

Identifying Challenges in the Identification of Autism Spectrum Disorder in Children with Hearing Loss

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Aim/Objective

Aim/Objectives: To identify barriers in screening and assessment referrals for autism spectrum disorder (ASD) for children with hearing loss and to specifically identify variables in professional knowledge, expertise, and responsibility surrounding ASD diagnosis in audiologists compared with other professionals working with children with hearing loss.

Overview/Background

There is evidence to support that a child can be reliably diagnosed with ASD by 2 years of age (Johnson et al., 2007), however symptoms of ASD may be exhibited and identifiable as young as 6-12 months of age (Charman & Baird, 2002; Mandell, Novak, & Zubritsky, 2005). As with other developmental disabilities, the goal is early intervention. In the US, the current average age of an ASD diagnosis in children with typical hearing is variable, however children are commonly not diagnosed until 4-5 years of age (Christensen et al., 2016; CDC, 2009). The prevalence of ASD in the US is 1 in 68 children (CDC, 2009) and is estimated to be as much as three times higher in children with hearing loss (Carr, Xu, Yoshinaga-Itano, 2014). In addition, children with hearing loss are often late identified with secondary disabilities including ASD (Szarkowski, Mood, Shield, Wiley and Yoshinaga-Itano, 2014). The age of an ASD diagnosis in children with hearing loss is variable and can be delayed until adolescence or adulthood (Meinzen-Derr et al., 2014).

Joint Committee on Infant Hearing (JCIH), a multi-disciplinary group representing seven professional organizations, has a founding principal that, "all children with hearing loss should have access to resources necessary to reach their maximum potential." (JCIH, 2003). JCIH 2007 Position Statement identifies the need for "referrals for specialty evaluations" based on comprehensive intervention. Clearly the intent is to identify children with secondary challenges, and it appears the responsibility falls with any professional engaged in monitoring outcomes in children with hearing loss. This includes audiologists, physicians, speech-language pathologists, and others, such as early educators, special educators, and teachers of the deaf/hard-of-hearing involved in early intervention services.

Overlapping Symptoms. Distinguishing ASD in children with hearing loss is difficult due to a variety of factors including overlapping symptoms. According to Szarkowski, Mood, Shield, Wiley, and Yoshinaga-Itano (2014), some of the overlapping symptoms are not responding to one's name, language delay, and delayed theory of mind. In addition, the tools used to give an ASD diagnosis to children with hearing loss are problematic, especially for children who communicate primarily through sign language as the assessments are not validated or normed on children with hearing loss. (Mood and Shield, 2014).

Red Flags: The later age of diagnosis of ASD in children with hearing loss could also be due to a lack of knowledge of ASD red flags. A chart of several red flags for ASD was listed in Szarkowski, Flynn, Clark, (2014) and The Modified Checklist for Autism in Toddlers (M-CHAT) also identifies common red flags. Results obtained from a retrospective chart review conducted by Szarkowski, Flynn, and Clark (2014) found that individual professionals vary significantly in their comfort in giving an ASD diagnosis in children with hearing loss. There was also significant variety in their knowledge surrounding ASD red flags. Szarkowski, Mood, Shield, Wiley, and Yoshinaga-Itano, (2014) suggest being informed about ASD red flags as they present in children with hearing loss may lead to professionals being more comfortable referring when ASD is suspected or when giving a diagnosis of ASD.

Lack of social smiles or sharing joyful expressions directed at people
No babbling
Any loss of previously acquired speech, babbling, or social skills
No gestures to communicate
No words
Pronoun avoidance
Has unusual, intense reaction to sounds, smells, tastes, textures, lights, and/or colors
Repeats words/phrases over and over

