels of support both from the professionals providing AAC services and the family and broader social networks. While support was provided, the overall data analysis indicated that these supports are insufficient to support their family members that use AAC. Additionally, the lack of support evidenced in the caregiver respondent data provided a picture of how limited support prevented the exploration of cultural needs and the selection of preferred icons and vocabulary by the treating SLP. The SLPs did not engage caregivers to provide the requisite information on these cultural concerns. The respondent indicated that the family system stepped in to supplement these areas of concern when the technical knowledge regarding the programming of AAC devices was readily available to these family members.

Research Questions Two and Two C: Caregiver Icon Selection for Culture and Intervention

Culture. A primary concern of the current research was rooted in culturally responsive practices. The concepts of culturally responsive practices in AAC require unique considerations, including the iconographic representations of people within the AAC system, the vocabulary used within the system, the ability to use primary languages other than English, and the ability to use dialectal variations other than Standard American English (Beukelman & Light, 2020a; Beukelman & Mirenda, 2013a; *Cultural Responsiveness*, n.d.). The caregiver respondent data related to culture assisted in answering the research questions: What are the lived experiences of BIPOC users of AAC and their caregivers regarding the selection of AAC icons on their devices that reflect their culture? What does cultural representation mean to BIPOC AAC users and families of individuals using AAC?

Caregivers indicated that their primary concern was communication and finding an effective communication method. Cultural considerations for the caregiver participants were of less significance, aiding in understanding the low level of concern these issues engendered. However, even as a low-level concern, caregivers did note that while the visual representation of icons was of little concern, cultural vocabulary that reflected their lived cultural experiences was important, as evidenced in one respondent's statement.

> So adding another language right now, on top of this, is not the right call for our family, but down the road, there is. And some of these devices have a way where you can switch just with a button between Spanish yeah, this one does. There is the option. But we're like this way off for this little guy, when you have pictures, regardless of who's programming and whether it's you guys or the school when you have pictures of people, there isn't need to change the icons.

The caregiver stressed the importance of using pictures of real people within their primary and broader family system. By doing so, the caregiver participants indicated that the need to adjust the skin tone of icons representing people became irrelevant when using real pictures of these people. Within the data, there was an identified need to include icons and vocabulary representing cultural touchstones (holidays, foods, celebrations, and slang), as evidenced by this respondent's statement.

> Whereas family is huge, I can say in the Black community people, I will say, especially like for family, because I know they put Grandma, Grandpa, mom, things like that, but I will say cousins is really big because my son, he has a lot. I am skeptical about that

> [changing icons for skin tone and changing dialect], and the reason why I'm skeptical. Because [of] how I was raised. So, we do have different dialects. But that's usually done at home and not in the school or a professional setting. So, I would say no, not to add it, because that's not something that should be used at schools. That's more so when you're at home or when you're around your family or friends of the family that you can feel open to. Yep, that will be something that would be beneficial. For example, he uses my bad now. So, he got that from [sic] my brothers like oh, my bad or when he's referencing some, especially like a guy is, hey Bro hey cuz. So yes, I definitely understand that dialect. If there was a button, that could be something that he is always using as an option [would be good].

Caregivers also demonstrated their reduced concern regarding cultural adjustments to their AAC devices based on their personal experience and how they raise their family members using AAC.

> That's just not something that I will say in my household [is done]. That wouldn't stop me or [prevent] me [sic] from using the device because of the dialect; in my situation, I don't use too many outside dialects, especially with him, because he picks up on anything.

However, caregivers that self-identified as engaged in the AAC process indicated that if a word, phrase, or icon needed to be added to the system, they would either program these themselves or make requests to the speech-language pathologist providing services. This engaged caregiver was the only respondent to indicate she would suggest iconographic and vocabulary changes if necessary to support her son's cultural life. One caregiver differentiated between varying groups within the wider BIPOC community and indicated that this might be a more significant issue for some, clearly expressing that the BIPOC community does not view issues of race and culture singularly. The iconographic and vocabulary needs of users of AAC are individualistic and contingent upon their own lived cultural experiences.

> So, if that was something he were to use, he [sic] would do it, and he says, my bad clear as day, so I don't think that he will be pointing that out on the talk device; that's just a key thing, I feel. If I was maybe African descent or Nigerian and I had those [dialects] because I do have a coworker and they have different lingo and things like that. Then yes, I [would] understand that need. But with my household, no.

An analysis of caregiver data on culture assisted in answering research questions: What are the lived experiences of BIPOC users of AAC and their caregivers regarding the selection of AAC icons on their devices that reflect their culture? What does cultural representation mean to BIPOC AAC users and families of individuals using AAC? The respondent data demonstrated that the client's culture must be considered regarding AAC systems, particularly when selecting vocabulary. However, modifying AAC icons was not a primary concern limiting the need to participate in the icon selection process.

All caregiver participants noted that the overriding concern was to identify and begin using an effective method of communication. However, caregivers indicated that SLP professionals must identify when to adjust programming or what to program based on the input from the caregivers and AAC users, as they are primary informants regarding the lived cultural experiences within the family system. This was particularly important when working with an AAC user from a cultural group different from the culture of the speech-language pathologist. For caregiver respondents, the central focus of culturally responsive practices was the consideration of the existence and validity of various cultures, including the family system in decision-making for AAC, and accepting the value of their lived cultural experiences.

Team Input. The lowest reported concern within the data was team input. However, team input and problems inherent in team input were viewed predominantly as barriers to adequate AAC services. Caregivers that self-identified as engaged in AAC with treating professionals indicated that they provide input when they identify a need for a new vocabulary or changes in iconography that reflect their cultural experiences. One self-described involved caregiver stated, “I was able to bring it up [vocabulary changes].” However, one caregiver that did not describe themselves as involved indicated they did not provide input regarding icon and vocabulary selection, and their treating SLP did not actively seek that input. “They have not communicated about it, but they are the professional; I wait for them to identify needs and make changes, but I am not involved in it.”

Another caregiver noted that when first receiving the device, all human characters had White skin tones, but after several weeks skin tones were changed to brown without the caregiver’s input. Caregivers noted that changes to their family members’ devices were made without their knowledge, including adjustments to the iconography by changing the skin tone of human characters, “So I did notice that, and then I also like, because it was kind of color coded.” Some providers did consider culture, language, and iconography on AAC devices. However, this became problematic when SLPs did not engage the family and broader family system as informants that best provide insight into the cultural touchstones needed to represent and perform culture in their communities (Beukelman & Light, 2020; Hyter & Salas-Provance, 2019a).

The caregiver respondent data answered the research questions: What are the lived experiences of BIPOC users of AAC and their caregivers regarding selecting AAC icons on their devices that reflect their culture? How do caregivers of individuals using AAC experience the icon selection phase of assessment? How do caregivers of individuals using AAC experience icon selection during the ongoing intervention process? What does cultural representation mean to BIPOC AAC users and families of individuals using AAC? Due to the time requirements and costs (financially and socially) of seeking out, obtaining, and supporting their family members' AAC systems, caregivers experienced a reduced ability to focus on the issues of culture and icon and vocabulary selection. The lack of SLPs engaging caregivers in the icon and vocabulary selection process inhibited caregivers from sharing cultural information to guide icon and vocabulary selection. Caregivers that did not identify as engaged in the process did not share culturally relevant information, viewing the SLP as the decision maker. The lack of SLP communication regarding programming changes to AAC systems also impacted how caregivers perceived their place as informants of cultural experiences, limiting their involvement in selecting preferred iconography and vocabulary. Caregiver perceptions of culture and where AAC should be used (school vs. home) decoupled AAC from the cultural lives of the caregivers of family members that use AAC.

Users of AAC Analysis

Consideration of lived experiences of those involved with AAC cannot be illuminated by just professionals and the caregivers of users of AAC. The lived experiences and perceptions of users of AAC regarding the selection of iconography and vocabulary are meaningful as they are the individuals that will be using the AAC systems throughout their daily lives.

BIPOC users of AAC were selected to participate in interviews to answer the research questions: What are the lived experiences of BIPOC users of AAC and their caregivers regarding selecting AAC icons on their devices that reflect their culture? How do users of AAC experience the icon selection phase of assessment? How do users of AAC experience AAC icon selection during the ongoing intervention process? What does cultural representation mean to BIPOC AAC users and families of individuals using AAC?

