SPEECH-LANGUAGE PATHOLOGISTS' PRACTICES DURING ASSESSMENTS WITH LINGUISTICALLY DIVERSE CHILDREN

by

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Dalhousie University is located in Mi'kma'ki, the
ancestral and unceeded territory of the Mi'kmaq.
We are all treaty people.

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ABSTRACT

This study investigates the assessment practices used by Speech-Language Pathologists (SLPs) when working with linguistically diverse children in Canada. An online survey was used to collect data on the current approaches used and the barriers faced in the provision of appropriate assessment services by SLPs. The survey was completed by 118 SLPs from across Canada. Results show that the majority of SLPs use non-standardized approaches (e.g., family interviews, language samples and dynamic assessments) as well as standardized approaches (e.g., standardized tests in English) when assessing this population. The main challenges reported by clinicians were the lack of appropriate assessment tools, insufficient societal and structural support for assessments with diverse populations, and the inability to speak the child's heritage language. These findings provide updated information that can inform the development of best practices for SLPs working with linguistically diverse children and contribute to professional development initiatives and university programs' curriculum development.

LIST OF ABBREVIATIONS USED

ALDeQ: Alberta Language and Development Questionnaire

ANOVA: Analysis of Variance

BESA: Bilingual English-Spanish Assessment

CLD: culturally and linguistically diverse

CELF-5: Clinical Evaluation of Language Fundamentals – Fifth Edition

ELL: English Language Learner

EVT-3: Expressive Vocabulary Test—Third Edition

MBCDI: MacArthur-Bates Communication Development Inventories

OSLA: Ontario Association of Speech-Language Pathologists and Audiologists

PPVT: Peabody Picture Vocabulary Test

REB: Research Ethics Board

Rossetti: Rossetti Infant-Toddler Language Scale

SD: Standard Deviation

SLAM: School-Age Language Assessment Measures

SLP: Speech-language pathologist

SLP: Speech-language pathology

SAC: Speech-Language and Audiology Canada

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CHAPTER 1:

INTRODUCTION

Canada is a linguistically diverse country with an increasing number of children who are bilingual and/or who speak languages other than the country's official languages (Schott et al., 2022; Statistics Canada, 2022). This linguistic diversity is especially relevant to speech-language pathologists (SLPs), as some of these children exhibit communication difficulties and are referred for speech and language services (Kay-Raining Bird et al., 2016). Yet, only a few studies have examined the practices used by SLPs when assessing this population and the challenges encountered for the delivery of appropriate services to these children (e.g., Santhanam & Parveen, 2018). Furthermore, SLP service delivery has been impacted by many developments in the last years, including the COVID-19 pandemic (Campbell & Goldstein, 2021) and changes in the awareness about globalization and multiculturalism (Hyter & Salas-Provance, 2021).

The present study aims to provide new information on the current practices used by SLPs' when assessing linguistically diverse children in Canada. We define linguistically diverse children as children (birth to 18 years old) who communicate in two (bilingual) or more (multilingual) languages, who are non-mainstream dialect users (e.g., an Indigenous English dialect), or who are monolingual in a language other than English or French (e.g., a newcomer child who only speaks Mandarin). Through an online survey, we asked SLPs in Canada about their current attitudes towards assessing linguistically diverse children, the approaches they commonly use, and barriers they face in conducting appropriate assessments. Findings from this thesis provide valuable information on current practices used to assess linguistically diverse children, which in turn can inform

professional development initiatives and graduate programs' curriculum development. These findings can also guide the development of position statements and best practices for SLPs that are person-centered, holistic and catered towards a multilingual society

CHAPTER 2:

LITERATURE REVIEW

2.1 Linguistic and Cultural Diversity in Canada

Recent census data show that Canada's population is becoming more linguistically and culturally diverse (Statistics Canada, 2022; Verdon et al., 2016). *Linguistic diversity* arises from differences in the languages, dialects and ways that people communicate (Clark et al., 2021), whereas *cultural diversity* describes differences between groups of people in terms of customs and beliefs (Gillam & Marquardt, 2019). These two concepts are closely intertwined and are not mutually exclusive; it is possible for groups to identify with just one of these backgrounds (i.e., "linguistically diverse" or "culturally diverse") or both (i.e., "linguistically and culturally diverse"). While knowledge of both cultural diversity and linguistic diversity is pertinent to the comprehensive role of the SLP, the focus of this thesis is on linguistic diversity—while simultaneously acknowledging that culture and language are closely related.

In Canada, there are over 450 languages spoken and 21% of Canadians report speaking a first language other than English or French (Statistics Canada, 2022). The most common non-official languages spoken in Canada are Mandarin, Punjabi, Cantonese, Spanish, and Arabic (Statistics Canada, 2022). Similarly, there are over 450 different ethnic origins reported in Canada, the most common being Canadian, English, Irish, Scottish, French, German, Chinese, and Indian (Statistics Canada, 2022). Additionally, the Indigenous Canadian population is prominent, as 2.2 million people have Indigenous ancestry (e.g., Métis, Inuit, Cree, Mi'kmaq, Ojibway; Statistics Canada, 2022). Given these demographics, SLPs can expect to encounter linguistically diverse

clients on their caseloads (D'Souza et al., 2012). Clinicians must consider this diversity and incorporate "knowledge of, and respond to, the unique needs of linguistically, sexually and culturally diverse populations into practice," (The Canadian Alliance of Audiology and Speech-Language Pathology Regulators, 2018, p. 6).

The Canadian geographic region where SLPs work can also impact the specific non-official languages spoken by children on clinicians' caseloads. In the territories (i.e., the Northwest Territories, Nunavut, and Yukon), the local Indigenous languages are most prevalent (Statistics Canada, 2022). For instance, Inuktitut and Inuinnaqtun are the most common languages spoken in Nunavut, whereas in the Atlantic provinces (i.e., New Brunswick, Nova Scotia, P.E.I., Newfoundland), Arabic is one of the most common non-official languages spoken (Statistics Canada, 2022). An awareness of these linguistic differences based on the region can help SLPs to better prepare, serve, and honour the diversity in their community.

2.2 Importance of Appropriate Speech and Language Assessment

Assessing the speech and language abilities of linguistically diverse children requires a thoughtful and reflective approach. This includes acknowledging and understanding variations and similarities in languages, perceptions about language, and cultural needs of all individuals (Hyter & Salas-Provance, 2021). By adhering to these values, assessments would align with culturally responsive ideologies and linguistically diverse children could be more accurately represented on SLP caseloads (Hendricks & Diehm, 2020; Hopf et al., 2021).

2.2.1. Defining Cultural Responsiveness

Culturally responsive practice lies at the heart of embracing language diversity and is essential for service providers to effectively work with individuals from different cultures and linguistic backgrounds (Hopf et al., 2021; Hyter & Salas-Provance, 2021). It encompasses values and knowledge that consider how social, historical, and cultural factors affect clients' beliefs and needs (Betancourt et al., 2003 as cited in Grandpierre et al., 2018; Hopf et al., 2021). Additionally, cultural competence, awareness, humility, sensitivity, safety, and advocacy are critical components related to a responsive approach that involves showing respect for cultural differences (Oelke et al., 2013; see Ward et al., 2016, for a comprehensive discussion of these terms). Culturally responsive practice is an ongoing and reflective journey of learning that requires acknowledging and understanding diverse experiences, as well as developing the skills to provide appropriate care for the diversity of clients that SLPs serve (Hyter & Salas-Provance, 2021). Furthermore, this practice should involve a collaborative approach where SLPs consider the context, the individual, the culture, the community, and the entire interprofessional team to provide appropriate speech and language services (Hopf et al., 2021; Hyter & Salas-Provance, 2021). This holistic approach is particularly important for SLPs, given the intricate connection between language and culture.

2.2.2 Embracing Individual Differences

Despite the heterogeneous populations it serves, the profession of SLP has been described as having linguistic and cultural homogeneity (McLeod et al., 2013). That is, recommendations for SLP practice have idealized a "gold standard" that is constructed on prescriptivist language values and modelled after the cultural beliefs, expectations and

linguistic standards of the White-middle class (Hopf et al., 2021; Verdon et al., 2015), which typically reflects only the needs of the dominant language and culture. Crucially, SLPs should adopt an approach that welcomes and promotes positive attitudes towards language variation, with knowledge of the unique linguistic expressions caused by regional, social, ethnic, and cultural differences (Clark et al., 2021; Hyter & Salas-Provance, 2021; Verdon et al., 2015). For example, dialects of African American English have specific phonological and syntactic features that vary compared to other dialects of Canadian English or American English (Hendricks & Diehm, 2020). Speech-language pathologists must recognize that all dialects and variations of language are complex, rule-governed systems of language—none is inherently superior over another (Hendricks & Diehm, 2020). This neutrality is crucial for SLPs to be able to distinguish language differences from disorders (Clark et al., 2021; Hyter & Salas-Provance, 2021).

Speech-language pathologists should also understand how perceptions about communication difficulties differ across cultures (McLeod et al., 2013). For example, some diagnostic labels such as "speech sound disorder" used in North America may not be used universally and can carry negative connotations in certain cultures (Verdon et al., 2015). Moreover, the expectations for the roles of health care providers and the roles and behaviours of children can also vary significantly depending on the cultural context (McLeod et al., 2013). For instance, in Samoan societies, respect for elders is highly valued and children are often taught to demonstrate this by being attentive listeners rather than active participants in conversations with adults. Consequently, interactions between adults and children in Samoan societies may contrast with the typical practices of clinicians working in Western societies (McLeod et al., 2017). Finally, perceptions

around language aquisiton vary across cultures (Verdon et al., 2015). For example, developmental and language milestones are used to track children's development in many Western societies, but may not be prioritized elsewhere (Smith, 2022). Given this variation, SLPs must be able to individualize their services and adhere to culturally appropriate and person-centered care when working with linguistically diverse children.

2.2.3 Accurate Representation on Caseloads

Providing appropriate assessments for linguistically diverse children involves ensuring that they are accurately represented on SLPs' caseloads and that they are correctly diagnosed with communication disorders when these exist (McLeod et al., 2013). Linguistically diverse children may be underrepresented or overrepresented on SLP caseloads, and both of these scenarios are harmful (Bedore & Peña, 2008; McLeod et al., 2013). Linguistically diverse children who are learning the dominant societal language (i.e., English or French in Canada), may be mistakenly referred to SLP services when they do not have a communication disorder due to their limited proficiency in the majority language (Kritikos, 2003). Similarly, the wrongful characterization of dialectal differences as communication disorders can result in overidentification of communication disorders (Hendricks & Diehm, 2020). These errors can lead to negative associations with a child's heritage language or dialect and culture (Smith, 2022). Contrarily, linguistically diverse children may be under-diagnosed with communication disorders when their difficulty with language is wrongfully attributed to their linguistic background (Smith, 2022). This can have important repercussions given that when children do not receive appropriate early intervention, there can be lasting effects on language development (Clark et al., 2021). Clinicians must therefore understand the development, linguistic

features of, and cultural beliefs about, various languages and dialects to provide culturally responsive assessments (Hopf et al., 2021; Hyter & Salas-Provance, 2021). This will ensure that multilingual and diverse children are accurately represented on SLPs' caseloads (Hendricks & Diehm, 2020; McLeod et al., 2013).

2.3 Assessment Approaches with Linguistically Diverse Children

As previously discussed, SLPs working in Canada can expect to encounter linguistically diverse children in their caseloads. Although research on assessments for this population in Canada is limited (e.g., D'Souza et al., 2012), studies from other countries, including the U.S.A., Australia, Guam, and Singapore are available. This research has found that SLPs worldwide report numerous barriers to the appropriate provision of services for these children (e.g., Kritikos, 2003; Parveen & Santhanam, 2021; Teoh et al., 2018; Williams & McLeod, 2012). Speech-language pathologists employ various assessment approaches with linguistically diverse children. These approaches include different materials (e.g., standardized and non-standardized tests), service delivery components (e.g., the language used for assessment) and human resources (e.g., interpreters). The next section presents key aspects of these assessment practices emphasized in research conducted in other countries. Following that, the findings from the Canadian studies will be presented.

2.3.1 Materials

2.3.1.1 Standardized Assessments. To have a comprehensive picture of the language skills of linguistically diverse children, there is a need for different methods of assessment (Kohnert, 2010). Yet, many SLPs still rely on standardized tests designed for monolingual children who speak the mainstream dialect when assessing linguistically

diverse children (Teoh et al., 2018; Williams & McLeod, 2012). There are various approaches SLPs can take with these tests, including conducting standardized tests in the societal language (e.g., English or French in Canada) with no modifications, translating tests into the child's heritage language (i.e., language spoken by the child's family), or using tests with modified scoring methods. The sufficiency of each of these approaches will be further discussed.

Prior studies from English-speaking countries (e.g., the U.S.A., Australia) have reported that standardized tests in English remain the most common approach used when assessing linguistically diverse children (Harris, 2004; Teoh et al., 2018, Williams & McLeod, 2012). However, there are important limitations to consider with this approach. For instance, standardized tests can be biased, given that they are designed for a specific population (i.e., usually the mainstream culture) and can include items that might not be shared across communities and cultures (Kohnert et al., 2003; Teoh et al., 2018; Williams & McLeod, 2012). This bias can lead to lower scores for children who are not familiar with some test items, even when they do not have a language disorder (Williams & McLeod, 2012). In fact, prior research has shown that some typically developing bilingual children score lower on standardized tests when compared to their monolingual peers (Bialystok et al., 2010; Caesar & Kohler, 2007; Thordardottir, 2015).

Additionally, most standardized tests do not account for the variation observed in bilingual language acquisition and language learning across cultures (Roberts, 2008), as well as for the effects of language transfer, code-mixing and other factors unique to bilingual language acquisition (Teoh et al., 2018). Language development is influenced

by the beliefs, socialization techniques and childrearing practices of different cultures, all of which cannot be captured in a standardized test (Lieven, 2013).

Standardized tests can be used with linguistically diverse children to identify areas of difficulty and plan for intervention (Clifford, 2023). However, test results should not be scored or compared against the test norms, as the majority of tests are not normed with children from linguistically diverse backgrounds (Clifford, 2023; McLeod et al., 2017). Tests that are normed for a specific population can be used with bilingual children if they fall within the intended demographic of that test (e.g., children who speak English and Spanish can be assessed with the Bilingual English-Spanish Assessment; BESA; Peña et al., 2018). However, the majority of standardized tests currently available do not include a representative sample of bilingual children or specific demographic groups beyond the mainstream language and culture (Teoh et al., 2018; Williams & McLeod, 2012).

To account for variation in dialects within languages, some standardized assessments include modified scoring methods (e.g., Clinical Evaluation of Language Fundamentals–Fifth Edition; Wiig et al., 2013) and translations to different languages (Hendricks & Diehm, 2020). Unfortunately, these tests are often inadequate to assess linguistically diverse children even after translation to the child's language(s) (Teoh et al., 2018; Williams & McLeod, 2012). This is due to the fact that items effective in measuring development in one language are not necessarily effective when measuring another (Teoh et al., 2018; Williams & McLeod, 2012). For example, a word such as "bat" which has only one syllable and phonemes that are acquired early in speech development (i.e., by age three; Bernthal et al., 2022), may be used in English

assessments. However, its equivalent word in Spanish, “murciélago” has five syllables and phonemes that are acquired later in speech development (e.g., /r/ acquired by age six; Bernthal et al., 2022), rendering this test item not phonologically or developmentally equivalent in the two languages or across different dialects (Roberts, 2008). Ultimately, assessments created for the client’s language are more accurate than translated tests, as the intended concepts and difficulty level may not transfer to the translated version (Smith, 2022).