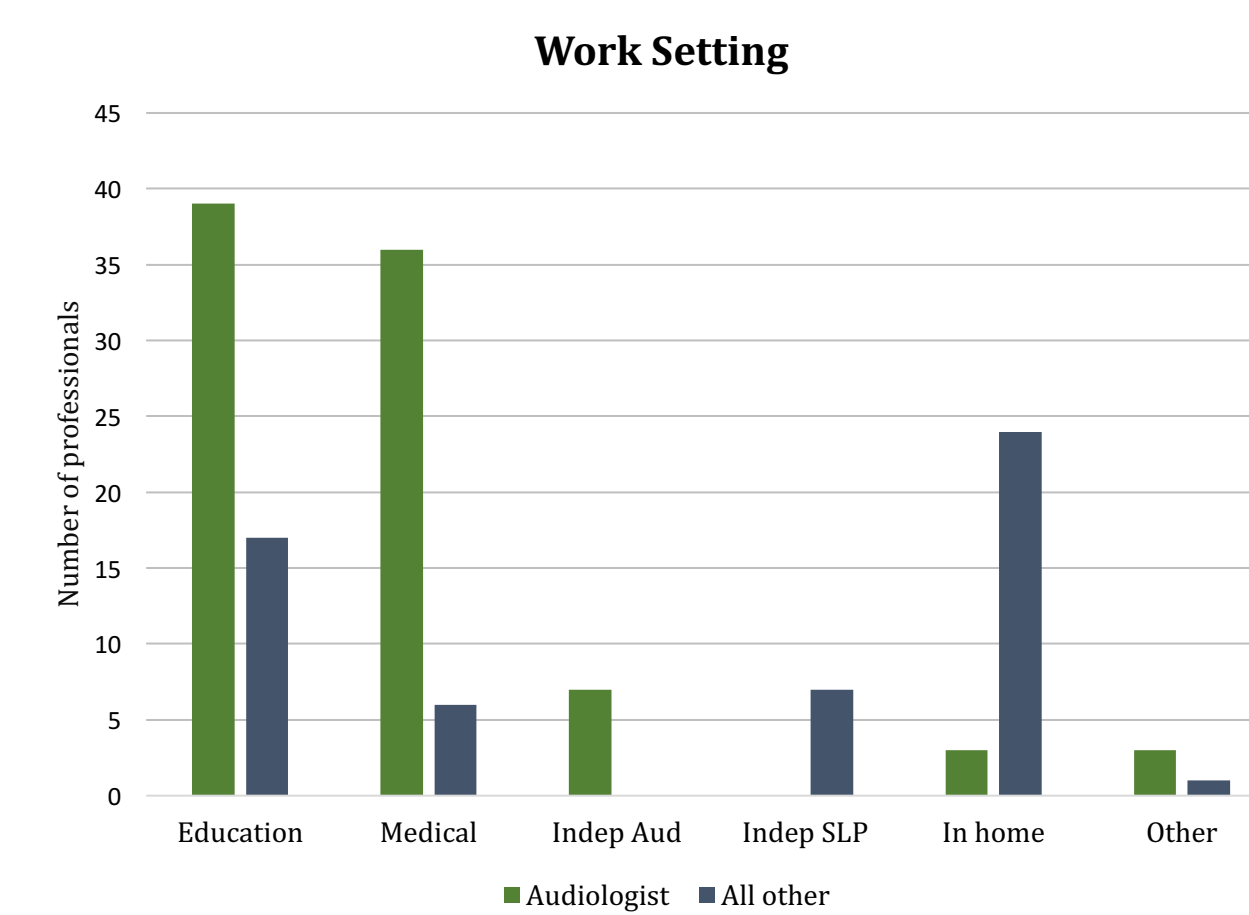
Professional variables: There are multiple barriers to an accurate and timely ASD diagnosis. Identifying areas of professional knowledge, expertise, and referral patterns can be used to identify barriers that may be contributing to later identification of ASD in children with hearing loss. Audiologists may be among the first healthcare providers to interact with a child with ASD and be the first provider with whom parents discuss the communication concerns that they have. If those concerns cannot be explained by the hearing loss alone, the audiologist should be comfortable screening and referring for additional assessments. The American Academy of Audiology (AAA) scope of practice guidelines state, "audiologists may perform speech or language screenings or other screening measures for the purpose of initial identification and referral of persons with other communication disorders." ASD is a social "communication disorder" and therefore it is clearly within the AAA scope of practice to screen and refer a child when ASD is suspected. Similarly, the American Speech, Language, Hearing Association (ASHA) scope of practice guidelines state that screening for disorders that impact "development or communication" may result "in referral for other examinations or services."

- This investigation evaluates differences in knowledge, responsibilities, and screening and referral patterns of audiologists and other professionals working with children with hearing loss.
- The ultimate goal is to reduce the age of identification of ASD in children with hearing loss and evaluate the role audiologists can play in identification and referral practices.