Users of AAC were identified through contact with three AAC support groups, four local university clinics, and local SLPs working in AAC. These requests for participation initially yielded four participants. However, while scheduling interviews and focus groups, one participant dropped out due to moving to a new city and did not have the time to dedicate to the study. This left a total of three AAC user participants. Three users of AAC participated in in-depth qualitative interviews, and two users of AAC participated in a mixed focus group (SLP, users of AAC, caregivers), resulting in a data set for analysis using inductive coding during primary and secondary pass-through and tertiary axial coding to collapse codes into broader themes. Due to the nature of communication in this population, adaptations were made to interview questions. These adaptations consisted of practice interviews with users of AAC not included in this study, providing study participants with interview and focus group questions before the meeting, and using questioning to determine the accuracy and consistency of the participants' comments to ensure the accuracy of meaning.

As with the other participants (SLPs and Caregivers), similar themes developed through inductive coding and axial coding of AAC user participant data that aided in answering the research questions noted above. The themes developed from the AAC user data can be seen in Table 7 below. Some differences between AAC user data and the data of SLPs were noted. AAC users commented more on the area of support than the other two participant groups, making support the most salient theme within the data set. The second most frequent theme noted was barriers; primarily, these barriers were related to support and support needs. Additionally, they addressed team input comprising the least number of comments. The themes developed from axial coding were used to answer the research questions of the present study.

Table 7

AAC User Themes

Barriers	They were exemplified by comments relating to any issue that interfered with adequate and appropriate service delivery.
Support	They were typified by comments relating to supporting families and others and notations indicating a need for support.
Culture	They were evidenced by comments relating to culture, including cultural voices, iconography, and cultural touchstones like holidays and meals.
Team Input	They were demonstrative of comments of either receiving input from team members or not receiving support from team members.

Research Question Two: Users' Experiences of Icon Selection That Reflects Culture

Support. Respondents that use AAC identified the support they received after their initial therapy sessions within the medical community. This respondent data assisted in answering the research question: What are the lived experiences of BIPOC users of AAC and their caregivers regarding the selection of AAC icons on their devices that reflect their culture? Respondents noted that their initial support was limited due to restrictions in funding ongoing treatment. One respondent noted that he was not asked what he wanted to be programmed on the device during the brief period of funded treatment. The limited number of therapy sessions was identified by two caregiver respondents, as reducing their ability to fully engage in the AAC personalization process that reflected their cultural experiences, including icon and vocabulary selection, because there was not enough time to explore the client's cultural needs. At the end of the brief period of funded ongoing services, the respondents sought the assistance of free university speech and language clinics. An increase in the weekly treatment sessions was noted in the data and contributed to increased opportunities to engage in the ongoing personalization of their AAC systems to include preferred iconography and vocabulary that was culturally salient to the AAC users' lived experiences. The data of users of AAC demonstrated that their involvement in expressing their cultural experiences and needs regarding icon and vocabulary selection was limited. These limitations centered on the amount of time intervention was provided and the willingness of the treating SLPs (medical SLPs and university clinic SLPs) to engage the users of AAC in personalizing their devices. While initial SLP supports did not provide ample opportunity to engage in the personalization process of icon and vocabulary selection, the support received from free clinics did provide the user respondents with additional opportunities to select preferences for the icons and vocabulary programmed on their AAC devices. The respondent data also demonstrated that members of the family system served as additional support in the personalization process outside of the therapeutic setting, assisting the users of AAC in selecting vocabulary and icons that were viewed as culturally salient.

Team Input. Team input was the least evident theme within the AAC user data. Team input reflected the barriers and support needed by AAC users. It appeared as a function of the need for more engagement of users of AAC during the selection of vocabulary and icons. "The SLP got the talker, they set up everything on the talker," and lack of input on what was programmed on the system, "I wasn't asked what to put on the device," and "On the device, no one asked what needs to be there" appeared to be the most salient issues. The AAC user data showed evidence of engaging caregivers more than engaging AAC users in the AAC personalization process; this limited engagement of users of AAC hindered the selection of culturally relevant vocabulary and the icons used to represent that vocabulary.

Research Questions Two C and Two D: User Icon Selection Across Assessment and Intervention

Barriers. AAC user participants expressed various issues related to the barriers they experienced obtaining and using AAC systems. These barriers consisted of AAC funding, the time necessary to obtain an AAC device (typically related to insurance, both public and private), lack of ongoing treatment to support AAC (typically due to the funding source restrictions), and a lack of attempts to seek out the AAC users' opinions regarding what should be on their AAC devices including the vocabulary and icons. User respondent data assisted in answering the research questions: How do users of AAC experience the icon selection phase of assessment? How do users of AAC experience AAC icon selection during the ongoing intervention process?

All participants from the user respondent group indicated barriers related to what device they received, and the content programmed on the systems. These barriers extended throughout the therapeutic process from assessment and initial device purchase to ongoing interventions.

Barriers were best exemplified by comments like, "I got my device when discharged from the hospital; the SLP gave it to me. The SLP got the talker; they set up everything on the talker. I wasn't asked what to put on the device." This respondent demonstrated that the assessing SLP did not consult him on the iconography and vocabulary needed for his AAC device. By not doing so, the SLP missed the opportunity to explore the lived cultural experiences of the user and did not consider such experiences when selecting the programmed iconography and vocabulary. Another participant succinctly stated, "No one asked what I want on the talker." Additional issues related to a lack of a family systems approach to AAC were evident in one participant's comments that described what happened when their AAC device finally arrived after working on a loaner device provided by the treating SLP. "So by the time coming to university, just got it. While wait worked on old talker, was hard when new talker came. They were different. No help once new talker came, insurance ugh.” For this user of AAC, their insurance ran out right as they were getting their AAC device, and their entire treatment up to that time was done on a different device on hand at the hospital. This loaner device was not configured for the user and did not include programming that reflected the user’s cultural experiences hindering the personalization of preferred icons and vocabulary. Additionally, the new device came when insurance funding for ongoing treatment ran out, further preventing personalization, including selecting preferred iconography and vocabulary. The AAC user expressed how difficult it was to make such a transition without the requisite assistance from the therapist. While not only an issue related to lacking a family systems approach that incorporated the user of AAC as a valued team member, but this statement also highlighted the issues experienced by the AAC user when navigating funding through private insurance. This AAC user was able to seek assistance by relying on free university speech-language clinics in their area. However, even the support from free university clinics, as referenced by the AAC user, demonstrated the difficulty of seeking out, obtaining, and ensuring ongoing AAC support. Without strong family systems, limited user advocacy occurred related to all aspects of the AAC process, including icon and vocabulary selection. Not only is the AAC user placed in the position to “start over again,” but so is the new SLP at the free university speech-language clinic.

The final barrier noted by the AAC user participants consisted of not being included in the decision-making processes in AAC, limiting their ability to ensure the programming of preferred icons and vocabulary. These issues ranged from changes to the programming on their device without their knowledge or opinions and decisions regarding the AAC system itself. However, most of these barriers focused primarily on changes to the AAC system and its programming without consulting the AAC user regarding their cultural needs or preferences for iconography and vocabulary. “You know what [on] the device [sic] I do this and that? I like different foods. It would been help if they put these on the talker,” A second user noted, “just wanted to talk to family and friends. Most important thing. [I] got different colored people but not favorite food [like] chicken wings. [The] family was [a] big help, support, found ways to talk.” A third participant indicated that they had not been a part of the decision-making process to select an AAC system, “My friend and SLP chose these things to help me talk [sic], dry erase board, phone app, they helped find what works best I did not choose but more tried things and use what works [sic]. This user indicated that the multi-modal system selected by her friend and SLP for her worked well and that she enjoyed using her system regardless of who chose it. When probed regarding selecting icons and vocabulary, the respondent indicated that her system was sufficient to meet her needs, and she did not make icon and vocabulary selections.

The barriers noted within the data by AAC users inhibited the opportunities to share culturally relevant information to appropriately select icons and vocabulary that reflected the users’ cultural experiences. However, the respondent data indicated that the selection of AAC icons based on their visual representations (skin tone) was not a concern for the users of AAC. However, the selection of culturally salient vocabulary was important.

Research Question Two E: What does cultural representation mean to BIPOC Users of AAC

Culture. The field of speech-language pathology is not known for its diversity of practitioners or academicians (“A Demographic Snapshot of SLPs,” 2019). Disciplinary self-awareness of the limited diversity of SLP practitioners has fostered an impetus within the discipline to promote diversity, equity, and inclusion, as made clear in ASHA’s position statements as well as within the extant literature (Hyter & Salas-Provance, 2019a; Beukelman & Light, 2020a; Cultural Responsiveness, n.d.). A clear need for cultural understanding and humility is necessary to provide appropriate services to individuals from different cultures; to do so, listening to the lived experiences of users of AAC is essential.

