



**Managing Speech Sound Disorders in Children with Cerebral Palsy:
South African Speech Therapists' Perspectives**

Nicol Randeria (1616911)

School of Humanities, University of Witwatersrand

Master of Arts by Dissertation in Speech Pathology

Supervisor: Dr Anniah Mupawose

Co-Supervisor: Miss Lavanya Naidoo

2025

Declaration

This work has not been previously submitted, in whole or in part, for the award of any degree. This research report is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Arts by Dissertation in Speech Pathology at the University of the Witwatersrand.



Nicol Randeria

Signed in Durban, KwaZulu-Natal on this 31st day of January 2025.

Acknowledgments

I wish to thank Dr Anniah Mupawose and Ms Lavanya Naidoo for their continuous support and guidance throughout this research journey. I would also like to express my deepest gratitude to my family for their unwavering support and encouragement during this time. Finally, I am grateful to all survey respondents and focus group participants, whose input was invaluable to the study.

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List of Acronyms

AAC	Augmentative and alternative communication
CBR	Community-based rehabilitation
CP	Cerebral palsy
CPD	Continuous professional development
FGD	Focus group discussion
HPCSA	Health Professions Council of South Africa
ICF	International Classification of Functioning, Disability and Health
LMICs	Low- and middle-income countries
MDT	Multidisciplinary team
NDP	National Development Plan
NDT	Neurodevelopmental treatment
PROMPT	PROMPTS for Restructuring Oral Muscular Phonetic Targets
POPIA	Protection of Personal Information Act
SASLHA	South African Speech-Language and Hearing Association
SLP	Speech-language pathologist
SLT	Speech-language therapist
SSI	Semi-structured interview
URL	Uniform Resource Locator
WHO	World Health Organization

Managing Speech Sound Disorders in Children with Cerebral Palsy: South African Speech Therapists' Perspectives

Chapter 1: Introduction

A Vignette

The following vignette is a personal narrative, developed from the researcher's clinical experience in a South African context.

Shaquille, a 5-year-old boy diagnosed with cerebral palsy, is wheeled in by his Gogo (grandmother) into my office. Both look absolutely drained—a testament to the gruelling early morning commute from home to the hospital.

A heavy sigh from Gogo hangs in the air while she sinks into the chair, and I note how her weariness is etched in every movement.

[Silence]

In her mother tongue, IsiZulu, Gogo expresses her concerns and fears about her grandson's limited speech and immobility. I strain to understand her, but unfortunately, I don't grasp the exact meaning of her words. Frustration and annoyance rise in me, which are mirrored in her expression—both of us failing to connect as we grapple to communicate.

[Silence]

I glance around the department, desperate to find someone who can interpret or translate. Staff is scarce, and no one can assist—it's just me; I am the only speech therapist at the hospital.

With only 30 minutes left of our therapy session, I frantically try to pull the resources I have together to assess Shaquille's speech. I cannot find tools in his home language, IsiZulu; they all seem to be in English. So, I try to adapt by informally translating sections of the assessment that I can—I find it clumsy and incomplete. Gogo is disapproving and unimpressed.

[Silence]

By the end of the assessment, I can conclude that Shaquille presents with slurred, slowed, and unclear speech, along with a few vocalisations, which he uses to express his needs and wants to his grandmother.

[Silence. I take a moment to compose myself to ponder over the situation.]

How do I translate and communicate my findings to Gogo?

What should be my next steps for management? What resources do I use? What resources do I have at my disposal?

Should I consider recommending speech exercises or AAC [augmentative and alternative communication], or which approach will work best for Shaquille?

What should I do and how do I do it? I ask myself this as I feel the enormity of the task pressing down on me.

This vignette shines a spotlight on the inadequacies of South Africa's healthcare system and policies. It illustrates the challenges speech-language therapists (SLTs) typically encounter when assessing and managing children with cerebral palsy (CP) diagnosed with a speech disorder within a diverse South African health setting. It also highlights the obstacles faced by caregivers like Shaquille's grandmother, as well as the challenges confronting SLTs around appropriate use and accessibility to resources (such as translators and linguistically appropriate tools) and confidence in therapy management.

Background

Within the sub-Saharan African setting lies a wide chasm between research, knowledge, and expertise among SLTs, as well as the relationship between CP and speech disorders (Khoza-Shangase & Mophosho, 2021). In South Africa, the prevalence rate of CP is 10 per 1 000 live births, particularly regions such as KwaZulu-Natal, which report even higher prevalence rates (Katangwe, 2020).

Speech-language therapists play a pivotal role in assessing, managing, and offering support to children with CP who are diagnosed with communication disabilities (Pennington et al., 2019). Cerebral palsy is a congenital disorder of movement, muscle tone, or posture, caused by abnormal brain development or brain damage (Pennington et al., 2019). It is the most common physical disability in childhood—a condition that is permanent, but not unchanging (Patel et al., 2020). As this condition often presents with communication disorders, SLTs need to be able to provide services to children with CP, support their communication challenges, and improve their quality of life by meeting their communication needs (Patel et al., 2020).

Research in the field of speech-language therapy and CP is ongoing but reveals a gap in resources and interventions available for CP and associated speech disorders (Pascoe, 2011). Drawing from the opening vignette and evidence from local and international journals, knowledge remains limited regarding speech and language services for children with CP who have a speech disorder in the South African context. Therefore, exploring the perceptions of SLTs who manage speech difficulties of children with CP within the country's healthcare landscape has the potential to bridge this gap.