2.3.1.2 Non-standardized Assessments. Non-standardized assessments are often recommended as a more valid assessment option for linguistically diverse children (Paradis, 2016). Non-standardized approaches can include dynamic assessment (Williams & McLeod, 2012), language sampling (Teoh et al., 2018; Williams & McLeod, 2012), processing measures (Pieretti & Roseberry-McKibbin, 2016) and clinical judgment (Teoh et al., 2018). Clinicians have also reported some challenges using non-standardized measures to assess the communication skills of linguistically diverse children (Teoh et al., 2018), but when these measures are culturally relevant and appropriate, they can be used to accurately identify linguistically diverse children with speech and language disorders (Eriks-Brophy, 2014).

Dynamic assessment tests a child’s ability to learn new language components and does not require previous language knowledge (Teoh et al., 2018; Williams & McLeod, 2012). In this approach, the test-teach-retest method is used to support the development of different language skills such as vocabulary (Pieretti & Roseberry-McKibbin, 2016). This method proved useful at distinguishing typically developing bilingual English-Spanish children from bilingual children who had speech and language disorders (Pieretti

& Roseberry-McKibbin, 2016). Critically, clinicians must consider how cultural upbringing can influence performance in these types of assessment (e.g., behaviours such as turn-taking and eye-contact differ across cultures; De Lamo White & Jin, 2011) and compare the performance of linguistically diverse children to those of children from the same culture, which is not always feasible (De Lamo White & Jin, 2011).

Language sampling is a technique where a child's spontaneous speech (e.g., 50-100 utterances) is elicited and then transcribed by the clinician (Teoh et al., 2018). This sample is used to gather data regarding the child's current language skills (Teoh et al., 2018; Williams & McLeod, 2012). It can take a considerable amount of time to gather a sizable sample (Caesar & Kohler, 2007). Some clinicians consider recording and transcribing only notable aspects and errors when using this practice (Verdon et al., 2015). However, it is recommended that clincians conduct a full language sample, as this approach has been deemed one of the most effective techniques for working with linguistically diverse children, particularily when executed comprehensively (Caesar & Kohler, 2007).

Processing measures are cognitive-linguistic approaches that aim to assess cognitive processing, such as working memory and attention, rather than strictly testing linguistic abilities (Pieretti & Roseberry-McKibbin, 2016). Children are given tasks such as memorizing vocabulary, repeating sentences of increasing complexity, or repeating non-words. A constraint of these tools is their potential bias, as they may reflect linguistic knowledge that pertains to one language more than another (Eriks-Brophy, 2014). Despite the potential for bias, this assessment method can still be useful for working with linguistically diverse children, considering these tasks aim to reduce the need for

extensive cultural or common societal knowledge (Pieretti & Roseberry-McKibbin, 2016). Children with typically developing language perform well on these information processing tasks compared to their peers with communication disorders (Pieretti & Roseberry-McKibbin, 2016).

Additional non-standardized assessment approaches include use of naturalistic observations (e.g., observing the child, using rating scales, or interviewing parents and teachers to report on the child's communication; Caesar & Kohler, 2007), response to intervention (Pieretti & Roseberry-McKibbin, 2016), and sociocultural considerations (e.g., dialectal variations and the cultural identity of the family; De Lamo White & Jin, 2011). One challenge of many of these non-standardized approaches is that they tend to result in an increased time commitment for the clinician, which might impact their workload (Teoh et al., 2018). Moreover, previous studies suggest that some SLPs may lack the necessary level of competence to use non-standardized assessments given insufficient knowledge and training on how to implement these methods (Kimble, 2013; Maul, 2015; Williams & McLeod, 2012).

2.3.2 Service delivery

There are certain additional considerations to SLP service delivery for linguistically diverse children. These include the choice of the language used for assessment, the time commitment, and financial constraints. These issues are important to detail, as they are contributing factors to SLPs' comfort level for assessing linguistically diverse children. Additionally, they are necessary to examine to adequately prepare and provide holistic services (Kimble, 2013; Williams & McLeod, 2012).

2.3.2.1 Language of Assessment. Increasingly in recent years, SLPs encourage parents to expose their child to their heritage language, as speech and language skills are core to child development, autonomy, and social participation (Verdon et al., 2015). However, the assessment of the heritage language can be challenging during SLP evaluations if the SLP does not speak this language. Examples have been provided where there are differences in languages spoken between the clinicians and clients, including Canada (D'Souza et al., 2012), Australia (Clark et al., 2021), and the U.S.A. (Parveen & Santhanam, 2021). To get a complete idea of a child's linguistic ability, it is recommended to assess all their languages; however, whether the child's heritage language is assessed or not depends on the SLP's professional perspective and comfort level with the language(s) (Pieretti & Roseberry-McKibbin, 2016). The SLP must consider several important factors regarding the language of assessment: the child's age, time of acquisition of the language(s), proficiency in their language(s), context in which the languages were learned, and the child's internal (e.g., attitude towards their languages) and external (e.g., the language environment, the community, and society) factors (Caesar & Kohler, 2007). If a child has very limited proficiency in their second language, testing only the primary language is a viable option (Pieretti & Roseberry-McKibbin, 2016). Additional factors further complicate the choice of language for assessment. For example, some settings that provide speech and language assessments have policies that regulate the languages that can be used for assessment, such as immersion programs in schools (Verdon et al., 2015) and laws surrounding official languages (De Valenzuela et al., 2016). Moreover, a parent or caregiver may have preferences that influence the choice of language used for assessment (Verdon et al.,

2015). Ultimately, while it is important to take parental language preferences into consideration, clinicians are equipped with the expertise to make descisions following best practices (Maul, 2015; Paradis, 2016). They must weigh all pertinent factors concerning the assessment language, assess the child comprehensively, and consider the long-term ramifications of language decisions.

2.3.2.2 Time Commitment. The time commitment necessary for assessments with linguistically diverse children varies greatly and may be a constraint for some SLPs and families. SLPs may require more time during assessments with this population to prepare materials, implement additional measures and collaborate with human resources. Prior to assessment, SLPs must gather information about the client's case history, and their family languages and cultures (McLeod et al., 2013). Similarly, approaches recommended for working with diverse families, such as recording and transcribing language samples, can be time-consuming (Verdon et al., 2015). Finally, working with linguistically diverse children often requires additional resources, such as interpreters, which introduces another factor to schedule and coordinate throughout the assessment process. This can be particularly challenging for interpreters who are hired from separate organizations rather than being directly employed by SLP practices, as aligning their time commitments with those of the clinician may be difficult (Kritikos, 2003; Roberts, 2008). Assessment sessions that require the assistance of a language interpreter must also be allocated more time compared to an assessment with a monolingual child who speaks the majority language (Santhanam et al., 2019).

2.3.2.3 Financial Barriers. Assessments for linguistically diverse clients can be hindered by financial barriers. First, acquiring supplemental language tests and materials,

such as children's books in multiple languages, can be an added expense for SLP practices (Roberts, 2008). Second, access to interpreters can be restricted by funding. For example, the federal law in Canada mandates education in both official languages and thus, funding may be prioritized for French and English language programs but not for other languages (De Valenzuela et al., 2016). Although professional interpreters may be funded externally, certain work settings might not have the resources and funds necessary to accommodate interpreters (e.g., schools and hospital SLP settings in particular; Santhanam et al., 2019). Speech-language pathologists have described cases where funding was provided for interpreters in assessments, but not for subsequent intervention sessions (Roberts, 2008). As a result, some SLP practices may not have adequate access to interpreters for linguistically diverse clients.

2.3.3 Human Resources

Human resources are necessary to aid with translation and communication with the client when the SLPs' knowledge of the client's language is insufficient. To assess linguistically diverse children's language skills, SLPs can collaborate with different people such as professional interpreters (Harris, 2004; Kritikos, 2003; Williams & McLeod, 2012), untrained interpreters (e.g., family members, Williams & McLeod, 2012), SLPs or educators who speak the client's language (Kohnert et al., 2003; Santhanam et al., 2018), or cultural brokers (i.e., someone who navigates a cultural barrier in the way a language interpreter navigates a language barrier; Huang et al., 2019). Clinicians report limited availability of these human resources during speech and language evaluations (Harris, 2004; Williams & McLeod, 2012), which results in English often being the only

language used for assessment, despite clients' varying levels of English proficiency and other languages spoken (Caesar & Kohler, 2007; Williams & McLeod, 2012). The use of trained and untrained interpreters, as well as the challenges that arise with these human resources, will be detailed below.

2.3.3.1 Professional Interpreters. Professional interpreters are individuals who are proficient in at least two languages and have received training to work in interpretation (Santhanam et al., 2019). While professional interpreters can be useful resources during speech and language assessment, SLPs report multiple challenges working with them (McLeod et al., 2013). One of the primary challenges that SLPs face is that the access to interpreters varies across different SLP work settings. For instance, in a study conducted in the U.S.A. by Hammer et al. (2004), SLPs reported that rural areas have less access to interpreters than urban areas. Another challenge pertains to the quality of service provided by some interpreters. In contrast to other avenues of healthcare, interpreters working in SLP services are not only needed to transmit the content of the message between clinician and client, but also the complexities of speech patterns and errors (Huang et al., 2019). However, SLPs have reported feeling unsure of the accuracy of the translation, as some interpreters may alter the client's phrases, omit essential information, or relay the client's message without using the client's actual words (Roberts, 2008; Smith, 2022). These difficulties might arise due to the lack of equivalent linguistic terms across languages or the interpreter's limited experience working in SLP practices. To address these challenges, interpreters should be trained to work in SLP contexts and clinicians should participate in briefing the interpreter prior to the session as well as debriefing afterwards (Langdon & Saenz, 2016).

2.3.3.2 Untrained Interpreters. Untrained interpreters are individuals who have some proficiency in at least two languages, but have not received training specific to language interpretation (Santhanam et al., 2019). New challenges arise when family members or other untrained personnel act as an interpreter (Jordaan, 2008). Untrained interpreters may not be equipped to meet the demands of an interpreting role, resulting in a mismatch between SLP expectations and interpreter performance (Huang et al., 2019). For instance, SLPs have reported that sessions are less structured when a client's family member or friend acts as an interpreter, there is also more difficulty communicating ideas that use technical language, and complications can arise maintaining privacy and client confidentiality (Santhanam et al., 2019).

2.3.3.3 Other Professionals. Depending on the SLP service setting, interpretation can involve other professionals. For example, interpretation may be performed by a teacher or a bilingual SLP co-worker. These professionals have varying degrees of training for translation, and as a result, many of the previously mentioned challenges might still be present. The presence of an interpreter may also hinder the SLP's ability to connect personally with the client (Roberts, 2008). For example, SLPs describe cases where the interpreter led the assessment session in place of the clinician due to unclearly defined role expectations prior to the session (Huang et al., 2019). Furthermore, the time it takes to communicate through an interpreter can make interactions feel unnatural and impede, to some extent, the flow of the session (Roberts, 2008). More research is necessary to better understand the needs of SLPs when working with interpreters and to establish best practices for effective communication (Huang et al., 2019).

2.3.3.4 Insufficient Training to Work with Interpreters. While interpreters can help provide higher quality care for linguistically diverse clients, SLPs report that when they have not received sufficient training to work with them, interpreters can exacerbate, rather than improve, the delivery of services to linguistically diverse clients (Santhanam et al., 2019). In recent years universities have enhanced their programming regarding training to work with linguistically diverse children in some areas (Parveen & Santhanam, 2021). For example, in the U.S.A., SLPs are being trained to work with bilingual-specific assessment tools and university programs are improving their education on second language acquisition and cultural humility (Parveen & Santhanam, 2021). However, SLPs report that training to work with interpreters has been insufficient (Harris, 2004; Williams & McLeod, 2012). Prior studies have shown that only around 25% (Hammer et al., 2004; Kritikos, 2003) or 50% (Guiberson & Atkins, 2012) of SLPs have received training specific to working with interpreters. In many graduate programs, there are no specialized courses on this topic or it is a small subset of one course (Santhanam et al., 2019). This means SLPs do not have enough information to utilize this type of resource when entering the workforce (Santhanam et al., 2019).

2.3.4 Assessment Approaches and Challenges Specific to the Canadian Context

While studies from other countries have provided important insights into SLPs' approaches when working with linguistically diverse children, less research has been conducted in Canada to understand this topic. To our knowledge, only a handful of studies have examined practices used by SLPs working in Canada (e.g., D'Souza et al., 2012; Jordaan, 2008; Marinova-Todd et al., 2016). The study most comparable to the present investigation was conducted by D'Souza et al. (2012), who surveyed monolingual

and bilingual SLPs working with a diverse range of adult and pediatric clients to determine the state of linguistically competent services provided by SLPs in Canada. D'Souza et al.'s (2012) study included 344 survey responses from SLPs. This study addressed various aspects of both assessment and intervention, including assessment strategies (e.g., language samples), resources (e.g., cultural data, interpreters, and training), and barriers to appropriate assessments (e.g., language obstacles and biased tools).

Key findings of relevance to this thesis include the fact that, despite working with clients who speak many languages, the majority of clinicians treated and assessed clients exclusively in the clinicians' own language and 72% of clinicians identified "language" as a common barrier in service delivery (D'Souza et al., 2012). Additionally, many SLPs lacked access to essential resources, such as bilingual SLPs, assessment tools in the client's languages, language-specific norms, developmental information, and adequate training to work with diverse clients (D'Souza et al., 2012). Given these challenges, SLPs emphasized the importance of supports and resources such as interpreters, sufficient training, and informal assessment methods to deliver appropriate services (D'Souza et al., 2012). D'Souza et al.'s (2012) study highlighted both similarities and differences in the delivery of SLP services and the challenges faced compared to other countries. The subsequent section provides a more in-depth discussion of these key similarities and differences.

D'Souza et al.'s (2012) findings revealed that SLPs use a variety of non-standardized assessment when working with linguistically diverse children in Canada, such as naturalistic observations, language samples, and dynamic assessments. These

results contrast with assessment practices reported by SLPs in other countries (e.g., Kohnert et al., 2003; Kritikos, 2003), who tend to rely more on standardized tests for assessment (e.g., Teoh et al., 2018; Williams & McLeod, 2012). Regarding challenges to the provision of services, D'Souza et al. (2012) reported that SLPs' challenges were similar to findings from other countries (e.g., Kohnert et al., 2003; Kritikos, 2003). These barriers included insufficient human resources, financial constraints, time limitations, and inadequate materials (D'Souza et al., 2012; Harris, 2004; Kritikos, 2003; Williams & McLeod, 2012). Specifically, there was a shortage of professional interpreters and SLPs proficient in the clients' language(s) (D'Souza et al., 2012). The use of untrained interpreters resulted in errors, inaccurate translations and added time to assessments, emphasizing the need for more interpreter training (D'Souza et al., 2012). Additionally, the cost of professional interpreters was a financial barrier identified to appropriately servicing linguistically diverse clients. Finally, SLPs reported an insufficient availability of non-biased assessments and developmental norms in varied languages to interpret language samples and work with clients in their preferred language (D'Souza et al., 2012).

Most barriers to the appropriate service provision for linguistically diverse clients arose due to language differences between clinicians and clients, which was a consistent finding across studies conducted in Canada (D'Souza et al., 2012) and other countries, including Australia (Clark et al., 2021) and the U.S.A. (Maul, 2015). In the D'Souza et al. (2012) study, the survey respondents reported speaking a combined 32 languages; whereas their clients spoke a total of 87 languages. Other than English and French, the most common languages spoken by clients were Spanish, Arabic and Urdu, and the most

common languages spoken by clinicians were Spanish, German, and Italian (D'Souza et al., 2012). These findings highlight the challenges of providing linguistically appropriate services in a multilingual context.