The theme of culture was the third most prevalent theme within the data set and assisted in answering the research question: What does cultural representation mean to BIPOC AAC users and families of individuals using AAC? While many participants commented on a need for more cultural touchstones to be programmed into their AAC systems, cultural representation in the iconography was not the AAC users' primary concern. One participant characterized it as, "No need for pictures to be color changed, just used to talk when needed stopped bringing talker after speech got better." Another participant commented, "No, didn't care about pictures on device, just focus on finding good ways to talk and really fast way." A final statement that reflected the reduced importance of AAC modifications related to culturally reflective iconography was seen in the data, "No, pictures fine, not thought [of], no big deal, just want to talk, so important just to talk. [Only] change, hold finger down long too long nothing else change." Within the data, a hierarchy took shape, with obtaining an effective means of communicating as primary, modifications to the system as secondary, and cultural modifications such as iconography and vocabulary as tertiary concerns.

Respondent statements made it clear that, at times, mass changes and additions can create some difficulty for the user, and the user of AAC must be a member of the AAC team whose input is sought and valued. However, the data did not demonstrate that the AAC users were consistently providing input or that their input was being sought, limiting the selection of vocabulary and iconography that was culturally salient to the users of AAC. One participant noted, "The SLP got the talker; they set up everything on the talker. No one asked what I want on talker." Another succinctly indicated, "On device, no one asked what needs to be there." One participant did stress the assistance she received from her friend in selecting items to put on her device; this friend acted as an advocate during the AAC process,

> Oh! But speaking, oh, want to get better, so [my] friend helped get that. He pointed that out. Like creating new things. What, like what I like, what I do, I go Running. She asked what I wanted; family helped, showed the family how she asked [sic]. [Friend Name], we were choosing activities [like] parenting and running. And [that's] part [of] what I wanted [to] do with my stuff.

AAC users' responses indicated their primary motivation throughout the process was to find the best and quickest way to communicate. Concerns regarding their culture and cultural expression through AAC were limited within the data. These concerns, when identified, were related primarily to cultural touchstones like foods and preferred activities and not the visual representation of the icons used to refer to the vocabulary programmed on their devices. User data indicated that while not a primary concern, there was a need for cultural considerations when selecting cultural vocabulary. For users of AAC, the data indicated that cultural representation on AAC devices was primarily centered on selecting culturally salient vocabulary. The respondents did not identify additional areas that reflect considerations for cultural representation within AAC systems.

Conclusion: Comparative Analysis

The analysis of each participant group has portrayed a narrative of their lived experiences navigating and using AAC systems and services that aided in answering the research questions R1, R1A-R1B for speech-language pathologists, and R2 and R2A-R2E for caregivers and users of AAC. However, a larger narrative developed through a comparative analysis of the interview data coupled with the data from the mixed focus group. The comparative analysis combined the responses from the interviews of all stakeholder participants and those that participated in the focus group (three SLPs, two caregivers, and two users of AAC). All three participant groups shared the same themes across the data; barriers, support (received and needed), culture, and team input that impacted icon and vocabulary selection. When taken in its totality, the participant data suggested the following narrative.

At the outset, a client with complex communication needs interfaces with SLPs and other AAC professionals through referrals from medical professionals (doctors, nurses, nurse practitioners, occupational therapy, and physical therapists). During this referral time, some but not all SLPs engaged the AAC users and their caregivers regarding communication needs, conducted formal and informal assessments, and made recommendations for AAC systems. However, this engagement was limited when viewed through the lens of the caregiver and AAC user and did not extend to an exploration of the cultural needs of the users and their families, including the selection of culturally reflective iconography. Caregivers and users of AAC did not indicate that they were allowed to select their AAC systems, or the language, vocabulary, and iconography programmed on these devices answering research questions (Table 4): What are the experiences of caregivers and users of AAC regarding icon selection that is culturally reflective? How do caregivers and users of AAC experience icon selection at the assessment and intervention stages? What does cultural representation mean to caregivers and users of AAC? This is primarily salient when reviewing the SLP participant data. Participants indicated this outreach was not a function of their job, or they indicated when referencing cultural touchstones that they “don’t see color.”

Users of AAC and their caregivers have found ways to supplement the support they receive from AAC professionals. This support manifested in the data as additional means to communicate (dry erase boards and phone applications), to learn the AAC system, and add necessary vocabulary and language to support the individual's communication needs, including cultural performance. Within the data, there is a strong emphasis on family and caregiver support; however, this support sometimes reflected caregivers making decisions without the AAC user's input limiting the inclusion of icons and vocabulary that the user deemed important to them. Changes to AAC icons and vocabulary took place without the input of the users of AAC and also limited the selection of icons and vocabulary that was deemed culturally salient.

The participant data indicated that SLPs engaged in and modified AAC practices due to their work environment and the restrictions placed on these work environments. Speech-language pathologists had to find ways to shortcut the AAC process to meet timing requirements, funding requirements, and state and state federal regulations. The shortcuts taken included a reduction of information gathering from other professionals, caregivers, and users of AAC limiting the necessary information to plan AAC interventions and the selection of icons and vocabulary that was relevant to the users. These aspects of the process interfere with providing best practices and culturally responsive practices within AAC services and speech-language pathology. The barriers identified by Beukelman and Mirenda (2013) and Beukelman and Light (2020) still exist, affecting the provision of services to those that need AAC, reducing culturally responsive practices, and limiting or preventing the selection of culturally appropriate iconography and vocabulary. The following discussion section will detail in summary the study overview, an overview of the findings, the relationships between the findings and the extant literature, study limitations, implications for practice, and culminate in an organizational improvement plan designed to address the issues identified in this study.

Chapter – Five

Discussion

Introduction

Qualitative research that is focused on the lived experiences of individuals related to a phenomenon of study provides the researcher with a clearer understanding of the phenomenon in question from the perspectives of those experiencing the phenomenon. As seen in the previous chapter, analysis of the collected data provided a narrative of the barriers, support issues, and team input experienced by all three groups during the AAC process.

The present phenomenologically based qualitative study focused on these lived experiences of three stakeholders in the AAC process (SLPs, caregivers of those who use AAC from the BIPOC community, and BIPOC users of AAC). Interviews were conducted with four SLPs engaged in providing AAC services to members of the BIPOC community, three caregivers of BIPOC users of AAC, and three BIPOC users of AAC. An additional focus group comprised of three SLPs, two caregivers, and 2 BIPOC users of AAC was conducted. Interviews and the focus group were recorded using an online meeting platform. These interviews were then transcribed and uploaded to a free, open-source qualitative analysis software, Taguette (Rampin et al., 2021). Once uploaded, interview transcripts were analyzed using inductive coding procedures, resulting in codes for continued analysis. Inductive coding yielded 27 codes that were then axially coded to collapse these codes into distinct themes. Four themes were developed from the axial coding: barriers, support, culture, and team input. These themes were then used to develop a narrative of the lived experience of all three stakeholders in relation to the AAC processes experienced, as represented in Chapter 4. To ensure interrater reliability, students from a graduate course in culturally responsive practices were trained using the inductive code book and provided with portions of transcripts to code, resulting in 95% agreement after the use of consensus building when disagreements amongst coders were present. The following section serves as an overview of the study's findings.

Results

The themes identified within the respondent data serve as a means to understand the lived experiences of SLPs engaged in AAC assessment and ongoing interventions with BIPOC users of AAC, caregivers of BIPOC users of AAC, and BIPOC users of AAC. These themes provided a framework with which to answer the primary and secondary research questions R1 and R2 and sub-questions R1A-R1C and R2A-R2E below.

Main questions

R1: What are the lived experiences of speech-language pathologists working with clients that use AAC regarding the selection of AAC iconography for BIPOC clients and their families?

R2: What are the lived experiences of BIPOC users of AAC and their caregivers regarding the selection of AAC icons on their devices that reflect their culture?

Sub-questions (SLP):

R1A: How do Speech-language pathologists experience the icon selection phase of assessment?

R1B: How do Speech-language pathologists experience AAC icon selection during the ongoing intervention process?

R1C: What additional considerations do Speech-language pathologists experience when working with users of AAC that are BIPOC?

Sub questions (Families/Caregivers):

R2A: How do caregivers of individuals using AAC experience the icon selection phase of assessment?

R2B: How do caregivers of individuals using AAC experience AAC icon selection during the ongoing intervention process?

