Speech-language pathologists on the autism spectrum

Rebecca Freeman Barnett

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Speech-Language Pathologists on the Autism Spectrum

by

Rebecca Freeman Barnett

Thesis
Submitted to the Department of Special Education & Communication Sciences and Disorders
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in partial fulfillment of the requirements for the degree of

MASTER OF ARTS
in
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Thesis Committee:
Lidia Lee, Ph.D., CCC-A, Chair
Audrey Farrugia, Ph.D., CCC-SLP
Sally Burton-Hoyle, Ed.D.

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Abstract

This thesis consists of three journal articles for publication that addresses three different aspects of the research that examines the state of diversity in the field of speech-language pathology (SLP) as it pertains to autistic representation and possible implications. In the first article, Demographic Analysis of Autistic Speech-Language Pathologists, the purpose was to determine the demographic differences between SLPs that identified on the autism spectrum and those that did not. A mass survey was conducted of SLPs in the states of Wisconsin, Michigan, and Ohio. It was concluded that 2.98% of SLPs self-identified on the autism spectrum. Chi-square analyses found statistically significant differences in gender, pronouns, and preference for disability accommodations. In article 2, Clinical Tendencies of Autistic Speech-Language Pathologists, the purpose of this study was to compare autistic and non-autistic SLPs’ clinical tendencies toward autistic clients. A mass survey was conducted of SLPs in the states of Wisconsin, Michigan, and Ohio; in addition, autistic SLPs were recruited from online communities. Chi-square analyses found significant differences in preferences for autism assessments and interventions, client-centered practice, and anti-autism stigma, but no significant differences were observed in rapport/progress and knowledge of autism. In article 3, Clinical Correlates of Speech-Language Pathologist Autism Preferences, the primary purpose of this study was to draw correlations between SLP preferences for particular autism assessments/interventions and preferences in clinical practice using the same set of data. Aggregated responses were analyzed using Spearman’s correlations and indicated weak associations between autism assessments/interventions and measures of self-reported client-centeredness, client rapport and progress, anti-autism stigma, and knowledge about autism.
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Demographic Analysis of Autistic Speech-Language Pathologists
Abstract

Purpose: Research has increasingly stressed the importance of diversity in the field of speech-language pathology (SLP). Particularly relevant to communication is autistic representation within the field. The aim of this study was to determine the demographic characteristics of autistic speech-language pathologists (SLPs) and compare them to non-autistic SLPs.

Methods: Demographic information was collected as part of a survey that was emailed to all SLPs in the states of Ohio, Michigan, and Wisconsin who provided email addresses to their respective licensing agencies (n = 436). A comparative demographic analysis was conducted.

Results: Results showed that 2.98% of SLPs in Ohio, Michigan, and Wisconsin identified themselves as being on the autism spectrum. Significant associations were found between autistic self-identification and male gender identification, “he/him” pronouns, and desiring but not using disability accommodations. There were no statistically significant associations between autism self-identification and age, caseload, years of experience, or setting.

Conclusions: A substantial subpopulation of clinicians that self-identify as autistic exists within the profession of speech-language pathology with demographic differences and demographic similarities.
Introduction

Speech-language pathology has long struggled to establish a culturally competent field of study with a membership reflecting the full spectrum of people served as clients and partners in care. A misunderstood but frequently encountered population served by speech-language pathologists (SLPs) is clients on the autism spectrum. Research in the past decade has shown that autistic people communicate in a unique manner better understood by other autistic people than by non-autistic people (Crompton, Hallett, et al., 2020). Autistic self-advocates, empowered in recent years by the ubiquity of the internet, have begun to speak out about what they refer to as the double empathy problem (Milton et al., 2018). The double empathy problem details the ways in which differing social norms and expectations in an interaction cause communication difficulty between autistic and non-autistic speakers. This has critical implications for autism studies, as it challenges the assumption held by autism researchers that they can accurately interpret autistic behavior based on non-autistic norms and expectations. The researcher who coined the term “double empathy problem” is on the autism spectrum himself, describing that the issue manifests in the distrust of autism researchers by the autistic participants they try to study (Milton, 2014). The result of this double empathy problem is misinterpretation of autistic behaviors, which Milton argues threatens the epistemological integrity of autism studies that attempt to analyze this behavior from a non-autistic point of view.

Misunderstandings between autistic and non-autistic communicators may have implications for the field of communication sciences and disorders, as individuals on the autism spectrum report a preference for interacting with others on the autism spectrum, stating lower levels of anxiety when interacting with autistic people than when interacting with non-autistic people (Crompton, Ropar, et al., 2020). This seems to challenge the common assumption that
people on the autism spectrum are socially unmotivated and suggests that SLPs on the autism spectrum could yield better clinical outcomes for clients on the autism spectrum. The innate advantage autistic individuals have when it comes to reading the intentions of autistic speakers provides an impetus for the direct recruitment of autistic SLPs into the field of communication sciences and disorders as a means of alleviating the aforementioned double empathy problem. The inability of non-autistic SLPs to understand autistic intentions manifests in a breadth of autism literature created by and for non-autistic people. Fortunately, autistic SLPs fill this gap in knowledge through a combination of lived expertise of autism and learned expertise of communication sciences and disorders (Milton et al., 2018).

**Impact of the Double Empathy Problem on Speech Pathology**

The idea that SLPs may unintentionally hinder their own clients through their own biases has been observed with a variety of communication disorders, such as fluency disorders. The effects of SLPs holding stigma against people who stutter included a variety of self-reported negative assumptions about stuttering and less willingness to help their clients, demonstrating that the issue of bias against clients is not unique to autism (Boyle, 2014). Negative perceptions about autism have already been normalized within the field. Recently, the American Speech-Language Hearing Association (ASHA) has condoned autism workshops with derogatory titles such as “Walking On Eggshells & Pulling Teeth: Building More Effective AAC Sessions for Students with ASD” (Zangari, 2018). As concerning as this is, promising developments have been observed when autistic people collaborate with autism institutions at the systemic level, such as in research.

When researchers invited autistic focus groups to conduct a review of autism studies, the following issues were identified: studies were not actually helpful in improving the lives of
autistic adults, studies used language and concepts that are considered to be derogatory by the autistic community, and miscommunication between researchers and participants threatened the validity of many studies; furthermore, many of the findings were often used to advance agendas that opposed to the values in the autistic community (Nicolaidis et al., 2011). Mistrust of researchers by the autistic community decreases their willingness to self-report and participate in future research. This means collaborative research could potentially transform the current understanding of autism spectrum disorders in our field.

Financial transparency is another factor that could improve the validity of autism research. Accurate reporting of financial conflicts of interest appears to be the exception in autism research, rather than the rule. This is a clear “indictment of established standards in autism intervention research” (Bottema-Beutel et al., 2021, p. 5-15). This financial imbalance between non-autistic researchers and the autistic community creates a hierarchy in which researchers possess the institutional power to determine nearly every aspect of autism studies (Nicolaidis et al., 2019). Researchers’ proposed solution to this issue has been to prioritize the participation of autistic adults as co-researchers as well as study participants. The guidelines detailed by the Academic Autism Spectrum Partnership in Research and Education, an international community-based participatory research association, outlined a variety of ways in which autistic individuals must be included and accommodated in order to draw valid conclusions. These include making the consent process more accessible, encouraging direct participation through multiple avenues rather than relying on “proxy reporters,” and assuming basic competence from participants.

The dialectical conflict that contributes to such diverging autism research pathways is the idea of a medical versus a social model of autism. The medical model purports autism to be
disability due to “direct consequence of a person’s biological make-up and functioning,” while the social model attributes autism’s disability to “an environment that does not effectively accommodate those characteristics” (Pellicano et al., 2021, p. 2-5). A review of autism literature identified three major weaknesses in the medical model of autism. First, the deficit-based nature of the medical model results in autistic people being limited rather than empowered by SLPs. Second, the individualist nature of the medical model makes systemic change difficult but worthwhile. Third, the medical model minimizes autistic accounts of their own experience, resulting in a framework in which autistic people have “no say as to what gets researched in autism science, why or how” (Pellicano et al., 2021, p. 2-5). Changing this narrow view of autism could substantially improve the validity problems in the literature informing autism assessments and interventions.

**Autistic Representation in Research**

Trust between researchers and participants is critical. Coercion during research procedures has become a pressing ethical problem when working with autistic participants (Nicolaidis et al., 2011). Researchers with disabilities have long stressed the importance of incorporating their voices into research about people with disabilities, citing benefits such as increased rapport between researchers and participants, more extensive responses from participants with shared disability identities, and reduced perceptions of power imbalance between researchers and participants (Brown & Boardman, 2011). However, the authors are quick to note that the extent to which one disabled individual shares lived experience with another is mediated by a variety of intersectional factors including but not limited to socioeconomic status, gender, age, nationality, age, and other identities. This further demonstrates the impetus for a more diverse field of communication sciences and disorders in
general. The root problem with underrepresentation of autistic people in institutions that serve them stems from the validity of the seminal research that informs SLP practices. Without autistic researchers to establish trust and communicate with autistic participants, autism studies will likely continue to struggle in recruiting participants and suffer from the limitations of relying on proxy reporters like caregivers that do not reflect the true intentions of autistic people. Without autistic researchers and clinicians to interpret the responses of autistic participants, misunderstood intentions will continue to result in incorrect conclusions as evidenced by experiments that are not replicable.

A qualitative analysis of autistic adults performed by SLPs revealed SLPs often misunderstand the autistic people they are trying to serve (Angulo-Jiménez & DeThorne, 2019, p. 569-590). Many autistic individuals report “not making eye contact helps them to focus on the ongoing conversation,” nevertheless eye contact is a common goal in speech-language therapy despite the research showing it makes communication more difficult amongst the autistic clients (Hadjikhani et al., 2017, p. 1-4). This could negatively impact rapport between SLPs and autistic clients. Not only is rapport between clients and clinicians associated with increased client participation in speech and language services as measured by attendance records, but SLP and caregiver perceptions of rapport have been established as a significant predictor of clinical success in children with a variety of speech and language disorders (Ebert, 2017). The authors recommend that clinicians must be educated on the “varying views of autism held by autistic individuals, as their perspectives are an integral component of evidence-based practice” (Angulo-Jiménez & DeThorne, 2019, p. 569-590). This study emphasized the importance of autistic input in evidence-based practice, and autistic SLPs have a unique experience of lived expertise in autistic communication and learned expertise in non-autistic communication (i.e., pragmatics and
social communication). Autistic SLPs, who are self-identifying in ASHA publications for the first time (Dorsey et. al, 2020), bring a fresh perspective to the field and highlight common misconceptions about autistic clients. This unique experience is critical in filling in gaps in understanding between various stakeholders in the autistic community. Therefore, seeking out the views and clinical expertise of autistic SLPs is key when bridging the gap between the communication sciences and disorders research and autistic client outcomes.

A recent study quantified the predisposition of autistic people communicating with other autistic vs. non-autistic individuals. Results indicated decreased rapport and degradation of information transferred between non-autistic and autistic speakers (Crompton, Ropar, et al., 2020). Participants conveyed information along three different types of communication chains: all autistic, all non-autistic, and alternating autistic/non-autistic (mixed). The mixed chain produced a more degraded message than either of the unmixed chains, this is the first time that quantitative evidence has shown no significant differences in information degradation between an all-autistic group and a non-autistic group. This indicates that autistic listeners are better equipped to receive the messages of autistic speakers without losing the message or misinterpreting the intentions of the speaker. While this does not negate the importance of social communication, it does indicate that autistic pragmatics should not be viewed as an impaired version of neurotypical social communication. Instead, it should be considered a different language of pragmatics, and should be treated in therapy accordingly.

**Rationale**

Given the insights on autistic communication offered by this subpopulation of SLPs, it becomes of interest to quantify the state of autistic representation within the field. This author’s personal interest in autistic SLPs comes from a desire to minimize harmful stereotypes about
autism and to improve the understanding of autism spectrum disorder by creating a more accessible experience for autistic clients in the field of communication sciences and disorders. In the literature, no data is available on the basic demographic information on autistic SLPs. This is critical to ensure autistic voices are being considered in autism research, assessment, and intervention within the field of SLP. This study aimed to examine autistic representation in the field of SLP by comparing autistic and non-autistic SLPs’ demographic characteristics.

**Method**

**Study Design**

A quantitative approach was employed to ascertain the demographic characteristics of autistic SLPs. Survey responses were analyzed using chi-squared tests of independence. In this study, the primary independent variable being investigated was self-identification on the autism spectrum. The surveys used to investigate research questions were based on previously established measures of demographics (Eastern Michigan University, 2020; ASHA, 2018). A subset of the data was analyzed for the purpose of this study. To estimate the demographic characteristics of SLPs in the three Midwestern states of interest, survey distribution was completed during the fall of 2020. Email addresses for Michigan SLPs were obtained from the state’s department of Licensing and Regulatory Affairs (LARA). Email addresses for Ohio SLPs were obtained from the state’s Speech and Hearing Professionals (SHP) board. Email addresses for Wisconsin SLPs were obtained from the state’s Department of Safety and Professional Services (DSPS). All SLPs were sent a copy of the survey hosted on Google Forms using the email address listed in the associated state roster.
Participants

The survey was disseminated via email to all licensed SLPs in the states of Michigan, Ohio, and Wisconsin. A total of 436 SLPs in these states completed the survey.

Results

Survey data was analyzed using chi-square tests of independence. Significance level was set at $p = 0.10$ due to the exploratory nature of the study. During data collection, 13,487 recruitment emails were sent out, and 447 participants returned surveys, indicating a 3.30% response rate. Response rates from each state are summarized in Table 1. Four hundred and thirty-six participants returned the surveys fully completed and thus were included in data analysis. The demographic data from this survey indicated that 2.98% of respondents identified themselves as being on the autism spectrum. This indicated a slightly higher proportion in the field of speech-language pathology on the autism spectrum compared to the general population proportion estimate of 2.27% (Maenner et al., 2021). In the entire sample, 3.89% of respondents identified as male, and 96.10% identified as female. In addition, 4.13% of SLPs reported using disability accommodations at their job, and an additional 2.06% stated they would like to. This would indicate that a total of 6.19% of SLPs either utilize or would like to utilize work-related disability accommodations. A summary of these descriptive statistics is provided in Table 2.

The comparative analysis of the survey aimed to determine whether autistic SLPs possess significantly different demographic characteristics from non-autistic SLPs. Chi-square analyses (Table 3) revealed that SLPs who identified on the autism spectrum were significantly more likely to report “No, but I would like to” when asked if they use disability accommodations, $\chi^2 (1, N = 436) = 12.501, p = 0.006$, but no respondents on the autism spectrum reported using disability accommodations. Cramer’s $V$, which was used to measure effect size, provided a
measure of strength of the relationship between the variables found by chi-square analyses to be correlated (Kim, 2017). The correlation with the strongest effect size ($V = 0.169$) was the relationship between autism and SLPs who reported “No, but I would like to” when asked if they use disability accommodations. Autistic SLPs have significantly different gender makeup than non-autistic SLPs and were more likely to identify as male $\chi^2(1, N = 436) = 4.717, p = .030$.

Interestingly, the correlation between gender diversity and identification on the autism spectrum fell between small-medium ($V = -0.104$). Preferred pronouns also differed significantly depending on autism self-identification, $\chi^2(1, N = 436) = 5.322, p = .070$. A moderate association ($V = 0.110$) was found between self-identifying on the autism spectrum and preferred pronouns of “he/him.” There were no statistically significant differences between SLPs with and without autism when it came to age, caseload, years of experience, or setting.