This study is contextually relevant because it situates itself within the confines of the South African National Development Plan (NDP), and specifically the tenet of “promoting health” (National Planning Commission, 2012). The study aligns with the NDP's key objectives within the area of promoting health by exploring public health systems and guidelines, multidisciplinary team approaches, and social challenges facing SLTs regarding service provision in South Africa to children with CP diagnosed with a speech disorder. This study aimed to recruit SLTs registered with the Health Professions Council of South Africa (HPCSA), working with children with CP diagnosed with a speech disorder, from across South Africa via online platforms.

Conceptual Framework

This study was guided by the Collaborative Care Model (CoCM) (Katon et al., 1990), and drew on the interdisciplinary aspects of the model, which allowed for the expression and holistic analysis of SLTs' views and opinions regarding the management of paediatric CP in South Africa. This model has primarily been reviewed in mental-health settings which has analysed the beneficial relationship between holistic treatment plan settings and patient outcomes (Reist et al., 2022). An article by Unutzer (2013) describes the CoCM as a model which creates a holistic framework that encourages interdisciplinary collaboration, as well as family and community engagement, to improve patient outcomes. The model has the potential to contribute substantially to advancing future research (Katon et al., 1990).

Conclusion

This study focused on exploring and describing SLTs' perceptions in the clinical management of children with CP in South Africa who present with speech impairments. The impact of CP on an individual's life can be significant, limiting their performance of daily tasks and thus affecting their quality of life and ability to function independently (Patel et al., 2020). By exploring SLTs' perceptions, this study identified factors such as the accessibility and effectiveness of tools and resources, knowledge and training requirements, and the clinical experience SLTs possess or lack when working with the CP population. Identifying these factors could contribute to future assessment and intervention methods and lay the foundation for well-structured services—crucial for sustained development for this population. Understanding, and thus improving service delivery could offer children with CP presenting with a speech disorder effective communication skills and the ability to become better communicators in all environments, thereby improving their quality of life.

Chapter 2: Literature Review

Introduction

To fully understand South African speech-language therapists' (SLTs) perceptions around service delivery for children with cerebral palsy (CP) diagnosed with a speech disorder, exploring the factors that affect the 'why' and 'how' within both a global and local context is essential. This study positions itself on a local platform within the field of Speech and Language Therapy in South Africa, to understand better and clarify the possible facilitators or barriers to and within therapy. Additionally, this study will explore assessment and management practices used within therapy, SLT's cultural responsiveness within the field and recommendations to better the future of Speech and Language Therapy made by SLTs. This study was situated within a South African context. The researcher examined South Africa's history and policies around disability and rehabilitation services. Defining and understanding CP as a disability, and its prevalence globally and locally, was also investigated to understand its impact on and relationship to rehabilitation services, specifically speech-language therapy. The researcher analysed therapy practices used among SLTs both globally and locally, including their effectiveness for the CP population.

Understanding the scope of practice for SLTs was crucial to this study, as this would help develop a deeper understanding of the services provided to the CP population and shed light on the challenges experienced within service delivery. Furthermore, it would guide the researcher to explore solutions to these challenges and their application in the South African healthcare landscape. All key variables and research discussions were guided and supported by the Collaborative Care Model (CoCM).

Disability in the South African Context

Disability and particularly the effectiveness of disability policies, will be analysed and discussed within the local South African context. The World Health Organization (WHO)

defines disability as the presence of one or more of the following dimensions: impairment in a person's body structure or function, or in mental functioning. Reports indicate that 16% of the global population currently experiences a significant disability (WHO, 2001).

Various international frameworks and laws have been developed to address inequalities affecting children with disabilities (Sherry, 2014). South Africa has also established well formulated and comprehensive policies on paper to support children with disabilities but the use and the practical component of these policies and frameworks remain inconsistent and inadequate (Patel, 2014). The Constitution of the Republic of South Africa (Act No. 108 of 1996) protects the rights and dignity of children with disabilities. This Act promotes and supports equal opportunities for children with disabilities and their integration into society (Sherry, 2014).

Moreover, the Integrated National Disability Strategy White Paper in 1997 (Office of the Deputy President, 1997) was drafted in accordance with the new South African constitution, serving as the primary policy document to establish a framework for social welfare in South Africa's post-apartheid era (Patel, 2014). Two white paper policies add significance to this study's purpose and value: (1) the National Education Policy Act, 1996: Education White Paper Five on Early Childhood Development, and (2) the National Education Policy Act, 1996: Education White Paper Six on Special Education: Building an Inclusive Education and Training System (Department of Education, 2001). The researcher analysed the effectiveness of the principles outlined in these policies by assessing the quality-of-service delivery to the CP population based on SLTs' perceptions.

In its *Pocket Guide to South Africa 2009/10: Social Development*, the South African Department of Social Development (2009) drew attention to the fragmented and unequal nature of services for children with disabilities, which persist to the present day. This viewpoint is supported by Sherry (2014), who identified critical factors affecting disability

and South Africa's health system, such as access to healthcare, quality of care, and rehabilitation. For the purposes of this study, these critical factors were further explored in the field of speech-language therapy. Although the National Rehabilitation Policy (2000) was established to rectify these matters, deep-rooted deficiencies still exist at a social, economic, and political level, contributing to the limited availability of resources and inadequate service provision in South Africa (Patel, 2014). The South African government has made noteworthy progress in developing and structuring legislation; however, the execution of these policies is stagnant (Patel, 2014).

This study focused on SLTs' understanding, incorporation, and integration of South African policies influencing their provision of services to the CP population with communication challenges.