Sub questions (Users of AAC):

R2C: How do users of AAC experience the icon selection phase of assessment?

R2D: How do users of AAC experience AAC icon selection during the ongoing intervention process?

R2E: What does cultural representation mean to BIPOC AAC users and families of individuals using AAC?

The following section will describe how the themes identified within the data impact the selection of culturally appropriate iconography in AAC systems.

Themes related to the perceived barriers, support, input, and culture experienced by the SLP respondents that speak to the research questions R1 and R1A-R1C (Table 4) impacted their use of culturally responsive practices, including the selection and use of culturally reflective AAC iconography. SLPs were consistent in their identification of time constraints that limited their ability to seek out information on the cultural iconographic needs of their clients from assessment through ongoing interventions. SLPs noted that they understood AAC best practices as rooted in family systems but reported that they did not have the time to consider the family system limiting consideration of culture and culturally reflective AAC icons. This resulted in not engaging the family system, including the users of AAC, in the process of selecting culturally appropriate iconography for their clients’ AAC systems. SLPs also noted that they struggled with team input from other professionals, caregivers of users of AAC, and users of AAC. Professionals did not provide adequate referral information, which was viewed as problematic by the SLP respondents when identifying the cultural needs of their clients as one respondent stated, “When referrals come in, we don’t know where the client is with communication, we don’t know their vocabulary preferences or anything.” The respondents cited that limited referral information did not provide information to begin personalization at the outset of treatment. SLP respondents also identified the family system as not providing unsolicited on the selection of culturally appropriate iconography. In fact, SLP respondents identified this work as the responsibility of the family system, that the family system should provide input on culture and culturally relevant iconography even when already indicating they do not engage in seeking out this information. SLP respondents did indicate that they consider their clients’ cultural experiences but, when pressed, stated that they either do not engage in dialogue regarding AAC icons, don’t consider culturally relevant iconography, or simply wait for input from a caregiver.

The data answers the primary and secondary research questions R1 and R1A-R1C (see Table 4) regarding the lived experiences of SLPs engaged in AAC practices as they relate to culturally reflective iconographic selection. SLPs did not engage the family system or the user of AAC in what icons to select, reducing or limiting their use of culturally responsive practices, causing a potential cultural mismatch of icons on AAC systems of BIPOC users of AAC, and limiting their engagement with the family system in identifying the important cultural touchstones the client and family need to express themselves in culturally relevant ways.

Caregivers of Users of AAC and users of AAC also identified similar barriers within the respondent data that answer the second primary research question R2 and secondary research questions R2A-R2E (see Table 4) related to caregivers and Users of AAC. Caregivers identified barriers related to time, support, team input, and culture that impacted the use and consideration of culturally reflective iconography. Due to caregivers’ experiences related to the time it took to obtain AAC services, their primary focus throughout the assessment and intervention stages of treatment was on obtaining an effective means for their family members to communicate. This primary focus relegated culture, culturally reflective iconography, and cultural dialect and vocabulary to secondary considerations. Caregivers and Users of AAC indicated that the time for appointments and making time for the rest of their family system were contributing factors impacting their engagement in the icon selection process. Caregivers also noted within the support theme a lack of cultural support from their SLPs, indicating that treating SLPs did not ask or engage them in the process of selecting culturally appropriate iconography. Caregivers and Users of AAC assumed that their treating SLPs as experts would make iconographic decisions rooted in that expertise, limiting caregivers and users of AAC engagement in the process of selecting the iconography and vocabulary of their systems. The respondent data of Caregivers and Users of AAC identified a lack of team input or engagement within the AAC process, including the selection of icons and vocabulary, stating that neither caregivers nor users of AAC were asked what icons and vocabulary should be programmed on their AAC systems both at the assessment and ongoing intervention stages. The view of the SLP as the expert and decision maker relegated the family system (caregiver and User of AAC) to disengaged consumers of a service not rooted in their cultural needs in a process that requires the active engagement of all stakeholders. Thus, reducing the willingness and opportunities to make choices regarding culturally relevant iconography, vocabulary, and dialect.

While the barriers identified posed problems for culturally responsive AAC practices, including the selection of culturally reflective iconography, both caregivers and Users of AAC indicated that the visual representation (skin tone, hair texture, facial characteristics, and culturally relevant clothing) of the icons was not relevant and was not a significant finding of this study. However, these respondents did indicate a need for culturally relevant vocabulary and dialect, noting that when interacting within the home and community, certain vocabulary is helpful in expressing themselves in an authentic way within their family system and the wider community. The lack of engagement to seek out culturally relevant information from clients, the view of the SLP as the expert and decision-maker, time necessary to seek out and obtain assessment and treatment all acted in conjunction to limit the dialogue between these three stakeholders that would have resulted in a cultural match between the users of AAC and the dialect, vocabulary, and iconography programmed on their AAC systems.

Additional Findings

While not demonstrative of the selection and use of culturally appropriate AAC iconography, this study identified additional information regarding culturally responsive practices and the lived experiences of all three stakeholders that should be discussed. All three stakeholder groups identified the barriers, support, cultural considerations, and team input they experienced during the assessment and ongoing intervention stages of AAC that limit the use of culturally responsive practices. Results of the analysis indicated barriers associated with the difficulty obtaining ongoing services to support the use of AAC systems, including funding for these services, barriers regarding the funding process that resulted in time missed in intervention, and for SLPs, a general lack of actionable focus on the family system and the cultural needs of the caregivers and users of AAC. The results suggested that professionals, including speech-language pathologists, did not seek caregiver input regarding AAC for these caregivers. When provided, it consisted of an initial AAC set-up limiting the necessary aspect of ongoing treatment adjustments, including adding and removing vocabulary without the family system's knowledge, reducing the personalization of their family members' AAC systems, and preventing a true match between the system and the user of AAC. An overreliance on professional decision-making and professional knowledge by caregivers and AAC users decreased their active engagement in all aspects of AAC services. As seen in the data, a lack of professional outreach to include caregivers and particularly users of AAC also potentially contributed to this lack of engagement.

A stronger focus on family systems-centered treatment would aid in mitigating support and engagement issues. By centering treatment on the AAC user, family system, and broader social systems, the discipline can engage these stakeholders and obtain the input necessary to make treatment decisions. This may be rectified by re-engaging professionals in the best practice of centering AAC practices in family systems theory and stressing the partnerships required (professionals, family, community members, etc.) for effective AAC practices. This re-centering allows for processes that capture the unique needs and interests of a user of AAC, the unique dynamics of their family, broader social and cultural lives, and engage those individuals in providing services and support.

Additional issues unrelated to the research questions of this study were noted regarding the process of culturally responsive practices, which squarely centers itself on the concepts of neo-liberal racism (Hyter & Salas-Provance, 2019a; Arendt et al., 2015; Banjo & Jennings, 2016; Bristor et al., 1995; Daalmans & Odink, 2019). The attitude of not seeing color (as identified by one SLP respondent) denies the lived experiences of those from groups other than the White hegemony. It ensures that a BIPOC AAC user or an AAC user from any marginalized group will experience this blindness to their cultural communication needs. These concepts and beliefs resulted in a lack of personalization of AAC users' systems, including the selection and use of culturally salient iconography and vocabulary.

The data indicated that AAC users need to be consulted throughout the AAC process, which is reflected in AAC best practices, as detailed by Beukelman & Light (2020). They were not seen to be or allowed to be engaged members of the AAC team, and their input was not sought out by professionals and, at times, friends. There is a refrain of helplessness in the AAC user data, expressed as frustration throughout the process with not being allowed to contribute to the AAC system in a way that is genuine and reflects their lived experience, the waiting that must occur, and being dropped from therapy due to insurance restrictions. All these barriers, which can be described as the medicalization of the AAC process, place these vulnerable AAC users who cannot communicate their needs at a disadvantage before, during, and after AAC assessment and intervention. They cannot communicate those needs when the AAC system arrives, mainly when the professionals and caregivers do not engage them as team members and contributors. Speech-language pathologists and other AAC professionals could easily mitigate these identified issues by engaging the client and their family in selecting and designing AAC systems and practices to meet their individual needs. The respondent data stressed again a need to revisit the best practice of rooting intervention within a family systems framework.