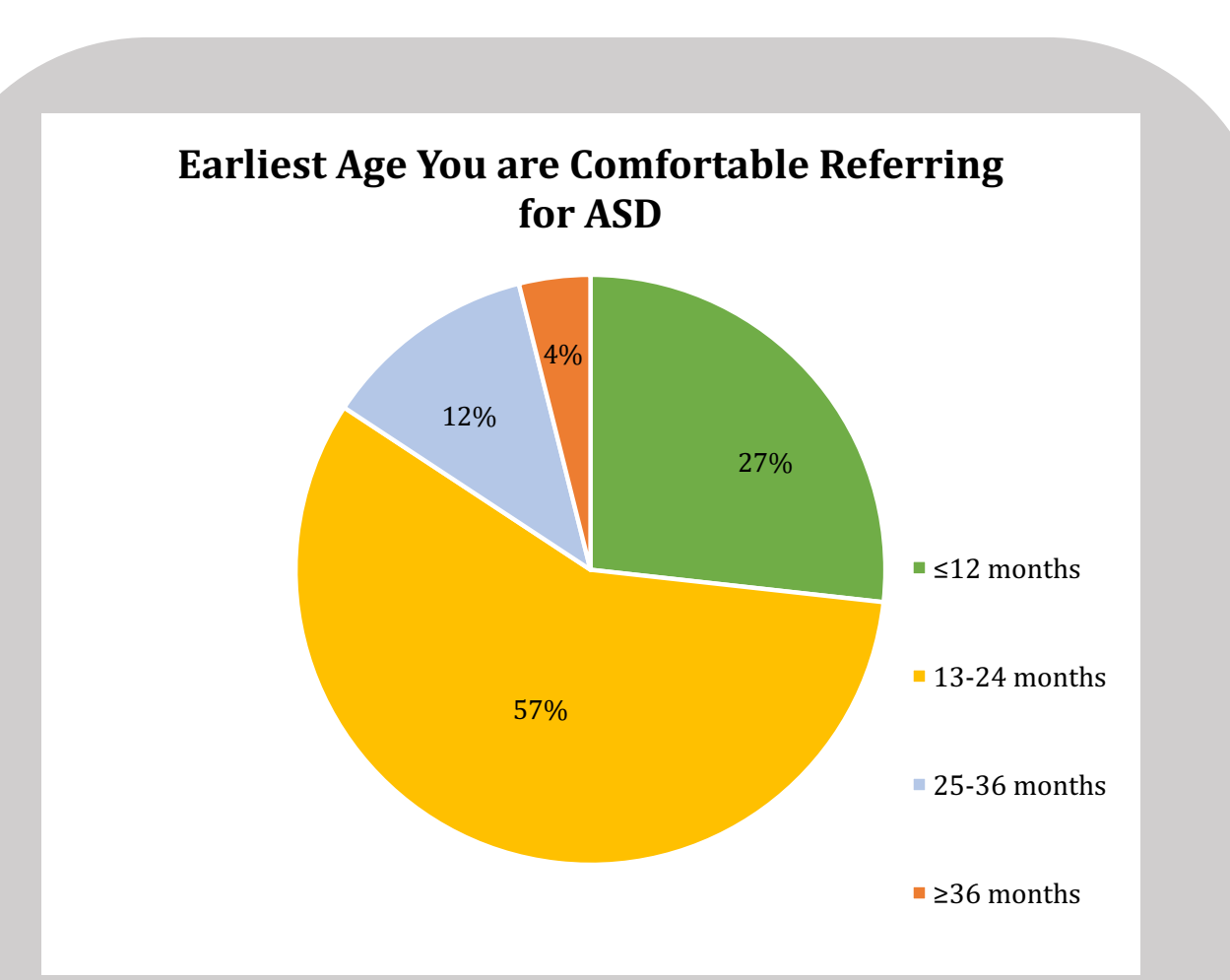
Methods

This survey was designed to determine professional awareness, knowledge, protocols, and available resources for referral options for an ASD diagnosis in children with hearing loss. The questions included in the survey were designed using a matrix and forced choice format. The survey was developed in RedCap and was distributed electronically via listservs and social media. Professionals who work in the Colorado Home Intervention Program, in public schools in Colorado, and members of the Colorado Academy of Audiology were all sent survey requests through specific email list serves. In addition, survey information was distributed on Facebook. It is estimated that approximately 500-600 professionals received the survey and it is likely that the majority practice in Colorado. Completed surveys were received from 101 individual professionals with an estimated response rate of 17-20%. Survey data analysis was completed using RedCap and Excel software.