Cerebral Palsy

Defining the symptoms, characteristics and prevalence of CP is crucial when analysing and understanding the management of it. CP is a neurodevelopmental disorder that affects movement and posture, caused by abnormal brain development or damage to the immature brain (Patel et al., 2020). It is the most common childhood motor disability (Patel et al., 2020) and accounts for 10 per 1 000 live births globally (Katangwe, 2020). Additionally, one must account for the difference in presentation with CP for rural versus urban settings within South Africa. Rachamose and Harvey (2025) explain this difference in functional impairment; rural settings accounting for more severe cases, due to limited access to healthcare services, socio-economic challenges and cultural beliefs. These factors hinder improvement in quality of life for children with CP as diagnoses and intervention are delayed (Rachamose & Harvey, 2025). Conversely, children with CP situated in urban settings have

earlier access to diagnoses, resources and multidisciplinary therapy which results in improved functional outcomes and quality of life (Rachamose & Harvey, 2025).

Prevalence of CP

A study by McIntyre et al. (2022) explained the global prevalence of CP by determining the trends and estimates of CP among high-income countries and low-middle-income countries (LMICs) through CP register systems and population-based prevalence studies. The study concluded that CP birth prevalence was much higher in LMICs than in high-income countries, which have benefited from greater medical advancements and socio-economic development. Moreover, little to no support from CP registers is available in low-income countries (McIntyre et al., 2022). Whereas this study shares statistical evidence around CP in a global setting, a study by Dan and Paneth (2017) presented reasons for the substantial shift in the prevalence of CP between the Global North versus the Global South. This shift may be attributed to perinatal and post-natal causes, with cerebral malaria and other infections of the central nervous system noted as the leading causes of CP in LMICs (Dan & Paneth, 2017).

Global North Versus Global South of CP

Coombe (2017) drew attention to the discrepancy in CP prevalence between the Global North and the Global South, as well as the discrepancy in CP representation between urban and rural health settings in South Africa. This is significant as the current research study explored SLTs' perceptions of service delivery across all geographical work settings (urban, semi-urban, and rural). Coombe (2017) concluded that previous studies have considerably misrepresented the experiences and needs of CP patients, whose diagnosis, specifically around speech disorders, is predominantly clinically represented at an urban

tertiary hospital level. Although patients in tertiary health settings have access to trained specialists, resources, correct referrals, and rehabilitative services, patients in rural settings do not. The lack of such services has resulted in a higher and more varied risk prevalence for CP, presenting a different clinical picture regarding how and why CP-related speech disorders manifest in children with CP in South Africa (Coombe, 2017). In line with the suggestion made by Katangwe (2020), Coombe's (2017) article emphasised the need for CP registries and further information regarding preventative measures to combat the aetiology of CP in Africa. Furthermore, the article revealed the lack of early identification and management of children with CP, which was attributed to a shortage of medical staff and rehabilitation therapists specifically trained within a rural African healthcare context (Coombe, 2017). Thus, the discrepancies in trainings and accessibility has highlighted the vast differences between the global south and global north (Coombe, 2017).

Characteristics and Symptoms of CP within Speech and Language

Because of its high prevalence rate in South Africa, understanding CP in the context of speech and language was crucial for this study.

Figure 1 illustrates the types of CP, its causes, and factors affected by the condition. It is evident that children with CP may experience a range of speech disorders; therefore, providing systematic and comprehensive examinations of the prevalence and features of childhood speech disorders with CP is key.

With 70% to 80% of individuals with CP affected, spastic CP is the most common type of CP, resulting in limited movement, tightness, and muscle stiffness (Sadowska et al., 2020). These symptoms severely affect the ability of children with CP to coordinate and control orofacial and respiratory muscles, resulting in slurred and unclear speech (Sadowska et al., 2020). Dysarthria is the most common motor speech disorder in children with CP

(Pennington et al., 2019). Although research around this motor speech disorder is limited, it is most common in dyskinetic CP and is prevalent in at least 50% of the paediatric CP population (Swanepoel, 2020).

Figure 1

Characteristics of Cerebral Palsy

Cerebral Palsy (CP)			
Types of CP • Spastic CP – motor cortex damage (most common) • Dyskinetic CP – basal ganglia damage • Ataxic CP – cerebellum damage • Mixed CP – combination damage			
Aetiology	Feeding and Swallowing	Speech	Language
• Antenatal – prematurity, low birth weight, intrauterine infections • Perinatal – birth asphyxia, complicated birth, and delivery • Post-natal – head trauma, meningitis/encephalitis	• Oral motor dysfunction • Dysphagia • Poor jaw control • Delayed swallow reflex • Gastro-oesophageal reflux • Excessive drooling • Poor posture • Feeding fatigue	• Dysarthria: ◦ Poor control of speech muscles • Apraxia: ◦ Difficulty planning and coordinating movements for speech • Voice disorders: ◦ Difficulty controlling pitch and loudness • Fluency disorders: ◦ Inconsistent flow and rhythm of speech	• Aphasia ◦ Language disorder affecting one's ability to communicate, typically caused by brain damage • Receptive difficulties • Expressive difficulties • Cognitive communication challenges

Source: Pennington et al. (2020)

Speech production relies on five key subsystems: respiration, phonation, articulation, resonance, and prosody (Hustad et al., 2019). As a result of reduced muscle tone, difficulty controlling the orofacial muscles, and impaired breath support, the characteristics of dysarthria are typically described as breathy, slow, and mumbled speech, as it affects all subsystems (Hustad et al., 2019). As CP is a permanent disorder of movement and muscle

tone, a child's ability to fully engage with and participate in their environment is significantly hindered due to the long-term physical, mental, intellectual, or sensory impairments they may face (Swanepoel, 2020). For the purposes of this study, understanding the aetiologies and classification of CP is key to ensuring that the appropriate intervention can be analysed and discussed when assessing effective speech and language service provision to this population. Equally important is the provision of interventions that allow children to engage with all communicative partners to the best of their abilities in all environments (Swanepoel, 2020).