Analyzing the data confirmed previously identified barriers, the need for support, cultural considerations, and team input identified within the extant literature. For many years, best practice within AAC services has been guided by the limited research available and identified processes within AAC course texts (Beukelman & Mirenda, 2013a; Beukelman & Light, 2020b; Huer & Wyatt, 1999; Mindel, 2020). These sources provide the best practice framework in which SLPs operate when providing AAC services. The present study is clear that for these participants, the use of the aforementioned best practices had not occurred and included circumvention of these best practices due to time, work location (SLPs), AAC funding processes, and a general lack of focus on culturally responsive practices. When analyzed together, the data indicated connectedness between the responses of all three stakeholder groups, tying together and demonstrating how these shared experiences interact. An exemplar of this connectedness can be seen in the transcripts of an SLP identifying the belief that programming new language on AAC systems, cultural considerations, and obtaining caregiver and AAC user input were outside the scope of her position. This participant indicated a reliance on caregiver input but noted a lack of impetus to seek this information out. This perception impacts the openness and willingness of caregivers to engage in the process, and due to communication issues, AAC users' views and needs are disregarded. The results demonstrated a need to revisit considerations for best practices in AAC services.

The following section will discuss the relationship between the results of this study and the theoretical frameworks used. Following this section, a discussion of the researcher's personal lessons learned, limitations of the current study, and implications for practice, including an organizational improvement plan, will be discussed.

Relationship to Extant Literature and Theory

For the present study, grounded theory as an approach to data analysis was utilized. This approach allowed for bottom-up coding and thematic development across all data streams. Using such an approach allows the researcher to identify codes inherent within the data. Additionally, grounded theory allowed for axial coding to collapse inductive codes into interconnected themes for narrative development. This approach allowed the researcher to identify the lived experiences of all three stakeholder groups that resulted from their own words related to the research questions posed.

When considering the demographic disparities between the US, licensed SLPs, and Users of AAC, it was important to have a framework with which to consider these relationships. Critical race theory was utilized as a framework in which to view the impact of the cultural hegemony on AAC practices from the views of licensed SLPs, caregivers of BIPOC users of AAC, and users of AAC. The tenets of critical race theory state that hegemonic cultures serve as the guideposts for what is culturally acceptable, make decisions rooted in their place within society as the dominant culture, and through such decisions, impact the experiences of those from outside groups (De La Garza, 2016). The results indicated that the cultural impact of the hegemony regarding the treatment decisions made by SLP respondents was active within the processes of AAC assessment and treatment. SLPs respondents indicated throughout the data that they were not consulting with caregivers or the users of ACC regarding culture and the selection of culturally reflective iconography and vocabulary. A lack of engagement with caregivers and users of AAC by service providers, particularly regarding their cultural needs can be seen in the extant literature, Hispanic caregivers identified the formalness of the language used on AAC systems and the mismatch with the use of language within the home (McCord & Soto, 2004). Additionally, the extant AAC literature that focuses on the BIPOC population also demonstrated similar discrepancies between the perceived formal language of AAC based on Standard American English dialect and the perceived informal language of the home where African American English dialect is used (Mindel, 2020). The lack of engagement of caregivers of users of AAC and users of AAC regarding their needs both communicatively and culturally was evident within the data. The lack of engagement of these stakeholders regarding the selection of vocabulary and icons to be programmed on the users AAC device directly contradicts the focus placed on culturally responsive practices as identified by ASHA in their position statement and the AAC procedures identified as best practices (*Cultural Responsiveness*, n.d.; Beukelman & Light, 2020a; Beukelman & Mirenda, 2013a; Solomon-Rice et al., 2018). King et al. (2020) identified similar concerns regarding a lack of engagement of the caregiver and user of AAC when their culture and the culture of the treating SLP varies. King et al. (2020) identified a need to incorporate the primary cultural language with the language being learned on AAC systems. However, this incorporation of cultural linguistic needs and the language programmed on AAC systems was not evidenced within the data. SLP respondent data clearly demonstrated the lack of engagement of caregivers and users of AAC particularly when it comes to their cultural needs. Additionally, Parette (1995) studied the perceptions of Hispanic families as they related to AAC and client cultural needs. Families within the study identified the need for language to reflect their culture and identity within their community as well as supporting the need to engage the family and wider family systems to ensure that their cultural lives were considered within their AAC systems (Parette et al., 1995). Results of the present study demonstrated similar concerns for BIPOC users of AAC and their caregivers including a need to engage the family system to identify the cultural needs of the user of AAC as they relate to AAC use and the selection of vocabulary and icons to be used on these devices. The results of the present study and those of the extant literature demonstrated a need to recognize the family and family systems, as impacting educational outcomes, as the primary source for homework assistance, that they communicate the benefits of learning, and that family encouragement promotes self-determination (Rackensperger, 2012). By recognizing the importance of the family system and the impact on learning and development SLPs can better understand the need to engage family systems and their impact on meeting the cultural needs of the users of AAC and their caregivers better.

Family-systems theory posits that members of a family unit do not operate primarily as individuals lacking connectedness to the entirety of the family unit (W. H. Watson, 2012). Each member of a family system serves as a part of the system, impacting all aspects of the system and members of such a system. Additionally, family systems theory maintains that not only do immediate members of the family contribute to such a system, but broader social circles also extend out from the family unit to incorporate extended family, non-familial caregivers, community members in their broader social network, healthcare professionals with whom they often interface, and co-workers for those employed or volunteering. SLP academicians, researchers, and practitioners have identified these more expansive social networks as impacting the provision, adoption, and continued use of AAC (Beukelman & Miranda, 2020). The importance of family systems in the assessment and treatment of individuals that use AAC is supported in the extant literature as seen in studies by King et al. (2020) that focused on the perceptions of Hispanic families regarding AAC. These families identified the need to explore culture through the lens of the family and widening social circles. Additionally, research by Mindel (2020) and Hyter & Salas-Provence (2019) stressed the need to consider culture including the primary language of the family when making treatment and teaching decisions, and that by doing so improved client outcomes. To do so the authors contend that cultural information is best obtained through the family system. A family systems approach to AAC services is considered the best practice, mainly due to the extensive needs of users of AAC. For a practicing SLP to understand the unique needs and strengths of a person that uses AAC, gathering information from informants is necessary (Beukelman & Light, 2020a). These informants according to Beukelman & Light (2020), Rackensperger 2012, and Parette et al. (1995) consist of members of the family system including the microsystem (immediate family, extended family, and non-biologically related members) and mesosystem (SLPs and teachers). This is further supported in Beukelman & Light (2020) which identified the members of the microsystem as the primary informants regarding the communicative and cultural needs of the user of AAC.

However, the present study identified failures and weaknesses within the spectrum of AAC assessment and intervention, and these failures were inextricably tied to short-cutting the process. These shortcuts to the process include not involving caregivers and users of AAC as informants in their own care, which contradicts the use of the microsystem of the family as the primary informants of communicative and cultural needs seen in the extant literature (Beukelman & Light, 2020). This manifested in the data as caregivers and users of AAC were not provided with choices and options and were not being engaged in selecting the vocabulary and icons included in the AAC systems which is contraindicated by the extant literature (Beukelman & Light, 2020; Rackensperger, 2012; Parette et al., 1995; and Mindel, 2020). These shortcuts were further supported and explained within the SLP participant data that indicated limited engagement of caregivers and AAC users in the assessment and intervention process. Limited attempts to seek out caregiver and AAC user input were noted and qualified by the SLP participants as necessary due to the time constraints placed upon them by their employers and the medical process of obtaining funding for AAC systems. This short-cutting had a detrimental effect on maintaining cultural awareness and responsivity during the AAC process which occurs when the family system is not engaged in the therapeutic process (Beukelman & Light, 2020). Additionally, SLPs unwillingness to engage the family system in the process resulted in caregivers noting the difficulty in customization due to the perceived limitations of their involvement. This limited involvement impeded their ability to ensure their family members received the necessary services and support. Professionals' lack of engagement with AAC users represented the starkest problem with this short-circuiting of best practices. The very individuals to be supported are the most neglected within the process. While this issue can be explained readily due to the difficulty people with complex communication needs have in communicating, research has identified ways to engage AAC users to determine their preferences for AAC systems, language, and iconography (Beukelman & Light, 2020).

Conversely, the data demonstrated that support was available and provided through the involvement of the caregivers and broader family system. They identified these individuals and groups as supportive and actively engaged in assisting the user of AAC in communicating.