**Discussion**

One potential concern of the study is the distinction between autistic and non-autistic SLPs was made on a self-identification basis rather than a diagnostic basis. Consequently, we cannot determine the medical validity of the respondents’ self-identification on the autism spectrum. The possibility that a respondent would incorrectly identify as being on the autism spectrum is unlikely within the speech-language pathology profession given that assessing and treating autism spectrum disorder is part of the scope of practice. The education SLPs have on autism, the role SLPs play in assessing and treating autism, and the frequency with which autistic clients are encountered in the field decreases the likelihood of false autism self-identification.

Another potential limitation in this study may have been self-selection bias. Since the survey was mass distributed to all SLPs who provided an active email address to their state licensing agency, participants who chose to complete the survey may have had increased interest
in the topic. As a result, the surveyed sample may not be an accurate representation of Midwest SLPs.

A third potential limitation of this study is that the small sample size violates one assumption behind the chi-square test of independence. The small subpopulation of SLPs identifying on the autism spectrum \( (n = 13) \) resulted in expected counts of less than five in over 20% of cases, even if similar cells were combined. This could threaten the validity of the significance revealed by the chi-square tests.

**Conclusions and Future Research**

SLPs that self-identified on the autism spectrum possess distinct demographic characteristics from non-autistic SLPs in that they are more gender-diverse and more likely to want (but not have) disability accommodations at work but share many key characteristics such as years of experience, age, caseload, autism caseload, and setting. Despite 6.19% of SLPs reporting either currently using or wanting to use work-related disability accommodations, and 2.98% of respondents identified themselves as being on the autism spectrum, there are few resources in the field available to support students and faculty with disabilities. This indicates a shortage in support for disabled students included in ASHA’s own definition of diversity: “age, disability, ethnicity, gender identity... national origin... race, religion, sex, sexual orientation, and veteran status” (ASHA, n.d., p. 1). SLPs with disabilities, especially autistic SLPs, would very likely benefit from increased support and recognition within the field, especially given that autistic SLPs report not using, but wanting disability accommodations.

Amidst the revelations that autistic SLPs exist as a distinct minority within the field representing the autistic community at large (Dorsey et al., 2020), many non-autistic SLPs have wondered what they can do differently to better interact with autistic people. A variety of
suggestions have been made in the ASHA Leader by autistic SLP Kaylen Randall, specifically for non-autistic SLPs (2021). They include the acceptance of autism as a distinct neurotype, the use of identity-first (“autistic”) language over person-first (“person with autism”) language; learning about the ways autistic people face oppression due to ableist institutions that make up society; and the recognition of autistic adults, moving away from discriminatory “functioning” labels, self-education on the double empathy problem (Milton et al., 2018), as well as an appreciation for the uniqueness of each autistic person as an individual (Randall, 2021). The time has come for autistic clinicians to be recognized within the field as a cultural and linguistic minority. Autistic SLPs have had to work around systemic barriers to become SLPs, break down those barriers, and promote mutual understanding.

Following the recommendations of autistic SLPs using strategies the community has identified as helpful could have countless benefits within the field. Including autistic SLPs in the research process, for example, could substantially improve the integrity of research pertaining to the autistic community by establishing a relationship of trust and mutual goals (Nicolaidis et al., 2011). This type of inclusion could improve autistic clients’ access to their preferred modality of communication by reducing the probability that the client may be forced to engage in a non-preferred communication modality such as speech against their will, as has been reported by autistic adult AAC users in previous studies (Donaldson et al., 2021). Autistic SLPs are more likely to be able to understand the needs and desires expressed by autistic clients (Crompton, Hallett, et al., 2020). Introducing autistic-led education on autism into educational programs, at the graduate and continuing education level, is critical to train SLPs as a profession to capitalize on autistic strengths rather than try to force autistic people to attempt to communicate in an inaccessible manner (Donaldson et al., 2017). Greater flexibility on the part of SLPs working
with autistic clients, especially more willingness to honor non-spoken forms of communication, could go a long way in addressing the double empathy problem (Milton et al., 2018).

Prioritizing autistic people as the primary stakeholders when determining autism treatment in our field is beneficial to everyone involved, from clients who have never felt understood before to clinicians who need help connecting with their caseload of autistic clients (Dorsey et al., 2020). Autistic SLPs have been uniquely praised by parents, who have made comments such as “he and [the SLP] are both autistic and this has given her an advantage in understanding the way he does things,” “she is the only one who modified her methods to suit my son,” and “[the SLP] has helped my son tremendously and given my husband and I a refreshingly different approach in guiding him through this overstimulating world” (Dorsey, 2022, p. 1). Until a few decades ago, there were no institutional efforts to recruit, support, and maintain ethnically diverse student populations in speech-language pathology programs. However, when the value of culturally diverse clinicians reflecting the client base we serve was made irrefutable, efforts were made by ASHA to center the cultural and linguistic minorities in the discussion of treating these clients. Changes included dedicated courses on multiculturalism, sponsorship of minority faculty, and outreach to minority communities, which have alleviated the imbalance but have not fully addressed the lack of cultural competence in the field. However, the issue autistic SLPs experience is not underrepresentation, according to the present study, but lack of platform. While outreach would not necessarily be needed, more support could be given to the autistic clinicians and students who are already in the field. This could include introducing autism courses that take a critical disability studies approach, prioritizing lived experience of autism over the deficit-based model pushed by mainstream autism services, and/or
offering permanent online options for entry-level degrees in the field of communication sciences and disorders.

Future research should focus on the experiences of autistic SLPs and the long-term outcomes of autistic clients following various communication interventions. The active inclusion and feedback of autistic SLPs has promising prospects for improving speech and language outcomes for autistic clients.

**Data Availability Statement**

The de-identified, aggregated data used during this study is available from the primary investigator upon written request.
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Tables

Table 1

*Survey Response Rates of SLPs From Wisconsin, Michigan, and Ohio*

<table>
<thead>
<tr>
<th>State</th>
<th>Emails Sent</th>
<th>Emails Rejected</th>
<th>Completed Surveys</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michigan</td>
<td>5462</td>
<td>331</td>
<td>199</td>
<td>3.88%</td>
</tr>
<tr>
<td>Ohio</td>
<td>7939</td>
<td>103</td>
<td>217</td>
<td>2.77%</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>758</td>
<td>24</td>
<td>20</td>
<td>2.72%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>14159</td>
<td>458</td>
<td>436</td>
<td>3.18%</td>
</tr>
</tbody>
</table>
Table 2

Descriptive Statistics of Demographic Characteristics of SLPs who Identified on the Autism Spectrum vs. Typical SLPs From Wisconsin, Michigan, and Ohio (n = 436)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>n</th>
<th>“Yes”</th>
<th>“No”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you identify on the autism spectrum?</td>
<td>436</td>
<td>13</td>
<td>423</td>
</tr>
</tbody>
</table>
Table 3

χ² Distributions of Demographic Characteristics of SLPs who Identified on the Autism Spectrum vs. Typical SLPs From Wisconsin, Michigan, and Ohio (n = 436)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>df</th>
<th>χ²</th>
<th>p</th>
<th>Cramer’s V</th>
<th>Effect size (if significant) (Kim, 2017)</th>
<th>Biggest Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is your age?</td>
<td>8</td>
<td>12.744</td>
<td>0.121</td>
<td>0.171</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is your sex assigned at birth?</td>
<td>1</td>
<td>4.717</td>
<td>0.030*</td>
<td>-0.104</td>
<td>Small-medium</td>
<td>Autistic - “male”</td>
</tr>
<tr>
<td>What is your gender identity?</td>
<td>1</td>
<td>4.717</td>
<td>0.030*</td>
<td>-0.104</td>
<td>Small-medium</td>
<td>Autistic - “male”</td>
</tr>
<tr>
<td>What are your preferred pronouns?</td>
<td>2</td>
<td>5.322</td>
<td>0.070*</td>
<td>0.110</td>
<td>Small-medium</td>
<td>Autistic - “he/him”</td>
</tr>
<tr>
<td>Do you use disability accommodations at work?</td>
<td>3</td>
<td>12.501</td>
<td>0.006*</td>
<td>0.169</td>
<td>Medium</td>
<td>Autistic - “no, but I want to”</td>
</tr>
<tr>
<td>How many total clients are on your caseload?</td>
<td>13</td>
<td>12.605</td>
<td>0.479</td>
<td>0.170</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many clients on your current caseload are on the autism spectrum?</td>
<td>14</td>
<td>14.434</td>
<td>0.418</td>
<td>0.182</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many years have you practiced speech-language pathology?</td>
<td>10</td>
<td>6.457</td>
<td>0.776</td>
<td>0.122</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is your setting?</td>
<td>4</td>
<td>5.594</td>
<td>0.232</td>
<td>0.113</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Learning Outcomes

1. Describe three demographic differences between autistic SLPs and non-autistic SLPs.
2. List three demographic similarities between autistic SLPs and non-autistic SLPs.
3. Discuss three ways the autistic representation could impact the field of speech-language pathology.
Clinical Tendencies of Autistic Speech-Language Pathologists
Abstract

**Purpose:** Previous research has indicated that non-autistic people experience challenges communicating with autistic people. However, autistic speech-language pathologists (SLPs) have documented many successful interactions with their autistic clients. The purpose of this study was to compare autistic versus non-autistic SLPs and their views related to clinical preferences, client relationships, and knowledge and attitudes about autism.

**Methods:** Autistic SLPs were recruited from online communities ($n = 9$) with a mass survey of SLPs in three Midwestern states ($n = 436$). Participants completed a survey of clinical preferences, client relationships, and knowledge and attitudes about autism. Aggregated data were analyzed using chi-square tests of independence ($n = 445$).

**Results:** Significant differences were observed for certain autism assessment and intervention tools, as well as views of client-centeredness. There were no significant differences observed between the groups in their clinical relationships, as measured by self-reported rapport and progress with clients. Autistic SLPs were more likely to disagree with stigmatized and negative statements about autistic people, but autistic SLPs and non-autistic SLPs did not differ in their knowledge of autism.

**Conclusions:** Findings from this study support the prioritization of autistic clinicians as authorities of autism knowledge within the field due to lowered levels of bias against autism and increased affinity for client-centeredness. Future research should be conducted to determine differences in client outcomes following various assessments and interventions.
**Introduction**

Research in the past decade has shown that autistic people communicate in a unique manner better understood by other autistic people than by non-autistic people (Crompton, Ropar, et al., 2020; Crompton, Hallett, et al., 2020). This “double empathy” phenomenon supports the consideration of autism as a valuable form of diversity within the field of speech-language pathology (Milton et al., 2018). The collaboration of speech-language pathologists (SLPs) as a profession that facilitates communication for the autistic community is paramount to the success of institutions serving autistic people. However, debate has arisen amongst the autism community’s stakeholders in recent years regarding the efficacy of these institutions, from research to clinical practice (Nicolaidis et al., 2019). Despite this disagreement, it is generally accepted by the American Speech-Language-Hearing Association (ASHA, n.d.) that the role of SLPs is facilitating communication for autistic people. This becomes a salient issue given autistic individuals are one of the most commonly served populations SLPs encounter (ASHA, 2018a). While prevalence estimates suggest just 1 in 44 children is on the autism spectrum (Maenner et al., 2021), 90.2% of school SLPs report having autistic students on their caseload, each having an average of 9.6 autistic students per caseload (ASHA, 2018b). This means that not only are SLPs more likely to interact with autistic individuals than the general population, but they are uniquely tasked with understanding the intricacies of autistic communication. This requires helping autistic clients to communicate in a non-autistic world.

**The State of Autism Services**

Many of the institutions that claim to help autistic people are owned by private equity firms such as Blackstone (which purchased an applied behavioral analysis center for $700 million in 2018), Rothschild & Co (which acquired New England ABA in 2019), and
Centerbridge Partners (which purchased Civitas Solutions in 2017), to name a few (Summers, 2021). As a result, the primary beneficiaries of most modern autism therapies are not autistic people, but stakeholders in multimillion-dollar investment holdings. A recent study revealed that in 2016, a majority (60%) of behavioral health financial transactions involved private equity firms despite that no peer-reviewed evidence exists to support behavioral intervention as a treatment for autism (Brown et al., 2020). This paints a dismal picture in which insurers, autistic people, and their families must pay millions of dollars each year to enrich investor portfolios under the guise of “behavioral treatment,” which treats autism as a disorder characterized by a set of behaviors, despite its distinct genetic and neurological basis.

This glosses over the tangible harm that the “therapy” being administered might inflict on autistic people. A recent study that interviewed autistic adults who went through behavioral intervention as children revealed detrimental communicative and socioemotional outcomes (McGill & Robinson, 2020). As a result, many researchers have gone so far as to call behavioral therapies abusive and point out the way early interventions for autism resemble conversion therapies for LGBTQ individuals (Sandoval-Norton et al., 2021). The comparison becomes even more apt when revisiting one of behaviorism’s seminal papers entitled “Behavioral Treatment of Deviant Sex-Role Behaviors in a Male Child” which is considered by the LGBTQ community to be pseudoscientific, ineffective, and unethical (Rekers & Lovaas, 1974). The paper was lauded at the time as a “preliminary step toward correcting pathological sex-role development in boys, which may provide a basis for the primary prevention of adult transsexualism or similar adult sex-role deviation” (Rekers & Lovaas, 1974, p. 1). The views expressed in this paper parallel two of the major issues that pervade institutions that purport to serve autistic people.
One major issue is the way in which innate neurological qualities are portrayed as a set of behaviors rather than the physiological frameworks that define them. The behavioral view of autism not only contradicts the modern understanding that autism (like being LGBTQ) is inherited genetically, but also overlooks autistic people’s neurological differences. The other issue is the pathologizing of non-harmful behaviors in the first place. Pathologizing autistic behaviors that are not harmful to anyone but the status quo, brings up the issue of who benefits from “therapies” that autistic people didn’t ask for, don’t benefit from, and often experience trauma from (Sandoval-Norton et al., 2021). The question of who benefits from institutions like this is best revealed by following the money. One autism center “derives approximately three-quarters of its annual profit from the Persian Gulf monarchies,” where they have been in operation since 2007, while the Association for Behavior Analysis International regularly “seeks the favor of government officials in China and Russia” by advertising their model as a potent means of social control (Summers, 2021, p. 2). As a result, many institutions purporting to help autistic people do the exact opposite by imposing the interests of oppressive institutions on an already marginalized population.

When introduced to the idea that behavioral interventions may be harmful to speech-language pathology clients, many professionals often wonder what the alternative is. Luckily, research supports a variety of strengths-based approaches to treatment with autistic clients, involving presumed competence and access to alternative and augmentative communication (Donaldson et al., 2017). Further, the SLPs should be aware of the increased prevalence of trauma and post-traumatic stress disorder amongst the autistic population and approach autistic clients with trauma-informed approach to therapy (Faccini & Allely, 2021). A trauma-informed approach to therapy requires education on the unique way post-traumatic stress disorder
manifests in autistic individuals, consideration of the formative events in a client’s life that lead to current behaviors, and education on the nuances of the autistic neurotype.

**Autistic-Led and Strengths-Based Autistic Support**

While only preliminary research has been done in the field of communication sciences and disorders recognizing the importance of autistic representation, recent studies have indicated that autistic people are better at communicating with other autistic people (Crompton, Ropar, et al., 2020; Crompton, Hallett, et al., 2020). Crompton, Ropar, et al.'s (2020) and Crompton, Hallett, et al.'s (2020) studies also revealed autistic people feel more comfortable around other autistic people, providing further motivation to prioritize autistic clinicians’ and clients’ voices in the field’s discussion of autism spectrum disorder. The autistic community brings up troubling discrepancies between how autistic behavior is interpreted in the literature and how autistic people actually think (Gernsbacher & Yergeau, 2019). As a field that prides itself on evidence-based practice, improving SLPs’ ability to serve autistic clients must begin with better autism research.