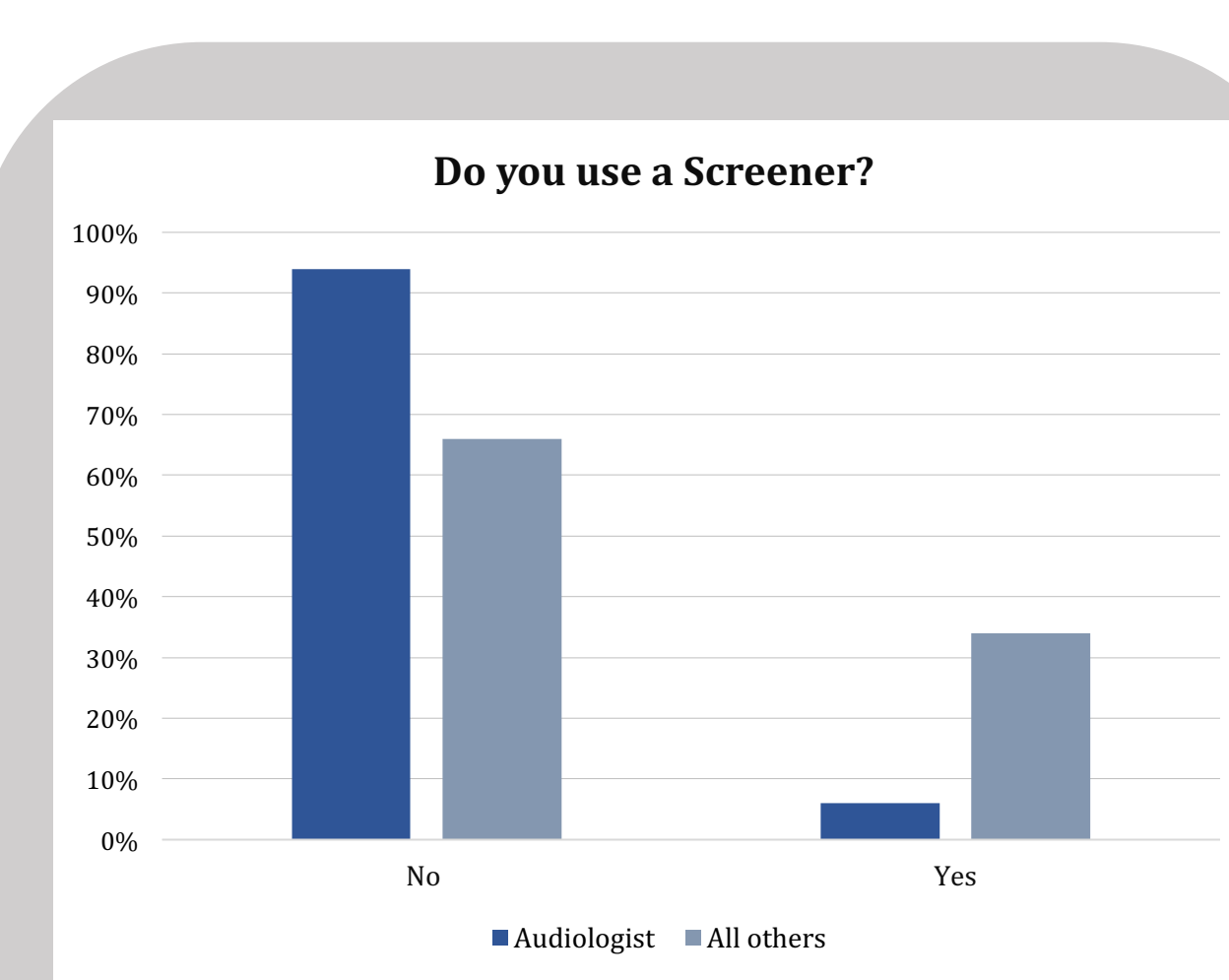
Results



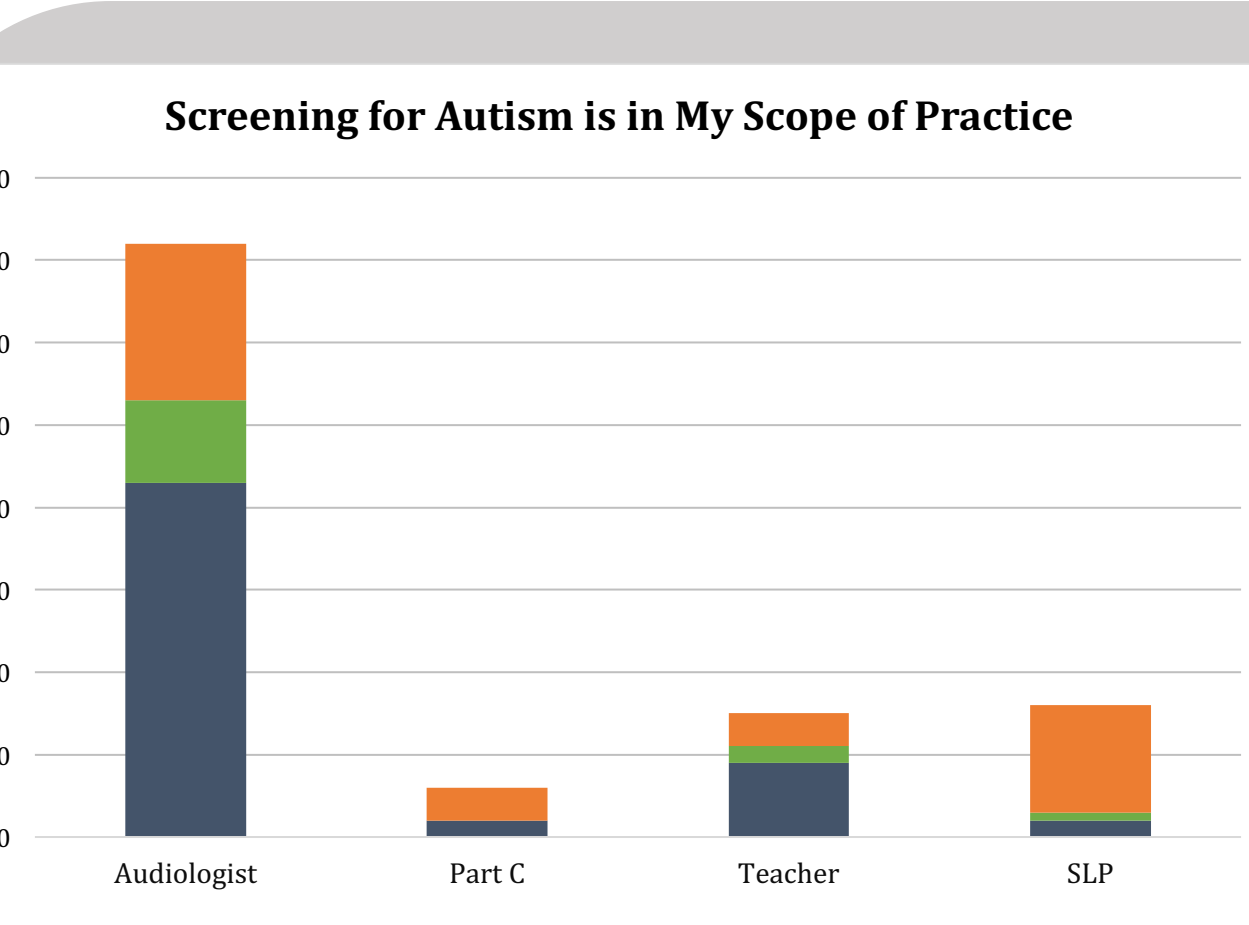
- The population that was surveyed are made of up professionals who primarily work in the educational or medical settings
- Other professionals includes speech language pathologist, teacher of the deaf/hard of hearing, Part C early interventionists