However, this support did not translate to a shared understanding with AAC professionals due to a lack of engagement with the family system providing the support. SLPs did not engage with caregivers and users of AAC due to their perceived time constraints, difficulty maintaining contact with caregivers and users of AAC, constraints placed on all parties by the health care system, and issues with policies and procedures experienced within their work environments. SLP respondents identified failures related to the use of best practice for AAC by not engaging the family system as informants of the communicative and cultural needs of the user of AAC. This lack of engagement as identified by the SLP respondents is in direct conflict with the expressed importance of the family systems discussed within the extant literature (Beukelman & Light, 2020; Rackensperger, 2012; Parette et al., 1995; and Mindel, 2020).

Critical race theory was also used in the present study as a conceptual framework for understanding the impact of hegemonic culture (White culture) on the representations of marginalized groups in the visual medium that is AAC iconography. Critical race theory posits that the dominant culture determines the appropriate and socially acceptable representations of non-dominant cultures (Godbold et al., 2007; Schug et al., 2017; and Plous & Neptune, 1997). Demographically SLPs are predominantly White and within the respondent data, SLPs consistently indicated that they choose the vocabulary and iconography for BIPOC users of AAC, disregarding the lived cultural experiences of these users of AAC, and defaulting to the hegemonic understanding of acceptable out-group representation. This is further seen in the respondent data of both BIPOC users of AAC and their caregivers as a lack of engagement by the SLPs in the decision-making process for AAC. A lack of effort to engage the caregivers and BIPOC users of AAC had a chilling effect on the willingness of these stakeholders to proffer culturally relevant information when not solicited. This further solidified the hegemonic view of acceptable cultural representation of out-groups in AAC as seen in the extant critical media research and was consistent with the dominant cultural views of the white service providers (Jiwani, 2005; Mercado, 2018; and Perter et al., 2016). These hegemonic cultural views resulted in a lack of consideration for dialect, cultural vocabulary, and culturally saliant iconography.

In the following sections, the primary researcher will address an organizational improvement plan rooted in the LAFF (listen, ask, focus, find) active listening program (McNaughton et al., 2008) to address these shortcomings and re-engage pre-service SLPs in a best practices family systems-centered approach to AAC services.

Personal Lessons and Study Limitations

This section will detail the personal lessons experienced by this researcher while conducting this study and the limitations of the study. Lessons regarding my preconceived notions of culture and its importance within AAC practices were challenged for their voracity while being supported more subtly within the data. Additionally, lessons regarding the research process and the use of human subjects in the research were of important note. I set out to conduct this study from a strong, culturally responsive perspective. This view presented the overarching idea of such a study. As a White, gay, male SLP academician and practitioner, I came to the study with a few assumptions not supported by the data. I assumed that BIPOC users of AAC and their caregivers would identify more cultural differences and needs than the data yielded. Additionally, I assumed that human-based icons' skin tone would represent an issue for these users and their caregivers. However, this was not the case. The primary motivating factor for all three stakeholder groups was to identify the best means of communication in the shortest time. Caregivers and users of AAC identified specific vocabulary, including slang, that should be added to AAC systems. However, this vocabulary was not as culturally dependent as this researcher initially assumed and was more representative of individual preferences that extended from their broader family systems.

The final lesson learned from this study relates to finding participants for this study. While operating on the assumption that, given the chance, caregivers and users of AAC would be willing to participate, my experiences indicated otherwise. When seeking out participants, it became clear that the low incidence of both users of AAC and BIPOC users of AAC was problematic in obtaining participation. I additionally discovered that, at times, I still operate within a White savior conceptualization of race and cultural issues. The data of AAC users and caregivers provided new insight into the actual perceptions of individuals from the BIPOC population, which have been valuable in re-conceptualizing my place as a member of the hegemony working with those from marginalized groups.

This current study consisted of several limitations. First, the number of participants within the study was small, including a disparity in the number of participants from the three participant groups (SLP 4; Caregiver 3, User of AAC 3). However, this small sample size was sufficient for the study design and for answering the research questions R1 and R2 as well as sub-questions R1A-R1C and R2A-R2E (see Table 4). The purposive sample of SLPs as members of a professional community known to me as a peer contributed to the higher participation of SLPs during interviews and may have impacted their willingness to share honest responses due to fear of professional judgment. Second, the Hawthorne Effect, a well-known threat to study validity, cannot be disregarded. The Hawthorne Effect posits that the very act of observing or researching a population can cause variances in the behaviors and responses of those being studied. Third, using coders from the primary researcher's Culturally Responsive Practices presents possible limitations in that students may respond in a manner that agrees with the primary researcher and course instructor due to the power dynamics inherent in the student/professor relationship. However, the students working with the present study were assured during training that their grades were not contingent upon agreement with the primary researcher.

Additionally, while not apparent to the researcher at the time, the conceptualization of this study stemmed from a belief that caregivers of BIPOC users of AAC and BIPOC users of AAC would be concerned with the visual representation of AAC icons that are reflective of their cultural experiences. This researcher assumed the level of concern of this outgroup from a hegemonic and White savior perspective. This neo-liberal conceptualization may have introduced a level of bias not previously noted, posing study limitations. The final limitation of this study is related to interviewing individuals with complex communication needs using various AAC systems. This process was much more complicated than expected, even when working with individuals using generative language. A level of interpretation of comments was necessary, coupled with an increased level of checking for meaning using close-ended questions for verification introducing the potential for misunderstanding and the introduction of researcher bias regarding the intended meaning of the respondent statements. Additionally, the data from users of AAC systems lacked a variety of conjunctions, prepositions, and articles, making analysis more difficult.

Implications for Practice

The data demonstrated a need to re-engage SLPs in best practices regarding AAC services. This re-engagement requires a focus on all members of the family system. While some view such an approach as extensive and time-consuming, it is clear from the research that a family systems approach allows the professional to obtain the information necessary to make the most appropriate decisions, effectively improving outcomes (Soto et al., 2002). It is also important to re-engage in these best practices as they allow the service provider to identify the barriers experienced by caregivers of individuals that use AAC and users of AAC. Funding for AAC devices, in general, was not identified within the data; ongoing funding for AAC services after obtaining the AAC devices was identified. This presented difficulty for caregivers and users of AAC. To obtain a device through funding sources like private insurance and public insurance (Medicaid and Medicare), a provision for ongoing therapy is required. However, these funding sources often limit or cap the number of sessions for treatment, impacting continued AAC use and progression. Without the engagement of caregivers and users of AAC, the professional remains unaware of these concerns. Often these funding issues require the use of free-for-service university clinics for ongoing AAC interventions. Additionally, issues related to the time constraints that caregivers experience and the decisions they must make regarding their time can be illuminated through the engagement of caregivers. One caregiver participant that self-identified as an adoptive parent related the discomfort in making strategic decisions for her son’s care. This caregiver described the wide variety of medical issues faced by her adoptive son and the need for the family to determine what aspects of his care, including AAC services they could afford, had the time to manage, and the increased cost incurred by the family in the form of insurance co-pays, gas to and from numerous medical appointments, and additional time costs of implementing AAC within the home. This mother was clear about the difficulty of these decisions and the guilt that she felt. By re-engaging in AAC best practices that include the family system and the AAC user as members of the team that provide valuable input, the SLP can determine these issues and assist the family with navigating their concerns, assisting in the decision-making process, and obtaining additional support for the family.

Given this information, it is, therefore, essential to identify ways pre-service SLPs can be trained to engage the family system, to re-train In-service SLPs, and communicate the results of this study to the wider AAC community. Currently, engaging the family system in the AAC process is considered a necessary best practice for making appropriate treatment decisions (Beukelman & Light, 2020a; (Beukelman & Light, 2020b; Solomon-Rice et al., 2018). Engaging the family system in AAC processes appears in graduate-level course texts and currently provides the framework that pre-service SLPs receive at the graduate level. Additionally, research projects focused on the training of pre-service and in-service SLPs have identified family systems as an appropriate framework through which to provide AAC services (Solomon-Rice et al., 2018). However, respondent data suggested that these best practices were not being employed when providing AAC assessment and intervention. Engagement in the use of family systems in AAC can be done by identifying the members of the family system, engaging them as informants for AAC services, and incorporating their views into the provision of AAC services. A researched and focused approach is necessary to engage pre-service SLPs in a family systems framework. In the following organizational improvement plan section, a discussion of the LAFF (listen, ask, focus, find) active listening approach developed by (McNaughton et al., 2008) is undertaken and includes recommendations to improve the skills of pre-service SLPs regarding AAC practices. Additionally, the organizational improvement plan will also address the training needs of in-service SLPs and a process for disseminating the results of this study with the wider AAC community. Research findings of the current study were used to inform the following organizational improvement plan discussed below.