Studies have shown strengths-based approaches result in positive outcomes, even though deficit-based models are more commonly taught in communication sciences and disorders programs (Emerson & Dearden, 2013; Donaldson et al., 2017; Donaldson et al., 2021). Case studies of non-verbal autistic children provide evidence supporting the strengths-based rather than deficits-based approach. In one case, a 10-year-old autistic child demonstrated far better comprehension abilities than were assumed. He responded more accurately to complex speech than one-word/two-word utterances, despite his diagnosis of severely impaired receptive language. The authors of this case study posit that the child always “had the means and cognitive ability to follow instructions prior to our intervention but was not being given the opportunity to
demonstrate these” until a strengths-based approach was adopted (Emerson & Dearden, 2013, p. 235). The staff in the child’s school were so skeptical of this approach that until they employed it, they did not realize the child could read. The strengths-based approach here was referred to as the “least dangerous assumption” because the primary barrier preventing the child from succeeding linguistically and academically was the “assumption of limited ability” by those entrusted with his care and education.

Donaldson et al. (2021) reference this case and expand upon it to describe the ways in which the deficit-based model taught in communication sciences and disorders programs limits clients’ therapy progress. This model curtailed clients’ abilities to make their own choices, failed to provide autism-specific environmental support, and allowed others to speak over them rather than motivate them to speak for themselves (Donaldson et al., 2021). Underestimating and limiting autistic clients in this way infringes upon their rights to self-determination as outlined by the Developmental Disabilities Assistance and Bill of Rights Act of 2000 (Public Law 106-402), which includes the ability and opportunity to: communicate/make personal decisions, control resources/supports made for them, participate in their communities, and play a role in the “development of public policies that affect individuals with developmental disabilities” (Donaldson et al., 2017, p. 60).

**Rationale**

While increasing numbers of SLPs have recognized the limitations of the deficits-based model of disability, many are at a loss as to how to better understand autistic people. For example, a qualitative analysis of autistic adults performed by SLPs revealed that SLPs often misunderstand the autistic people they are trying to serve (Angulo-Jiménez & DeThorne, 2019, p. 569-590). Many autistic individuals report “not making eye contact helps them to focus on the
ongoing conversation” (Angulo-Jiménez & DeThorne, 2019, p. 572); however, eye contact is frequently set as a goal in speech-language therapy for autistic clients, despite the way it makes communication harder (Hadjikhani et al., 2017, p. 1-4). The authors recommend that clinicians must be educated on the “varying views of autism held by autistic individuals, as their perspectives are an integral component of evidence-based practice” (Angulo-Jiménez & DeThorne, 2019, p. 580-590). This study emphasized the importance of autistic input in evidence-based practice. Autistic SLPs exist at a unique intersection of lived expertise in autistic communication, combined with learned expertise in non-autistic communication (i.e., pragmatics and social communication). Therefore, seeking out the views and clinical expertise of autistic SLPs is critical for bridging the gap between the communication sciences and disorders research and autistic client outcomes.

Not only is rapport between clients and clinicians associated with increased client participation in speech and language services as measured by attendance records, but SLP and caregiver perceptions of rapport have been established as a significant predictor of clinical success in children with a variety of speech and language disorders (Ebert, 2017). The major stipulation of this study was that caregiver ratings may have been biased by the private clinic setting, as caregivers had direct control over the selection of their child’s SLP and communication goals. The researchers questioned if caregiver ratings would have skewed positively in a situation where they do not get to select the child’s clinician, such as in a school. The survey had the highest internal reliability for SLPs (Cronbach’s α = .91), noting that SLPs could observe and report client and family perceptions of rapport as an alternative to direct surveys of caregivers and child clients. Their survey responses demonstrated lower internal reliability (Cronbach’s α = .76 and .79, respectively). The other stipulation of this study is that it
excluded autistic clients due to the stated propensity for autism to “influence both the strength of the relationships a child forms” and their “ability to evaluate them” (Ebert, 2017, p. 5-7). This means that not only do clinician perceptions of rapport matter when it comes to predicting success in therapy, but it also bears investigating whether autistic SLPs report higher levels of rapport with clients compared to non-autistic SLPs.

The predisposition autistic people have when communicating with other autistic people has recently been operationalized in a quantitative study. It demonstrated a significant degradation of information transferred between autistic and non-autistic individuals that did not occur in exclusively autistic nor exclusively non-autistic communication chains (Crompton, Ropar, et al., 2020). Decreased rapport between autistic and non-autistic speakers was observed as well. While the mixed chain producing a more degraded message than a non-autistic message chain is unsurprising, this is the first time that evidence has shown no significant differences in information degradation between an all-autistic group and a non-autistic group.

**Statement of Purpose**

This comparative study examines autistic and non-autistic SLPs in three areas to determine (a) whether autistic SLPs have different clinical tendencies from non-autistic SLPs, (b) whether autistic SLPs experience different levels of rapport and/or progress with autistic clients than non-autistic SLPs, and (c) whether autistic SLPs exhibit different levels of stigma and/or knowledge regarding autism spectrum disorder compared to non-autistic SLPs.

**Method**

A quantitative approach was used to ascertain the demographic characteristics of autistic SLPs. Survey responses were analyzed using chi-squared tests of independence. This study first assessed clinician perceptions of the most common autism assessment and treatment methods as
listed on ASHA’s (n.d.) autism practice portal. To determine whether stereotypes could be informing perceptions within the field and impacting clinical practice, this study compared perceptions and knowledge of autism held by autistic versus non-autistic SLPs. This study also compared the therapeutic alliances of autistic SLPs and non-autistic SLPs. The surveys used to investigate research questions were based on established measures of client-centeredness (Bellon-Harn et al., 2017), stigma (Boyle, 2017), rapport/progress (Ebert, 2017), and knowledge of autism (Harrison et al., 2017).

Participants

Survey responses were collected in two phases. Phase 1, which aimed to estimate the demographic characteristics of SLPs in the three Midwestern states of interest, was completed during the fall of 2020. Email addresses for Michigan SLPs were obtained from the state’s department of Licensing and Regulatory Affairs (LARA). Email addresses for Ohio SLPs were obtained from the state’s Speech and Hearing Professionals (SHP) board. Email addresses for Wisconsin SLPs were obtained from the state’s Department of Safety and Professional Services (DSPS). All SLPs were sent a copy of the survey using the email address listed in the associated state roster, and responses were accepted for one month. Phase 2, which was carried out in the winter of 2021, involved the direct recruitment of autistic SLPs who had not yet taken the survey through the online community “Autistic Speech-Language Pathologists/Therapists.” Identical recruitment materials were used in both phases, but phase 2 responses were solicited using a social media post rather than individual email messages. Phase 1 and phase 2 data were combined to determine whether the groups possessed different clinical preferences, differences in rapport/progress, and differences in autism stigma/knowledge.
The survey was disseminated via email to all SLPs in the states of Michigan, Ohio, and Wisconsin, and phase 1 data was collected from October to November 2020. Once phase 1 was complete and survey responses from Ohio, Michigan, and Wisconsin were recorded (n = 436), additional responses from autistic SLPs throughout the country were collected during phase II. Phase 2 data was collected from January to February 2021 (n = 9). Since the population is so small, their responses were gathered to better represent the views of a small, highly specific population of SLPs. Autistic SLPs were recruited from the online community “Autistic Speech-Language Pathologists/Therapists.” A total of 445 participants completed the entire survey, of which 22 identified on the autism spectrum (Table 1).

Results

Survey data was analyzed using chi-square tests of independence (χ²) to determine demographic between autistic and non-autistic SLPs’ responses. Significance level was set at p = .10 due to the exploratory nature of the study. For significant relationships, Cramer’s V was used to calculate correlations between variables of interest as well as determine effect size (Kim, 2017).

Demographics

While demographics was not the primary focus of the study, it bears consideration. During phase one of data collection, 13,487 recruitment emails were sent out and 447 surveys were returned, indicating a 3.30% response rate. Four hundred and thirty-six of the surveys were fully completed and thus were included in data analysis. The demographic data from this survey indicated that 2.98% of respondents identified themselves as being on the autism spectrum. This demonstrates a higher proportion of people on the autism spectrum in the field of SLP compared to the general population, of which just 2.27% are estimated to be on the autism spectrum.
(Maenner et al., 2021). Of all participants who completed the survey, 3.89% of respondents were male, and 96.10% were female. Additionally, 4.13% of SLPs reported using disability accommodations at their job, and an additional 2.06% stated they would like to. This would indicate that a total of 6.19% of SLPs have either utilized or would like to utilize work-related disability accommodations.

**Clinical Preferences**

In this survey, assessment and intervention preference items were drawn from ASHA’s (n.d.) autism practice portal. The clinical preferences survey items consisted of assessment preferences, intervention preferences, and views of client-centered practice based on an abridged version of the Patient-Practitioner Orientation Scale that has been modified and validated for use by SLPs (Bellon-Harn et al., 2017). For assessment preferences, autistic SLPs were more likely to prefer the Social Communication, Emotional Regulation and Transactional Support (SCERTS) assessment, $\chi^2 (5, N = 445) = 10.656, p < .10$, with a medium-large effect size of $V = 0.155$; see Table 2. Autistic SLPs also expressed a preference for literacy-based interventions, $\chi^2 (5, N = 445) = 20.163, p < .10$, with a medium-large effect size of $V = 0.213$. However, autistic SLPs were less likely to prefer behavioral interventions, $\chi^2 (5, N = 445) = 18.045, p < .10$, with a medium-large effect size of $V = 0.201$; peer-mediated interventions, $\chi^2 (5, N = 445) = 12.504, p < .10$, with a medium-large effect size of $V = 0.168$; spoken language interventions, $\chi^2 (5, N = 445) = 30.547, p < .10$, with a large effect size of $V = 0.262$; and social communication interventions, $\chi^2 (5, N = 445) = 79.147, p < .10$, with a large effect size of $V = 0.422$; see Table 3. This brings up the concerns that many interventions purported to “help” autistic people, including popular behavioral and social interventions, are not preferred by autistic people. Autistic clients should also be consulted when determining which assessment and interventions
will be used, as this can help promote positive clinical outcomes (Nicolaidis et al., 2019). Further studies should investigate whether correlations exist between client-centeredness, rapport, progress, stigma, and knowledge and each assessment and intervention.

Autistic SLPs were also more likely to disagree with the non-client-centered statements “the SLP is the one who should decide what is targeted in each therapy session,” $\chi^2 (4, N = 445) = 13.326, p = .010$, with a medium-large effect size of $V = 0.173$, and strongly disagree with “the client must always be aware that the SLP is in charge,” $\chi^2 (4, N = 445) = 14.542, p = .006$, with a medium-large effect size of $V = 0.181$; see Table 4. This supports prior concerns that non-autistic SLPs may have difficulty empathizing with autistic clients, negatively impacting the utility of goals they set for autistic clients. To align with the gold standard within the field of “evidence-based practice,” client preferences must be considered alongside clinical expertise and empirical evidence (ASHA, 2005). Given the insufficient incorporation of client perspectives into the practice of SLP, many clinicians have pushed for better inclusion of client voices, stating “those directly affected by communication issues not only have the potential to add valuable perspectives, they can also become champions, pushing for better research and treatments” (Reeves, 2019, p. 8).

**Rapport/Progress**

Autistic SLPs were more likely not to respond to the survey item “My clients are able to work well with me, the SLP,” $\chi^2 (3, N = 445) = 7.176, p = .067$, with a small to medium effect size of $V = 0.127$; see Table 5. Otherwise, significant differences between autistic SLPs and non-autistic SLPs were not observed when it came to rapport/progress with clients, nor in their knowledge of autism.
Stigma/Knowledge

Autistic SLPs were more likely to strongly disagree with the negative statements “People on the autism spectrum have more personality problems than other people,” $\chi^2 (4, N = 445) = 15.727, p = .003$, with a medium-large effect size of $V = 0.173$, and “Speech therapy can successfully treat autism in most cases,” $\chi^2 (4, N = 445) = 30.707, p < .001$, with a large effect size of $V = 0.263$; see Table 6. No differences were detected between the groups in terms of autism knowledge; see Table 7. These revelations are concerning, but not surprising in the face of recent research that showed participants tend to overestimate the extent to which they are helpful in a simulated interaction after simply being told the confederate was autistic (Heasman & Gillespie, 2019). Fortunately, the increasing visibility of autistic SLPs as a minority group within the field can help combat this stigma.

Given that SLPs exhibiting stigma against clients with specific disorders exhibited a variety of self-reported negative assumptions and less willingness to help their clients, this anti-autistic stigma could result in negative outcomes for autistic clients. Citing several ways in which pathologizing harmless autistic traits harms autistic clients, multiple self-identified autistic SLPs have called for a radical realignment of the field’s practices surrounding autism spectrum disorder, aiming to uplift and center autistic voices rather than suppress them (Dorsey et al., 2020). The autistic SLPs expressed that the lack of recognition of the nuances between autistic and non-autistic neurology are major obstacles to maximizing communication for autistic clients. Other barriers our field sets up that can hinder communication for autistic clients include requiring prerequisites to use alternative/augmentative communication, failing to uphold the client’s right to refuse, using hand-over-hand prompting to physically force interactions, and
using “functioning labels” that are, contrary to the belief of many professionals, no longer a part of autism’s diagnostic criteria.

**Discussion**

**Limitations of the Study**

One potential concern of the study is the distinction between autistic and non-autistic SLPs was made on a self-identification basis rather than a diagnostic basis. Consequently, we cannot determine the medical validity of the respondents’ self-identification on the autism spectrum. The possibility that a respondent would incorrectly identify as being on the autism spectrum, however, is somewhat unlikely within the SLP profession given that assessing and treating autism spectrum disorder is part of our scope of practice.

Another potential concern is that while Phase 1 participants came from Ohio, Michigan, and Wisconsin only, Phase 2 participants may have come from anywhere in the US. In Phase 1, the targeted population was SLPs in the states of Ohio, Michigan, and Wisconsin, and the survey was sent to all SLP email addresses provided by the state licensing boards. During Phase 2, participants were recruited directly from the online community “Autistic Speech-Language Pathologists/Therapists” and could have been from anywhere in the United States. This may have presented geographical disparities that could impact clinical preferences.

A third potential limitation of this study is that the small sample size violates one assumption behind the chi-square test of independence. The small subpopulation of SLPs identifying on the autism spectrum ($n = 22$) resulted in expected counts of less than five in over 20% of cases, even if similar cells were combined. This could threaten the validity of the significance revealed by the chi-square tests.
Conclusions and Future Research

Ultimately, SLPs on the autism spectrum tended to disagree with non-autistic SLPs in that they expressed a preference for the SCERTS assessment. Autistic SLPs expressed a preference against behavioral interventions, social skills interventions, and spoken language interventions. Autistic SLPs were more likely to express a preference for written language interventions. Autistic SLPs tended to exhibit more client-centeredness in their practice as evidenced by their disagreement with non-client-centered statements compared to neurotypical SLPs. While there were no differences in perceived rapport, progress, or knowledge of autism, autistic SLPs exhibited substantially more disagreement with statements that carried anti-autism stigma.