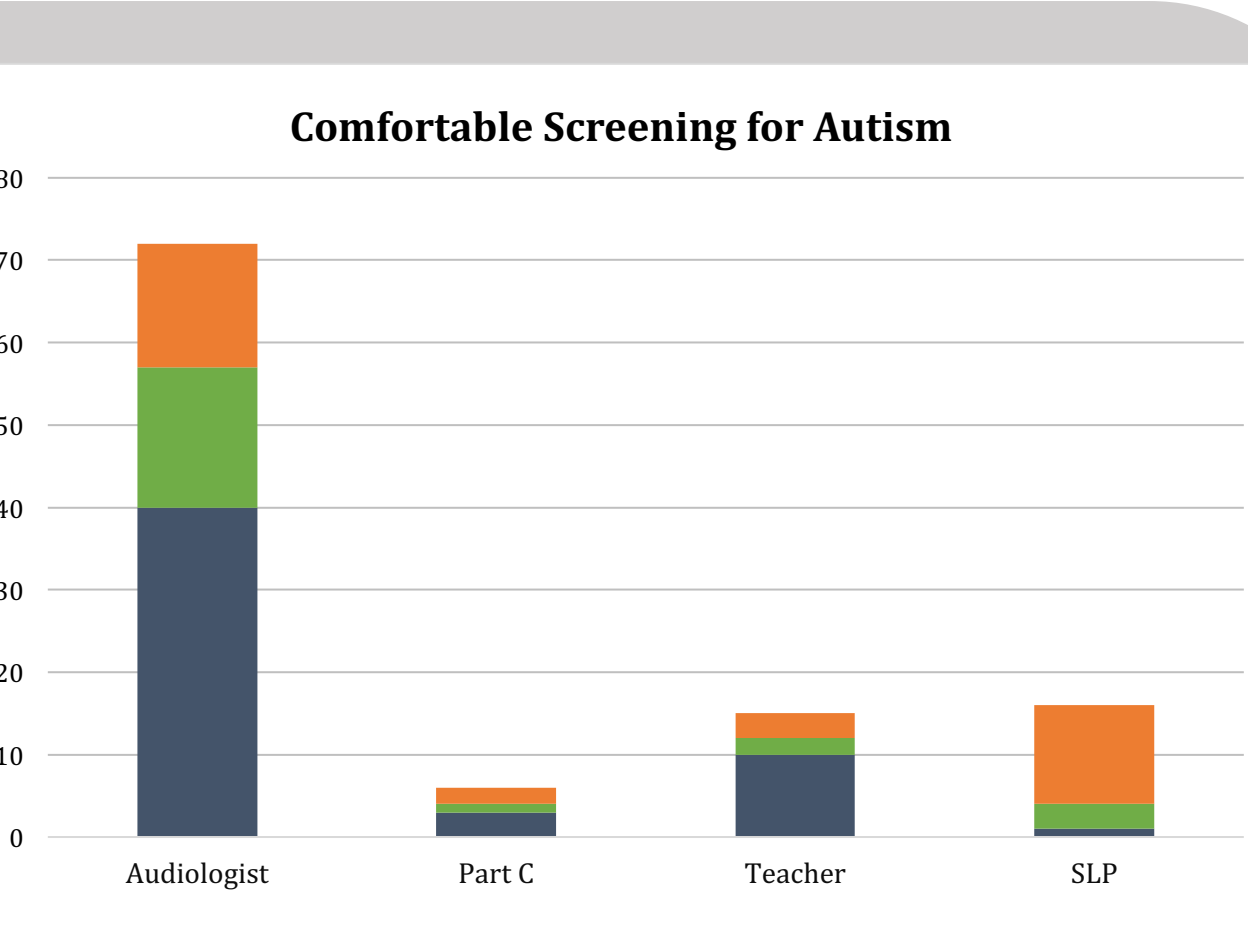
57% of the surveyed population report that they are comfortable referring a child for suspected autism between 13-24 months, which is lower than the national average.