Organizational Improvement Plan

Soto et al. (2002) identified the need for collaboration and the development of active listening skills through a family systems framework when training pre-service SLPs and in-service SLPs. Such skills, according to researchers, are necessary for successful collaboration. These skills are necessary to effectively engage families and users of AAC in the assessment and intervention process. In their study on teaching active listening skills to pre-service SLPs, Thistle and McNaughton (2015) identified the LAFF (listen, ask, focus, find) active listening program as a potential candidate to engage SLPs in family systems processes and thus improving culturally responsive practices. LAFF-active listening at its core centers on teaching listening skills using trained simulated patient actors. The use of simulated patients has been identified within the extant medical and healthcare literature as an effective strategy to improve the use of culturally responsive practices (Markey et al., 2021).

The LAFF-active listening program consists of a process to teach active listening skills. According to Thistle and McNaughton (2015), this approach has been widely utilized in the healthcare sector, including training nurses and physicians (Markey et al., 2021) to improve their understanding and use of culturally responsive practices. This approach focuses on teaching the following aspects of active listening:

> “(a) The listener conveys nonverbal involvement/immediacy through the provision of unconditional attention, (b) The listener paraphrases both the content and the feelings in the speaker’s message to demonstrate awareness of the speaker’s intent, and (c) the listener asks questions to encourage the speaker to provide additional information on his or her feelings or beliefs”(Thistle & McNaughton, 2015, p. 45).

LAFF was adapted by McNaughton et al. (2008) to consist of four steps to active listening. These steps make up the acronym LAFF, “(a) listen, empathize, and communicate respect; (b) ask questions, and ask permission to take notes; (c) focus on the issues, and (d) find a first step” (McNaughton et al., 2008). The study was clear; the LAFF approach improved the communication skills of pre-service SLPs engaged in AAC learning. These steps formed the basis of their research and acted as guideposts for this organizational improvement plan.

To address the primary issues identified by the current study in Chapter 4 (lack of caregiver and AAC user input, barriers of time, funding, and ongoing support) and their impact on culturally responsive AAC practices, including cultural representation through AAC, the LAFF-active listening program can provide the skills necessary to engage and listen to the concerns, issues, and needs of caregivers and users of AAC including their cultural needs. Additionally, an active listening approach is rooted in culturally responsive practices, extricating potential cultural bias by placing emphasis on listening to caregivers and users of AAC (Thistle & McNaughton, 2015; Markey et al., 2021). This active listening approach can then be coupled with information collection resources adapted to capture cultural concerns that are geared towards the active listening approach and designed for AAC information gathering. This allows for streamlining the information-gathering process and reducing the time-intensive nature of such work. Such documentation resources like those developed by Virginia Commonwealth University Autism Center for Education can be adapted to capture the personalization needs, including cultural needs, stakeholder concerns or difficulties, and mitigation strategies to assist with these concerns and difficulties (*Communication Inventory - VCU Autism Center for Education*, n.d.). Adapting these documentation strategies and incorporating them into the LAFF-active listening approach and training provided to pre-service SLPs both in clinical practice and in the AAC classroom will assist in improving AAC practices and centering these practices within the family system. Additionally, concerns regarding funding for ongoing treatments require a concerted effort to ensure that pre-service SLPs understand the resources available within the university's practice area. Such resources include AAC manufacturing representatives that can be instrumental in navigating funding, AAC device loaner programs for those that are unable to secure AAC funding, and community-based AAC training resources and support groups. All these resources can be incorporated into the Virginia Commonwealth University

Autism Center for Education (VCU ACE) AAC documentation resources and folded into the LAFF-active listening training. These resources can then serve as the beginning of a university-based consortium of AAC strategies and provide documentation available to the wider public.

By focusing on a research-based approach to active listening that incorporates the use of simulated patients and incorporating into such a program, adapted VCU ACE AAC documentation resources proven to improve the skills of pre-service SLPs (culturally responsive practices, family-centered practice, and listening skills) the students will be able to carry forward such an approach with their clients. This approach is rooted within family systems theory and is tied to best practice AAC services. A LAFF approach provides the training and processes to ensure that future SLP practitioners will have the tools and strategies necessary to identify AAC informants; documentation resources allow students to collect the requisite information needed from such informants and therefore plan interventions and make AAC decisions accordingly, all to the benefit of improving client outcomes as identified within the family systems theory approach. The following section will detail the steps of the organizational improvement plan.

Organizational Improvement (OIP) Plan Next Steps

The proposed OIP process will consist of two primary phases, internal changes (LAFF-active listening course assignment) and external changes consisting of LAFF-active listening community training, dissemination of the results of this current study coupled with the results of implementing LAFF-active listening in AAC courses at conferences dedicated to AAC, and AAC manufacturer outreach that will allow for a focus on pre-service SLPs, current practicing SLPs, and the wider AAC academic and research field as seen in table 8 below.

Table 8

Organizational Improvement Plan

	Phase 1: Internal Changes **LAFF-active listening AAC assignment**	**Phase 2: External Changes** **LAFF-active listening community training**
Stage 1	AAC case study development	Development of LAFF-active listening training for in-service SLPs
Stage 2	Hire and train simulated patients	Adaptation of Virginia Commonwealth University Center for Autism Education AAC information gathering forms
Stage 3	Student LAFF-active listening training	Research presentation to (ASHA, ISAAC, MSHA) annual conferences, and AAC manufacturing representatives
Stage 4	Operationalization of the LAFF-active listening assignment	

Internal Changes: Pre-Service SLPs. Phase one of the OIP will consist of developing a department LAFF (listen, ask, focus, find) active listening program to promote pre-service training on active listening and information-gathering processes using simulated patients and adapted Virginia Commonwealth University Autism Center for Education (VCU ACE) AAC information-gathering forms. Stage one of the first phase of the OIP will begin with developing AAC case studies. Case studies will be designed to address the barriers and issues identified within this study. Case study development will begin during the summer semester for implementation during the fall semester AAC course. This researcher will develop all case studies in consultation with additional AAC specialist faculty from two other universities within the local community. Case studies will consist of adult and pediatric cases of BIPOC users of AAC and include issues related to dialectal difference, cultural vocabulary use, and AAC icon selection as seen within the respondent data to ensure pre-service SLPs are engaging the simulated patient in these processes.

Stage two will employ the use of simulated patients required by the LAFF-active listening program. The use of simulated patients in the healthcare setting has been widely studied and identified as a way to “educate and train for cultural competence, the research evidence is overwhelmingly clear: the potential exists for the use of patient simulation as an effective teaching strategy for cultural competency training” (Baily, 2020, para. 1). Additional research identified the use of simulated patients as an effective teaching strategy to train healthcare providers on culturally responsive practices and cultural humility (Foronda et al., 2018). In stage two simulated patient actors will be hired. Simulated patient scripts will be designed with the flexibility to allow for improvisation during the interaction. Scripts will be designed to include target comments related to vocabulary, dialect, and icon selection and include pragmatic responses appropriate to disappointment when cultural targets are not explored and positive when explored. Once all actors have been hired, training on each AAC case study and the corresponding script will be scheduled.

Stage three will consist of training students in the AAC course on the LAFF-active listening program to begin preparation for completing the assignment. Students participating in the AAC course will receive the adapted Virginia Commonwealth University Autism Center for Education (VCU ACE) AAC information gathering forms and be trained in class on their use. This training will consist of didactic groups, one student acting as the client and the other as the SLP. Student SLPs will use the adapted VCU ACE AAC information gathering forms to develop their familiarity with the forms and the processes through using the forms to collect assessment and treatment planning information. Students will then switch roles to allow all students to work with the VCU ACE AAC forms. After training students will be assigned to a case study and simulated patient. Students will be provided with the case study to prepare for their simulated patient encounters.

Stage Four will consist of operationalizing the LAFF-active listening assignment for the AAC course and will take place during the final week of August 2023, with the student assignment date scheduled to begin September 2023. During this time, students will be assigned to a case study and approved actor resulting in a schedule of in-person interviews within the university clinic for participating students and actors. Interviews will be held according to the schedule and recorded for later analysis and grading. Analysis and final grades for the assignment will be based on a rubric of skills identified by Thistle & McNaughton, 2015 that need to be demonstrated per the LAFF-active listening program. This rubric will consist of identification of actions within simulated patient meetings that demonstrate the use of active listening, reflecting back to ensure the simulated patient knows you are listening, focus on the simulated patient's needs, and find a first step to assist the simulated patient. The LAFF-active listening assignment will culminate with a final meeting between the student, actor, and professor to discuss the strengths and weaknesses of the interaction, identification of areas of improvement, and conduct a student self-evaluation in the form of a reflection paper.