The results of this survey support the aforementioned study (Crompton, Hallett, et al., 2020) that autistic people communicate better with one another than with non-autistic people; therefore, more research should be carried out to correlate measures of client-centeredness, rapport/progress, stigma, and knowledge with specific assessments and interventions. The present study identifies that while the field of SLP is actually fairly populated with autistic clinicians, the underrepresentation of autistic voices in the field manifests as the lack of replicability of studies ASHA cites as seminal autism research. Often, the dialectic of conflict within the framework of autism research is portrayed as autism versus the person, a phenomenon reinforced by person-first language that stigmatizes autism by separating it from personhood (Kenny et al., 2016; Autism Self-Advocacy Network, 2017). This can create a dangerous misrepresentation of the nature of disability, in which the societal mechanisms oppressing a marginalized class can absolve themselves of responsibility for the material conditions they create. In light of the disparities in practice preferences exhibited by autistic and non-autistic
SLPs combined with the knowledge of conflicts of interest plaguing autism research, the evidence behind many of the most commonly used autism assessments and interventions requires careful reappraisal to determine who benefits from it.

Despite the autistic community’s major disagreements with common autism practices in the field, non-autistic “experts” are treated as authority figures within the field on the topic. Given the issues pervading autism research, literature on autism assessment and intervention bears review for conflicts of interest and validity, especially if not conducted in consultation with the autistic community. Many of the assessments and interventions used by SLPs for autistic clients are not preferred by autistic people, which could very well be related to non-autistic SLPs’ tendency to agree with non-client-centered statements and statements with a negative stigma against autistic people. Autistic people have demonstrated time and time again that they can communicate at their best when properly accommodated, and that often involves multimodal communication.

Future quantitative research should investigate the experiences of autistic adults who have undergone various assessments, interventions, and clinical services to determine the value of each from the perspective of the client. Future qualitative research should be conducted to investigate the effects of anti-autism bias within the field and give voice to autistic experiences. Future studies should be also conducted to create a cultural competence self-evaluation that includes a clinician assessment of anti-autism bias.

**Data Availability Statement**

The de-identified, aggregated data used during this study is available from the primary investigator upon written request.
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Tables

Table 1

Descriptive Statistics of Demographic Characteristics of SLPs who Identified on the Autism Spectrum vs. Typical SLPs From Wisconsin, Michigan, and Ohio (n = 436)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>n</th>
<th>“Yes”</th>
<th>“No”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you identify on the autism spectrum?</td>
<td>436</td>
<td>13</td>
<td>423</td>
</tr>
</tbody>
</table>
### Table 2

χ² Distributions of Assessment Preferences of SLPs who Identified on the Autism Spectrum vs. Typical SLPs (*n* = 445)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>df</th>
<th>χ²</th>
<th>p</th>
<th>Cramer’s V</th>
<th>Effect size (if significant)</th>
<th>Biggest Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autism Behavior Checklist (Krug et al., 1980).</td>
<td>5</td>
<td>1.358</td>
<td>0.929</td>
<td>0.055</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autism Diagnostic Interview - Revised (Lord, Rutter, &amp; Le Couteur, 1994)</td>
<td>5</td>
<td>2.749</td>
<td>0.739</td>
<td>0.079</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autism Diagnostic Observation Schedule (Lord, Rutter, DiLavore, Risi, Gotham, &amp; Bishop, 2012)</td>
<td>5</td>
<td>4.291</td>
<td>0.508</td>
<td>0.098</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child Behavior Checklist (Achenbach, 1999)</td>
<td>5</td>
<td>7.660</td>
<td>0.176</td>
<td>0.131</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Childhood Autism Rating Scale (Schopler, Reichler, DeVellis &amp; Daly, 1980)</td>
<td>5</td>
<td>1.481</td>
<td>0.915</td>
<td>0.058</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication Matrix (Rowland, &amp; Fried-Oken, 2010)</td>
<td>5</td>
<td>1.008</td>
<td>0.962</td>
<td>0.048</td>
<td></td>
<td></td>
</tr>
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</table>
Table 2 Continued

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>df</th>
<th>$\chi^2$</th>
<th>p</th>
<th>Cramer’s V</th>
<th>Effect size (if significant)</th>
<th>Biggest Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Social Communication Scales (Mundy et al., 2003)</td>
<td>5</td>
<td>1.400</td>
<td>0.924</td>
<td>0.056</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functional Communication Profile (Santos &amp; Fernandes, 2012)</td>
<td>5</td>
<td>4.218</td>
<td>0.518</td>
<td>0.097</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MacArthur-Bates Communicative Development Inventories (Fenson et al., 2007)</td>
<td>5</td>
<td>1.662</td>
<td>0.894</td>
<td>0.061</td>
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<td></td>
</tr>
<tr>
<td>The Parent Interview for Autism - Clinical Version (Stone et al., 2003)</td>
<td>5</td>
<td>2.936</td>
<td>0.710</td>
<td>0.081</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCERTS (social communication, emotional regulation, and transactional support) Assessment Process (Prizant et al., 2006)</td>
<td>5</td>
<td>10.656</td>
<td>0.059*</td>
<td>0.155</td>
<td>Medium-large</td>
<td>Autistic - “most preferred”</td>
</tr>
<tr>
<td>Vineland Adaptive Behavior Scales (Sparrow, Cicchetti, &amp; Balla, 2005)</td>
<td>5</td>
<td>3.265</td>
<td>0.659</td>
<td>0.086</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3

χ² Distributions of Intervention Preferences of SLPs who Identified on the Autism Spectrum vs. Typical SLPs (n = 445)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>df</th>
<th>χ²</th>
<th>p</th>
<th>Cramer’s V</th>
<th>Effect size (if significant)</th>
<th>Biggest Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative and/or augmentative communication (AAC)</td>
<td>5</td>
<td>4.222</td>
<td>0.518</td>
<td>0.097</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral interventions and techniques (ex. applied behavioral analysis, discrete trial training, and pivotal response treatment)</td>
<td>5</td>
<td>18.045</td>
<td>0.003*</td>
<td>0.201</td>
<td>Medium-large</td>
<td>Autistic - “least preferred”</td>
</tr>
<tr>
<td>Cognitive-behavioral therapy (ex. exploring feelings, social thinking, and Rational Emotive Behavioral Therapy)</td>
<td>5</td>
<td>8.713</td>
<td>0.121</td>
<td>0.140</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gentle teaching</td>
<td>5</td>
<td>6.432</td>
<td>0.266</td>
<td>0.120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literacy (Written Language) Intervention</td>
<td>5</td>
<td>20.163</td>
<td>0.001*</td>
<td>0.213</td>
<td>Medium-large</td>
<td>Autistic - “most preferred”</td>
</tr>
<tr>
<td>Parent-Mediated or Parent-Implemented Interventions (ex. More Than Words, Talkability)</td>
<td>5</td>
<td>2.271</td>
<td>0.811</td>
<td>0.071</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3 Continued

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>df</th>
<th>χ²</th>
<th>p</th>
<th>Cramer’s V</th>
<th>Effect size (if significant)</th>
<th>Biggest Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer-Mediated or Peer-Implemented Treatment (ex. LEAP, Circle of Friends,</td>
<td>5</td>
<td>12.504</td>
<td>0.029*</td>
<td>0.168</td>
<td>Medium-large</td>
<td>Autistic - “least preferred”</td>
</tr>
<tr>
<td>Integrated Play Groups)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spoken Language Intervention</td>
<td>5</td>
<td>30.547</td>
<td>&lt;0.001*</td>
<td>0.262</td>
<td>Large</td>
<td>Autistic - “least preferred”</td>
</tr>
<tr>
<td>Speech Sound Intervention</td>
<td>5</td>
<td>1.605</td>
<td>0.901</td>
<td>0.060</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social communication (SC), emotional regulation (ER), and transactional</td>
<td>5</td>
<td>8.997</td>
<td>0.109</td>
<td>0.142</td>
<td></td>
<td></td>
</tr>
<tr>
<td>support (TS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Communication Intervention (ex. social scripts, social stories,</td>
<td>5</td>
<td>79.147</td>
<td>&lt;0.001*</td>
<td>0.422</td>
<td>Large</td>
<td>Autistic - “least preferred”</td>
</tr>
<tr>
<td>and social skills groups)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship-Based Interventions (ex. DIR/Floortime)</td>
<td>5</td>
<td>3.953</td>
<td>0.556</td>
<td>0.094</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment and Education of Autistic and Related Communication Handicapped</td>
<td>5</td>
<td>1.567</td>
<td>0.905</td>
<td>0.059</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children (TEACCH)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 4

$\chi^2$ Distributions of Patient-Practitioner Orientation Scale Responses of SLPs who Identified on the Autism Spectrum vs. Typical SLPs ($n = 445$)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>df</th>
<th>$\chi^2$</th>
<th>p</th>
<th>Cramer’s $V$</th>
<th>Effect size (if significant)</th>
<th>Biggest Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>The speech-language pathologist is the one who should decide what is targeted in each therapy session.</td>
<td>4</td>
<td>13.326</td>
<td>0.010*</td>
<td>0.173</td>
<td>Medium-large</td>
<td>Autistic - “disagree”</td>
</tr>
<tr>
<td>Clients should be treated as if they were partners with the speech-language pathologist, equal in power and status.</td>
<td>4</td>
<td>6.631</td>
<td>0.157</td>
<td>0.122</td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is often best for clients if they do not have a full explanation of their condition from a speech-language pathologist.</td>
<td>4</td>
<td>2.331</td>
<td>0.675</td>
<td>0.072</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Even if speech-language pathologists are truly good at diagnosis and treatment, the way they relate to clients is important.</td>
<td>4</td>
<td>2.128</td>
<td>0.712</td>
<td>0.069</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4 Continued

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>df</th>
<th>( \chi^2 )</th>
<th>p</th>
<th>Cramer’s V</th>
<th>Effect size (if significant)</th>
<th>Biggest Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clients generally want reassurance rather than information about their speech, language, voice, or swallowing disorder.</td>
<td>4</td>
<td>5.510</td>
<td>0.239</td>
<td>0.111</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A management plan cannot succeed if it is in conflict with a client’s lifestyle or values.</td>
<td>4</td>
<td>0.948</td>
<td>0.814</td>
<td>0.046</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The client must always be aware that the speech-language pathologist is in charge.</td>
<td>4</td>
<td>14.542</td>
<td>0.006*</td>
<td>0.181</td>
<td>Medium-large</td>
<td>Autistic - “strongly disagree”</td>
</tr>
<tr>
<td>It is important to know a client’s culture and background in order to treat the client’s speech, language, voice, or swallowing disorder.</td>
<td>4</td>
<td>2.010</td>
<td>0.570</td>
<td>0.067</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 5

χ² Distributions of TASC-r Responses of SLPs who Identified on the Autism Spectrum vs. Typical SLPs (n = 445)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>df</th>
<th>χ²</th>
<th>p</th>
<th>Cramer’s V</th>
<th>Effect size (if significant)</th>
<th>Biggest Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>My clients like spending time with me, the SLP.</td>
<td>4</td>
<td>6.791</td>
<td>0.147</td>
<td>0.124</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My clients find it hard to work with me on speech-language goals.</td>
<td>4</td>
<td>1.770</td>
<td>0.778</td>
<td>0.063</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My clients consider me to be an ally.</td>
<td>4</td>
<td>4.302</td>
<td>0.367</td>
<td>0.098</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My clients work with me on improving speech-language skills.</td>
<td>3</td>
<td>0.439</td>
<td>0.933</td>
<td>0.031</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My clients appear eager to have sessions end.</td>
<td>4</td>
<td>4.573</td>
<td>0.334</td>
<td>0.101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My clients look forward to sessions with me.</td>
<td>3</td>
<td>1.498</td>
<td>0.683</td>
<td>0.058</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 5 Continued

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>df</th>
<th>$\chi^2$</th>
<th>p</th>
<th>Cramer’s V</th>
<th>Effect size (if significant)</th>
<th>Biggest Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>My clients feel that I spend too much time working on their speech-language skills.</td>
<td>4</td>
<td>2.437</td>
<td>0.656</td>
<td>0.074</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My clients are resistant to coming to speech.</td>
<td>3</td>
<td>3.716</td>
<td>0.294</td>
<td>0.091</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My clients use their time with me to work on speech-language goals.</td>
<td>3</td>
<td>4.041</td>
<td>0.257</td>
<td>0.095</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My clients express positive emotion toward me, the SLP.</td>
<td>4</td>
<td>4.372</td>
<td>0.358</td>
<td>0.099</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My clients would rather not work on speech-language goals.</td>
<td>3</td>
<td>0.142</td>
<td>0.986</td>
<td>0.018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My clients are able to work well with me, the SLP.</td>
<td>3</td>
<td>7.176</td>
<td>0.067*</td>
<td>0.127</td>
<td>Small-medium</td>
<td>Autistic - “NR”</td>
</tr>
<tr>
<td>My clients progress through therapy as I would expect.</td>
<td>3</td>
<td>1.328</td>
<td>0.722</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My clients do not attend therapy as often as needed to make progress.</td>
<td>4</td>
<td>0.735</td>
<td>0.947</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 6

χ² Distributions of Survey Items Measuring Knowledge and Attitudes Toward Autism Spectrum Disorder Responses of SLPs who Identified on the Autism Spectrum vs. Typical SLPs (n = 445)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>df</th>
<th>χ²</th>
<th>p</th>
<th>Cramer's V</th>
<th>Effect size (if significant)</th>
<th>Biggest Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>People on the autism spectrum are as intelligent as everyone else.</td>
<td>3</td>
<td>1.993</td>
<td>0.574</td>
<td>0.067</td>
<td></td>
<td></td>
</tr>
<tr>
<td>People on the autism spectrum have more personality problems than other people.</td>
<td>4</td>
<td>15.727</td>
<td>0.003*</td>
<td>0.188</td>
<td>Medium-large</td>
<td>Autistic - “strongly disagree”</td>
</tr>
<tr>
<td>It is uncomfortable for others to talk with people on the autism spectrum.</td>
<td>4</td>
<td>3.764</td>
<td>0.439</td>
<td>0.092</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speech therapy can successfully treat autism in most cases.</td>
<td>4</td>
<td>30.707</td>
<td>&lt;0.001*</td>
<td>0.263</td>
<td>Large</td>
<td>Autistic - “strongly disagree”</td>
</tr>
<tr>
<td>People on the autism spectrum can be as successful as other people in their chosen career.</td>
<td>4</td>
<td>5.583</td>
<td>0.233</td>
<td>0.112</td>
<td></td>
<td></td>
</tr>
<tr>
<td>People on the autism spectrum can lead a normal life.</td>
<td>3</td>
<td>2.127</td>
<td>0.546</td>
<td>0.069</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 7

\(\chi^2\) Distributions of ASK-Q Responses of SLPs who Identified on the Autism Spectrum vs. Typical SLPs (n = 445)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>df</th>
<th>(\chi^2)</th>
<th>p</th>
<th>Cramer’s V</th>
<th>Effect size (if significant)</th>
<th>Biggest Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is currently no medical test to diagnose autism.</td>
<td>4</td>
<td>1.767</td>
<td>0.779</td>
<td>0.063</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children with autism do not enjoy the presence of others.</td>
<td>3</td>
<td>1.063</td>
<td>0.786</td>
<td>0.049</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Genetics plays an important role in the development of autism.</td>
<td>4</td>
<td>5.555</td>
<td>0.235</td>
<td>0.112</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autism is preventable.</td>
<td>3</td>
<td>1.178</td>
<td>0.758</td>
<td>0.051</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication can alleviate the core symptoms of autism.</td>
<td>4</td>
<td>1.306</td>
<td>0.860</td>
<td>0.054</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With the proper treatment, most children diagnosed with autism eventually outgrow the disorder.</td>
<td>3</td>
<td>3.980</td>
<td>0.264</td>
<td>0.095</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There is currently no medical test to diagnose autism.