Clinical Experience and Exposure, Trainings and Limitations

Given CP's multifaceted and diverse diagnosis, along with the level of knowledge and skill required by SLTs, effective intervention is vital. This section will explore the factors that either facilitate or hinder effective management practices for SLTs. These factors will include SLTs' confidence in management practices and awareness of evidence-based practices and management approaches, as well as the accessibility of knowledge, training, and courses. Recognising the importance of studying these factors in the field of CP, the researcher sought to analyse accessibility, practicality, and quality in management practices and policy guidelines for SLTs.

Approaches

Speech disorders require professionals to be well adapted and updated on efficient training and resources (Pennington et al., 2004). Notwithstanding the effective training and courses available to SLTs—such as PROMPTS for Restructuring Oral Muscular Phonetic Targets (PROMPT) and augmentative and alternative communication (AAC)—some researchers report gaps in specific CP training programmes, specifically regarding CP management techniques. A systematic review by Pennington et al. (2004) emphasised the need for more evidence-based management practices that target communication challenges, such as

dysarthria, in children with CP. Their article highlighted the potential for evidence-based management practices in the speech therapy field but questioned its effectiveness for speech therapy practices because current research lacks conclusive data (Pennington et al., 2004).

A study by Korkalainen et al. (2023) revealed the effectiveness of principles of motor learning to improve motor speech in children with CP, but noted that the quality of evidence is low, pointing to the need for further research to evaluate the effectiveness of motor speech therapy in improving speech.

A study conducted by Pitt et al. (2023) investigated the prevalence of and preference for pre-service training in AAC for speech-language pathologists (SLPs) and special education teachers. Pre-service training was reportedly important as it provided professionals with skills to enhance inclusivity and therefore aid in AAC's success. Although the existing research focused predominantly on evaluating SLPs' perspectives on AAC course design, the study by Pitt et al. (2023) concluded that participants preferred active learning activities or a mix of active and passive learning over passive learning coursework, as it aided in their confidence and knowledge (Pitt et al., 2023). Therefore, courses and training should consider the types of learning and teaching methods.

A motor learning approach, PROMPT, was assessed and analysed in a study conducted in 2019, which aimed to assess its effectiveness in improving speech motor abilities in children with CP through a waitlist control group trial protocol (Fiori et al., 2022). The study supported the effectiveness of PROMPT's intensive, hands-on training, demonstrating its advantages for speech motor control and intelligibility with children with CP. Although PROMPT is a beneficial method for improving speech motor difficulties,

specialised training needs to be implemented among SLPs for its techniques to be performed effectively (Fiori et al., 2022). The study's findings identified and analysed well-defined and beneficial training programmes available to SLTs. However, the study concluded that future research would be required to enhance such training programmes to ensure SLTs were well prepared to perform effective interventions in a population with complex communication challenges like CP.

Courses and Training

Bakuwa et al. (2020) evaluated a short practical course between 2015 and 2017, aimed at bridging the gap between newly qualified SLTs (less than four years of experience) and CP patient interventions. The course exposed the complexities of CP, while also drawing attention to the complexities and challenges in training and readiness that SLTs in South Africa face. The article concluded that the course resulted in positive outcomes, including increased confidence, changed attitudes and perceptions, altered practice intentions, and enhance self-perceived readiness in the area of CP among SLTs (Bakuwa et al., 2020). Therefore, this could potentially improve the quality of service delivery for children with CP. Although SLTs with less experience but more complex training may deliver better therapy to a diverse population of patients, a study by Dawson (2018) revealed that therapists with more clinical experience report higher levels of self-efficacy, confidence, and flexibility in applying their knowledge.

Despite improvements in the availability of rehabilitation services in South Africa, a study by Lydall (2020) on the perceptions of SLTs working in the public health sector revealed the systemic challenges that have hindered the effectiveness of therapy. The SLTs

also expressed the need for more support and specialised training to deliver quality services to children with CP (Lydall, 2020).

Policies

According to Khoza-Shangase and Mophosho (2021), South African studies and policies reveal ongoing efforts to improve training for SLTs in the field of CP, indicating that challenges with resources and comprehensive training persist. Their study discussed speech therapy tools and programmes developed around Western culture and language, noting that failure to acknowledge South Africa's linguistic diversity has created a barrier for effective training in African languages. To address these barriers and improve the quality of care for all, the authors advocated for developing culturally and linguistically responsive training and training platforms, which can be achieved by restructuring curricula and continuous professional development within the speech-language field (Khoza-Shangase & Mophosho, 2021).

Linguistic and Cultural Appropriateness of Resources

Similarly, a study by Southwood and van Dulm (2015) brings to light the lack of reflexivity around linguistic and cultural diversity in South Africa among SLTs. This study compared the quality of service delivery in a diverse context between SLTs with more clinical experience versus SLTs who have recently graduated, but whose training focused on multilingualism and multiculturalism. The results revealed marginal significance between the two groups of SLTs. The authors reported that SLTs with less experience but multicultural and multilingual training could offer therapy in an African language. However, the challenge with the lack of appropriate linguistic and cultural assessment and management resources still affected the quality of services provided. Additionally, Southwood and van Dulm (2015) suggested that African-language-speaking SLTs may contribute to better service delivery, given South Africa's diverse context.

Southwood and van Dulm's study is further supported by Abrahams et al. (2023), who reviewed emerging professional practices focusing on reducing inequality in speech-language therapy and audiology. This scoping review emphasised the underdevelopment of multilingual therapy programmes and the focus of therapy practice on predominantly English-speaking or affluent communities, thus limiting training for multilingual and culturally diverse communities in LMICs (Abrahams et al., 2023).