External Changes In-Service SLPs. Pre-service SLPs are not the only group this organizational improvement plan will target. Phase two of the OIP focuses on In-service SLPs. In-service SLPs also require assistance in developing and revisiting the skills needed to obtain necessary information through the process of active listening. Using the results from the LAFF-active listening assignment during the fall 2023 semester, the professor will develop an AAC active-listening training program for practicing SLPs for implementation beginning in the spring semester of 2024. This training will focus on using the LAFF-active listening program and the use of adapted Virginia Commonwealth University Center for Autism Education (VCU ACE) AAC information-gathering documents. Video presentations will be developed and used to provide training to in-service SLPs regarding the LAFF-active listening program and adapted VCU ACE

AAC forms. These training videos will be developed and include excerpts of the simulated patient interactions conducted by the students in the AAC course. Excerpts of student simulated patient interactions will only be included with the written permission of the student. Video training will be recorded for submission to a private YouTube account. Training videos will be subject to availability on YouTube and will be provided at the request of treating SLPs and their respective employers if YouTube videos become unavailable. Using a platform such as YouTube will allow for disseminating the training to a wider audience.

The third stage of the external phase of the organizational improvement plan is intended to target academics and those who conduct research on AAC and the manufacturers of AAC equipment. Presentation of the current study's results at professional conferences will take place at various speech-language pathology conferences, including MSHA (Missouri Speech and Hearing Association) in April of 2024, ISAAC (International Society for Augmentative and Alternative Communication) in July of 2024, and ASHA (American Speech-Language-Hearing Association) conference in November of 2024. These presentations will include the present study's results and the results and benefits identified from implementing the LAFF-active listening program and adapted VCU ACE AAC information-gathering forms within AAC graduate-level coursework. Additional ties to community-based training on the use of the program will also be included. Additional informational outreach to share the current study's results, as well as the results of the LAFF-active listening program and training, will be provided to AAC manufacturers, including sales representatives, as a means not only to disseminate important findings but also to promote the dissemination of the content of this research as these manufacturers act as consortiums of AAC information. By doing so, the entirety of the present study and the resulting strategies for improving AAC services can be shared, reaching the widest audience possible and providing a framework for other academics and researchers to continue to promote and refine the current body of research and the training of pre-service and in-service SLPs.

Implications for Future Research

Additional research can serve to advocate for changes in laws, policies, and practices to improve the provision of services for those that use AAC and their caregivers. Further studies using similar procedures should be conducted with higher levels of participation to ensure a broader segment of the population is considered, as the current study results may not be representative of all BIPOC AAC stakeholders. A study that incorporates more SLPs working with BIPOC clients, caregivers of BIPOC users of AAC, and BIPOC users of AAC may allow for the identification of additional barriers related to their experiences of culturally responsive practices. This was seen in the caregiver respondent data in which the caregiver identified the variance within the BIPOC population, noting that what she and her family needed would be different from someone from Africa, Bahamas, and Jamaica. An additional area of future research could adapt the methodology of the present study to include more than just BIPOC users of AAC. By incorporating the lived experiences of additional cultural groups, including variances in the BIPOC population, comparative data could be obtained to determine if there are perceived variances in the cultural needs of the cultural groups that make up the BIPOC diaspora. Additionally, the methodology of the present study could be adapted to incorporate respondents from additional cultural groups (Hispanic and Asian) could provide comparative data on the lived experiences across the groups, identifying if the experiences are similar in nature. By identifying experiences across marginalized groups, the discipline of speech-language pathology can better understand the cultural needs of the wide variety of individuals they work with. Additionally, longitudinal studies could be conducted to follow individual users of AAC, caregivers, and SLPs to identify changes in their experiences over time regarding vocabulary selection, icon selection, and dialectal changes to AAC devices. Finally, additional expansions and adaptations of the current study's methodology to incorporate the lived experiences of SLPs from marginalized groups could be assistive in determining variances in AAC practices across cultural groups.

Conclusion

The current study focused on identifying the lived experiences of SLPs providing services to BIPOC users of AAC, caregivers of BIPOC users of AAC, and BIPOC users of AAC as they related to the selection of culturally reflective iconography for use on their AAC systems. The study asked the following research questions.

R1: What are the lived experiences of Speech-language pathologists working with clients that use AAC regarding the selection of AAC iconography for BIPOC clients and their families?

R1A: How do Speech-language pathologists experience the icon selection phase of assessment?

R1B: How do Speech-language pathologists experience AAC icon selection during the ongoing intervention process?

R1C: What additional considerations do Speech-language pathologists experience when working with users of AAC that are BIPOC?

R2: What are the lived experiences of BIPOC users of AAC and their caregivers regarding the selection of AAC icons on their devices that reflect their culture?

R2A: How do caregivers of individuals using AAC experience the icon selection phase of assessment?

R2B: How do caregivers of individuals using AAC experience AAC icon selection during the ongoing intervention process?

R2C: How do users of AAC experience the icon selection phase of assessment?

R2D: How do users of AAC experience AAC icon selection during the ongoing intervention process?

R2E: What does cultural representation mean to BIPOC AAC users and families of individuals using AAC?

Results of the current study identified the barriers that all three stakeholder groups experience when considering the selection and use of culturally reflective iconography on their AAC systems. The themes of barriers, support, team input, and culture were identified within the data and reflected the issues that impact the consideration of AAC systems, AAC services, and culturally reflective AAC icon selection. While caregivers of BIPOC users of AAC and BIPOC users of AAC did not identify the visual representations of AAC iconography as salient to them, they did identify the need for culturally relevant vocabulary and dialectal choices on AAC systems as important to them culturally. This consideration is greatly important when coupled with the results of the analysis of the SLP data, which indicated a lack of consideration of culture when making decisions on which vocabulary and linguistic systems to include in a BIPOC user of AAC's device.

As the United States grows ever more diverse, so does the diversity of the clients to whom services are provided. As the discipline continues to struggle to diversify the profession's membership, we must adapt our services and strategies to meet the needs of a diverse population. By focusing on family-systems and active listening, SLPs can re-focus their services on the individual served, their family, and broader social networks, develop a family systems-focused understanding of the unique cultural needs of clients, and ultimately provide best practices to those that use AAC systems.

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Appendix A

Interview script and probes (users of AAC and caregivers of person that uses AAC):

- What do you think about the icons on your/your family member's AAC device?
- What do you like about the icons on your device?
    - What do you like about them?
    - Would you change any of your current icons?
    - How would you change your current icons?
- What do you not like about icons?
    - If you could change anything about the icons you don't like what would you change?
- Did you get the opportunity to choose any of the icons on your or your family member's AAC device?
    - If yes: What icons did you select for you or your family member's AAC device?
        - Describe the icon selection process as you experienced it.
    - If no: Who selected the icons on your or your family member's AAC device?
        - Describe the device and icon selection process you participated in during your assessment for AAC.
        - Describe the device and icon selection process you participated in during ongoing interventions.

Interview script and probes (Speech Language Pathologist)

- Describe the process you use to select AAC devices and icons for your clients that use AAC during the assessment.
- How much client/caregiver input do you typically seek when selecting AAC devices and icons for clients using AAC during the assessment?
    - If none: What reasons, if any, do you not seek out client/caregiver input when selecting AAC devices and icons during the assessment?
    - If yes: Describe how you obtain client/caregiver input on the AAC device and icon selection during the assessment.
- Describe the issues, if any, that you face regarding AAC device and icon selection during the assessment.
    - If affirmative: probe for more information
    - If none: Is there anything you would change regarding AAC device and AAC icon selection during the assessment process that would benefit you as a practitioner and your clients?
- Describe the process you use to select AAC icons for your clients that use AAC during ongoing interventions.
- How much client/caregiver input do you typically seek when selecting AAC icons for clients using AAC during the ongoing intervention?
    - If none: What reasons, if any, do you not seek out client/caregiver input when selecting AAC devices and icons during the ongoing intervention?
    - If yes: Describe how you obtain client/caregiver input on the AAC device and icon selection during the ongoing intervention.

- Describe the issues, if any, that you face regarding AAC device and icon selection during the ongoing intervention.
    - If affirmative: probe for more information
    - If none: Is there anything you would change regarding AAC device and AAC icon selection during the assessment process that would benefit you as a practitioner and your clients?
- Thinking on your practice in AAC as a whole, what issues do you experience that inhibit the provision of assessment and intervention for individuals needing AAC?