2.4 The Current Study

There is insufficient information on the current approaches SLPs use and the barriers to appropriate service provision when assessing linguistically diverse children in Canada, with only a handful of studies available (e.g., D'Souza et al., 2012). More important, the few studies on this topic are not specific to the pediatric population or are no longer current due to various factors since their completion, such as shifts in population due to increased immigration, the growing focus on diversity, equity, and inclusion, and recent events relevant to Canada. For example, the COVID-19 pandemic is a recent event that may exacerbate existing challenges or create new challenges (Campbell & Goldstein, 2021; Smith, 2022) and more recent information is needed to gain an understanding of clinicians' needs. Additionally, despite increasingly positive attitudes towards communication disorders and bilingualism in pediatric clients in Canada, recent studies suggest a gap between SLPs' beliefs and actual practices in assessing these children (Jordaan, 2008; Marinova-Todd et al., 2016). This further underscores the need for updated information that can inform the development of best practices for the provision of culturally responsive services to linguistically diverse children.

2.4.1 Research Questions

The present study examines SLPs' clinical practices with linguistically diverse children in Canada by exploring two research questions.

1. What are the current approaches SLPs in Canada use when assessing linguistically diverse children?
2. What barriers to service provision do SLPs report during assessment of linguistically diverse children?

CHAPTER 3:

METHODS

3.1 Material

An online survey was developed to gather information about SLPs' practices and challenges for the provision of appropriate services to linguistically diverse children. The survey was created using Opinio, a secure data repository hosted by Dalhousie University that is specifically designed to support data collection for research (Patridge & Bardyn, 2018). The survey questions and results described here were part of a larger survey examining the practices of SLPs with linguistically diverse children. Findings from the larger survey will be reported elsewhere. The survey questions were modeled from D'Souza and colleagues (2012) survey, as well as studies conducted in the U.S.A. (Harris, 2004; Kohnert et al., 2003; Kritikos, 2003; Maul, 2015), Singapore (Teoh et al., 2018) and other countries (Jordaan, 2008). This study also included original elements that had not yet been explored in research (i.e., information regarding specific assessment approaches used with linguistically diverse children).

The survey included 27 questions and consisted of 2 parts: (a) a demographics section and (b) an assessment and intervention practices section. Questions relevant to assessment practices (questions 1-18, 21-25 and 27) are reported in this thesis. The survey included various question formats, such as open-ended, multiple-choice, yes/no questions and rating scales (i.e., Likert-scale questions and matrix questions). The demographics section included 11 questions regarding participants' language and professional background. SLPs were asked to describe their education level, language background, region of work, years of work experience with children, and the percentage

of culturally and linguistically diverse children on their caseloads. The rationale behind these questions was to explore trends between different demographic groupings (e.g., trends based on language background) and assessment practices.

The assessment and intervention practices section included 15 questions and was divided into three subsections: (a) approaches, (b) training, and (c) challenges. The approaches section asked clinicians about different materials used for assessment (e.g., standardized and non-standardized tests), work with human resources (e.g., interpreters), and language(s) of assessments used with linguistically diverse children in their practice. The challenges section asked participants to identify major challenges they face related to the appropriate provision of services to linguistically diverse children, the frequency of these challenges, and their self-reported proficiency and beliefs related to the assessment of linguistically diverse children. The complete survey is included in Appendix A.

To assess the survey's content validity, the survey was first sent to five SLPs with varied years of education and professional experience, diverse language backgrounds, and who worked in various Canadian regions (i.e., one from Atlantic Canada, one from Central Canada, and three from the West Coast). These SLPs provided detailed feedback for each question, evaluating the relevance and importance of the content, as well as the clarity of the statements used. The survey was updated based on the SLPs' feedback and was then sent to three SLPs affiliated with Dalhousie University who provided final expert input on the survey.

3.2 Procedure

Ethics approval was obtained by the Dalhousie Research Ethics Board (REB 2022-6174). Participants were recruited in Canada from November 2022 to February

2023 through professional associations (e.g., Speech-Language & Audiology Canada; SAC), provincial colleges, Canadian universities, word-of-mouth, and SLP social media groups. SLPs were eligible to participate if they were licensed clinicians currently practicing in Canada and if they reported that children made up at least 1% of their caseload. The decision to set the 1% threshold was for two reasons. First, it allowed SLPs with varying caseloads to be included in the sample, recognizing the value of perspectives from clinicians who work with children less frequently. Second, this response rate ensured that the survey met the response rate requirement and included a representative sample of SLPs in Canada.

The survey was anonymous and was designed to take approximately 25 minutes to complete, including reviewing the consent statement and completing the survey questions. Participants had the option to save their responses and revisit their answers at a later time, allowing them to complete the survey at their preferred pace before submitting it. The consent statement appeared before the first page of the online survey, informing participants of the procedures, risks, and potential benefits of the research. Email contacts from the study's researchers were provided in the consent statement so that the lead researcher and the student-investigator could answer questions. Email comments received from respondents were considered and their feedback was incorporated into this thesis. At the end of the survey, participants were thanked for their time and were asked if they would like to be entered into a draw for a chance to win one out of four gift cards of CAD $50.

3.3 Participants

A total of 201 surveys were received. Following prior studies (e.g., Bridges & Kelly, 2023), surveys with at least 90% of responses completed were kept. The high completion rate of 90% ensured minimal missing data, contributing to the statistical power and reliability of the survey results. 118 surveys (59%) were over 90% complete and were included in the analysis; the 83 incomplete surveys (41%) were under 50% complete. This number of surveys is representative and similar to the response rate of prior studies conducted in Canada (e.g., 148 participants in Affoo et al., 2023; 91 participants in Campbell et al., 2016).

3.4 Data Analyses

Data analyses were performed using a mixed methods design, including both quantitative and qualitative analyses. Descriptive statistics were used to analyze questions with numeric answers. Statistical analyses were conducted in R (R Core Team, 2022) and IBM SPSS Statistics (Version 28), including measures of central tendency (e.g., mean) and measures of variability (e.g., standard deviation and range; Kaur et al., 2018). For each question, the number and percentage of individuals responding to different survey items were tallied, providing information on the most common approaches used and the most common barriers faced by SLPs.

In order to discover exploratory trends across demographic group comparisons, *t*-tests and a type III two-way Analysis of Variance (ANOVA) were conducted. Additonally, a Tukey post hoc analysis was performed on the ANOVA outcomes. This method was chosen for its capability to control the experiment-wise type I error rates by computing adjusted *p*-values that account for the quantity of comparisons (Ruxton &

Beauchamp, 2008). The adjusted *p*-value was then contrasted with a significance level of alpha = 0.05 to determine significant differences among the demographic items (Schmuller, 2017).

An inductive qualitative analysis was conducted on the open-ended responses (i.e., survey questions 13, 15, 21, 24 and 27). The thesis author and a research assistant completed a thematic analysis, which is a research approach used to identify and analyze prominent themes and trends in qualitative data (Anderson, 2007). The thematic content analysis process outlined by Braun and Clarke (2022) was used, as follows. 1) To become familiar with the data, the researchers carefully reviewed the open-text responses. 2) For each question, they generated initial codes, subcodes, and themes. 3) Subsequently, they organized these into a coding table and refined their themes. 4) The researchers then compared and merged their coding tables for each question. 5) Finally, they incorporated feedback from the lead researcher, to produce the final report of identified themes.

CHAPTER 4:

RESULTS

4.1 Sample Demographics

4.1.1 Work and Education Background

The majority of participants reported completing a master's degree as their highest level of education in the field of speech-language pathology. A smaller number held a doctoral or a bachelor's degree[1]. The surveyed SLPs had a range of working experience, with 27% of respondents having extensive experience (i.e., working more than 20 years with a pediatric population) and 34% reporting less experience (i.e., working five years or less with a pediatric population). The remaining respondents fell within this range of experience. Additional details can be found in Table 1.

Table 1

Participants' Educational Background and Work Experience with Pediatric Population

Highest SLP Degree Completed	*n*	%
Master's	111	94 %
PhD	5	4 %
Bachelor's	2	2%
Total Years Worked with Pediatric Population	*n*	%
0 – 5 years	40	34%
6 – 10 years	21	18%
11 – 15 years	14	12%
16 – 20 years	12	9%
> 20 years	31	27%

[1] In Canada, a Master's degree is required to practice as an SLP in most provinces. Participants who reported holding a professional bachelor's degree might be international clinicians with bachelor's degrees from their countries of origin who usually undergo an equivalence process with the respective provincial professional college to obtain their clinical license.

4.1.2 SLPs' Language Background

The survey inquired about the language proficiency of the SLPs. Results indicated that many SLPs were proficient in multiple languages, a substantial number were bilingual and a smaller percentage were monolingual. Clinicians listed up to five languages they spoke and rated their proficiency in each using a four-point rating scale (*highly proficient/native; proficient; intermediate proficiency; basic proficiency*). English emerged as the most frequently reported first language, French was the second most common, followed by Arabic, Portuguese, Serbian, and Spanish. Participants reported various languages spoken as their second language, such as French, English, Spanish, German, and ASL (see Table 2).

Table 2

SLP Language Background

SLPs Language Proficiency	*n*	%
Bilingual	54	46%
Multilingual	44	37%
Monolingual	20	17%
SLPs Language 1	*n*	%
English	82	66%
French	32	27%
Arabic	1	1%
Portuguese	1	1%
Serbian	1	1%
Spanish	1	1%
SLPs Language 2	*n*	%
French	42	36%
English	32	27%
Spanish	6	5%
German	3	3%
ASL	2	2%
Cantonese	2	2%
Swedish	2	2%
Hebrew	1	1%

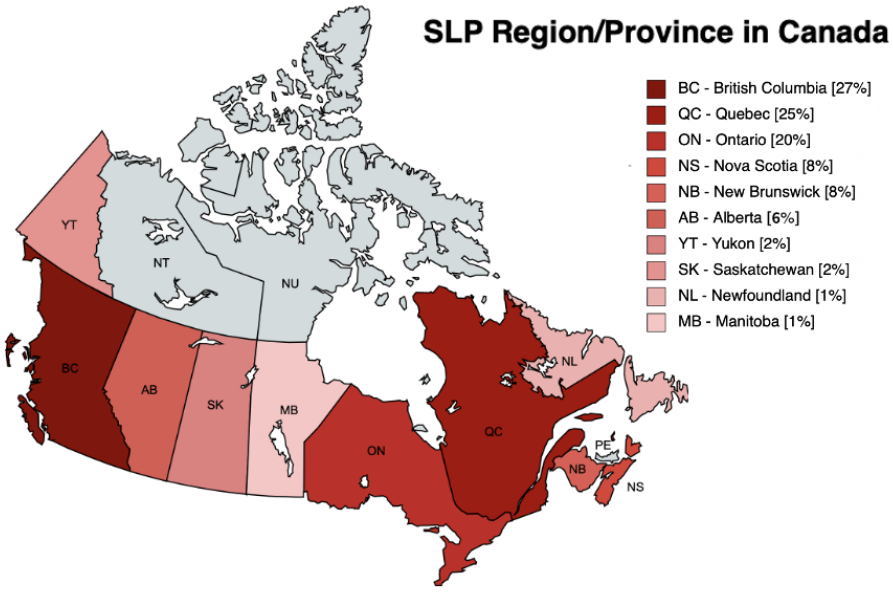
Hindi	1	1%
Japanese	1	1%
Mandarin	1	1%
Polish	1	1%
Portuguese	1	1%
Punjabi	1	1%
Serbo-Croatian	1	1%
Swahili	1	1%

4.1.3 Geographic Distribution and Work Setting

The survey captured data from SLPs working in various Canadian provinces and territories. The highest representation was from British Columbia, Quebec and Ontario, followed by New Brunswick, and Nova Scotia. The majority of SLPs reported practicing in urban areas, where the population density and access to resources are typically higher. A minority indicated working in both rural and urban areas, potentially providing services to a more diverse range of communities. A smaller proportion reported a specific focus on rural practice.

Figure 1

Participants' Region/Province of Work



Note. This figure is a map of Canada that illustrates the population distribution of survey participants' workplace across the country. Darker colours indicate higher representation.

Surveyed SLPs were employed in various settings. The most common employment settings were preschools and elementary schools, while some clinicians reported working in early intervention programs. Respondents also reported working in middle schools, high schools, and clinic/hospital settings. The least common work settings reported were rehabilitation centers, private practices, and other work settings. Further information can be found in Table 3.

Table 3

Geographic Distribution and Work Setting

Province or Territory of Work	*n*	%
British Columbia	32	27%
Quebec	30	25%
Ontario	23	19.5%
New Brunswick	10	8.5%
Nova Scotia	10	8.5%
Alberta	7	6%
Saskatchewan	2	2%
Yukon	2	2%
Newfoundland	1	1%
Manitoba	1	1%
Rural/Urban Area of SLP Practice	*n*	%
Urban	75	63.5%
Both	34	29%
Rural	9	7.5%
SLP Work Setting(s)	*n*	%[2]
Preschool	69	59%
Elementary school	53	45%
Early intervention	49	41%
Middle school	29	25%
High school	25	21%

[2] These percentages do not add up to 100% because participants were allowed to select unlimited options.

Private practice	25	21%
Clinic/hospital	13	11%
Rehabilitation center	3	3%
Other[3]	4	3%

4.1.4 Caseload Information

Most SLPs reported working with a caseload comprised of 75% to 100% children. Among the respondents, a significant percentage (33%) reported that the majority of the children on their caseloads were from culturally and linguistically diverse (CLD) backgrounds (i.e., these children comprised 71% to 100% of the children on their caseload). A similar percentage of participants (36%) indicated that CLD children made up an important portion of their caseloads (31% to 70% of the children on their caseload). Information regarding participants' caseload is presented in Table 4.

Table 4

Caseload Information

Percentage of Pediatric Clients	*n*	%
1 – 24%	3	2.5%
25 – 49%	1	1%
50 – 74%	3	2.5%
75 – 100%	111	94%
Percentage of Pediatric Clients who are CLD[4]	*n*	%
1 – 30%	36	31%
31 – 70%	43	36%
71 – 100 %	39	33%

[4] The term CLD is used here to refer to culturally and linguistically diverse children. Throughout the thesis, we focus on children in Canada who are *linguistically* diverse, but given that the survey used the term CLD children (inclusive of those who are culturally diverse), this term is used in the results section.

4.1.5 Client Language Backgrounds

Data showed that a considerable proportion of children on SLP caseloads were monolingual English speakers (38%) and bilinguals (34%). Smaller proportions comprised monolingual French speakers, multilinguals, non-standard English dialect users, monolinguals in languages other than English or French and speakers of non-mainstream French dialects. Considering the diversity of languages spoken on caseloads, the largest proportion of children spoke Arabic, French, English and Mandarin. Cantonese, Tagalog, Spanish and non-mainstream English dialects, such as Indigenous English Dialects, were also among the most prevalent languages spoken by pediatric clients.

Table 5

Client Language Background

Pediatric Clients Language Background	*n*	%
Monolingual English speakers	45	38%
Bilinguals	40	34%
Monolingual French speakers	11	9%
Multilingual	8	7%
Speakers of a non-standard[5] English dialect	7	6%
Monolingual in another language	5	4%
Speakers of a non-standard[6] French dialect	2	2%
Most Common Languages on Caseloads	*n*	%
Arabic	21	14%
French	20	13%

[5] The term "non-standard English dialect" was used in the survey and is the term that is used to report the results. However, the term "non-mainstream dialect" is used throughout the rest of the thesis to use more inclusive language to refer to people who are speakers of a dialect that is not the societal mainstream dialect.
[6] See footnote 5.