Children with autism do not enjoy the presence of others.

Genetics plays an important role in the development of autism.

Autism is preventable.

Medication can alleviate the core symptoms of autism.

With the proper treatment, most children diagnosed with autism eventually outgrow the disorder.
Learning Outcomes

1. Describe three differences in autism intervention preferences between autistic SLPs and non-autistic SLPs.
2. List three additional clinical differences between autistic SLPs and non-autistic SLPs.
3. Discuss three ways autistic SLPs recommend non-autistic SLPs can support the autistic community.
Clinical Correlates of Speech-Language Pathologist Autism Preferences
Abstract

Previous studies have shown that non-autistic people have just as much difficulty understanding autistic people as autistic people have understanding non-autistic people. Given the institutional challenges autistic people already face within the broader healthcare system, speech-language pathologists (SLPs) face many obstacles when integrating these clients’ perspectives with clinical expertise and research to engage in evidence-based practice. The purpose of this study was to compare the self-reported preferences of SLPs on various autism assessments and interventions with their views on client-centeredness, client rapport and progress, anti-autism stigma, and knowledge of autism using previously validated measures. All assessments and interventions were evaluated for the extent to which they were autism friendly. The term autism friendly was used for assessments and interventions that were either negatively correlated with measures of anti-autism stigma, or positively correlated with measures of client-centeredness, rapport/progress, and/or factual knowledge of autism. The term non-autism friendly was used to describe assessments and interventions with correlations in the opposite respective directions. The most consistently autism friendly assessment tool was found to be the Communication Matrix. The most consistently non-autism friendly assessment tool was found to be the Revised Behavior Summarized Evaluation Scale. Furthermore, the most consistently autism friendly intervention techniques were found to be the alternative/augmentative communication (AAC), cognitive behavioral therapy (CBT), and parent-mediated approaches, while the most non-autism friendly intervention techniques were found to be behavioral approaches. Study implications are discussed with respect to current practices and future research.
Lay Abstract

While it is well-known that autistic people misunderstand non-autistic people, recent research has just shown non-autistic people equally misunderstand autistic people. This could make it harder for mostly non-autistic speech therapists to help autistic clients learn to communicate. We aimed to find out if certain autism tests and treatments preferred by speech therapists are related to the way they view client opinions, make progress with clients, hold bias against autistic people, or know about autism. The Communication Matrix was the autism test that affiliates with positive views. The Revised Behavior Summarized Evaluation Scale was the autism test that affiliates with negative views. The autism treatments found to be most related with positive views were alternative communication, psychological counseling, and coaching parents. The autism treatments found to be the most consistently related to negative views were behavioral techniques. These results are important because speech therapists who use certain tests and treatments for autism could be more likely to view clients negatively, have poor relationships with clients, believe false statements about autism, or hold bias against autistic people.
**Introduction**

Research shows that the autistic community reports poorer experiences with the healthcare system. Autistic people report higher rates of unmet physical and mental health needs, diminished trust in clinicians, profound difficulty communicating with healthcare providers, decreased utilization of preventative services, and increased use of emergency services (Nicolaidis et al., 2012). This likely stems from the lack of incorporation of autistic perspectives in the seminal autism literature that informs clinical practices surrounding autism. The autistic community has brought up troubling discrepancies between how autistic behavior is interpreted in scientific literature and how autistic people actually think (Gernsbacher & Yergeau, 2019). This indicates a trend in which the views and priorities of professionals serving the autistic community are increasingly being documented as conflicting with the needs of autistic individuals. Given the role of communication difficulty in impacting autistic people’s healthcare outcomes, it seems prudent to investigate ways to improve institutions that teach them communication in the first place (Nicolaidis et al., 2012; Cummins et al., 2020). Speech-language pathologists (SLPs) are uniquely tasked with this role and must understand the intricacies of autistic communication to support autistic clients’ abilities to navigate a non-autistic world.

However, interviewing autistic recipients of speech-language pathology services reveals disparities in accessing needed resources for functional communication. Autistic adults who previously went through speech therapy reported many SLPs inhibited their communication through lack of willingness to consider alternative and augmentative communication as an option in therapy due to lack of presumed competence and preference for oral speech (Donaldson et al., 2021). Underestimating and limiting autistic clients in this way infringes upon their rights to self-
determination as outlined by the Developmental Disabilities Assistance and Bill of Rights Act of 2000 (Public Law 106-402). This law encompasses the ability and opportunity to: communicate/make personal decisions, control resources/supports made for them, participate in their communities, and play a role in the “development of public policies that affect individuals with developmental disabilities” (Donaldson et al., 2017, p. 60). This type of limitation is further reflected in untenable therapy goals, such as maintaining eye contact, as a common objective.

Eye contact, however, has been shown to actively inhibit autistic people’s communication capabilities, resulting in increased activation of the superior colliculus, pulvinar nucleus of the thalamus, and amygdala (Hadjikhani et al., 2017, p. 1-4). Qualitative analysis further reveals that many autistic individuals report “not making eye contact helps them to focus on the ongoing conversation,” yet eye contact is a frequent goal set in speech-language therapy for autistic clients (Angulo-Jiménez & DeThorne, 2019, p. 569-590). The authors recommend that clinicians must be educated on the “varying views of autism held by autistic individuals” to ensure that one is able to communicate as effectively as possible (Angulo-Jiménez & DeThorne, 2019, p. 569-590). This study emphasized the importance of client perspectives as a key component of evidence-based practice.

Research has shown strengths-based approaches result in positive outcomes, even though deficit-based models are more commonly taught in communication sciences and disorders programs. Case studies of non-verbal autistic children provide support for strengths-based approaches rather than deficits-based (Donaldson et al., 2017). One case study involving a 10-year-old autistic child showed that he had far better comprehension abilities than were assumed. He responded more accurately to complex speech than one-word/two-word utterances, despite his diagnosis of severely impaired receptive language. The authors posit that the child always
“had the means and cognitive ability to follow instructions prior to our intervention but was not being given the opportunity to demonstrate these” until a strengths-based approach was adopted (Emerson & Dearden, 2013, p. 235). The strengths-based approach in this study was referred to as the “least dangerous assumption” because the primary barrier preventing the child from succeeding linguistically and academically was the “assumption of limited ability” by those entrusted with his care and education.

While increasing numbers of SLPs have recognized the limitations of the deficits-based model of disability, many are at a loss as to how to better assess and treat autistic people. Recently, self-identified autistic SLPs have called for a radical realignment of the field’s practices surrounding autism, aiming to center autistic voices rather than limit them. These autistic SLPs documented ways in which our field’s suppression of harmless autistic traits and behaviors can increase depression, anxiety, and suicidality in autistic people (Dorsey et al., 2020). These autistic SLPs express exhaustion “from the fear that society may view autistic traits as pathological defects” and the ways common autism practices hinder autistic communication rather than encourage it (Dorsey et al., 2020, p. 1). Barriers the field sets up that can hinder communication for autistic clients include requiring prerequisites to use alternative/augmentative communication (AAC), failing to uphold the client’s right to refuse, using hand-over-hand prompting to physically force interactions, as well as the use of “functioning labels.” Recent studies have indicated that autistic people are quantifiably better at communicating with other autistic people, providing further motivation to support and uplift autistic clinicians’ voices (Crompton et al., 2020). As a result, additional effort is being made to include autistic participants in the current survey of speech-language pathologists.
The goal of this study is to determine which assessments and interventions for autism are positively and negatively associated with self-reported clinician preferences for client-centeredness, rapport and progress, anti-autism stigma, and objective autism knowledge.

**Methods**

**Study Design**

A quantitative approach was employed to ascertain the demographic characteristics of respondents. Survey responses were from a previous study by the same author in which the primary independent variable being investigated was self-identification on the autism spectrum. A total of 2.98% of the entire sample surveyed \((n = 445)\) reported identifying on the autism spectrum. The surveys used to investigate research questions were based on previously established measures of client-centeredness, stigma, rapport/progress, and knowledge of autism (Bellon-Harn et al., 2017; Boyle 2017; Ebert, 2017; Harrison et al., 2017). This study aimed to compare clinician responses to these items with their self-reported preferences for various autism assessment and treatment methods as listed on ASHA’s (n.d.) autism practice portal (n.d.).

**Participants**

Email addresses for Michigan SLPs were obtained from the state’s department of Licensing and Regulatory Affairs (LARA). Email addresses for Ohio SLPs were obtained from the state’s Speech and Hearing Professionals (SHP) board. Email addresses for Wisconsin SLPs were obtained from the state’s Department of Safety and Professional Services (DSPS). All SLPs were sent a copy of the survey using the email address listed in the associated state roster, and responses were accepted for one month. Survey responses were collected in two phases. Phase 1, which aimed to estimate the demographic characteristics of SLPs in the three Midwestern states of interest, was completed in the fall of 2020. Four hundred and thirty-six participants completed
the survey, and 13 of these participants self-identified on the autism spectrum. The prevalence of autism among the speech-language pathology profession is then estimated around 2.98% of the field based on this sample. Phase 2 was carried out in the winter of 2021. Phase 2 responses were solicited using a social media post through the online community “Autistic Speech-Language Pathologists/Therapists.” Identical recruitment materials were used in both phases, but an additional nine participants who identified on the autism spectrum completed the survey after which phase 1 and phase 2 data were combined to provide additional autistic representation in responses. Of all participants who completed the survey from phase 1 and 2, (n = 445), a total of 22 identified on the autism spectrum.

**Data Analysis**

Survey data was analyzed using SPSS statistical analysis software. Spearman’s correlations were drawn between reported preferences for each assessment/intervention and responses on measures of client-centeredness, rapport/progress, anti-autism stigma, and autism knowledge. Since responses were coded as 0 = prefer not to respond, 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree, and 5 = don’t know, only responses that were coded 1, 2, 3, or 4 were included in analysis for Likert scale continuity. Assessments and interventions were evaluated using previously validated measures of (a) client-centeredness, (b) client rapport and progress, (c) anti-autism stigma, and (d) knowledge of autism (Bellon-Harn et al., 2017; Ebert, 2017; Boyle, 2017; Harrison et al., 2017). Items measuring client-centeredness were based on responses to an abridged version of the Patient-Practitioner Orientation Scale that has been modified and validated for use by SLPs (Bellon-Harn et al., 2017). Items measuring rapport and progress were based on the Therapeutic Alliance Scales for Children (TASC-r), developed by Shirk and Saiz (1992) and adapted for speech-language pathology by Ebert (2017). This
subsection consisted of 14 items, 12 survey items measuring rapport and 2 survey items measuring client progress as perceived by the SLP. Items assessing stigma against autistic people were validated by and adapted from Survey Items Measuring Knowledge and Attitudes Toward Stuttering (Boyle, 2017). This subsection consisted of six items, three of which were positively oriented statements and three of which were negatively stigmatized statements. Knowledge items were based on the Autism Stigma and Knowledge Questionnaire (Harrison, Bradshaw, Naqvi, Paff, & Campbell 2017). The subsection consisted of six items, two of which were true and four of which were false. See Table 1 for assessment coding schemes and Table 2 for intervention coding schemes.

**Community Involvement Statement**

This project was implemented by an autistic graduate student researcher as the primary investigator under the supervision of a non-autistic faculty mentor. Autistic SLPs (n = 22) were specifically sought out as participants and comprised a total of 4.94% of the sample surveyed.

**Results**

Results were analyzed using Spearman’s correlations to establish relationships between ranked ordinal variables of self-reported preferences for autism assessments and interventions with self-reported agreement with survey items evaluating SLP preferences for client-centeredness, rapport and progress, anti-autism stigma, and knowledge of autism. Correlations were considered significant if \( p < .05 \), and of these correlations, those with a Spearman’s rho less than +/- 0.20 were considered very weak, while correlations having a Spearman’s rho between +/- 0.20 and +/- 0.40 were considered weak.

*Autism friendly* assessments and interventions are defined as significantly positively correlated with client-centered, rapport and progress-oriented, non-stigmatized, and/or true
statements about autism. Non-autism friendly assessments and interventions are defined as significantly positively correlated with non-client-centered, non-rapport and non-progress-oriented, stigmatized, and/or false statements about autism.

Assessments

Autism Friendly Assessments

These assessments were considered more autism friendly overall. Assessment titles are abbreviated (Table 1).

Client-Centered Assessments. Negative correlations were found between non-client-centered statements and the Communication Matrix, \( r(230) = -0.174, p = 0.008 \), and the SRS, \( r(66) = -0.268, p = 0.030 \). Positive correlations were found between client-centered statements and the FCP, \( r(286) = 0.159, p = 0.007 \); the ABC, \( r(127) = 0.192, p = 0.031 \); and the Communication Matrix, \( r(243) = 0.135, p = 0.035 \) as well as the FCP, \( r(295) = 0.173, p = 0.003 \) (Table 3).

Rapport and Progress-Oriented Assessments. Positive correlations were observed between a rapport-oriented statement and the ADOS, \( r(177) = 0.185, p = 0.013 \), PIPS, \( r(49) = 0.296, p = 0.039 \), and SCERTS, \( r(154) = 0.164, p = 0.042 \). A correlation was also observed between an additional rapport-oriented statement and SCERTS, \( r(150) = 0.175, p = 0.032 \). Non-rapport-oriented statements were negatively correlated with the VABS, \( r(211) = -0.144, p = 0.036 \), and SCERTS assessments, \( r(151) = -0.224, p = 0.006 \) (Table 4).

Non-Stigmatized Assessments. Correlations were found between disagreement with stigmatized statements and the ADOS assessment, \( r(171) = -0.174, p = 0.022 \), as well as the Communication Matrix, \( r(229) = -0.163, p = 0.014 \). Three non-stigmatized statements were positively correlated with the Communication Matrix, \( r(238) = 0.137, p = 0.035 \), \( r(235) = 0.132, p = 0.043 \), and \( r(230) = 0.132, p = 0.046 \) (Table 5).
**Autism-Informed Assessments.** A false statement about autism was negatively correlated with the Communication Matrix, $r(241) = -.131, p = .042$. True statements were positively correlated with SCERTS, $r(145) = .182, p = .028$, and the ADI-R assessments, $r(91) = .222, p = .035$ (Table 6).

**Non-Autism Friendly Assessments**

These assessments were considered less autism friendly overall. Assessment titles are abbreviated (Table 1).

**Non-Client-Centered Assessments.** Positive correlations were found between a non-client-centered statement and the ADOS, $r(178) = .165, p = .028$; CARS, $r(173) = .224, p = .003$; and SRS assessments, $r(68) = .254, p = .036$. Positive correlations were found between another non-client-centered statement and the ABC, $r(120) = .219, p = .016$; CARS, $r(169) = .177, p = .021$; and the SCERTS assessment, $r(148) = .211, p = .010$. Positive correlations were also found between an additional non-client-centered statement and the ADI-R, $r(98) = .213, p = .035$. Negative correlations were found between a client-centered statement and the SCERTS assessment, $r(153) = -.192, p = .017$, as well as the RBSES, $r(38) = -.356, p = .028$ (Table 3).

**Non-Rapport-oriented, Non-Progress-Oriented Assessments.** Negative correlations were found between one rapport-oriented statement and the ADI-R, $r(99) = -.235, p = .019$. Positive correlations were found between one non-rapport-oriented statement and the PIA-CV assessment, $r(128) = .371, p < .001$; RBSES, $r(38) = .367, p = .023$; and ADI-R assessments, $r(99) = .222, p = .027$ (Table 4).