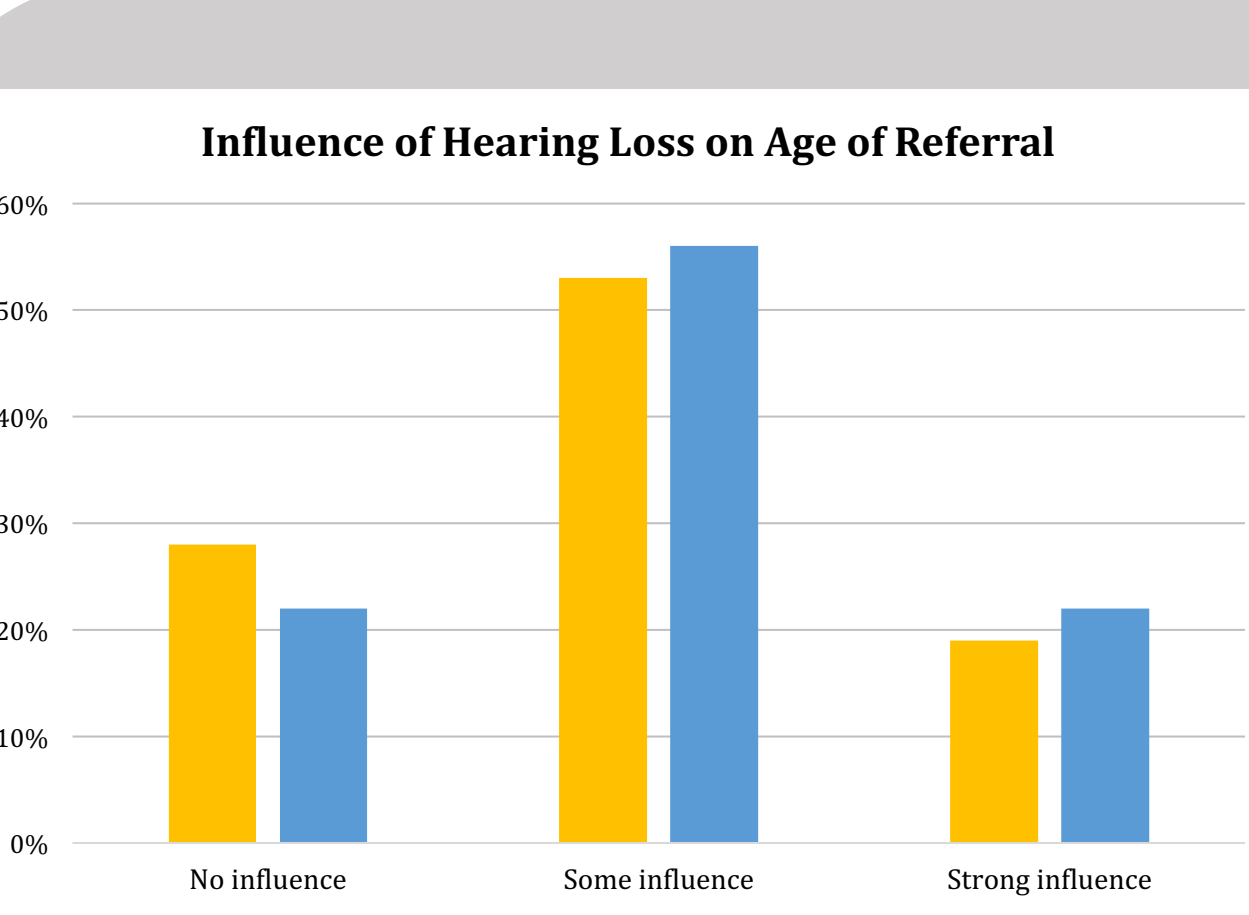
94% of audiologists do not use a screening tool to screen children for autism. Only 34% of other providers use screening tools, only 6% of audiologists use screeners. The most common screeners used were the MCHAT and the ASQ.