English	12	8%
Mandarin	12	8%
Cantonese	9	6%
Tagalog	8	5%
Spanish	5	3%
Second Most Common Languages on Caseloads	*n*	%
Spanish	20	13%
Arabic	15	10%
French	13	8%
Tagalog	12	8%
Russian	9	7%
English	8	5%
Punjabi	8	5%
Mandarin	7	5%

4.1.6 Client Age Ranges

Surveyed SLPs reported working with a range of age groups. The majority of respondents reported working with children from birth to 11 years. A smaller percentage of SLPs reported working with children older than 11 years.

Table 6

Ages of Clients on Caseloads

Children Age Ranges	***n***	%[7]
Birth – 3	66	63%
4 – 5	103	94%
6 – 8	75	64%
9 – 11	67	57%
12 – 14	45	38%
15 – 18	33	28%

4.2 Current Assessment Approaches with Linguistically Diverse Children

To gather information on clinicians' assessment approaches with linguistically diverse children, respondents rated the frequency for various approaches using a five-

[7] These percentages do not add up to 100% because participants were allowed to select unlimited options.

point rating scale (*always; very often; sometimes; rarely; never*). Following D'Souza et al. (2012) and Narayanan and Ramsdell (2022), collected responses were condensed into a three-point rating scale (*always and very often; sometimes; rarely and never*). This three-point scale was used for a clearer presentation of the results. Given the study's emphasis on qualitative findings, the concise quantitative data supports the focused discussion of the descriptive conclusions.

Table 7 presents an overview of the study's qualitative findings concerning the current assessment approaches used by Canadian SLPs when working with linguistically diverse children to address the first research question. The thematic analysis of participants' feedback on various aspects of approaches revealed language choices, materials/tools, and human resources considered valuable in the assessment process. Subsequent sections detail each topic listed in the table by describing first the quantitative results for each sub-topic followed by the qualitative findings.

Table 7

Assessment Practices

Code	Subcode
Language choice(s) and considerations during assessment	Value of clinician speaking the child's language(s) in assessment
	Assess in all child language(s)
	Assess all languages that the clinician speaks
	Choice of which language to assess depends on context and exposure
	Use past clinical experience
	Perform ongoing assessment
General preference of non-standardized approaches over standardized tests	Criterion referenced tests and screens
	Dynamic assessment
	Nonword repetition tasks
	Language samples
	Narrative measures

	Speech sound inventories
	Play-based tasks and observation
	Naturalistic observation
	Caregiver/family interview/report
	Parent questionnaires (e.g., ALDeQ, MBCDI etc.)
	Developmental information
Approaches involving standardized tests	Use of standardized test but diverging from its typical standardized application (e.g., not following test protocols, not scoring or reporting norms, adaptions of tests)
	Translations of standardized tests
	Using standardized tests
	Using screening tools in the child's language
Tools, materials and resources used in assessments	Culturally and linguistically appropriate children's books
	Visual supports
	Resources/materials appropriate for the child's context/language group
	Translated materials
	Research the child's language and use external resources from websites, professional associations, and universities
Speech-language pathology and interprofessional resources	Working with a trained interpreter
	Working with cultural brokers
	Transferring client to a French-speaking SLP
	Consultation and collaboration with other SLPs (who are bilingual, speak the child's language, or have more experience in bilingual services)
	Consultation and collaboration with classroom teachers and other professionals
Family and community collaboration	Working with caregivers/family as untrained interpreters/translators
	Collaboration with caregiver/family in assessment
	Parents provide materials/vocabulary for services
	Consultation and collaboration with community members

4.2.1 Language Approach in Assessments

4.2.1.1 Quantitative Results. Respondents were asked to rate the frequency of their language assessment approaches for their linguistically diverse clients. The most common assessment approach, reported as *always* or *very often* by 83% of respondents, was to assess these children in the languages spoken by the SLP. Additional approaches chosen by the majority of participants included assessing children in the language(s)

spoken in the community, assessing children in all their languages and considering the language(s) that the parent or guardian desired for assessment. Less commonly used approaches included assessing these children exclusively in their heritage or family language(s) or assessing children exclusively in their dominant or strongest language. Table 8 presents a summary of responses obtained regarding languages used by SLPs during assessments.

Table 8

Language Approach in Assessments

Language Approach	Always & Very Often	Sometimes	Rarely & Never
I assess the child in the languages that I speak	83%	7%	10%
I assess the language(s) spoken in the community (societal language)	55%	17%	28%
I assess all the languages that the child speaks	45%	25%	30%
I assess the language(s) the parent/guardian desires	40%	26%	34%
I assess only the child's dominant/strongest language	30.5%	22%	47.5%
I assess only the child's heritage/family languages	11%	19%	70%
Other[8]	80%	1%	6%

4.2.1.2 Qualitative Results. Table 9 presents the thematic analysis on language approaches used in assessments. Several themes emerged concerning language choice during assessments, many of which aligned with the quantitative data. Considering the child's exposure and context were the most crucial factors in language selection for assessment, as 33% of clinicians who discussed the languages used in assessment for survey question listed these considerations. Clinicians reported assessing a language only

[8] These percentages do not add up to 100% because participants were not required to provide frequency ratings for "other" approaches.

if children were adequately exposed to and comfortable using it, given their current age. Clinicians used this knowledge of exposure to make informed conclusions. For instance, one clinician stated, *"If they only began learning English at age 3, then scoring in the lower end of the range is less concerning than a child whose first and only home language is English."* Surveyed SLPs described how they consider the child's unique language background, not only accounting for all languages, but also considering language(s) of schooling and the child's literacy proficiency in various languages.

The next most prominent approach, emphasized by 28% of clinicians, was the importance of assessing children in all their languages. While some SLPs reported conducting language sampling in only the languages they speak, many others highlighted the significance of understanding the child's languages collectively to determine progress and be able to differentiate language differences from disorders. Clinicians stressed the importance of being able to speak the child's language themselves and mentioned the benefits of having at least a basic grasp of the language. Clinicians also discussed using their clinical experiences to inform their judgments during assessments. For instance, previous clients with similar linguistic contexts helped to validate assessment results. Lastly, some clinicians reported conducting ongoing assessments that extend into intervention. This allows the clinician to sharpen their conclusions as they gain a better understanding of the child's communication abilities over time.

Table 9

Assessment Strategies: Language Approach in Assessments

Code	Subcode	Sample Quotes
Language choice(s) during assessment	Value of clinician speaking the child's language(s) in assessment	"It is of course most beneficial if I have at least basic command of the language myself."

Assess in all child language(s)	"Combine the child's languages to judge their achievements." "Assess in both/all languages to determine difference versus difficulty."
Assess all languages that the clinician speaks	"Bilingual language sampling in languages that I speak."
Choice of which language to assess depends on context and exposure	"Assessing literacy skills in the child's language of instruction and assessing oral language skills in the child's strongest oral language (the two are not always the same)." "Assessing in the language only if the child demonstrates adequate comfort and level of exposure."
Use past clinical experience	"I also draw on my experience from previous children with similar language backgrounds during assessment."
Perform ongoing assessment	*"Je vais offrir de l'intervention afin de mieux comprendre les besoins (et les progrès."* "I will offer intervention in order to better understand needs (and progress)."

4.2.2 Assessment Strategies

4.2.2.1 Quantitative Results. In terms of assessment strategies used with linguistically diverse children, the most frequently employed approaches were family interviews, language samples and dynamic assessments. Other frequently used approaches included naturalistic observations, teacher interviews, collaborating with other professionals to form clinical judgments, criterion-referenced measures and standardized tests in English. Alongside these approaches, SLPs also indicated minimal use of certain assessment strategies. While standardized tests in English were a common approach, standardized tests in languages other than English were not frequently

employed, including the following specific test types: tests translated by the SLP into the child's heritage/family language, those translated by an interpreter or translator into the child's heritage/family language, and those in French. Additionally, virtual administrations of assessment and processing-based measures were assessments strategies that were infrequently or never employed. Table 10 presents detailed information regarding assessment strategies.

Table 10

Assessment Strategies

Approach/Strategy	Always & Very Often	Sometimes	Rarely & Never
Family interviews	93%	5%	2%
Language samples	87%	8%	5%
Dynamic assessments	84%	10%	6%
Naturalistic observations	74%	28%	8%
Teacher interviews	68%	21%	11%
Collaborating with other professionals to form a clinical judgment	63%	31%	6%
Standardized tests in English	52%	24%	24%
Criterion-referenced measures	42%	38%	20%
Standardized tests in French	28%	6%	66%
Processing-based measures (e.g., non-word repetition)	24.5%	6%	57.5%
Standardized tests translated by an interpreter or translator into the child's heritage/family language	13%	19%	69%
Standardized tests translated by the SLP into the child's heritage/family language	10%	9%	81%
Virtual administration of assessment	7%	26%	67%
Standardized tests in a language other than English or French	2%	8%	90%
Other[9]	3%	2%	9%

[9] These percentages do not add up to 100% because participants were not required to provide frequency ratings for "other" approaches.

4.2.2.2 Qualitative Results.

4.2.2.2.1 General Preference of Non-Standardized Approaches Over Standardized Tests. Many SLPs emphasized their departure from standardized tests in their approaches and instead focused on employing a range of non-standardized methods. These approaches included various tasks that are considered best practice for diverse populations (Paradis, 2016), such as criterion-referenced tests and screeners, dynamic assessment, and nonword repetition tasks. Table 11 presents the thematic analysis pertaining to non-standardized assessment approaches used.

In the open-text responses, standardized approaches were mentioned 48 times. Fifty percent of these mentions came from clinicians who advocated against using standardized tests, with some noting that their caseloads (e.g., children with ASD, minimally verbal children or children who recently immigrated to Canada) rarely warranted the use of standardized assessments regardless of their linguistic background. For example, one clinician noted, *"Most of my current clientele is very obviously delayed as they speak very minimally in any language, and the mandate of my program is around assessment for goal setting only, so I do not do much formal assessment."* Others highlighted the inadequacy of standardized assessment tools for specific populations (e.g., Indigenous children, refugee children) and emphasized the harm that can be caused when monolingual standards are inappropriately applied to children from these groups. This led the clinicians in this study to prefer non-standardized tests. The ensuing results will discuss the extensive range of approaches discussed by SLPs.

The open-text responses referenced non-standardized approaches a total of 147 times. Gathering information from parents about the child's communication was the most

prominent qualitative sub-theme that arose, as 43% of these mentions related to parent report. This was accomplished through parent interviews, as well as parent questionnaires. Parent interviews were important for SLPs to discover the parent's perspectives and concerns regarding their child's communication. The direct input provided information about terms (e.g., greetings), parent-child interactions (e.g., surrounding play) and communication goals, which all vary significantly based on lifestyle and family dynamics. This enables SLPs to tailor their advice and language stimulation strategies to each family. Through parent interview, SLPs described being able to gain an understanding of how parents communicate and compare the child's communication patterns to that of their parents. Surveyed SLPs expressed that this could help identify dialectal or cultural differences to accurately distinguish between natural language variations and communication disorders. This interview process also provides useful information about the child's language exposure (e.g., early communication milestones, family background, and academic progress).

Speech-language pathologists also described using questionnaires, such as the Alberta Language and Development Questionnaire (ALDeQ; Paradis et al., 2010) and the MacArthur-Bates Communication Development Inventories (MBCDI; Fenson et al., 2007). Clinicians reported a preference for these as the MBCDI is available in various languages and the ALDeQ is normed on Canadian English Language Learner (ELL) students. These questionnaires were used to gain information about a child's language profile and communicative development.

Child observations emerged as the next most frequently mentioned approach, with 15% of the references to non-standardized approaches highlighting its importance,

particularly in a play-based or a naturalistic context. Clinicians found less structured activities, such as child-led play, effective for assessing linguistically diverse children, as they focused on the child's natural interests and daily routines. Additionally, SLPs reported that assessing a child in a familiar environment ensures comfort so the child can demonstrate their speech and language abilities. In addition to gaining information about the child's articulation, receptive and expressive language skills, observations offer insight into social communication and parent-child interactions.

Clinicians reported using dynamic assessments to observe a child's rate of learning within a session, often conducted in play with children. To ensure an accurate assessment with this method, clinicians reported translating prompts into the child's language with the help of parents or an interpreter. This theme ranked third in prevalence among the qualitative data, with 13% of mentions elaborating on dynamic assessment.

Other methods to gather assessment data, though not as prominent as thoses outlined earlier, encompassed language samples, narrative measures, speech sound inventories and syllable repetition and non-word repetition tasks. Language samples were a preferred approach as clinicians reported that they are more flexible than other assessment practices and can be a collaborative approach. For instance, clinicians described being able to elicit, transcribe and analyze language samples collaboratively with a parent or an interpreter, and then discussing the child's skills in multiple languages. When assessing articulation, SLPs reported that they access the phonemic inventory of the child's language (sometimes available online). They acknowledged that such resources are available for some languages (e.g., Arabic) but not for all languages. Clinicians described using developmental information about the child's language when

this was available, to compare against assessment data. They referenced developmental norms of children with similar language profiles and reported often conducting online research about the language to understand basic milestones before assessments. When this resource was available, clinicians in this study reported that they found it valuable to validate conclusions.

Lastly, SLPs also detailed modifications they made in their non-standardized techniques when working with linguistically diverse children. For instance, one participant mentioned allowing more time and encouraging any attempts, and focusing on modeling rather than testing to be more conducive to diverse linguistic backgrounds. This encapsulates the array of non-standardized approaches employed by SLPs.

Table 11

Assessment strategies: Non-standardized assessment approaches

Code	Subcode	Sample Quotes
General preference of non-standardized approaches over standardized tests	Criterion referenced tests and screeners	"Criterion referenced screens."
	Dynamic assessment	"Dynamic ax is important given the dialect (acadian) that my clients speak."
	Nonword repetition tasks	"Repetition of nonwords."
	Language samples	"Language and speech sampling in all languages."
	Narrative measures	"Narrative samples with translator present for assistance."
	Speech sound inventories	"Sound inventory."
	Play-based tasks and observation	"Informal play is a great way for assessing culturally and linguistically diverse children."
	Naturalistic observation	"I complete observations and interactions in the classroom, with peers and family members."

Caregiver/family interview/report	"In my non-native language any assessment I do is via parent report."
	"Detailed interview with parents about language background and environment."
Parent questionnaires	"I get questionnaires from ASHA's prac portal that are in the language spoken in the home. Parent input guides assessment."
	"Macarthur Bates CDI - is available in other languages."
Developmental information	"Developmental norms of children with similar language profiles."

4.2.2.2.2 Approaches Involving Standardized Tests. Standardized approaches were mentioned 48 times in the open-text reponses, with 50% of these mentions indicating that SLPs use standardized tests or screening tools to assess linguistically diverse children. Clinical judgment was used to weigh the appropriateness of using a standardized tool. Some SLPs deviated from typical protocols, scoring, or reporting norms. They described using standardized tests (sometimes with the help of an interpreter), but refraining from scoring the tests. Other clinicians translated or adapted these tests to reflect the child's linguistic and cultural background.

While some SLPs in this study referred to using specific standardized tests like the Rossetti Infant-Toddler Language Scale (Rossetti, 2006), the Clinical Evaluation of Language Fundamentals–Fifth Edition (CELF-5; Wiig et al., 2013), the Expressive Vocabulary Test (EVT-3; Williams, 2019) and the Peabody Picture Vocabulary Test (PPVT; Dunn, 2019), others specified the contexts in which they employed standardized tests, such as using bilingual norm-referenced standardized tests designed for the same linguistic and cultural background as the child. Certain screeners for speech sound assessment are available in diverse languages, and SLPs mentioned using these

specifically for articulation assessments. Table 12 presents the thematic analysis pertaining to the use of standardized tests.