**Stigmatized Assessments.** Positive correlations were found between a stigmatized statement and the ESCS, $r(139) = .206, p = .015$, and SRS assessments, $r(63) = .250, p = .048$ (Table 5).
Non-Autism-Informed Assessments. A positive association was found between a false statement and preference for the CBC, \( r(135) = .178, p = .039 \). A negative correlation was found between a true statement and RBSES, \( r(36) = -.354, p = .034 \) (Table 6).

Interventions

Autism Friendly Interventions

These interventions were considered more autism friendly overall. Intervention titles are abbreviated (Table 2).

Client-Centered Interventions. Negative correlations were found between one non-client-centered statement and the Denver model, \( r(74) = -.243, p = .037 \). Positive correlations were observed between one client-centered statement and preference for AAC, \( r(401) = .135, p = .007 \); CBT, \( r(386) = .111, p = .029 \); speech sound interventions, \( r(338) = .133, p = .015 \); and relationship-based interventions, \( r(286) = .286, p < .001 \). Positive correlations were also observed between another client-centered statement and AAC, \( r(416) = .199, p < .001 \) (Table 7).

Rapport and Progress-Oriented Interventions. A positive correlation was found between one rapport-oriented statement and relationship-based interventions, \( r(294) = .130, p = .026 \); parent-mediated interventions, \( r(268) = .171, p = .005 \); peer-mediated interventions, \( r(315) = .118, p = .036 \); and SCERTS, \( r(311) = .121, p = .033 \).

Positive correlations were observed between another rapport-oriented statement and parent-mediated interventions, \( r(268) = .190, p = .002 \), as well as peer-mediated interventions, \( r(317) = .132, p = .019 \). Positive correlations were observed between a third rapport-oriented statement and speech sound intervention, \( r(344) = .123, p = .023 \); SCERTS, \( r(311) = .112, p = .033 \); and social communication interventions, \( r(413) = .097, p < .001 \). A positive correlation was found between the fourth rapport-oriented statement and AAC, \( r(412) = .105, p = .033 \). Another
positive correlation was found between a fifth rapport-oriented statement and CBT, \( r(397) = .126, p = .012 \).

Finally, positive correlations were observed between the progress-oriented statement and SCERTS, \( r(308) = 152, p = .008 \), as well as relationship-based interventions, \( r(287) = .133, p < .001 \). Negative correlations were observed between one non-rapport-oriented statement and preference for behavioral interventions, \( r(407) = -.107, p = .032 \); and AAC, \( r(402) = -.131, p = .009 \). A negative correlation was also found between a second non-progress-oriented statement and AAC, \( r(401) = -.189, p < .001 \) (Table 8).

**Non-Stigmatized Interventions.** A negative correlation was found between the stigmatized statement and AAC, \( r(397) = -.265, p < .001 \). Negative correlations were found between one stigmatized statement and CBT, \( r(393) = -.123, p = .015 \), as well as Gentle Teaching, \( r(123) = -.195, p = .035 \). A positive correlation was found between one non-stigmatized statement and CBT, \( r(382) = .191, p < .001 \); SCERTS, \( r(298) = .188, p = .001 \); and relationship-based interventions, \( r(283) = .134, p = .024 \). Positive correlations were found between another non-stigmatized statement and CBT, \( r(389) = .139, p = .006 \); SCERTS, \( r(306) = .116, p = .042 \), and relationship-based interventions, \( r(287) = .234, p < .001 \). Finally, positive correlations were found between a third non-stigmatized statement and AAC, \( r(396) = .110, p = .028 \); CBT, \( r(382) = .128, p = .012 \); parent-mediated intervention, \( r(256) = .140, p = .025 \); peer-mediated intervention, \( r(303) = .119, p = .038 \); and relationship-based intervention, \( r(278) = .168, p = .005 \) (Table 9).

**Autism-Informed Interventions.** A positive association was found between a true statement and parent-mediated intervention, \( r(244) = .128, p = .046 \). A negative association was
found between one false statement and preference for AAC intervention, \( r(396) = -.114, p = .023 \) (Table 10).

**Non-Autism Friendly Interventions**

These interventions were considered less autism friendly overall. Intervention titles are abbreviated (Table 2).

**Non-Client-Centered Interventions.** Positive correlations were found between a non-client-centered statement and spoken language intervention, \( r(313) = .174, p < .001 \); behavioral interventions, \( r(394) = .194, p < .001 \); and social communication interventions, \( r(400) = .156, p = .002 \). Negative correlations were found between a client-centered statement and preference for behavioral interventions, \( r(395) = -.156, p = .002 \) (Table 7).

**Non-Rapport and Non-Progress-Oriented Interventions.** Positive correlations were found between a non-rapport-oriented statement and the Treatment and Education of Autistic and Related Communication Handicapped Children intervention, \( r(169) = .164, p = .034 \) (Table 8).

**Stigmatized Interventions.** Positive correlations were observed between a stigmatized statement and behavioral interventions, \( r(391) = .145, p = .004 \); the Denver model, \( r(72) = .233, p = .049 \); Gentle Teaching, \( r(118) = .194, p = .035 \); and Spoken Language Intervention, \( r(306) = .138, p = .016 \). Positive correlations were observed between another stigmatized statement and behavioral intervention, \( r(365) = .198, p < .001 \); the Denver model, \( r(72) = .296, p = .012 \); spoken language interventions, \( r(288) = .130, p = .028 \); and social communication interventions, \( r(372) = .153, p = .003 \). Negative correlations were found between a non-stigmatized statement and behavioral interventions, \( r(391) = -.103, p = .042 \). Another non-stigmatized statement was negatively correlated with behavioral interventions, \( r(390) = -.110, p = .029 \) (Table 9).
Non-Autism-Informed Interventions. A positive association was found between one false statement and behavioral intervention, $r(391) = .176, p < .001$; and speech sound intervention, $r(321) = .139, p = .013$. A positive association was observed between a second false statement “with the proper treatment, most children diagnosed with autism eventually outgrow the disorder” and behavioral intervention, $r(404) = .126, p = .011$ (Table 10).

Discussion

This study supports the idea of the double empathy problem within the context of speech-language pathology. The double empathy problem is a theory that details the ways in which differing social norms and expectations in an interaction can cause communication difficulties between autistic and non-autistic speakers (Milton et al., 2018). This is exemplified in the way behavioral interventions were shown to be associated with lack of knowledge of autism, bias against autistic people, and lack of client-centeredness. Nevertheless, the American Speech-Language Hearing Association (ASHA) autism practice portal lists more behavioral interventions than any other type, including applied behavioral analysis (ABA), discrete trial training (DTT), functional communication training (FCT), incidental teaching, milieu therapy, pivotal response treatment (PRT), positive behavior support (PBS), and self-management. These types of interventions were shown in the present study to be negatively correlated with non-stigmatized statements (such as “people on the autism spectrum can lead a normal life”) but positively correlated with anti-autism stigmatized statements. Even more concerning were the significant positive associations between preference for behavioral intervention and false statements about autism, as this not only threatens the evidence base behind behavioral intervention from a client-centeredness standpoint, but a research-based standpoint as well. The contradictions between preference for behavioral approaches to autism and factual information
about autism, the field-wide standard of client-centeredness and expectation of anti-bias supports reconsideration of ASHA’s listing of behavioral interventions as an evidence-based autism intervention (ASHA, n.d.).

Reviewing the present study’s results reveals that several assessments and interventions for autism are positively associated with relevant clinical measures. The Communication Matrix (Rowland & Fried-Oken, 2010), for example, showed promise in its consistent correlation with clinician-reported knowledge of autism, non-stigmatized views of autistic people, and client-centeredness. This is critical for SLPs hoping to assess autistic clients in an affirming way, as belief in these types of statements corresponds directly to the stated communication goals of autistic adults (Cummins et al., 2020). Client-centered practice makes up a third of the evidence-based practice paradigm employed by the field of speech-language pathology and has important implications for clinical practice. SLPs should strive to incorporate client perspectives into therapy sessions, especially at the assessment level, to collaboratively establish goals with clients and avoid unnecessary services.

Furthermore, several autism interventions were shown to be correlated with positive measures. Alternative and augmentative communication has been recognized by many autistic adults as the most accessible means of communication. However, this contrasts with the commonly held misconception in the field of speech-language pathology that AAC tends to be “considered a ‘last resort’ for children who did not develop functional speech” (Donaldson et al., 2021, p. 1-4). The present study concluded that practitioner preference for AAC is positively correlated with client-centered statements, supporting previous research that indicated the importance of AAC for autistic adults to achieve communication autonomy (Donaldson et al., 2021). While SLPs who prefer AAC tend to hold more client-centered beliefs compared to those
who do not, AAC users have made several suggestions for the field in general. To best serve autistic people, SLPs should make an increased effort to understand the value of AAC for individuals who cannot rely on speech.

This requires talking to more AAC users, educating other clinicians about AAC, and presuming competence (Donaldson et al., 2021). The association found between autism knowledge and preference for AAC intervention indicates that practitioners who express a preference for AAC as an autism intervention are more likely to disagree with false statements about autism. Given the correlations found between non-stigmatized views of autism and AAC, evidence suggests that SLPs expressing a preference for AAC as an autism intervention will be more likely to presume competence and consequently better understand the value of AAC to the autistic community. As a result, prioritizing AAC as a preferred autism intervention within the profession could go a long way in systemically implementing the changes suggested by autistic adults.

Another positive intervention is cognitive-behavioral therapy (CBT). The correlations were found between disagreement with the stigmatized statements and CBT indicates that SLPs with a preference for CBT hold less anti-autism stigma compared to SLPs that prefer other interventions. These associations show that SLPs who express a preference for CBT may be less biased against autistic people, have better relationships with clients, and hold the client’s opinion in higher regard. However, a recent review of the literature on CBT for autistic people indicated that although significant growth was noted by the practitioners, the same was not necessarily true for autistic self-reports (Wang et al., 2021). As a result, CBT could improve quality of life for some autistic people, but not all. ASHA lists autism-specific, CBT-based interventions on their practice portal such as exploring feelings, rational emotive behavioral therapy, and social
thinking (Attwood, 2004; Ellis & Dryden, 1997; Crooke et al., 2008). Exploring feelings could be promising, but randomized controlled trials of this strategy do not indicate improvements according to autistic self-reports, but parents and teachers (Sofronoff et al., 2007). Similarly mixed results confounded rational emotive behavior therapy, as randomized controlled trials showed no difference in participants after this intervention, but a difference in reported stress levels of parents (Ede et al., 2020). Finally, challenges have been brought up pertaining to the evidence base behind the social thinking curriculum. There is no substantial research that supports social thinking, which undermines its evidence base as an intervention for autism (Leaf et al., 2016). Overall, CBT approaches such as rational emotive behavior therapy and social thinking appear to have mixed results as an autism treatment.

Finally, correlations with measures of rapport and progress, autism knowledge, and lack of stigma were observed in parent-mediated approaches to autism. According to ASHA’s practice portal for autism, parent-mediated interventions require parents to engage in “direct, individualized intervention practices with their child to increase positive learning opportunities and acquisition of skills” (ASHA, n.d., p. 1-5). Examples include Hanen programs such as More Than Words, and TalkAbility (Sussman, 1999; Sussman, 2006). Studies of More Than Words have indicated it can be effective in bolstering the communication gains of some very young autistic children, particularly those with lower levels of sustained attention; however, it is difficult to determine the efficacy of this intervention through self-report due to the age investigated (Carter et al., 2011). While little empirical data was available on the efficacy of TalkAbility, this intervention is highly play based and child led (Sussman, 2006). It could be a contributing factor to the positive correlations found between parent-mediated interventions and statements of rapport, belief in non-stigmatized statements about autism, and autism knowledge.
Overall, parent-mediated interventions have an evidence base, but more autistic self-reports will be needed to support this.

In conclusion, several changes could be made to improve autistic experiences in speech-language pathology. First, the contents of the autism practice portal should be revised to reflect a truly evidence-based perspective. Several interventions ASHA listed as suitable for autism are based on research from 25 years ago. The field of autism has greatly evolved since then and should be reflected in the current practice portal. As it stands, the current evidence-base of treatment for autism by SLPs is highly representative of the biases and knowledge gaps as indicated by the present study. This could also be addressed through anti-bias education incorporated into graduate-level autism education for future SLPs, as this could alleviate negative beliefs associated with certain autism interventions. Autism education should be led by autistic people, as non-autistic people tend to improve their views of autism when diagnostic information is disclosed about an autistic person (Sasson & Morrison, 2017). This could also assuage the issue of SLPs failing to meet the communication needs of autistic people. Finally, a field-wide shift toward strengths-based, client-centered approaches can help ensure that the autistic clients get a chance to learn to self-advocate rather than communicate in ways SLPs believe is important.

Declaration of Conflicting Interests

The author declares no conflicts of interest with respect to the authorship, research, and/or publication of this article.

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### Table 1

**Coding Scheme for Autism Assessments**

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autism Behavior Checklist (Krug et al., 1980)</td>
<td>ABC</td>
</tr>
<tr>
<td>Autism Diagnostic Interview - Revised (Lord, Rutter, &amp; Le Couteur, 1994)</td>
<td>ADI-R</td>
</tr>
<tr>
<td>Autism Diagnostic Observation Schedule (Lord, Rutter, DiLavore, Risi, Gotham, &amp; Bishop, 2012)</td>
<td>ADOS</td>
</tr>
<tr>
<td>Child Behavior Checklist (Achenbach, 1999)</td>
<td>CBC</td>
</tr>
<tr>
<td>Childhood Autism Rating Scale (Schopler, Reichler, DeVellis &amp; Daly, 1980)</td>
<td>CARS</td>
</tr>
<tr>
<td>Communication Matrix (Rowland, &amp; Fried-Oken, 2010)</td>
<td>Matrix</td>
</tr>
<tr>
<td>Early Social Communication Scales (Mundy et al., 2003)</td>
<td>ESCS</td>
</tr>
<tr>
<td>Functional Communication Profile (Santos &amp; Fernandes, 2012)</td>
<td>FCP</td>
</tr>
<tr>
<td>MacArthur-Bates Communicative Development Inventories (Fenson et al., 2007)</td>
<td>MB</td>
</tr>
<tr>
<td>Preschool Imitation and Praxis Scale (Vanvuchelen, Roeyers, &amp; De Weerdt, 2011)</td>
<td>PIPS</td>
</tr>
<tr>
<td>The Parent Interview for Autism - Clinical Version (Stone et al., 2003)</td>
<td>PIA-CV</td>
</tr>
<tr>
<td>Revised Behavior Summarized Evaluation Scale (Barthélemey et al., 1997)</td>
<td>RBSES</td>
</tr>
<tr>
<td>Social Responsiveness Scale (Constantino &amp; Gruber, 2005)</td>
<td>SRS</td>
</tr>
</tbody>
</table>
Table 1 Continued

<table>
<thead>
<tr>
<th>Social communication (SC), emotional regulation (ER), and transactional support (TS), (Prizant et al., 2006).</th>
<th>SCERTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vineland Adaptive Behavior Scales (Sparrow, Cicchetti, &amp; Balla, 2005)</td>
<td>VABS</td>
</tr>
</tbody>
</table>
### Table 2