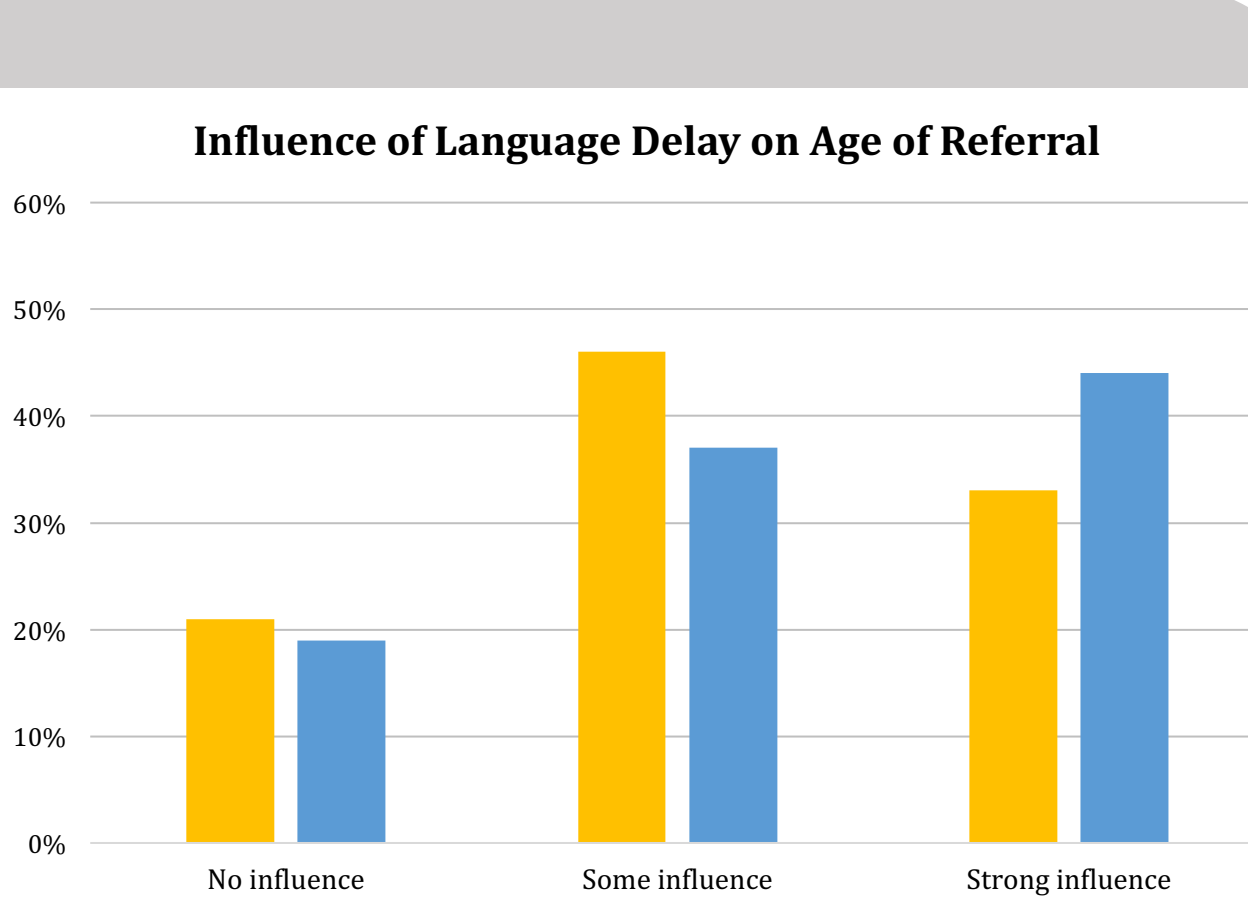
More than half of the audiologists surveyed reported that they strongly disagree/disagree that screening for autism is in their scope of practice