Table 12

Assessment Strategies: Approaches Involving Standardized Tests

Code	Subcode	Sample Quotes
Approaches involving Standardized Tests	Use of standardized test but diverging from its typical standardized administration	"I also used standardized tests with help from a translator but do not score."
		"Adapt testing material to reflect child's culture."
	Translations of standardized tests	"Bilingual or translated assessments/documents from the creators."
	Using standardized tests	"Bilingual norm referenced standardized tests when available for same linguistic and cultural background as the child."
		"Standardized tests."
	Using screening tools in the child's language	"Speech sound assessment screening tools in diverse languages (especially Mandarin and Cantonese)."

4.2.3 Materials Used in Assessments

4.2.3.1 Quantitative Results. Respondents were asked to rate their frequency of use of various materials when working with CLD children, using the same rating scale as described for choice of language in assessment. Clinicians reported using knowledge related to the child's culture(s) and language(s) most often. Furthermore, materials used *always* or *very often* encompassed non-standardized assessment tools in the child's language(s), resources obtained from training to work with linguistically diverse children and developmental speech and language norms in the child's language(s). Standardized assessment tools in the child's language(s) were less commonly used (see Table 13).

Table 13

Materials Used in Assessment

Material	Always & Very Often	Sometimes	Rarely & Never
Knowledge related to the child's culture(s) and language(s)	67%	24%	9%
Non-standardized assessment tools in the child's language(s)	54%	22%	25%
Resources obtained from training to work with culturally and linguistically diverse children (e.g., information from a webinar or professional development workshop)	49%	31%	20%
Developmental speech and language norms in the child's language(s)	42.5%	25.5%	32%
Standardized assessment tools in the child's language(s)	24%	18.5%	57.5%

4.2.3.2 Qualitative Results. Participants were asked about what approaches, materials, and human resources they use in assessments with CLD children in an open-text question. Table 14 presents the thematic content analysis results that pertains to materials. The responses highlighted a broad range of materials used by SLPs, some overlapping with the approaches previously mentioned. In addition to standardized and non-standardized approaches, SLPs reported the most common tools they used for assessment were using external resources to conduct research on the child's language and using culturally and linguistically appropriate children's books.

Clincians emphasized that the most important tool used for assessments was researching the child's language, with 37% of SLPs who disucussed tools for assessment, highlighting this approach. This can provide information on the specific phoneme inventory and features of the child's language. Clinicians used external resources from websites, associations (e.g., SAC) and universities. For instance, resources like *The*

Cambrige Handbook of Biolinguistics (Boeckx & Grohmann, 2013) were mentioned as valuable for assessing multilingual children.

Clinicians also used materials created for the child's language group, incorporating culturally and linguistically appropriate children's books, songs, and translated material. Their focus centered around resources that aligned with the child's community and daily life experiences. Clinicians used books developed for specific populations (e.g., Haisla and First Nations) or written by a member of a specific cultural community (e.g., written by an Indigenous writer). These books are considered more relatable and relevant to the child and aim to be inclusive and supportive of diverse cultures. Speech-language pathologists also used visual supports in assessments, selecting a variety of culturally appropriate and representative images. Some clinicians mentioned specific resources such as the School-Age Language Assessment Measures (SLAM; Crowley & Biagorri, 2014) that feature diverse images where children can identify themselves within the material.

Table 14

Assessment Strategies: Tools, Materials and Resources used in Assessments

Code	Subcode	Sample Quotes
Tools, materials and resources used in assessments	Materials appropriate for the child's context/language group	"Books and children's songs are particularly useful to build rapport and engage children in different languages."
		"Resources in that language and designed for that language group."
	Visual supports	"Selecting culturally appropriate pictures for therapy."
	Research the child's language and use external resources from websites, professional associations, and universities	"I use phonemic inventories of different languages to determine if phonemic production is an issue or likely due to a transfer."

	"I read information online, example from ASHA or SAC."
	"Utilisation d'un site internet pour apprendre des mots en Cri et trouver du matériel (eastcree.org)." "Using a website to learn Cree words and find materials (eastcree.org)."
	"Materials that evaluate the impact of a child's home language (e.g. Arabic) on their English production such as the Bilinguistics manual or searchable materials on the home language (e.g. IPA chart of available phonemes in Arabic) are invaluable when assessing multilingual children."

4.2.4 Human Resources Worked with in Assessments

4.2.4.1 Quantitative Results. Speech-language pathologists were asked about human resources they work with during assessments of CLD children. Parents, family members, or caregivers emerged as the primary resource. In contrast, clinicians reported not collaborating frequently with other human resources, such as bilingual SLPs, interpreters, and especially, cultural brokers. Refer to Table 15 for further details.

Table 15

Human Resources SLPs Work with during Assessments

Human Resource	Always & Very Often	Sometimes	Rarely & Never
Parent, family member or caregiver	80%	14%	6%
Interpreters	34%	27%	39%
Bilingual SLPs	31%	16%	53%
Cultural broker	12%	20%	68%
Other[10]	3%	5%	15%

[10] These percentages do not add up to 100% because participants were not required to provide frequency ratings for "other" approaches.

4.2.4.2 Qualitative Results. Speech-language pathologists were asked about their methods, materials and collaborations in assessments with CLD children through an open-text question. Tables 16 and 17 showcase the qualitative analysis findings regarding the human resources engaged by SLPs during assessments. Two main themes emerged: one focusing on SLP-related professionals (e.g., interpreters, classroom teachers; see Table 16), and the other highlighting family and community resources (see Table 17). Both of these are essential for assessments with linguistically diverse children and were reported as frequent resources that SLPs work with.

4.2.4.2.1 Speech-Language Pathology and Interprofessional Resources. Clinicians described a collaborative assessment approach, engaging with diverse human resources. Most commonly, participants described the importance of working with trained interpreters. Additionally, professionals reported conducting consultations with bilingual SLPs or those experienced in bilingual services, and in some cases transferring clients to SLPs who spoke the child's language (e.g., French-speaking SLPs). Collaboration with other professionals, such as cultural brokers, classroom teachers and psychologists, was also described.

Table 16

Assessment Strategies: Speech-Language Pathology and Interprofessional Resources

Code	Subcode	Sample Quotes
Speech-language pathology and interprofessional resources	Working with a trained interpreter	"Certified interpreters as needed."
		"Use of a bilingual interpreter from the same cultural background."
	Working with cultural brokers	"Cultural interpreter (Inuit)."
	Transferring client to a French-speaking SLP	"If there is a French speaking family i transfer them to the SLP on our team who speaks French."

	Consultation and collaboration with other SLPs	"Collaborating with SLPs who have expertise in bilingual services."
		"Consulting our Francophone SLP/consultant."
	Consultation and collaboration with classroom teachers and other professionals	"The classroom teachers I work with work mainly with bilingual students and have a good idea of what to expect because of their vast experience."
		"Teacher who speaks same language as child/family."

4.2.4.2.2 Family and Community Collaboration. Speech-language pathologists highlighted the importance of working closely with families and communities. They mentioned including parents in the assessment process to gather information regarding the language(s) spoken at home. They also reported relying on families when the SLP did not speak the child's heritage language, to help with interpretation and translations. Additionally, clinicians reported asking families about relevant vocabulary and to bring materials from home to ensure culturally appropriate assessments. Furthermore, SLPs reported engaging with community members to further understand the child's communication abilities.

Table 17

Assessment Strategies: Family and Community Collaboration

Code	Subcode	Sample Quotes
Family and community collaboration	Working with caregivers/family as untrained interpreters/translators	"I often ask parents to help with translation."
		"Using the parent as an interpreter."
	Collaboration with caregiver/family in assessment	"I always include the parents in the assessment process and get their input on language spoken at home."
	Parents provide material/relevant vocabulary for services	"I have parents give me a list of words e.g., special foods, toys,

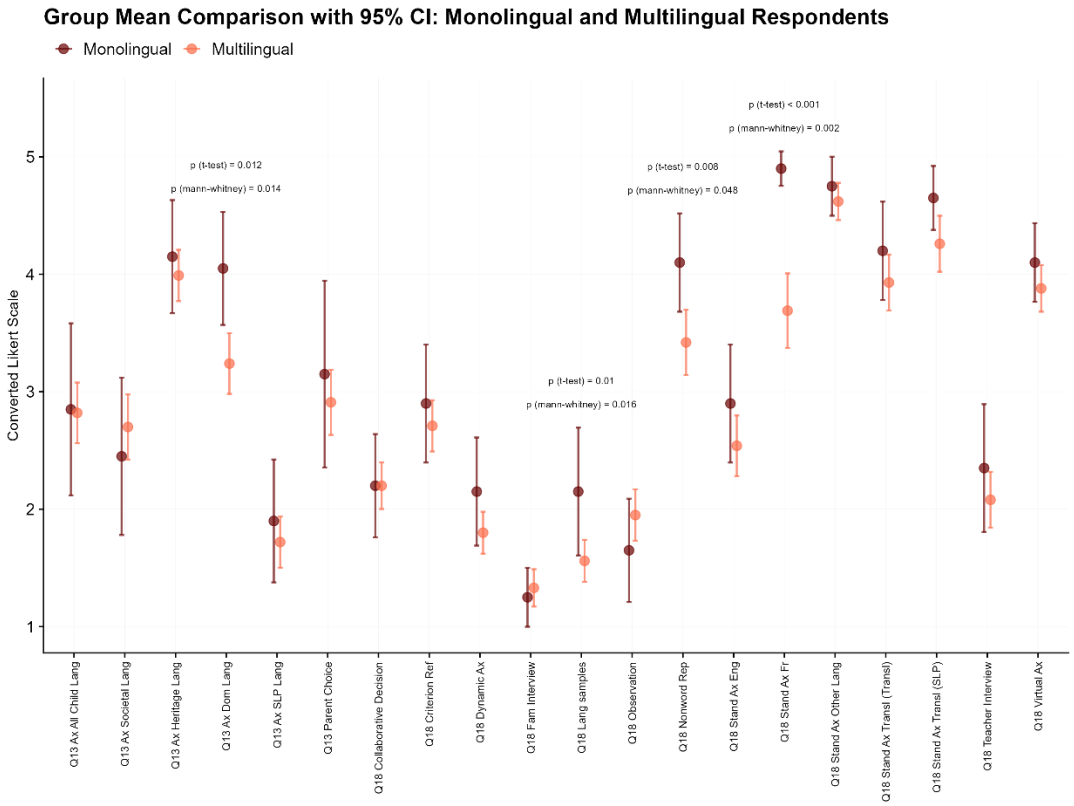
	holidays etc. that are functional in their daily life."
	"Asking the parents to show pictures or bring toys from home."
Consultation and collaboration with community members	"For indigenous students, connect with the indigenous support teacher and families."
	"Consulting First Nation language teachers, knowledge keepers and elders."

4.2.5 Group Comparisons and Descriptive Statistics

Group comparisons and descriptive statistics were used as part of the data analysis. These comparisons were exploratory in nature to examine differences in the frequency of approaches between different groups of SLPs. Specifically, two subgroups were compared: (1) monolingual clinicians versus multilingual clinicians (i.e., clinicians who reported speaking two or more languages) and (2) clinicians working in different settings (rural setting, urban setting, or both). The results of these group comparisons are presented in Figures 2 and 3.

Figure 2

Comparison of Assessment Approaches used by Monolinguals vs. Multilingual SLPs



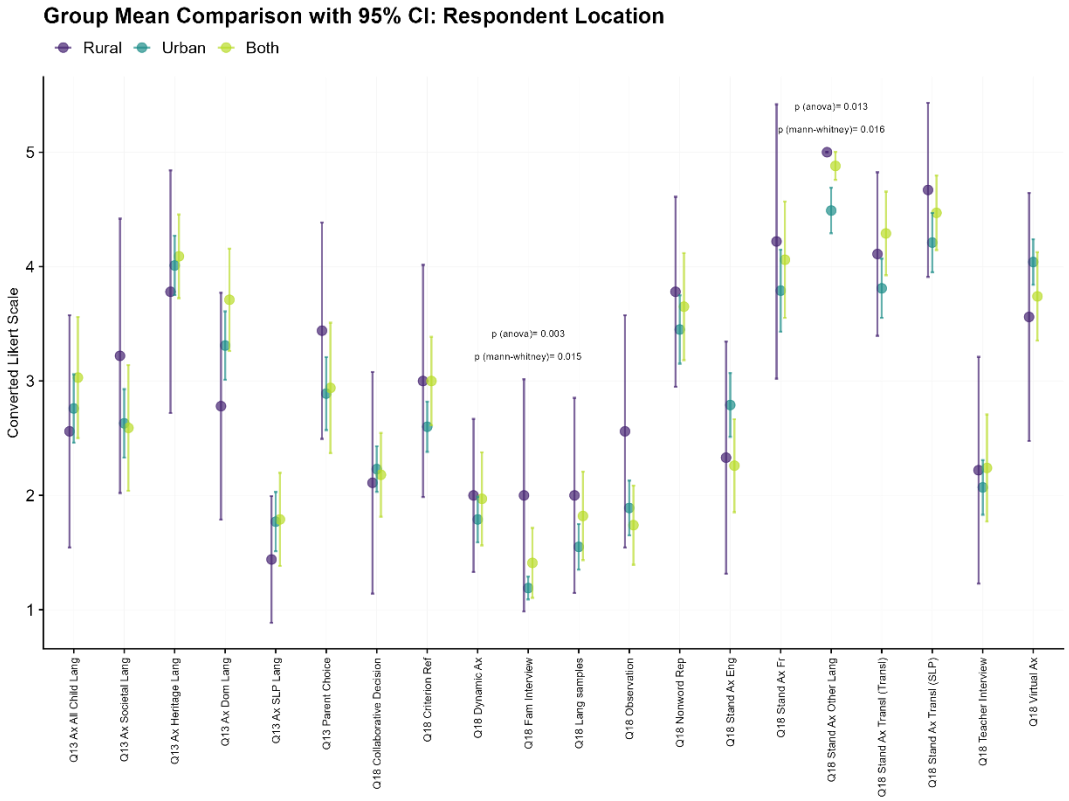
Note. This figure depicts the mean responses regarding assessment approaches (questions 13 to 18 in the survey) used by monolingual and multilingual SLPs on a Likert scale ranging from 1 (i.e., "always) to 5 ("never").

Both a *t*-test and its non-parametric equivalent, the Mann-Whitney test, were conducted to examine potential differences in responses based on clinicians' language background. The Mann-Whitney test was chosen due to the sample size being less than 30 in the monolingual group and the absence of normal distribution in the data. Results revealed four statistically significant differences between the two groups: assessing children in their dominant language (monolingual SLP $M = 4.1$, $SD = 1.1$, multilingual SLP $M = 3.2$, $SD = 1.3$, $t(116) = 2.543$, $p = 0.012$, *Cohen's d* $= 0.624$), using language

samples (monolingual SLP $M = 2.2$, $SD = 1.2$, multilingual SLP $M = 1.6$, $SD = 0.9$, $t(116) = 2.602$, $p = 0.010$, *Cohen's d* = 0.638), non-word repetition (monolingual SLP $M = 4.1$, $SD = 0.9$, multilingual SLP $M = 3.4$, $SD = 1.4$, $t(38.422) = 2.776$, $p = 0.008$, *Cohen's d* = 0.528), and standardized assessments in French (monolingual SLP $M = 4.9$, $SD = 0.3$, multilingual SLP $M = 3.7$, $SD = 1.6$, $t(115.98) = 6.980$, $p < 0.001$, *Cohen's d* = 0.837). Overall, the mean scores of the multilingual group were lower than those of the monolingual group, indicating that the multilingual group tended to employ each of these approaches more frequently than the monolingual group. However, given differences in sample size and other statistical issues, these results need further exploration and need to be interpreted with caution.

Figure 3

Comparison of Assessment Approaches used by SLPs Depending on Location of Work



Note. This figure depicts the mean responses regarding assessments approaches (questions 13 to 18 in the survey) used by SLPs on a Likert scale ranging from 1 (i.e., "always) to 5 ("never") based on their location of work (rural, urban, or both).