**Coding Scheme for Autism Interventions**

<table>
<thead>
<tr>
<th>Intervention Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative and/or augmentative communication (AAC)</td>
<td>AAC</td>
</tr>
<tr>
<td>Behavioral interventions and techniques (ex. applied behavioral analysis, discrete trial training, and pivotal response treatment)</td>
<td>ABA</td>
</tr>
<tr>
<td>Cognitive-behavioral therapy (ex. exploring feelings, social thinking, and Rational Emotive Behavioral Therapy)</td>
<td>CBT</td>
</tr>
<tr>
<td>Denver model</td>
<td>Denver</td>
</tr>
<tr>
<td>Gentle Teaching</td>
<td>Gentle</td>
</tr>
<tr>
<td>Literacy (Written Language) Intervention</td>
<td>Literacy</td>
</tr>
<tr>
<td>Parent-Mediated or Parent-Implemented Interventions (ex. More Than Words, Talkability)</td>
<td>Parent</td>
</tr>
<tr>
<td>Peer-Mediated or Peer-Implemented Treatment (ex. LEAP, Circle of Friends, Integrated Play Groups)</td>
<td>Peer</td>
</tr>
<tr>
<td>Spoken Language Intervention</td>
<td>Spoken</td>
</tr>
<tr>
<td>Speech Sound Intervention</td>
<td>Speech</td>
</tr>
<tr>
<td>Social communication (SC), emotional regulation (ER), and transactional support (TS)</td>
<td>SCERTS</td>
</tr>
<tr>
<td>Social Communication Intervention (ex. social scripts, social stories, and social skills groups)</td>
<td>Social</td>
</tr>
<tr>
<td>Relationship-Based Interventions (ex. DIR/Floortime)</td>
<td>RB</td>
</tr>
<tr>
<td>Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH)</td>
<td>TEACCH</td>
</tr>
</tbody>
</table>
Table 3

*Autism Assessments Categorized by Overall Client-Centeredness Based on Significant Spearman Correlations*

<table>
<thead>
<tr>
<th>Less Client-Centered</th>
<th>Neutral</th>
<th>More Client-Centered</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADOS, Negative: r(178) = .165, p = .028</td>
<td>ADOS, Negative: r(120) = .219, p = .016</td>
<td>r(243) = .135, p = .035</td>
</tr>
<tr>
<td>CARS, Negative: r(173) = .224, p = .003</td>
<td>CARS, Negative: r(66) = -.268, p = .030</td>
<td>FCP, Positive: r(286) = .159, p = .007</td>
</tr>
<tr>
<td>ABC, Negative: r(169) = .177, p = .021</td>
<td>CARS, Negative: r(68) = .254, p = .036</td>
<td>r(295) = .173, p = .003</td>
</tr>
<tr>
<td>RBSES, Positive: r(38) = -.356, p = .028</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCERTS, Negative: r(148) = .211, p = .010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive: r(153) = -.192, p = .017</td>
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<td></td>
</tr>
</tbody>
</table>
Table 4

*Autism Assessments Categorized by Overall Rapport/Progress Based on Significant Spearman's Correlations*

<table>
<thead>
<tr>
<th>Less correlated with rapport/progress</th>
<th>Neutral</th>
<th>More correlated with rapport/progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADI-R, Positive: ( r(99) = -0.235, p = .019 )</td>
<td></td>
<td>ADOS, Positive: ( r(177) = 0.185, p = .013 )</td>
</tr>
<tr>
<td>ADI-R, Negative: ( r(99) = 0.222, p = .027 )</td>
<td></td>
<td>PIPS, Positive: ( r(49) = 0.296, p = .039 )</td>
</tr>
<tr>
<td>PIA-CV, Negative: ( r(128) = 0.371, p &lt; .001 )</td>
<td></td>
<td>SCERTS, Positive: ( r(154) = 0.164, p = .042, r(150) = 0.175, p = .032 )</td>
</tr>
<tr>
<td>RBSES, Negative: ( r(38) = 0.367, p = .023 )</td>
<td></td>
<td>SCERTS, Negative: ( r(151) = -0.224, p = .006 )</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VABS, Negative: ( r(211) = -0.144, p = .036 )</td>
</tr>
</tbody>
</table>
Table 5

*Autism Assessments Categorized by Overall Anti-Autism Stigma Based on Significant Spearman's Correlations*

<table>
<thead>
<tr>
<th>More correlated with anti-autism stigma</th>
<th>Neutral</th>
<th>Less correlated with anti-autism stigma</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECSC,</td>
<td>ADOS,</td>
<td></td>
</tr>
<tr>
<td>Negative:</td>
<td>Negative:</td>
<td>r(171) = -.174, p = .022</td>
</tr>
<tr>
<td>r(139) = .206, p = .015</td>
<td>Matrix,</td>
<td></td>
</tr>
<tr>
<td>SRS,</td>
<td>Positive:</td>
<td>r(238) = .137, p = .035</td>
</tr>
<tr>
<td>Negative:</td>
<td>r(235) = .132, p = .043</td>
<td></td>
</tr>
<tr>
<td>r(63) = .250, p = .048</td>
<td>r(230) = .132, p = .046</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Negative:</td>
<td>r(229) = -.163, p = .014</td>
</tr>
</tbody>
</table>
### Table 6

*Autism Assessments Categorized by Overall Autism Knowledge Based on Significant Spearman's Correlations*

<table>
<thead>
<tr>
<th>Less correlated with factual knowledge of autism</th>
<th>Neutral</th>
<th>More correlated with factual knowledge of autism</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBC, False: r(135) = .178, p = .039</td>
<td></td>
<td>ADI-R, True: r(91) = .222, p = .035</td>
</tr>
<tr>
<td>RBSES, True: r(36) = -.354, p = .034</td>
<td></td>
<td>Matrix, False: r(241) = -.131, p = .042</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SCERTS, True: r(145) = .182, p = .028</td>
</tr>
</tbody>
</table>
Table 7

*Autism Interventions Categorized by Overall Client-Centeredness Based on Significant Spearman Correlations*

<table>
<thead>
<tr>
<th>Less correlated with client-centeredness</th>
<th>Neutral</th>
<th>More correlated with client-centeredness</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABA,</td>
<td></td>
<td>AAC,</td>
</tr>
<tr>
<td>Negative:</td>
<td></td>
<td>Positive:</td>
</tr>
<tr>
<td>r(394) = .194, p &lt; .001</td>
<td></td>
<td>r(401) = .135, p = .007,</td>
</tr>
<tr>
<td>Positive:</td>
<td></td>
<td>r(416) = .199, p &lt; .001</td>
</tr>
<tr>
<td>r(395) = -.156, p = .002</td>
<td></td>
<td>CBT,</td>
</tr>
<tr>
<td>Spoken,</td>
<td></td>
<td>Positive:</td>
</tr>
<tr>
<td>Negative:</td>
<td></td>
<td>r(386) = .111, p = .029</td>
</tr>
<tr>
<td>r(313) = .174, p &lt; .001</td>
<td></td>
<td>Denver,</td>
</tr>
<tr>
<td>Social,</td>
<td></td>
<td>Negative:</td>
</tr>
<tr>
<td>Negative:</td>
<td></td>
<td>r(74) = -.243, p = .037</td>
</tr>
<tr>
<td>r(400) = .156, p = .002</td>
<td></td>
<td>RB,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>r(286) = .286, p &lt; .001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Speech,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>r(338) = .133, p = .015</td>
</tr>
</tbody>
</table>
Table 8

*Autism Interventions Categorized by Overall Rapport/Progress Based on Significant Spearman's Correlations*

<table>
<thead>
<tr>
<th>Less correlated with rapport/progress</th>
<th>Neutral</th>
<th>More correlated with rapport/progress</th>
</tr>
</thead>
</table>
Table 9

*Autism Interventions Categorized by Overall Anti-Autism Stigma Based on Significant Spearman's Correlations*

<table>
<thead>
<tr>
<th>More correlated with anti-autism stigma</th>
<th>Neutral</th>
<th>Less correlated with anti-autism stigma</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABA,</td>
<td>Gentle,</td>
<td>AAC,</td>
</tr>
<tr>
<td>Negative:</td>
<td>Negative:</td>
<td>Negative:</td>
</tr>
<tr>
<td>r(391) = .145, p = .004</td>
<td>r(123) = -.195, p = .035</td>
<td>r(397) = -.265, p &lt; .001</td>
</tr>
<tr>
<td>r(365) = .198, p &lt; .001</td>
<td>r(118) = .194, p = .035</td>
<td>Positive:</td>
</tr>
<tr>
<td>Positive:</td>
<td>r(391) = -.103, p = .042</td>
<td>r(396) = .110, p = .028</td>
</tr>
<tr>
<td></td>
<td>r(390) = -.110, p = .029</td>
<td>CBT,</td>
</tr>
<tr>
<td>Denver,</td>
<td>Negative:</td>
<td>Positive:</td>
</tr>
<tr>
<td>r(72) = .233, p = .049</td>
<td>r(389) = .139, p = .006</td>
<td>r(389) = .139, p = .006</td>
</tr>
<tr>
<td>r(72) = .296, p = .012</td>
<td>r(382) = .191, p &lt; .001</td>
<td>Positive:</td>
</tr>
<tr>
<td>Spoken,</td>
<td>Negative:</td>
<td>r(382) = .128, p = .012</td>
</tr>
<tr>
<td>r(306) = .138, p = .016</td>
<td>r(393) = -.123, p = .015</td>
<td>CBT,</td>
</tr>
<tr>
<td>r(288) = .130, p = .028</td>
<td>Parent,</td>
<td></td>
</tr>
<tr>
<td>Social,</td>
<td>Negative:</td>
<td>Positive:</td>
</tr>
<tr>
<td>r(372) = .153, p = .003</td>
<td>r(256) = .140, p = .025</td>
<td>r(303) = .119, p = .038</td>
</tr>
<tr>
<td></td>
<td>Peer,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Positive:</td>
<td>SCERTS,</td>
</tr>
<tr>
<td></td>
<td>r(298) = .188, p = .001</td>
<td>Positive:</td>
</tr>
<tr>
<td></td>
<td>r(306) = .116, p = .042</td>
<td>r(298) = .188, p = .001</td>
</tr>
<tr>
<td></td>
<td>RB,</td>
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</tr>
<tr>
<td></td>
<td>Positive:</td>
<td>Positive:</td>
</tr>
<tr>
<td></td>
<td>r(283) = .134, p = .024</td>
<td>r(283) = .134, p = .024</td>
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<tr>
<td></td>
<td>r(287) = .234, p &lt; .001</td>
<td>r(287) = .234, p &lt; .001</td>
</tr>
<tr>
<td></td>
<td>r(278) = .168, p = .005</td>
<td>r(278) = .168, p = .005</td>
</tr>
</tbody>
</table>
Table 10

*Autism Interventions Categorized by Overall Autism Knowledge Based on Significant Spearman's Correlations*

<table>
<thead>
<tr>
<th>Less correlated with factual knowledge of autism</th>
<th>Neutral</th>
<th>More correlated with factual knowledge of autism</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABA, False: r(391) = .176, p &lt; .001 &lt;br&gt;r(404) = .126, p = .011 &lt;br&gt;Speech, False: r(321) = .139, p = .013</td>
<td></td>
<td>AAC, False: r(396) = -.114, p = .023, Parent, True: r(244) = .128, p = .046</td>
</tr>
</tbody>
</table>

*Table continued on next page...*
Appendix: IRB Approval Letter

Date: 10-10-2020

IRB #: UHSRC-FY20-21-5  
Title: Speech-Language Pathologists on the Autism Spectrum: A Comparative Analysis of Demographics, Perceptions, & Clinical Relationships  
Creation Date: 7-10-2020  
End Date:  
Status: Approved  
Principal Investigator: Rebecca Freeman  
Review Board: University Human Subjects Review Committee  
Sponsor:  

<table>
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<th>Study History</th>
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<tbody>
<tr>
<td>Submission Type</td>
<td>Initial</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Key Study Contacts</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Member</strong> Lidia Lee</td>
<td><strong>Role</strong> Co-Principal Investigator</td>
</tr>
<tr>
<td><strong>Member</strong> Rebecca Freeman</td>
<td><strong>Role</strong> Principal Investigator</td>
</tr>
<tr>
<td><strong>Member</strong> Rebecca Freeman</td>
<td><strong>Role</strong> Primary Contact</td>
</tr>
</tbody>
</table>
IRB #: UHSRC-FY20-21-5
Title: Speech-Language Pathologists on the Autism Spectrum: A Comparative Analysis of Demographics, Perceptions, & Clinical Relationships
Creation Date: 7-10-2020
End Date:
Status: Approved
Principal Investigator: Rebecca Freeman
Review Board: University Human Subjects Review Committee
Sponsor:

Study History

<table>
<thead>
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<th>Review Type</th>
<th>Decision</th>
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<tbody>
<tr>
<td>Initial</td>
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Key Study Contacts

<table>
<thead>
<tr>
<th>Member</th>
<th>Role</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lidia Lee</td>
<td>Co-Principal Investigator</td>
<td><a href="mailto:llee@emich.edu">llee@emich.edu</a></td>
</tr>
<tr>
<td>Rebecca Freeman</td>
<td>Principal Investigator</td>
<td><a href="mailto:rfreem10@emich.edu">rfreem10@emich.edu</a></td>
</tr>
<tr>
<td>Rebecca Freeman</td>
<td>Primary Contact</td>
<td><a href="mailto:rfreem10@emich.edu">rfreem10@emich.edu</a></td>
</tr>
</tbody>
</table>
Complete this form for a new human subjects project submission. For multi-site studies, contact the Office of Research Compliance at research_compliance@emich.edu or 734-487-3090 prior to completing this application.

Each question must be specifically answered or your application will be returned without review. Do not copy and paste language from other documents into the application.

All items with red stars are required and must be completed in order to submit. Save changes frequently.

Questions? Contact human.subjects@emich.edu or 734-487-3090.

Is your study any of the following:

- **Exclusively** a program evaluation (data collected for program improvement purposes)?
- Journalistic activity?
- Oral history **without** the purpose of extracting and generalizing themes from the oral histories?
- Biography?
- Literary criticism?
- Historical scholarship?

*Note: Mark Yes if your data will only be used for the purposes above.*

Yes

✔ No
Affiliation:

Check one

- Faculty/Staff
  - ✔ Graduate Student
  - Undergraduate Student

Student Type

- Doctoral Student
  - ✔ Masters Student

Project Type

- ✔ Thesis/Dissertation
  - Graduate Project

Principal Investigator

Name: Rebecca Freeman
Organization: Eastern Michigan University
Address: Ypsilanti, MI 481972212
Phone: 4407251649
Email: rfreem10@emich.edu
Briefly describe your qualifications to conduct the study.

*Students: Please include a brief statement about how your adviser will mentor you on this project.*

I am a graduate student in Communication Sciences & Disorders at Eastern Michigan University and a recipient of the Dolores Soderquist Brehm Scholarship. I will be working closely with Dr. Lidia Lee to complete this project. She will help fine tune the interview questions, assist me in following established research protocols needed to conduct responsible and high-quality research, and guide me through the quantitative analysis needed to compare my populations of interest.

**Human Subject Training**

*Attach your human subject training completion report (copy of grade page for Canvas course, completion certificate for CITI). Online human subject training must have been completed in the past THREE YEARS in order to be valid.*

[RF_CITI_Completion_Certificate.pdf](EMUResume.pdf)

*Attach a CV or resume here.*

[EMUResume.pdf](EMUResume.pdf)

**Primary Contact**

*Select someone who can be contacted about the study in the absence of the principal investigator. If you do not have a primary contact, please list yourself.*

Name: Rebecca Freeman  
Organization: Eastern Michigan University  
Address: , Ypsilanti, MI 481972212  
Phone: 4407251649  
Email: rfreem10@emich.edu

**Faculty Advisor**
Students are **required** to have a faculty member as a Co-Principal Investigator. Choose your faculty advisor from the list below.