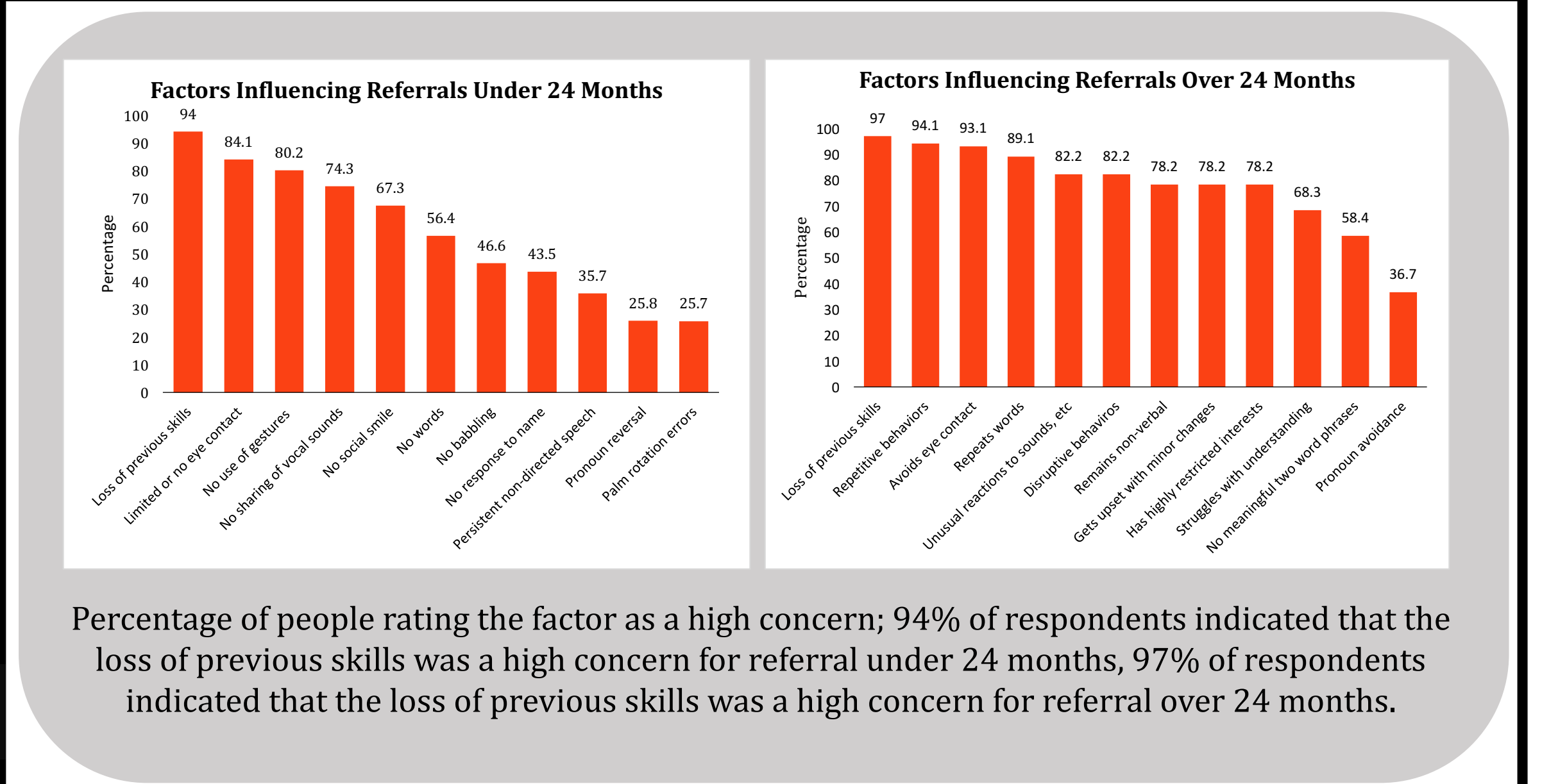
More than half of the audiologists surveyed reported that they strongly disagree/disagree that they are comfortable screening for autism.



More than 50% of audiologists and other professionals report that hearing loss only provides **some influence** in the age they will refer a child.



More than 40% of audiologists and other professionals report that language delay only provides **some influence** in the age they will refer a child.



Percentage of people rating the factor as a high concern; 94% of respondents indicated that the loss of previous skills was a high concern for referral under 24 months, 97% of respondents indicated that the loss of previous skills was a high concern for referral over 24 months.

Discussion

Research shows that the age of autism diagnosis tends to occur significantly after the identification of the child's hearing loss and later than in the hearing population (Meinzen-Derr, Wiley, Bishop, et al., 2014). Unfortunately the results from this survey, as well as previous research, indicate that there are several factors and barriers that complicate an earlier ASD diagnosis in children with hearing loss.

Significant Barriers to Early Dual Diagnosis:

- **Scope of Practice:** Audiologists are significantly less likely to use a screening tool when ASD is suspected. JCIH 2007 and AAA explicitly say that screening and referring for other disabilities is within an audiologist's scope of practice. Although not specifically stated, ASD would be included under this umbrella term. Our data also shows that audiologists don't agree that screening for ASD is within their scope of practice.
- **ASD Knowledge:** The providers reported awareness and knowledge of the red flags of ASD and there is agreement about which factors are important for a referral. The "classic" symptoms of ASD (e.g., poor eye contact, reduced use of language, receptive behaviors) are most likely to influence referral patterns, and the less familiar symptoms (e.g., pronoun reversal/avoidance, palm rotation) are less likely. This indicates that increased knowledge of specific red flags may increase the likelihood of referrals. The use of formal screening tools could help professionals use all risk factors to make accurate referrals for further assessment of ASD. However, providers are generally not using screening tools in their practice and over 50% of audiologists are not comfortable screening for autism. Without a process to identify and refer, children may not receive a timely diagnosis.
- **Access and Resources:** Results from this survey suggest that in order to reduce the age of an ASD diagnosis in children with hearing loss, many providers would benefit from ASD specific education aiming to improve overall knowledge and understanding of the presentation of ASD in this population. 99% indicate they have access to qualified professionals to refer for an ASD evaluation. This number contradicts research conducted by Wiley, Wiley, Gustafson, and Rozniak (2013), who state that families often do not have access to a dually trained provider. The larger number of professionals who have access to a dually trained professional in this study could be due to the geographic location of professionals who were surveyed. All providers indicated that they would like a resource guide, a roadmap to services, a checklist of autism red flags for DHH providers, and/or continuing education opportunities understanding of the presentation of ASD in this population.
- **Need for Continuing Education:** This study highlights the need for more resources and training for providers who work with this population in order to increase awareness of the possibility of a dual diagnosis.

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