Both a type III two-way Analysis of Variance (ANOVA) and its non-parametric equivalent, the Krusksal test, were conducted to explore whether there were any significant differences between the assessment approaches reported by clinicians based on their work location. In conducting the ANOVA analysis, the primary objective was to explore potential differences in means among the groups within the dataset. The ANOVA showed two statistically significant differences. A Tukey post hoc test was used as a follow-up analysis to examine the specific groups that exhibited significant differences. Results showed that clinicians working in urban settings reported using family interviews more frequently (M = 1.2, SD = 0.5) than clinicians working in rural contexts (M = 2, SD = 1.3); yet, both groups reported relying on this approach very frequently, $F(2, 115) = 5.971$, $p = 0.003$, $h^2 = 0.094$. The second statistically significant difference found was regarding the use of standardized tests in a language other than English or French, with clinicians working in rural settings reporting a lower use of this approach (M = 5, SD = 0) relative to clinicians working in urban settings (M = 4.5, SD = 0.88). However, for both groups the use of these tests is not a common practice, $F(2, 115) = 4.555$, $p = 0.03$, $h^2 = 0.073$. It is crucial to acknowledge the small sample size and equal cell sizes in the dataset, as well as the multiple comparisons performed, which affect the reliability of these analyses. While these results may offer initial insights, they should be interpreted cautiously.

4.3 Challenges to the Appropriate Provision of Care during Assessments

4.3.1 Quantitative Results

Respondents were asked to rate the frequency with which they encountered certain challenges in the provision of appropriate assessment services. Table 15 shows the percentage of clinicians and frequency of specific challenges. The most prominent challenge reported was the lack of appropriate assessment tools. Another significant challenge was the ability to speak and assess the child's heritage or family language when this is different from English or French. Additional challenges that SLPs reported facing *always or very often* included: lack of availability of other SLPs or professionals who speak the child's language(s), the presence of cultural or linguistic bias in standardized assessments, and not knowing developmental norms in the child's language(s).

Furthermore, many SLPs reported that inadequate knowledge of the child's culture was a barrier to assessments. Other challenges reported to occur *always* or *very often* included time constraints for administering appropriate assessments, the availability of interpreters who speak the child's language(s), distinguishing between language difference and language disorder, and collaborating with the child's family. In contrast, some challenges were more frequently reported as *rarely* or *never* encountered by SLPs, including lack of knowledge about bilingualism, multilingualism, or bilingual development and lack of knowledge about second language acquisition.

Table 18

Challenges to the Provision of Assessment Services

Challenge	Always & Very Often	Sometimes	Rarely & Never
Lack of appropriate assessment tools	79%	18%	3%
Ability to speak and assess the child's heritage/	78%	14%	8%

family language (other than English or French)			
Lack of availability of other speech language pathologists or professionals who speak the child's language(s)	74%	15%	11% 15% 11%
Presence of cultural or linguistic bias in standardized assessments (e.g., the presence of an item on a standardized language test that is not shared across all cultures)	66%	26%	8% 26% 8%
Lack of knowledge of developmental norms in the child's language(s)	59%	32%	9%
Inadequate knowledge of the child's culture	46.5%	46%	7.5%
Lack of time to administer the appropriate assessment	45%	22%	33%
Lack of availability of interpreters who speak the child's language(s)	34%	36%	30%
Difficulty distinguishing language difference from language disorder	24%	37%	39%
Difficulty collaborating with the child's family	22%	51%	27%
Lack of knowledge about second language acquisition	8%	23%	69%
Lack of knowledge about bilingualism, multilingualism, or bilingual development	7.5%	30.5%	62%

4.3.2 Qualitative Results

Table 19 reports the overview of the themes, codes and subcodes that emerged when participants described the major barrier to conducting appropriate assessments for linguistically diverse children. Three major themes emerged: (1) barriers related to clinician skillset, (2) barriers with assessment resources and (3) structural and societal barriers within healthcare and the SLP profession. Subsequently, each theme will be individually detailed in separate tables (Table 20, Table 21 and Table 22) alongside participant quotes supporting the qualitative analysis.

Table 19

Major Challenges Identified in Assessments

Major Theme	Code	Subcode
Barriers related to clinician skillset or training	Language used in assessment	Language barrier (not speaking the child/family's language)

	Difficulty obtaining an accurate and holistic view of the child's abilities	Inadequate knowledge of language, culture and resources
		Complexity of language profiles and obtaining an accurate conclusion of child's language abilities
		Combination of various conditions
	Barriers in collaborating with child's family/caregivers	Trauma/gaining trust
		Differences in cultural perspectives
		Limitations of parents/families as interpreters
		Difficulty communicating with parents (e.g., parent interview, communicating results)
Barriers related to assessment resources	Issues with standardized and non-standardized measures	Standardized tests are not appropriate for all assessments
		Overwhelming lack of materials and resources for culturally and linguistically diverse populations
		Lack of developmental information for some languages
	Barriers related to human resources	Barriers to access interpreters, bilingual SLPs and other professionals
		Difficulty with interpreters' translation skills
Structural and societal barriers within healthcare and the SLP profession	Societal and systemic barriers	Time constraints to appropriate assessments
		Biases of dominant culture and norms of Western healthcare system
	Training	Lack of training of some professionals and stakeholders
		Lack of training of other SLPs and colleagues
	Myths surrounding bilingualism	Education and combating myths with parents re: bilingualism
		Stakeholders (e.g., teachers, school staff) misinformation around bilingualism and appropriate assessments

4.3.2.1 Barriers Related to Clinician Skillset. Participants discussed several challenges related to the clinician's skillset and proficiency in conducting assessments. These challenges encompassed language barriers, difficulty getting the whole picture of

the child's communication abilities and difficulty collaborating with the family in assessments. Not being able to speak the family's language was a common barrier in assessments. Several clinicians acknowledged their own limitations, one stating, *"I can only work in English."* Clinicians found it difficult to elicit specific language targets in a language other than their own (i.e., when interacting with a child or when coaching parents or interpreters to elicit targets). Varying levels of proficiency posed difficulties in maintaining clear communication with parents, particularly during the parent interviews.

Clinicians also encountered significant obstacles in obtaining a comprehensive view of a child's communication abilities. This code was further broken down into four sub-codes relating to clinician knowledge, complexity of language profiles of their clients, ability to juggle multiple conditions and lack of training or experience working with this population. Clinicians encountered difficulties stemming from a knowledge deficit. This deficit was manifested in various ways, including a lack of agreement on how to conduct assessments for these children. Additionally, SLPs explained how challenges arose from their insufficient understanding about the child's specific language and typical language development. Cultural gaps (e.g., one SLP described their limited knowledge of northern indigenous culture) further compounded challenges. Insufficient knowledge about resources, including navigating interactions with trained or untrained interpreters (e.g., family members) and uncertainty about tools to use, posed significant challenges.

Clinicians described the complex process involved in determining a child's language abilities, including the consideration of several variables for each child, such as exposure to multiple languages, quality of exposure to each of the child's languages,

dialectal differences and the effects of language transfer. Clinicians described various scenarios which highlighted these complexities, including timing assessments for children who had recently immigrated to Canada, those experiencing a shift in their dominant language over time or those with multiple conditions (e.g., linguistically diverse children in foster care or deaf multilingual children who have many languages and modes). Clinicians described that SLPs must have extensive knowledge about second language acquisition and linguistic variation to account for these various factors. However, participants expressed uncertainty about their capacity to factor in all these considerations, as one participant expressed, *"For me it's been my own confidence in my ability to decipher whether there is a language delay that is in both languages or if there are delays that would be expected considering the child is learning two languages"*. Overall, clinicians struggled to accurately report strengths, weaknesses, and correctly distinguish between communication differences and disorders, to understand the child as a whole.

Challenges surfaced concerning the involvement of the child's family or caregivers, including issues with rapport building, differences in cultural perspectives, and communication challenges with families. When clinicians could not communicate in the family's language, establishing trust, rapport and assessing the impact of trauma alongside bilingual language development became more complicated. Differences in cultural perspectives across families were also evident, especially regarding expectations for language development and conflicts of cultural values (e.g., advice on language stimulation).

In assessments, communication challenges occurred during caregiver coaching (e.g., coaching on elicitation for receptive language testing) as well as when parents acted as untrained interpreters during the session. Some clinicians noted that parents inadvertently provided answers when interpreting for the child. Not only were interpretations not always reliable, but clinicians also had difficulty communicating with parents in terms of obtaining consent, communicating results and obtaining accurate information in the parent interview. One clinician said, *"Parents are not always 100% reliable for unbiased data, whether because they overestimate/"embellish" the child's production or because they can be too harsh and underestimate the abilities of their child".* Achieving a genuine understanding of the child's proficiency through parent reports posed difficulties.

Extensive challenges were highlighted surrounding clinician proficiency in conducting assessments with linguistically diverse children. These obstacles encompassed language barriers, struggles in obtaining a comprehensive view of the child's communication abilities, and difficulties in collaborating effectively with families during assessments. These challenges are further detailed in Table 20[11].

Table 20

Barriers Related to Clinician Skillset

Code	Subcode	Sample Quotes
Language used in assessment	Language barrier (not speaking the child/family's language)	"Drawing information out of parents who also have a language barrier."
		"Not speaking the child's first language."

[11] Table 20 is an excerpt from the larger thematic analysis of the question, *"Based on your experience, what is the major challenge you face when assessing culturally and linguistically diverse children?"* This section highlights the barriers that emerged related to clinician skillset.

Difficulty obtaining an accurate and holistic view of the child's abilities	Inadequate knowledge of language, culture and resources	"Knowledge of the child's culture and language if not French." "Not having the knowledge or tools."
	Complexity of language profiles and obtaining an accurate conclusion of child's language abilities	"For me it's been my own confidence in my ability to decipher whether there is a language delay that is in both languages OR if there are delays that would be expected considering the child is learning two languages."
		"Understanding child's true amount of exposure home language versus English and their strongest/dominant language to help with interpretation of results."
		"The relative contribution of each language to the picture of the child as a whole."
	Combination of various conditions	"The presence/risk of Selective Mutism in multilingual environments."
	Limited SLP training/ experience	"Limited experience in this area."
Barriers in collaborating with child's family/caregivers	Trauma/gaining trust	"It is also difficult for me to determine how much trauma/adverse experiences have affected their language development in addition to being bilingual."
	Differences in cultural perspectives	"Differences in perspectives of different cultural groups regarding expectations regarding language development."
	Limitations of parents/families as interpreters	"Parents give the answers to the child without realising it, when interpreting."
	Difficulty communicating with parents (e.g., parent interview, communicating results)	"My biggest challenge is clear communication when obtaining parent report when there is a language barrier."

4.3.2.2 Barriers Related to Assessment Resources. A key theme that emerged was related to assessment tools, materials and resources, including standardized and non-standardized measures as well as human resources. Clinicians identified two main issues associated with standardized measures: tests were not universally appropriate for all assessments and limited tests were available that were created for specific languages or

populations. They emphasized the cultural bias inherent in these tests, criticizing the prevalent acceptance of dominant culture norms as the standard for diagnosing all children. Thus, many language or cultural groups did not have suitable standardized test to assess their communication skills. Among the populations that were highlighted by SLPs in this survey were bilingual Francophone Canadians, particularly the Acadian community, the Indigenous population, and speakers of languages less commonly spoken in Canada (e.g., Tamil).

Similarly, limited developmental information was available for multilingual children. An SLP highlighted how useful developmental data and norms for diverse groups could be, stating, *"It would be great to have a resource in English that shares if anything is different or is typical. For example, I know speech sound "s" is acquired earlier in French, so that is great to help me better assess a child's development."* According to the clinicians in this survey, improving assessments for multilingual children relies on addressing these gaps in the available developmental information.

A prominent concern among SLPs was the shortage of all and any assessment resources for CLD populations, including both standardized and non-standardized measures. The participants discussed specific needs, such as access to varied interpreters and tools for dynamic assessment, in addition to expressing frustration over the general absence of materials to support diverse languages. This lack of resources was a large obstacle to assessments, with one participant stating, *"In all of my training I was never given assessment tools to support these clients. Instead it falls on the SLP to either refer to another SLP or gather additional information to support the client".* The participants

described how these barriers with resources are limiting the scope of assessments for certain groups.

Clinicians highlighted impediments in accessing human resources critical for assessments. Difficulties in accessing interpreters, bilingual SLPs, and other professionals were prevalent due to the availability and costs associated with trained interpreters. There were challenges with collaborating with interpreters, as well as the quality of interpretation, particularly when interpreters lacked specific training in speech-language pathology. These limitations concerning human resources significantly impacted the assessment process for CLD children, and are further detailed in Table 21.

Table 21

Barriers Related to Assessment Resources

Code	Subcode	Sample Quotes
Issues with standardized and non-standardized measures	Standardized tests are not appropriate for all assessments	"View of quantitative standardized monolingual measures as the gold standard even for multilingual children who are in the norms."
		"I am unable to assess them with standardized tests."
	Substantial lack of materials and resources for culturally and linguistically diverse populations	"Lack of standardized assessment tools for my specific populations."
		"There are few or no tools/materials available, especially for my Indigenous clients."
		"Lack of appropriate assessments tools for diverse languages."
	Lack of developmental information for some languages	"Access to meaningful resources to assess (accessible norms to which one could compare observations)."
		"Norms are lacking for speech and language in different cultures and languages."
Barriers related to human resources	Barriers to access interpreters, bilingual SLPs and other professionals	"It is not always possible to get translators or cultural brokers who

		know the specific dialect spoken by a child." "Accessing quality interpreters is too expensive for our small organization." "Collaborating with other bilingual SLPs who are neutral is the best way to gain insight [into the child's linguistic skills], however this is not always possible."
	Difficulty with interpreters' translation skills	"Even when I have an interpreter, I often get the sense that the messages are not being translated very accurately."

4.3.2.3 Structural and Societal Barriers within Healthcare and the SLP Profession.

The analysis of participants' responses highlighted broader structural and societal barriers that affect the assessment process. Time constraints were a prominent concern that affected the ability to conduct thorough and appropriate assessments for linguistically diverse children. Participants highlighted the need for more time not just during assessments, but also for tasks such as preparation, analysis, and research related to obtaining appropriate materials. Additionally, societal biases and norms, particularly within the dominant culture and Western healthcare systems, also posed challenges. Participants of this study highlighted the difficulty of conducting assessments within this framework, from the reliance on standardized tests as the primary assessment method, to the constraints of assessing within dominant cultural norms children from other cultures, all the way to systemic racism and discrimination in society.

Limited training and experience among colleagues and other professionals were identified as critical issues impacting the effectiveness of assessments. Stakeholders (e.g., daycares teachers, educators, school boards, staff) require ongoing training to adopt a strengths-based approach over checklist-based assessments and to reduce biases and

harmful labels. Some clinicians are also inadequately prepared for appropriate assessments. Instances were described where previous SLP's reports either over or underestimated a child's abilities, often failing to consider bilingualism and cultural differences. This oversight has led to misguided conclusions as well as undue concern for parents that subsequent clinicians had to correct. This study's participants strongly recommended more training for SLPs and other stakeholders to address these issues.

Specific areas to focus on, suggested by these clinicians, include training on incorporating other languages into assessments, differentiating language differences from disorders, and working with culturally and linguistically appropriate resources for assessments (e.g., forming relationships with community members to gain knowledge in the local Indigenous culture). Additional suggestions brought forward by respondents included increasing training opportunities for SLPs and other professionals to learn about other cultures, develop proficiency speaking other languages and incorporate culturally responsive practice in various settings (e.g., hospital settings, school settings).