Name: Lidia Lee  
Organization: Special Education  
Address: Special Education 128 Porter Bldg, Ypsilanti, MI 481970000  
Phone: 7344873300  
Email: llee@emich.edu

Attach your faculty advisor's human subject training completion report.

[CITI_refresh_Feb2022.pdf](CITI_refresh_Feb2022.pdf)

---

Research Personnel

Add all other investigators who will either have contact (in-person or virtual) contact with human subjects or who will have access to identifiable data.

If your research personnel are not affiliated with Eastern Michigan University, list their names, titles, and affiliations below.

Attach human subject training completion reports for each member of the study staff.

---

Does this study involve research sites or locations other than EMU?

*Note: This does not apply for survey studies in which surveys are completed on the subjects' personal computers.*

Yes

☑ No
Conflict of Interest

Do you or any study staff members have a potential conflict of interest for this project?

Yes

✔ No

Is this project funded?

Choose No if you have department or internal funds to conduct your study (including a Faculty Research Fellowship or a Summer Research Award).

Yes

Funding is pending

✔ No
Abstract

Provide a brief abstract of your study procedures in non-technical terms. Limit this abstract to no more than 300 words.

Speech-language pathology has long struggled to establish a culturally competent field of study with a membership reflecting the full spectrum of people served as clients and partners in care. A particularly misunderstood, but frequently encountered, population served by speech-language pathologists is clients on the autism spectrum. Research in the past decade has shown that autistic people communicate in a unique manner better understood by other autistic people than by non-autistic people. This phenomenon, referred to as the “Double Empathy” problem, supports the consideration of autism as a valuable form of diversity within the field of speech-language pathology. The purpose of this study is to comparatively survey the demographics, clinical preferences, client relationships, and knowledge & attitudes about autism of autistic speech-language pathologists versus non-autistic speech language pathologists.

Purpose

In one or two sentences, what is the purpose of your study?

The purpose of this survey is to assess speech-language pathologists' demographic characteristics, clinical preferences for treatments, assessment, and client-centeredness, client rapport, knowledge about autism, and stigma against people on the autism spectrum. This study aims to compare and contrast the responses of speech-language pathologists that identify on the autism spectrum with those who do not, in order to affect better outcomes for clients on the autism spectrum, who represent one of the field's largest client populations.

Study Procedures

Describe step-by-step, very clearly, all of the research procedures that will occur during your project. Please include the following information:

1. Describe your subject population(s).
2. What procedures will be conducted on the subjects? If you have two or more groups of subjects, please describe in detail the procedures for each group.

4. How long will participation last? If the study will take place over multiple days or there are multiple procedures, please specify the amount of time per day or procedure.

If you think it helps with clarity, please upload a chart or timeline under Study Measures below.

1. **Participants:** The population being investigated is speech-language pathologists, and the sub-populations being compared are speech-language pathologists who self-identify as being on the autism spectrum, versus speech-language pathologists who do not. Rather than a sample, we will mass survey the entire population of SLPs in Michigan, Ohio, and Wisconsin based on email addresses obtained through the states’ respective licensing boards, in order to maximize the rate of return of completed surveys. We plan to collect survey responses in two phases. Phase one, which aims to estimate the expected chi-square distributions of the demographic characteristics of SLPs in the three midwestern states of interest, will be collected during the fall of 2020. We aim to accept responses for one month, then analyze this data by December 2020. Phase two, which we would like to carry out during the winter of 2021, would involve the direct recruitment of autistic SLPs who have not yet taken the survey through online communities. Findings should be presented in the spring of 2021.

2. **Procedures:** The study procedures for both groups are the same for this survey. All participants will first be asked to read the informed consent document and accept the terms before continuing. The survey will be divided into five parts: consent (including autism self-identification), part I (demographics), part II (clinical preferences), part III (client relationships), and part IV (knowledge & attitudes toward autism). Each participant will respond through Google Forms. Responses will be recorded and later analyzed in Google Sheets. Self-identified autistic speech-language pathologists may (but are not required to) provide their email address for later qualitative studies, through a separate Google Form which will not be connected in any way to survey responses. Unless voluntarily waived, all responses will be completely de-identified and therefore anonymous.

3. **Experimental procedures:** This is a survey study and contains no experimental procedures.

4. **Participation time:** Participation will last 15-20 minutes per survey, including the time it takes to thoroughly read and accept the informed consent.

---

**Study Measures**

Provide a brief description of each measure/assessment/survey you plan to use.

Each participant will complete the same interview that asks them to answer questions about their demographic characteristics, clinical preferences, client relationships, and knowledge & attitudes toward autism. Part I will include questions on the participant's age, sex assigned at birth, gender identity, self-identification as being on the autism spectrum, use of occupational disability accommodations, caseload characteristics, and work experience. Part II will assess preferences toward various autism assessments, treatment approaches, and client-centeredness during therapy. Part III will assess each clinician's perceived therapeutic relationship and progress with autistic clients using a Likert scale to rate...
one's level of agreement or disagreement with twelve statements describing rapport and two statements
detailing clinical progress. Part IV will evaluate clinicians' knowledge about autism spectrum disorder
based on a previously validated survey measure, as well as their stigma toward people on the autism
spectrum.

Participants who self-identify as being on the autism spectrum will see one additional section at the very
beginning of the survey, reading: "Since you self-identified on the autism spectrum, you may leave your
email address for future studies by clicking on the following link: https://forms.gle/McUWFhzFEL6rxTZVA.
The purpose of providing a second Google Form for contact information is to separate your email address
from your responses if you choose to provide it so that you can stay anonymous. All data will be stored on
a restricted Google Drive that can only be accessed by the primary investigator, faculty advisor and faculty
chairs, through their institutional password-protected login with two-factor authentication. You do not,
however, need to provide your email address if you do not feel comfortable. Please click continue to
proceed with the survey."

Ignoring this item and proceeding will allow the participant on the autism spectrum to continue with the
survey and submit the form completely anonymously. In order to minimize coercion and ensure each
participant is able to remain anonymous if desired, clicking the link in this question will take them to a
separate Google Form, which reads: "If you are seeing this question, you responded that you are an SLP
on the autism spectrum. If you are interested in potentially participating in future studies, you may provide
your email address, but you are not required to. Because the survey responses and optional email
addresses are recorded using separate consent processes, forms, and spreadsheets, they will not be
linked and each participant taking the main survey will remain anonymous regardless of whether or not
you choose to provide your email address for future research purposes. You do not need to provide your
email address if you are not comfortable. If you do not wish to provide your email address, you may skip
this question by closing this browser tab." Email addresses entered into this Google Form will not be
connected to survey results as they will be recorded in a separate spreadsheet.

Attach all measures, assessments, and surveys.

For students conducting surveys and interviews: You must attach a completed Survey
Development Checklist.
RF_survey_development_checklist.pdf

RF Survey Questions.docx

Does your study use drugs or biological products?
Does your study use medical devices?

Yes

✔ No

Yes

✔ No
Exempt studies are not subject to the Common Rule (45 CFR 46), federal regulations regarding the protection of human subjects in research.

They are, however, subject to Eastern Michigan University policies and procedures. As such, the UHSRC requires that Exempt research be submitted for review.

According to UHSRC policy, investigators may not make their own Exempt determination. Exempt determinations may only be made by the UHSRC or their designees.

All of your research activities must fall into at least one of the following categories. Check all that apply.

If your research activities do not fall exactly into the categories below, click "None of the above" and complete the sections appearing in the left menu.

1. Research conducted in established or commonly accepted educational settings, involving normal educational practices that are not likely to adversely affect students' opportunity to learn or the assessment of educators who provide instruction.

This includes research on regular and especial education instructional strategies and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

2. Research that only includes interactions involving educational tests, survey procedures, interview procedures, or observations of public behavior if at least one of the following criteria is met:
   a. The information obtained is recorded by the investigator in such a manner that the subjects cannot readily be identified, either directly or through study IDs that are linked to identifiers;
   b. Any disclosure of the subjects' responses outside the research would not reasonably place the
subjects at risk of criminal or civil liability, or be damaging to the subjects’ financial standing, employability, educational advancement, or reputation; or

(c. The information obtained is recorded by the investigator such that subjects can be identified, and

the UHSRC has reviewed the privacy and confidentiality provisions in the study.

Note: This category is only applicable to adults age 18+. Educational tests, survey procedures, interview procedures, or observation of public behavior involving minors cannot be Exempt except for educational tests and observation of public behavior if the investigator’s presence will not in any way affect the behavior of the research subjects in conditions a and b above only. Condition c above can never be Exempt if the research involves minors.

3. Research involving benign behavioral interventions using adult subjects provided that the subject provides consent/permission to participate beforehand and at least one of the following criteria is met:

(a. All information collected about the subject (research data) is anonymous (not directly or indirectly identifiable).

(b. Any disclosure of the subjects’ data would not reasonably place subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation; or

(c. The information obtained is recorded by the investigator such that subjects can be identified, and

the UHSRC has reviewed the privacy and confidentiality provisions in the study.

Note: Benign behavioral interventions are brief in duration, harmless, painless, not physically invasive, not likely to have an adverse lasting impact on the subjects, and the investigator has no reason to think the subjects will find the interventions embarrassing or offensive. Research involving deception cannot be Exempt unless the subject authorizes the deception beforehand during the consent/permission process.

4. Secondary research for which consent is not required.
This category can include identifiable private information or identifiable biospecimens provided that at least one of the following criteria is met:

a. The information or biospecimens are publicly available;

b. The information is recorded by the investigator so that subjects cannot be directly or indirectly identified (i.e., the investigator's data set is anonymous), the investigator does not contact the subjects, and the investigator will not re-identify subjects;

c. The research is subject to HIPAA regulation and conducted under a HIPAA-covered entity; or

d. The research is conducted by, or on behalf of, a Federal department or agency using government-generated or government-collected information obtained for non research activities.

5. Research and demonstration projects which are conducted by or subject to the approval of Federal department or agency heads, and which are designed to study, evaluate, or otherwise examine:

a. Public benefit or service programs;

b. Procedures for obtaining benefits or services under those programs;

c. Possible changes in or alternatives to those programs or procedures; or

d. Possible changes in methods or levels of payment for benefits or services under those programs.

Note: All projects under this Exempt category must be published on public list maintained by the Federal department or agency before any human subject research begins.

6. Taste and food quality evaluation and consumer acceptance studies, if:

a. Wholesome foods without additives are consumed; or

b. A food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.
7. Storage or maintenance of identifiable private information or identifiable biospecimens for secondary research for which broad consent is required.

The UHSRC must conduct a limited review of the broad consent form, the privacy and confidentiality protections, and any additional protections for vulnerable subjects.

Note: This category applies only to creating and maintaining a repository of identifiable data, not to the analysis or other uses of such data. At this time, the UHSRC does not support the use of broad consent for administrative reasons. Contact the Office of Research Compliance at research_compliance@emich.edu with any questions.

8. Secondary research for which broad consent is required. This category involves the research use of data stored and/or maintained using broad consent.

The UHSRC must conduct a limited review to make sure that the purpose of the research is within the scope in the broad consent, of the privacy and confidentiality provisions for the data. In addition, the study plan should not include returning individual results to subjects.

Note: This category applies only to analysis of data from a repository of identifiable data, not to the creation or maintenance of such a repository. At this time, the UHSRC does not support the use of broad consent for administrative reasons. Contact the Office of Research Compliance at research_compliance@emich.edu with any questions.

None of the above.

Exempt Documents

Attach the following documents in MS Word:

1. Consent form
2. Recruitment scripts, email texts, social media texts, letters, fliers, etc.
3. Study measures: surveys, interview questions, educational tests, focus group questions, etc. (if not attached in Study Abstract and Summary section)

Recruitment Email (4).docx

Social Media Post (1).docx
Describe the consent process

Explain how, when, where, and by whom consent will be obtained. For studies involving minors, include a description of how, when, where, and by whom assent will be obtained. Consent will be obtained through detailed the consent page preceding the survey, through Google Forms. Only participants aged 18 years or older can participate. Participants will only be able to access the rest of the survey beyond the first question if they respond "yes" to the first question of the form. Participants responding "no" will be thanked for their time and will not be able to access the survey.

Participants who identified on the autism spectrum will next see an optional section in which they will be asked for consent through a link to a separate Google Form to provide identifying information (participant's email address) for contact for future research. If the participant wishes to remain anonymous, they are instructed to skip this section.

If they follow the link, the participant is again informed in the separate Google Form that they can consent to provide their email address if they wish to be contacted for future studies, and will be instructed to exit the browser tab if they do not wish to do so. The purpose of this double consent process is to avoid pressuring participants on the autism spectrum to share their contact information, and ensure they feel free to revoke their consent if uncomfortable.

Will subjects be compensated for participation?

Note: Compensation does not include refreshments provided during participation.

Yes
✔️  No
Please see the EMU Board of Regents Policy 6.4.4: [Research Data Retention](#).

Explain how you plan to protect subject privacy.

*Privacy refers to the individual person and not the data.*

While several questions related to demographics will be asked, the demographic information collected will be too broad to identify individuals through a mass survey, and Google Forms does not record respondent IP addresses. Email addresses will not be collected without the affirmative consent of each participant, and the email addresses of those participants would only be viewable by the PI and thesis advisor.

Self-identified autistic participants who choose to provide their email addresses can do so through a separate Google Form that will be linked though the original survey, in order to ensure any provided email addresses are recorded separately from participant responses. It is not required to provide an email address to participate, it is only there for those interested being recruited for future qualitative studies involving autistic speech-language pathologists.

Because the survey responses and optional email addresses are recorded using separate consent processes, forms, and spreadsheets, they will not be linked to the results of the main survey.

Data collected will be:

*Check only one.*

- **Anonymous**

  *Subjects cannot be identified directly, indirectly through a study ID code and key, or through combination of elements in the data set (e.g., job title and employer).*

- **Coded**
Data file does not contain subjects' identifiable information, but there is a separate key that links study ID codes with subjects' identifiable information.

Identifiable

Data file contains direct identifiers, such as name, phone number, social security number, EID number, or elements that, when combined, allow for identification (e.g., job title and employer). Audio and video recordings are considered identifiable.

How do you plan to keep data confidential?

Include special precautions for identifiable or coded data, and address how data in multiple media (e.g., paper data, electronic data, audio recordings, etc.) will be stored.

All data will be stored on a restricted Google Drive that can only be accessed by the primary investigator and thesis chair through the institutional password-protected logins with two-factor authentication provided by Eastern Michigan University.

Survey data will not contain identifiers. All responses will be analyzed in aggregate form.

The second Google Form, in which self-identified autistic participants may provide their email addresses, will feed into a different Google Sheet. This is to ensure email addresses can't be linked to survey responses.

How will research results be disseminated?

Include plans for protection of privacy/confidentiality in publications, presentations, and other methods of dissemination.

The PI intends to submit results from this research to professional conferences and publications once the study is complete. All data will be confidential, as no identifiable information is collected.
Attachments

Faculty Advisor CITI certificate

CITI_refresh_Feb2022.pdf

PI CV

EMUResume.pdf

PI CITI certificate

RF_CITI_Completion_Certificate.pdf

Research Staff CITI certificates

Exempt forms: consent/assent, recruitment, study questions if applicable

Recruitment Email (4).docx

Social Media Post (1).docx