The goal of speech-language therapy is to aid and facilitate communication (Pennington et al., 2019), and SLTs are considered experts in communication (Abrahams et al., 2019). Through assessment and treatment, SLTs offer a range of techniques and strategies in line with evidence-based practice to improve communication problems (Abrahams et al., 2019).

According to Watson and Pennington (2015), speech difficulties in children with CP often diminish quality of life and reduce interaction and participation in their environments. With approximately 50% to 70% of individuals with CP presenting with a speech disorder, ranging from mild to severe, the authors stressed the importance of understanding its effects on interaction and participation. A child's ability to produce or understand speech is affected as they experience difficulty with muscle control and the functioning of the respiratory system, as well as swallowing difficulties, all of which influence speech production (Watson & Pennington, 2015). Considering these findings, the current study aimed to evaluate and analyse the experience, expertise, and knowledge of SLTs in relation to the assessment and management of the CP population diagnosed with a speech disorder.

Approaches to Care in the Cerebral Palsy Population

This section will research into the speech-language profession and its management practices and approaches both on a global and local, South African platform.

Wickenden (2013) explained, SLTs lack coherency between their management practices and global perspectives of disability service provision. Her article critically discussed SLTs and their role within the clinical profession and society. She focused on the need to widen the lens of SLTs and to improve the wellbeing of people with communication disabilities globally. Wickenden (2013) described two therapy approaches that need to be considered to add value to the service provided and, most importantly, to the patient's life. The first approach, in line with the International Classification of Functioning, Disability and Health (ICF), involves placing less emphasis on impairment-based intervention and focusing instead on functional improvements among the CP population. Not only is this a sustainable approach, but it reduces stigmatisation and exclusion and contributes to the overall wellbeing of the child with a communication disability. Wickenden (2013) argued that although this approach is seemingly more challenging than impairment-focused interventions—as it targets changing society's perspective and attitude—it supports WHO's core components of the ICF, as it empowers a disabled person's activity and participation in their environment. The second therapy approach entails encouraging SLTs to shift away from conventional, individual-based therapy practices toward community-based interventions. Encouraging this type of intervention is essential, particularly in low-income countries, where a lack of knowledge and exclusion of people with disabilities is widespread. All this points to a need for SLTs to educate and improve community understanding around communication disabilities at an individual and structural level, beyond clinical practice (Wickenden, 2013).

In a similar vein, research by Staley et al. (2021) explored SLTs engaging at a macro level, expanding from historic practices that focused solely on impairments and social models to exploring human rights approaches and frameworks that consider inclusive community development and community-based rehabilitation within South Africa. Their study concluded that for SLTs to engage further than health and service, SLTs need to engage with various policies such as the International Classification of Functioning, Disability and Health (ICF) and the United Nations Convention on the Rights of People with Disabilities. In so doing, they could drive change and improve the lives of people with communication disabilities (Staley et al., 2021).

Contrary to Wickenden (2013) and Staley et al. (2021), a study by Pennington et al. (2019) argued that speech disorders in CP present in various forms (see Figure 1), and therefore, intervention requires an individualised approach. Similarly, a study by Mei et al. (2020) called attention to the importance of a personalised differential diagnosis targeting specific treatment to those with CP who have a speech disorder. The study identified the need for a personalised differential diagnosis rather than direct assessment for this population (Mei et al., 2020).

Challenges and Recommendations to Service Provision Generally and to the CP Population

This study aims to discuss SLTs' perceptions of service provision for the CP population, by exploring the potential challenges and facilitators SLTs face when providing therapy. Therefore, this study requires an identification of the global and local challenges SLTs, and rehabilitation services currently face when conducting therapy. Exploring the challenges revealed in previous research studies helped uncover potential solutions, allowing

the researcher to engage more effectively with SLTs in the present study, leading to comprehensive discussions and meaningful conclusions.

The World Health Organization's Report on Disability (WHO, 2001) reveals a notable difference between individuals with disabilities and the rehabilitation services available to them. Khoza-Shangase and Mophosho (2021) referred to a "known demand versus capacity challenge" (Staley et al., 2021, p. 1). Their study indicated that, even though SLTs possess the skills to meet the needs of individuals with communication difficulties, communication as a human right was still unmet for some individuals due to a shortage of SLTs and scarce resources. This reinforces the argument for the critical need to develop more communication-related services in sub-Saharan Africa to meet the needs of individuals with communication disabilities (Khoza-Shangase & Mophosho, 2021). Additionally, there is a need to follow a framework which works within a setting that has a scarcity of resources (Castaneda et al., 2014). Whilst the ICF, is a holistic framework which integrates medical and social perspectives, it overlooks the contextual and cultural influences within the Global South which reduces the quality of care provided to patients (Castaneda et al., 2014).

Speech-language therapy service provision in South Africa is influenced by various factors (Lydall & Gerber, 2021). Considering the relevance of this study's participants and their working contexts, the relationship between health and educational sectors in South Africa warrants investigation. Lydall and Gerber (2021) reported a clear divide in service delivery between sectors, resulting in fragmented and uncoordinated service provision for children with CP who leave the health system and enter the education system. This can be attributed to gaps in existing policies, limited resources, and lack of knowledge. The authors maintained that by supporting multidisciplinary team (MDT) approaches across various rehabilitative settings, encouraging resource-sharing, and creating efficient referral pathways for patients, the perceived chasm between health and education could be minimised. This

would enhance collaboration and carryover of therapeutic goals to achieve improvement in patient care (Lydall & Gerber, 2021).