Similarly, participants emphasized the prevalence of myths surrounding bilingualism, both with colleagues less informed about appropriate assessments and prevailing general views about multilingualism with parents and other stakeholders. Some parents prioritize English over their primary language, despite counselling and education from the SLP. This can hinder the accuracy of parent report, and lead to reluctance in using their primary language in assessments with their child. Educational decisions made by certain stakeholders are also influenced by misconceptions about second language acquisition and bilingualism. Table 22 depicts the thematic analysis of

these structural and societal barriers, including the misconceptions about bilingualism, inadequate training and insufficient time for assessments.

Table 22

Structural and Societal Barriers within Healthcare and the SLP Profession

Code	Subcode	Sample Quotes
Societal and systemic barriers	Time constraints to appropriate assessments	*"Temps parfois limité pour l'évaluation dynamique."* "Sometimes limited time for optimal dynamic assessment." *"Temps pour faire évaluation dans multiples langues"* "Time to do assessment in multiple languages." "Lack of time to plan and analyze findings." "Another major challenge is the team not having the time or resources to research and order the most appropriate assessments for linguistically diverse children."
	Biases of dominant culture and norms of Western healthcare system	"Widespread acceptance of dominant culture norms as the standard against which children are pathologized." "Assessing within the confines of the Western healthcare system is challenging in itself."
Training	Lack of training of some professionals and stakeholders	"Getting teachers, educators, directors of school or daycares to understand that training their staff is necessary on a continuous level in other to provide the best interventions for them, to reduce biases, and veer away from having to check boxes and put labels but rather working from a strength-based approach."
	Lack of training of other SLPs and colleagues	"Awareness of colleagues re inappropriateness of standardized assessments normed on monolingual English children for multilingual students."
Myths surrounding bilingualism	Education and combating myths with parents re: bilingualism	"Parents are often unfamiliar with norms in any language and often want their child to speak English so they're hesitant to use their

		primary language despite counselling/education."
	Stakeholders (e.g., teachers, school staff) misinformation around bilingualism and appropriate assessments	"Stakeholders who make educational decisions based on the myths regarding second language learning and bilingualism."

CHAPTER 5: DISCUSSION

The purpose of this study was to examine the current assessment practices of SLPs who work in Canada with linguistically diverse children. This study focused on describing the approaches that SLPs use as well as the barriers to the provision of appropriate care. Data from 118 SLPs working across Canada were analyzed. Clinicians reported employing various methods, most of which were non-standardized, such as family interviews, language samples, dynamic assessments, and naturalistic observations, as well as relying on parents and caregivers as the primary human resource in assessments. The clinicians in this study also described several challenges to appropriate assessments: communication barriers due to language differences, a lack of suitable assessment materials for this population, and a lack of systemic support to conduct these assessments. This discussion section explores the use and constraints of assessment materials, service delivery, and practices involving human resources, to better understand the present state of speech-language pathology assessment practices with linguistically diverse children.

5.1 Assessment Practices: Approaches, Resources and Materials

5.1.1 Language of Assessment

Clinicians reported working with children from diverse backgrounds, including bilinguals, multilinguals, monolinguals in a language other than English or French, as well as speakers of non-mainstream French or English dialects. Participants were asked to identify up to five languages they speak, and the top five languages spoken by their pediatric clients from linguistically diverse backgrounds. While the SLPs collectively reported proficiency in 30 languages, the clinicians noted 72 different languages spoken

by their clients, meaning children speak a larger variety of languages than those reported by clinicians. This was similar to the results of previous studies (e.g., Clark et al., 2021; D'Souza et al., 2012; Maul, 2015; McLeod et al., 2013) as in these studies, there were differences between the languages spoken by clinicians and the languages spoken by clients.

Addressing this language mismatch during assessments is crucial (Paradis, 2016). Prior studies have shown that SLPs tend to assess children only in English (Caesar & Kohler, 2007), while clinicians in this study reported assessing children in more than one language when possible. Although some methods deviate from best practices, with many clinicians assessing linguistically diverse children only in the languages the clinician speaks, the majority of reported practices align well with recommended approaches. These include: (a) some clinicians assessing clients in all their languages, (b) considering the child's multilingual background, such as the child's context and exposure, and (c) emphasizing the value of speaking the child's language themselves in assessments (Maul, 2015; Paradis, 2016). This observation echoes findings from previous studies (McLeod et al., 2013; Pieretti & Roseberry-McKibbin, 2016; Verdon et al., 2015), where SLPs might not assess children in all their languages, but they do consider various factors in their language selection process, such as the availability of interpreters, the child's age of language acquisition and parent influence. In light of this considerable variation, the vast majority of SLPs in Canada acknowledge the complexity of client language profiles and the need for additional considerations in assessments with linguistically diverse children. This demonstrates an awareness essential for supporting the languages their clients speak, even if the practice of assessing all languages is not consistently implemented.

5.1.2 Standardized Assessments

Findings showed that SLPs vary in their approach to assessing linguistically diverse children, with some using standardized tests or screening tools, while others refrain from using standardized assessments altogether. Those who use standardized tests may exercise clinical judgment, occasionally deviating from conventional protocols, scoring, or reporting norms. The decision to deviate or adhere to standardized protocols appears to be influenced by factors such as caseload composition, work context, and resource availability.

5.1.2.1 Following the Conventional Approach. Over half of the SLPs in the present study reported using a standardized test in English, in line with prior studies from English-speaking countries, such as the U.S.A. (Caesar & Kohler, 2007; Harris, 2004), Australia (Williams & McLeod, 2012) and Singapore (Teoh et al., 2018). This practice might not be appropriate for all cases (Smith, 2022; Williams & McLeod, 2012). In some prior studies (Caesar & Kohler, 2007; Teoh et al., 2018), unmodified standardized assessments were commonly used, comparing bilingual children against monolingual norms, which was not the prevalent approach observed among the SLPs in this study. While some SLPs used bilingual norm-referenced tests or language-specific screeners when available, the majority of existing standardized tests lack representation of linguistically diverse groups (Teoh et al., 2018; Williams & McLeod, 2012), leading SLPs in this study to predominantly avoid using standardized tests in a conventional manner.

5.1.2.2 Diverging from the Conventional Approach. The majority of SLPs in Canada who reported using standardized tests with linguistically diverse children diverge

from its conventional administration. Instead of comparing scores against normative data, clinicians employ these tests using their clinical judgment to assess learning potential. Standardized assessments become one part of a broader toolkit to identify difficulties, plan interventions or inform treatment eligibility, rather than a definitive measure. This approach has been previously reported in the literature and represents a more suitable use of standardized tests for linguistically diverse children (Clifford, 2023; Hendricks & Diehm, 2020; McLeod et al., 2013; Smith, 2022).

Moreover, some SLPs deviate from the standard procedures by translating or adapting tests. This can involve incorporating culturally relevant materials, selecting suitable parts of tests, using translations (e.g., translation of CELF-5 into French) or working alongside parents or interpreters to translate during the assessment (i.e., instructing them on eliciting responses in the child's language). These modifications reflect clinician's awareness that the conventional use of standardized tests is unsuitable for linguistically diverse children and the variability in approaches underscores the case-by-case nature of SLPs' efforts to compensate for the absence of standardized tests in the child's languages.

5.1.3 Non-Standardized Assessments

Speech-language pathologists in the present study prioritize non-standardized methods. Clinicians emphasized that their primary goal in assessments is information gathering, and many non-standardized approaches facilitate this by allowing SLPs to gather comprehensive data in diverse and relevant settings. While some literature suggests a heightened reliance on standardized assessments (Caesar & Kohler, 2007; Teoh et al., 2018), others, in agreement with our findings, indicate that SLPs more

commonly employ non-standardized assessment strategies (D'Souza, 2012; McLeod et al., 2013; Williams & McLeod, 2012). The diverse array of methods that SLPs use aligns with recommended best practices and previous findings, including family interviews (Caesar & Kohler, 2007), language samples (Clifford, 2023; Teoh et al., 2018; Williams & McLeod, 2012), dynamic assessments (Hendricks & Diehm, 2020; Teoh et al., 2018; Williams & McLeod, 2012), and naturalistic observations (Caesar & Kohler, 2007; Clifford, 2023). When deciding which assessments to use, SLPs consider various factors, including the child's age, time of language acquisition, dominant language(s) in different settings, and proficiency in language domains (e.g., reading, writing, speaking, listening), recognizing that there is no single method to assess linguistically diverse children. This variation reflects a positive trend, demonstrating a conscious choice to use a combination of techniques to complete comprehensive assessments for this population.

5.1.4 Reliance on Family and Caregivers

Parents, caregivers, and families play a key role in SLP services, and emerged as the primary resource that SLPs relied on during assessments. While previous research highlighted the role of interpreters (e.g., Guiberson & Atkins, 2012), findings from this study emphasize the critical role of parents during assessments. Clinicians reported using non-standardized assessment approaches, including family interviews and parent questionnaires. These are key parts of the assessment process where parent and caregiver input offers vital information about the child's communication and linguistic environment, capturing details not easily observed in assessment sessions (Maul, 2015; Clark et al., 2021). Clinicians also found that when parents were actively involved in assessments (e.g., in play-based observation and incorporating familiar items from

home), it contributed to fostering rapport, trust, and served as the initial phase in establishing a strong clinical relationship with the entire family.

5.1.5 Differences across Subgroups: Clinicians Language Background and Location of Work

Some insights emerged regarding the differences in approach frequency among different groups of SLPs. The comparison between monolingual and multilingual clinicians revealed that multilingual clinicians tend to employ various approaches more frequently than their monolingual colleagues, which could suggest that language diversity within the clinician's background influences their approach to assessment strategies. Specifically across parameters such as assessing children in their dominant language, using language samples, using processing measures such as non-word repetition, and employing standardized assessments in French.

The comparison between clinicians based on their location of work (either rural settings, urban settings, or both) revealed that clinicians working in urban settings rely more heavily on family interviews and standardized tests in languages other than English or French, compared to clinicians working in rural settings. However, these differences might not be clinically significant, since clinicians in both groups reported relying on this approach when conducting assessments. The difference found may stem from the distinct demographics and contextual factors prevalent in urban versus rural settings. However, it is essential to interpret these findings within the context of the study's limitations. The small sample size and equal cell sizes within the dataset may constrain the reliability and generalizability of the results.

5.2 Assessment Challenges: Additional Considerations and Barriers to Appropriate Assessments

To address the second research question focusing on challenges that SLPs encounter in the process of assessing linguistically diverse children, it is essential to clarify that the term "challenges" is not meant to convey a negative connotation associated with working with diverse clients. Rather, it describes the additional considerations that clinicians must take into account to provide equitable and culturally informed services to populations outside the mainstream language and culture. Healthcare services, including speech-language pathology services, have predominantly been tailored to English speakers and the mainstream culture (Hopf et al., 2021; Verdon et al., 2015). This necessitates a cultural awareness and professional judgment from SLPs to closer examine how this affects assessments for all other groups.

The initial and apparent challenge stems from not sharing the same language as the child, a common concern echoed in prior studies (D'Souza et al., 2012; McLeod et al., 2013). However, the hurdles in providing appropriate assessments for these diverse populations extend beyond language discrepancies. Speech-language pathologists in this study discuss a range of barriers within the profession (e.g., collaborating with families) to structural and societal barriers (e.g., funding for materials or myths prevailing about multilingualism). Furthermore, a study conducted in Singapore by Teoh et al. (2018) indicated that even when SLPs were bilingual and shared a language with their clients, unique considerations persisted in assessments with children who were not speakers of the mainstream language. Speaking the same language did not eliminate all challenges, as standardized assessments remained biased towards Western norms and culture, and

resources were still lacking for languages other than English (Teoh et al., 2018). Thus, the complexities of linguistically diverse assessments extend beyond language matching between the child and the clinician, emphasizing the need for broader considerations, including addressing the lack of materials and overall societal and structural support to conduct appropriate assessments.

5.2.1 Insufficiency of Resources and Materials in Linguistically Diverse Assessments

Canadian SLPs have encountered a significant lack of appropriate resources and materials when conducting assessments for linguistically diverse populations. This shortage, a recurring theme in the existing literature (e.g., Guiberson & Atkins, 2012; Pieretti & Roseberry-McKibbin, 2016; Teoh et al., 2018), is widespread. It encompasses language-specific resources, developmental norms and interpreters proficient in the child's language.

Limited availability of standardized tests for specific languages and the scarcity of appropriate translated tests, pose challenges, as evidenced in prior studies (Kohnert et al., 2003; Lieven, 2013; Roberts, 2008; Teoh et al., 2018; Williams & McLeod, 2012). Speech-language pathologists are keenly aware of the cultural biases and invalidity of norms in the available tests designed primarily for the mainstream population. It is therefore important to compare clients to norms relevant to their background, when possible (Clark et al., 2021). Clinicians in this study emphasize the critical need for greater diversity in assessment tools to address this deficiency, including more accessible developmental norms in various languages.

Another resource that not all SLPs have sufficient access to is interpreters. This presents a challenge because it is not equitable to deprive clients of the ability to

communicate with their SLP in the language of their choice. This challenge has been underscored in other studies (e.g., Kritikos, 2003; Teoh et al., 2018). Additionally, interpreters need to be well-trained to effectively mediate between clients and clinicians (Huang et al., 2019). However, SLPs in this study, as in previous research, encountered challenges related to interpreters, including issues with collaborating and the accuracy in translations (Langdon & Saenz, 2016; Maul, 2015; Roberts, 2008). Therefore, it is crucial to shift towards greater access to interpreters who are appropriately trained in speech and language assessments.

Given the limited available materials, some participants express uncertainty about which tools to use with these populations. However, the practices of SLPs in this study demonstrate an improvement compared to prior research where the lack of knowledge about resource selection was more evident (e.g., Kimble, 2013; Maul, 2015; Williams & McLeod, 2012). Clinicians search for, and occasionally buy, their own materials, aiming to be well-informed and well-prepared for assessments, using developmental norms, phoneme inventories, and culturally relevant children's books, when these materials exist. Beyond their research efforts, clinicians exhibit adaptability and resourcefulness, making modifications to standardized tests and non-standardized approaches. They also describe using interpreters effectively to complete various tasks (e.g., language samples and parent report) as well as consulting and collaborating with parents, teachers, other professionals or community members familiar with the child's background to draw comprehensive conclusion about the child's communication skills. This reflects the depth of knowledge among Canadian SLPs regarding diverse assessment options, but also makes apparent the lack of sufficient resources, highlighting the need for increased support in this area.

5.2.2 Bridging Gaps in SLP Proficiency and Systemic Support with Diverse Populations

The conventional clinical framework does not adequately support SLPs in conducting effective assessments for linguistically diverse children. Despite improved proficiency compared to earlier studies (Hammer et al., 2004; Kimble, 2013), a significant confidence gap persists globally when assessing language groups beyond monolingual English speakers (Clifford, 2023; Hammer et al., 2004; Kimble, 2013; McLeod et al., 2013). Speech-language pathologists source a multitude of non-standardized approaches, resources and modifications to functionally and appropriately assess these populations, and yet, many still express doubts in their ability to analyze and compile all this information and come up with valid conclusions. They outline the difficulties in discerning between language variations and disorders, highlighting how their limited understanding of the child's background impacts their ability to obtain a comprehensive picture of the child's communication. This persisting gap in confidence likely stems from factors such as the limited resources available (e.g., developmental norms) as discussed earlier and lack of clear guidance and support for these assessments.

Challenges arising from societal and systemic barriers also impact assessments (Roberts, 2008; Smith, 2022). The current assessment model is constrained by time limitations, which hinders thorough evaluations with diverse populations. Prior studies have also found that time constraints impact various stages, including case history gathering, family engagement, and collaboration with interpreters training (McLeod et al., 2013). Additionally, societal biases, particularly myths surrounding bilingualism, persist. Stakeholders, uninformed of the significance of supporting a child's multiple

languages, may still harbour the belief that bilingualism could impede a child's communicative development (Clark et al., 2021).