Pascoe et al. (2010) investigated the methods of assessment and intervention used by SLTs in the Western Cape, South Africa, when treating children with a speech disorder. The study concluded that because of the lack of evidence-based, cultural, and linguistically appropriate tools in South Africa, the selection of assessments and intervention procedures were flawed and produced inaccurate results. The results revealed that the majority of SLTs used a combination of informal and formal assessments, with more than 50% making procedural or linguistic adjustments to resources to better suit the local context. A few therapists also expressed feelings of uncertainty and lacked confidence when adapting and modifying these assessments for bilingual or multilingual children. The authors recommended that South Africa develop assessments and resources that considered the local context, particularly for children with developmental and neurological disorders (Pascoe et al., 2010).

Correspondingly, Moonsamy et al. (2017) noted that service delivery to patients with communication disorders from culturally and linguistically diverse backgrounds can be affected by differences in those of SLTs. They emphasised the importance of accommodating diversity within South Africa by considering resources that are contextually and linguistically appropriate, while giving careful consideration to rural and urban contexts. Therefore, developing more appropriate resources to better suit context and culture, as well as training and upskilling therapists working in these diversifying contexts, is essential (Khoza-Shangase & Mophosho, 2018). This finding is supported by Mdlalo et al. (2019), who explained that SLTs have a responsibility to ensure culture-fair assessments by acknowledging the patient's cultural and linguistic background.

Building on the study outcomes noted by Pascoe et al. (2010), Watson and Pennington (2015) described the lack of evidence-based practice among SLTs when

supporting communication in children with CP. The study revealed that, although SLTs adhere to speech-language therapy and CP guidelines and support children with CP who have wide-ranging speech-language impairments and communication needs, intervention methods relied on observation and schedules developed by therapists themselves. The clinical management demonstrated no adherence to robust evidence-based practices. This resulted in the provision of therapy without supporting evidence, which impacted the ability to compare across services, measure therapeutic success rates, and evaluate continuity of therapy. Their study emphasised the importance of using standardised assessments and practices to facilitate the benchmarking of service delivery and contribute to the development of research and clinical data (Watson & Pennington, 2015).

The greatest challenge for people with disabilities, particularly in LMICs, remains limited access to basic services (Bloese et al., 2021). In response, the United Nations Convention on the Rights of People with Disabilities developed a strategy known as community-based rehabilitation (CBR) (WHO et al., 2004). The main purpose of CBR is to strive for equal access and equal opportunity for health and rehabilitation services, while implementing inclusivity and empowerment (Bloese et al., 2021). This approach is supported by Coombe (2017), who noted the barriers to accessing rehabilitation services in South Africa, such as transportation and assistive devices, as well as stigmatisation around disability. The study suggested that careful planning and implementation of CBR, alongside the consideration of an appropriate health model, would combat these barriers (Coombe, 2017).

Aiming to achieve goals similar to those of CBR, the framework and strategy for disability and rehabilitation services (FSDR) was developed to ensure inclusivity and accessibility to rehabilitation services. A study by Hussein El Kout et al. (2022) that reviewed the FSDR in South Africa analysed the barriers faced by people with disabilities when accessing rehabilitation. The study aimed to assess barriers and facilitators to the

development and implementation of the FSDR. Some barriers to accessing healthcare services included transportation challenges, finances, and service barriers specific to rehabilitation. The study emphasised that these barriers are more pronounced in rural South African contexts, and concluded that the FSDR has not been successful in achieving the intended outcomes because of gaps in policy implementation, lack of stakeholder involvement between rehabilitation health workers and community health workers, and minimal state commitment.

This study, along with numerous others, showcases South Africa's notable policy developments but also highlights the country's poor implementation and follow-through (Hussein El Kout et al., 2022). Ensuring a multisectoral approach requires the creation of a contextually relevant and inclusive structure to ensure the effective implementation of policies and rehabilitation services to support children with CP (le Roux, 2022).

In working with SLTs, the present research study aimed to further analyse and identify the barriers and facilitators hindering service provision in the field of speech and language therapy. This would allow for appropriate adaptations to be made, or spark discussion around the implementation of policies and procedures regarding CP and service provision.

Conceptual Framework

The CoCM model will be further discussed in relation to the study's aims and findings. The CoCM supports an evidence-based, team approach that encourages healthcare professionals to work collectively in providing effective patient care and management (Reist et al., 2022). Therefore, the flexibility of this model allowed the researcher to adapt the CoCM to the discipline of Speech and Language Therapy in a variety of healthcare settings within South Africa (Unützer et al., 2013). Thus, helping the researcher explore these two

factors more in depth and guide the researcher to consider a more holistic approach when exploring how SLTs manage the complexities and associated disorders of CP.

Management of CP and the relationship with the CoCM

The CoCM was relevant in understanding SLTs' perspectives on the assessment and management of children with CP and associated speech disorders, particularly in a South African context. In this study, the researcher explored SLTs' insights across the health and education sector, as well as the private and public sectors. Additionally, this study examined SLTs' management methods, including their interaction and communication with healthcare professionals. This model suited the study, as it offers a holistic approach to providing effective management and care.

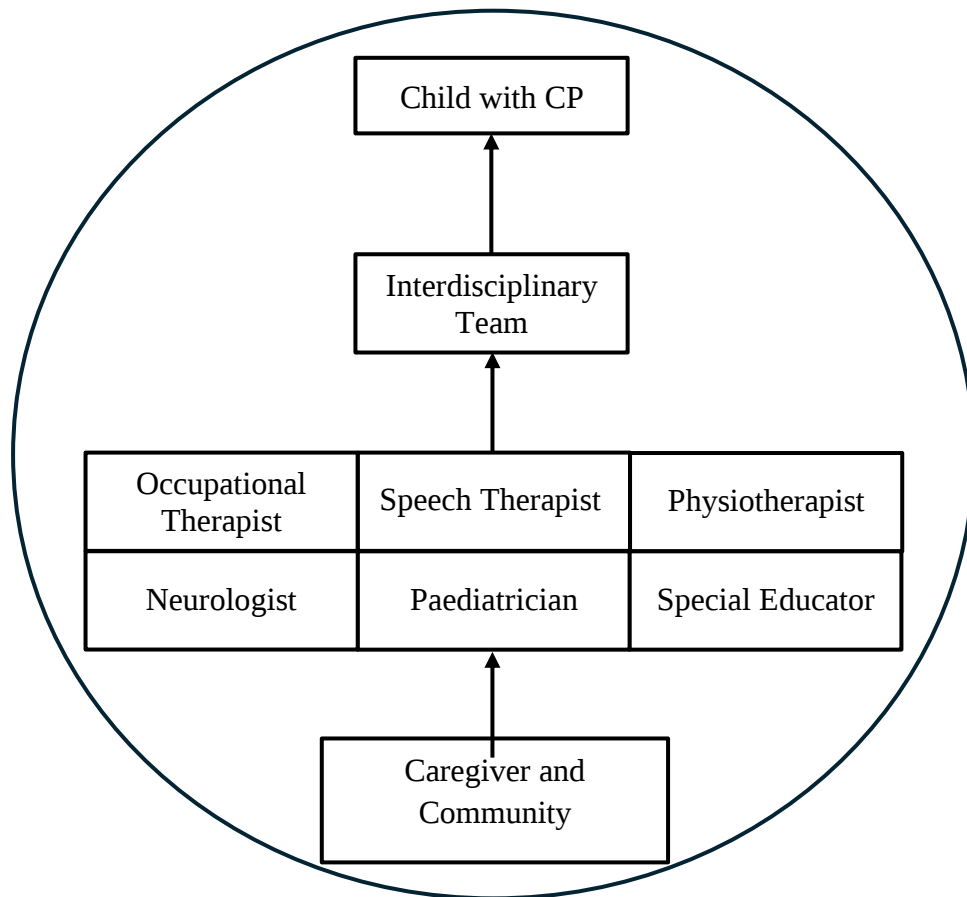
Figure 2 depicts the CoCM in a rehabilitation setting in South Africa for a child with CP. It reflects the multidisciplinary approach needed to address the complex needs of a child with CP, emphasising communication and collaboration between professionals, caregivers, and the community in the South African context.

Manyuma et al. (2023) emphasised the need for a model that could be integrated into a community and remain sustainable. The CoCM fulfils these requirements, as it is grounded in the principles of collaboration, interdisciplinary teamwork, and holistic care (Malek et al., 2018).

Although the CoCM holds promise in its effectiveness, South Africa's context poses unique challenges to implementing this model. First, South Africa has limited funding and a shortage of trained professionals and training programmes (Khoza-Shangase et al., 2021), thus hindering collaboration and effective multidisciplinary teamwork. Second, SLTs and other health professionals working in rural settings may find accessing the necessary resources and support challenging, which may impact the collaboration of care.

Figure 2

Collaborative Care Model in the Management of Children with CP in a South African Context



The CoCM proposes a practical and beneficial framework for SLTs managing children with CP and speech disorders in South Africa. The model has the potential to be sustainable in a context like South Africa, as it encourages principles such as interdisciplinary teamwork, sharing of resources, and cultural responsiveness. However, South Africa's systemic challenges will need to be addressed for its healthcare system to effectively utilise and maximise the benefits of this model.

Rationale

This study sought to address the quality and sustainability of therapeutic services provided by SLTs to children with CP diagnosed with a speech disorder in South Africa. The

study identified, explored, and explained the factors influencing assessment and management procedures for SLTs in a culturally and linguistically diverse setting like South Africa. By focusing on perspectives from SLTs, this study provided deeper insights into the factors that facilitate and hinder services, from resources and training to policy guidelines and approaches.

The findings of this study have the potential to inform and reshape the field of speech-language therapy, providing valuable recommendations for the appropriate use of resources, adding to the body of literature for future research, advancing therapy approaches, and offering policy recommendations. This study could provide a platform for better use and understanding of a framework, such as the CoCM, that can guide intervention to be holistic and sustainable. Finally, this study is significant as it aims to explain speech and language intervention in relation to the complex nature of CP within a multifaceted context like South Africa.

Chapter 3: Methodology

Aim

This study aimed to explore the perspectives of South African speech-language therapists (SLTs) regarding service provision for children with cerebral palsy (CP) diagnosed with a speech disorder.

Sub-Aims

1. To describe SLTs' scope of practice in the areas of assessment and management for children diagnosed with CP who present with a speech disorder.
2. To determine whether a relationship exists between SLTs' perspectives and demographic variables, such as knowledge, confidence and skills, and years of experience.
3. To describe the perceived facilitators for SLTs when providing services to children with CP diagnosed with a speech disorder within South Africa.
4. To describe the perceived barriers for SLTs when providing services to children with CP diagnosed with a speech disorder within South Africa.
5. To describe the cultural responsiveness of SLTs working with children with CP diagnosed with a speech disorder within South Africa.
6. To describe the recommendations made by SLTs to improve CP service delivery within South Africa.

Research Design

This study followed a sequential mixed-methods approach, beginning with a quantitative survey (Appendix A) and concluding with a focus group discussion (FGD) using a semi-structured interview (SSI) schedule (Appendix B). Both methods were conducted via online platforms such as social media (Facebook and WhatsApp groups), SASLHA and Survey Monkey.