Myths surrounding bilingualism, coupled with the unreliability of SLP conclusions, pose challenges during referrals. This uncertainty may lead to under-diagnosis or over-diagnosis, as teachers and parents may hesitate to refer children with emerging bilingual skills, impacting early intervention for linguistically diverse children. Increasing knowledge surrounding language diversity and cultivating positive attitudes towards bilingualism, both within and beyond the SLP field, are crucial for equitable and effective assessments (Clark et al., 2021).

5.3 Limitations and Future Directions

While this study provides valuable insights into SLPs' practices and barriers to the appropriate provision of services during assessments with linguistically diverse children in Canada, there are some limitations that should be acknowledged. First, a high response rate could not be reached. Participants were recruited using multiple outlets such as contacting provincial colleges and associations, and advertising in national organizations' (i.e., SAC) newsletters to clinicians. There were 201 surveys submitted, and of these 59% (i.e., 118 surveys) were complete. This might be attributed to the survey's comprehensive nature and time-consuming format. Future studies should include a larger sample size to confirm the findings from the current study. Nonetheless, there were over 100 complete surveys, which is in line with other studies including SLPs in Canada (e.g., Affoo et al., 2023; Campbell et al., 2016). In addition, there was a diverse representation from SLPs in every province across Canada.

Second, limitations arose from the wording of certain questions that restricted the capacity for specific analyses. In particular, question 13, which explored language approaches used by SLPs with linguistically diverse children, included the prompt: “I assess the language(s) I speak”. If this question had been framed as “I assess *only* the language(s) I speak”, it could have identified SLPs who abstain from gathering information in a child’s language(s). Subsequently, the prevalence of this practice among clinicians in Canada could not be conducted. Despite lacking this precise data, the survey incorporated open-ended questions, enabling a qualitative analysis of some items and resulting in more in-depth information on SLPs' current assessment practices. Future research should validate these findings and explore quantitative findings about approaches SLPs are using in greater detail.

Thirdly, it must be noted that the overall number of observations (N = 118) was smaller than ideal for performing a *t*-test and an ANOVA, and the size of the different cells formed by the grouping varied widely. This affects the validity of the statistical analyses conducted when comparing the assessment approaches used by monolingual and multilingual SLPs as well as the approaches used by clinicians depending on their location of work. Therefore, while the *t*-tests and ANOVA results may offer insights into potential group differences, it is important to interpret the results with caution. Future analyses may benefit from addressing the issue of disparate cell sizes, perhaps through refinement of survey questions, through data aggregation or alternative statistical methods better suited to handling uneven sample distributions.

CHAPTER 6:

CONCLUSION

The findings of this study reveal the variety of assessment practices and challenges that SLPs in Canada face when working with linguistically diverse children. Clinicians are using a range of resources and non-standardized approaches in assessments and are displaying a heightened awareness of the importance of supporting the linguistic development of their diverse clients. This marks a positive shift, contrasting with literature from prior studies where there were large disparities reported between recommendations and clinicians' actual reported practices for linguistically diverse children (Jordaan, 2008; Marinova-Todd et al., 2016). The present study reveals a closer alignment between best practices and the actual approaches implemented by SLPs today, reflecting an evolution in the field as well as a positive shift in attitudes toward bilingualism and communication disorders (Paradis, 2016).

However, SLPs still face challenges to the appropriate service provision for linguistically diverse children in Canada. The language mismatch between clinicians and their clients emerge as a primary barrier for SLP assessments, and the limited availability of bilingual SLPs, interpreters, and relevant resources exacerbates these challenges. Addressing these issues needs fundamental changes at structural, institutional, and educational levels, focusing on increased resources, SLP diversity, transforming the assessment model and providing comprehensive clinical training.

Firstly, there is a pressing need for increased resources to navigate language differences between clinicians and clients. Speech-language pathologists require improved access to trained interpreters who speak the child's language and dialect.

Furthermore, there is a need for an expanded availability of high-quality physical resources, including developmental norms and tools in their clients' language(s). These resources, designed to be less biased than some currently utilized methods in the field (e.g., standardized tests), are essential to support assessments.

Secondly, an increase in diversity within the SLP field, including more professionals proficient in multiple languages, is imperative to bridge language gaps and expand the amount of bilingual SLPs available for referrals. Additionally, all clinicians, regardless of their own language background, should serve as advocates for equity, diversity, inclusion, and anti-racism. As experts in language and communication, it is the SLP's role to appreciate, and to promote, the value of linguistic variation. This entails acquiring a deep understanding and respect for the complex multilingual and multicultural experience to challenge debunked notions such as the monolingual gold standard. By doing so, clinicians can engage effectively with linguistically diverse clients in assessments, supporting all their languages and establishing a safe and inclusive space for everyone.

Thirdly, restructuring the service model is crucial, as highlighted in previous studies (Smith, 2022). This involves addressing systemic issues, for example, the normative samples and data that perpetuate inequity (Smith, 2022). A shift towards a more bilingual assessment model would include allocating more time for assessments and emphasizing ongoing assessment rather than relying on a single session. Broader societal changes include legal and policy changes to increase support to marginalized communities, funding, and collaboration with provincial colleges and associations.

Finally, overcoming these barriers is suggested by one participant of this study, to involve "continued listening and learning," a perspective the researchers find particularly resonant. The implications of this study extend to research and diversity training in Canada, emphasizing the need for changes in SLP knowledge, learning, and training. Increased SLP training is essential for navigating language barriers, using a range of tools and collaborating with diverse human resources. Ongoing research in this field, coupled with the findings from this study, can guide the development of new linguistic diversity training in graduate programs and professional development workshops. This study significantly contributes to expanding knowledge in this area, offering valuable insights for developing position statements and best practices that empower SLPs to enhance person-centered healthcare practices in Canada.

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APPENDIX A:

SURVEY QUESTIONS

Demographic Questions

1. Are you a speech-language pathologist (SLP) currently practicing in Canada?
    a. Yes
    b. No

2. What is the highest degree related to speech-language pathology that you have completed? Please indicate the year of completion of this degree. *(Select only the highest degree).*

Degree	**Year of Completion**
Bachelors	
Masters	
PhD	

3. How many years in total have you worked with children (i.e., 0 – 18 years of age) as a speech-language pathologist? _____ *(drop-down list with numbers from <1, 1, 2, 3…50, >50)*

4. What is the current percentage of children that make up your caseload?
    a. 1-24%
    b. 25-49%
    c. 50-74%
    d. 75-100%

5. Given the percentage of children currently on your caseload, what is the percentage of those children who are linguistically and/or culturally diverse?
    Culturally and/or linguistically diverse children are children who are bilingual (e.g., speakers of English and Arabic, or French and Inuktitut), multilingual, non-standard dialect users, or monolingual in a language other than English or French.
    a. 1-10%
    b. 11-20%
    c. 21-30%
    d. 31-40%
    e. 41-50%
    f. 51-60%
    g. 61-70%
    h. 71-80%
    i. 81-90%
    j. 91-100%

6. Please estimate the current percentage of children on your caseload who are *(drop-down list with numbers from 0% to 100%)*:
    a. Monolingual English speakers _____
    b. Monolingual French speakers _____

c. Monolingual in another language (e.g., a child who only speaks Mandarin or a newcomer child who is being introduced to a new language in daycare/preschool/school)_____
d. Speakers of a non-standard English dialect (e.g., Indigenous English dialects)_____
e. Speakers of a non-standard French dialect (e.g., Indigenous French dialects) _____
f. Bilinguals (children who speak two languages such as Portuguese and French) _____
g. Multilingual (children who speak three or more languages)_____

7. What are the most common languages spoken among the culturally and linguistically diverse children that you currently work with? *(List up to 5.)*

Language	Number of children on your current caseload speaking that language

8. What is the main province/territory of Canada where you currently work as a SLP?
a. Alberta
b. British Columbia
c. Manitoba
d. New Brunswick
e. Newfoundland and Labrador
f. Northwest Territories
g. Nova Scotia
h. Nunavut
i. Ontario
j. Prince Edward Island
k. Quebec
l. Saskatchewan
m. Yukon

9. Do you practice in a rural or urban area?
a. Rural (geographic area located outside a main town or city)
b. Urban (geographic areas including city, towns or suburbs)
c. Both (rural and urban)

10. Enter the percentage of the time you currently work in each of the following settings. The total should equal 100%:
Some of the following options may vary depending on province, please use the ages and grades as a guideline.
a. Early intervention (Birth to 3 years) _____
b. Preschool (ages 4-5) _____
c. Elementary school (grade 1-6)_____
d. Middle school/Junior high school (grade 7-9)_____
e. High school/ Secondary school (grade 10-12)_____
f. Clinic/Hospital _____
g. Rehabilitation Centre _____
h. Private practice _____
i. Other (please specify): _____

11. Enter the percentage of the time you currently work with children from these ages. The total should equal 100%:
a. Birth to 3 years _____

b. ages 4 to 5 _____
c. Ages 6 to 8 _____
d. Ages 9 to 11 _____
e. Ages 12 to 14 _____
f. Ages 15 to 18 _____

12. List all the languages you speak from most proficient to least proficient and rate your proficiency in each of the following domains. *(Please list up to 5 languages.)*
Scale: Highly Proficient (Native), Proficient, Intermediate Proficiency, Basic Proficiency

Language	Proficiency In Listening	Proficiency In Speaking	Proficiency In Reading	Proficiency in Writing

A. Approaches

13. Please specify your usual practice regarding the following approaches when working with culturally and linguistically diverse children:

Approach	**Always**	**Very often**	**Sometimes**	**Rarely**	**Never**
I assess the language(s) I speak					
I assess only the child's heritage/family language(s)					
I assess only the dominant/strongest language					
I assess all the languages that the child speaks					
I assess the language(s) spoken in the community (societal language)					
I assess the language(s) the parent/guardian desires					
Other (please specify): _____					

14. Do you use approaches/materials that are specifically designed for culturally and linguistically diverse children?
    a. Yes
    b. No

15. What approaches, materials, and/or human resources do you find particularly useful when assessing culturally and linguistically diverse children and why? *(Please describe briefly.)*

_____
_____
_____

16. Please specify how often you use the following materials in assessments for culturally and linguistically diverse children:

Approach	Always	Very often	Sometimes	Rarely	Never
Standardized assessment tools in the child's language(s)					
Non-standardized assessment tools in the child's language(s)					
Developmental speech and language norms in the child's language(s)					
Knowledge related to the child's culture(s) and language(s)					
Resources obtained from training to work with culturally and linguistically diverse children (e.g., information from a webinar or professional development workshop)					

17. Please specify how often you use the following human resources to assist you in assessments for culturally and linguistically diverse children:

Approach	Always	Very often	Sometimes	Rarely	Never
Bilingual SLPs					
Parent, family member or caregiver					
Interpreters					
Cultural broker *(a person knowledgeable about a culture who acts as a cultural support and bridge between the client and clinician, James Cook University, n.d.)*					
Other (please specify): _____					

18. How often do you use the following assessment strategies when identifying communication disorders in culturally and linguistically diverse children?

Approach	Always	Very often	Sometimes	Rarely	Never
Standardized tests in English					
Standardized tests in French					
Standardized tests in a language other than English or French					
Standardized tests translated by the SLP into the child's heritage/family language					
Standardized tests translated by an interpreter or translator into the child's heritage/family language					
Naturalistic observations					
Language samples					
Dynamic assessments					
Criterion-referenced measures					
Processing-based measures (e.g., nonword repetition)					

Family interviews					
Teacher interviews					
Collaborating with other professionals to form a clinical judgment					
Virtual administration of assessment					
Other (please specify):					

B. Training

19. Have you received training and/or coaching specifically to work with culturally and linguistically diverse children?
    a. Yes
    b. No

20. Please indicate whether you have received training in the following domains at any of the following times, and the quality of the training received.
    Scale: Very good, good, acceptable, poor, very poor, did not receive training

Domain	**Coursework during graduate school**	**Practicum/Clinical placements during graduate school**	**Workshops and other training opportunities after graduate school**
Bilingualism/Second language acquisition			
Developmental norms and communication patterns in various cultures			
Developmental norms and communication patterns in various languages			
Dialect differences			
Differential assessment of bilingual and monolingual children			
Multicultural issues, knowledge on ethnically diverse populations			
Assessment tools for culturally and linguistically diverse children			
Intervention approaches for culturally and linguistically diverse children			
Differentiating language disorder and language differences			
Working with the families of culturally and linguistically diverse children			

Collaborating with an interpreter			
Collaborating with colleagues or other professionals (e.g., cultural broker)			

C. Challenges

21. Based on your experience, what is the major challenge you face when assessing culturally and linguistically diverse children? _____

22. Based on your experience, what is the major challenge you face when providing intervention to culturally and linguistically diverse children?
_____

23. Rate the frequency of the challenges that you face when assessing culturally and linguistically diverse children:

Approach	**Always**	**Very often**	**Sometimes**	**Rarely**	**Never**
Lack of appropriate assessment tools					
Lack of ability to speak and assess the child's heritage/family language (other than English or French)					
Inadequate knowledge of the child's culture					
Lack of knowledge about bilingualism, multilingualism, or bilingual development					
Lack of knowledge about second language acquisition					
Lack of availability of interpreters who speak the child's language(s)					
Lack of availability of other speech language pathologists or professionals who speak the child's language(s)					
Difficulty distinguishing language difference from language disorder					
Lack of knowledge of developmental norms in the child's language(s)					
Lack of time to administer the appropriate assessment					
Presence of cultural or linguistic bias in standardized assessments (e.g., the presence of an item on a standardized language test that is not shared across all cultures)					
Difficulty collaborating with the child's family					

24. Do you have any suggestions about how any of these barriers could be overcome? *(Please describe briefly.)*

_____
_____
_____

25. Please use the scale below to answer the following statements (strongly agree, agree, neutral, disagree, strongly disagree):

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
I am competent assessing linguistically diverse children					
I am competent providing intervention to culturally and linguistically diverse children					
Compared to other SLP's, I am more skilled in clinical interactions with culturally and linguistically diverse children					
I am proficient in clinical interactions with the families of culturally and linguistically diverse children					
I am comfortable assessing a child from a cultural or linguistic background other than my own					
I am comfortable providing intervention to a child from a cultural or linguistic background other than my own					
Cultural and linguistic diversity issues should be an integrated part of SLP graduate programs					
Cultural and linguistic diversity issues should be taught as a special course in SLP graduate programs					
I could benefit from postgraduate training in cultural and linguistic diversity					
Clinical competence is related to cross cultural knowledge					
Improving services to culturally and linguistically diverse children is an appropriate initiative for SAC and other Canadian associations					
Bilingual, linguistic diversity and multicultural issues should be considered specialty areas of clinical practice					
I feel more comfortable assessing children from my own culture					
I feel more comfortable assessing monolingual English children					
I feel more comfortable assessing monolingual French children					
I prefer to collaborate with another professional with expertise in this area when working with culturally and linguistically diverse children					
It is acceptable for SLPs who are not native speakers of Canadian standard English/French to assess children who speak a standard Canadian English/French dialect					
It is acceptable for SLPs who speak a standard Canadian English/French dialect to assess children who are not native speakers of standard Canadian English/French					

26. Please use the following scale to answer the following statements:

Statement	**Always**	**Very often**	**Sometimes**	**Rarely**	**Never**
I provide intervention to culturally and linguistically diverse children in the child's heritage/ family language					
I provide intervention to culturally and linguistically diverse children in the community/societal language					
I provide intervention to culturally and linguistically diverse children in all the languages they speak					

27. Do you have any additional comments?

_____

_____