The quantitative aspect of this study entailed a survey design. Jones et al. (2013) explained that surveys can be used to explore the experiences of participants in a particular context or situation, thereby providing the research with an effective way to gain insights into the SLTs' perspectives. This survey design was informed by previous literature (such as studies by Ngubane and Chetty (2017), Pascoe et al. (2010) and Singh and Sagar (2021)) and researcher experience. It primarily employed closed-ended questions, including yes/no answers, multiple-choice options, and Likert-scale responses. To explore the perceptions of SLTs in this study, the survey allowed the researcher to gather and assess information with ease (Jones et al., 2013). Through purposive and snowball sampling, the data were gathered from a population of SLTs in South Africa via online platforms. Owing to the flexibility of the survey design, the mode of administration was adapted to target this group of SLTs across South Africa, thus allowing for an online survey design to meet the study's objectives. This survey design produced quantitative results, which were analysed using statistical methods (Jones et al., 2013). Statistical methods, such as descriptive statistics and inferential statistics, allowed the researcher to summarise the characteristics of the dataset and the relationships between the study's variables (Jones et al., 2013). Employing a standardised survey structure and format assisted the researcher in drawing conclusions and making data-driven decisions—key for facilitating the second phase of data collection in this study (Jones et al., 2013).

The qualitative aspect of this study included an SSI schedule, which was used for the FGD. This tool combined a set of pre-determined, open-ended questions, employed by the researcher to prompt and facilitate discussion, allowing for flexibility and adaptability (DeJonckheere & Vaughn, 2019). Although the tool offered a set of pre-determined questions, it assisted the researcher in probing and prompting participants and further allowed the researcher to gain deeper insight into specific SLT contexts and clinical character traits.

Adaptability was key for this study, as the word ‘perspectives’ encompasses various factors and contexts that could influence participants’ responses. Therefore, this study design allowed the researcher to further engage in discussion and gather rich and nuanced data that might not be acquired from rigid interview structures (DeJonckheere & Vaughn, 2019). The use of open-ended questions and prompting allowed for a better flow of discussion between participants and helped the researcher in gaining rich perspectives and descriptions from SLTs (Weller et al., 2018). Speech-language therapist participants were able to elaborate on responses and provide detailed descriptions of their subjective experiences, beliefs, and opinions. This qualitative research design ultimately granted the researcher the opportunity to undertake an in-depth exploration and understanding of SLTs, whose responses were analysed using a thematic analysis (Weller et al., 2018).

Sampling Method

Purposive and snowball sampling were used to select participants for this study. The purposive approach allowed the researcher to select SLTs based on specific inclusion criteria that were relevant to the research topic (Palinkas et al., 2016). This sampling strategy ensured that participants possessed characteristics aligned with the study’s aims, contributing toward credible and meaningful data representation (Etikan et al., 2016). Additionally, snowball sampling helped identify further potential participants, offering a quicker and more cost-effective recruitment strategy (Parker et al., 2019).

Inclusion and Exclusion Criteria

Inclusion Criteria: Online Survey and Focus Group Discussion

- SLTs currently registered with the Health Professions Council of South Africa (HPCSA)
- SLTs with at least two years’ experience in assessing and managing children with CP (aged 2–17 years) who have been diagnosed with a speech disorder

- SLTs with experience and currently working in a South African multilingual clinical setting, irrespective of the language in which they provide the service

Exclusion Criteria: Online Survey and Focus Group Discussion

- SLTs not currently registered with the HPCSA
- SLTs who only worked with the adult population (aged 18 years and older) who presented with CP or a speech disorder, or CP and a speech disorder

Table 1 reveals that 46.2% of participants reported having a workload of fewer than 10 children with CP, and the majority of participants (84.6%) worked with children with CP who presented with a speech disorder.

Participants

Online Survey Participants

This study aimed to recruit approximately 100 SLTs who were registered with the HPCSA and working in either the private or public education or health sectors. To ensure the credibility and reliability of the research findings, gathering sufficient data that were rich and robust was crucial. A sample size of 100 participants would provide adequate data to identify patterns and themes for extensive data analysis and address the research aims (Tarnoki & Puentes, 2019). Participants were recruited online across all provinces within South Africa through advertisements on various social media platforms, including the South African Speech-Language Facebook group and several speech-language therapy WhatsApp groups, such as UCT 2020 Speech Therapy Graduates, Ballito Speechies, Westville/Berea Therapists, Speech and Audio Bara 2021, Amajuba District. Additionally, the researcher requested that the study be distributed to SLTs who were members of the South African Speech-Language and Hearing Association (SASLHA). This broad advertising approach across multiple platforms helped ensure diverse population sampling (Parker et al., 2019). According to Al-Kuwai et al. (2023), participation in online research and surveys tends to be low. Therefore,

two gentle reminders encouraging participation were posted on online platforms every two months. Fifty-two participants completed the online survey, aligning with the Roscoe's (1975) rule of 30, which suggests that a sample size of no less than 30 is suitable for data analysis in research studying perspectives (Felderer et al., 2022).

Focus Group Participants

The researcher recruited SLTs working in either the private and/or public sectors, and health and/or educational settings in South Africa. Participants who completed the online survey could opt to sign up for the FGD. The researcher aimed to recruit two groups of between six and eight participants, which would allow for a sufficiently large sample size to increase the validity of the results. However, participation was low and only two focus groups comprising three participants each were conducted. A methodological manual by van Eeuwijk and Angehrn (2017) stipulated that, although typical FGDs tend to include between six and twelve participants, smaller groups are also suitable. Smaller groups of between three and four participants, known as 'mini groups', provide adequate time and opportunity for participants to share, thus allowing for informative discussion. Van Eeuwijk and Angehrn (2017) emphasised the value of smaller focus groups comprising participants who were more experienced and knowledgeable about the subject at hand. In this study, the inclusion criteria required participants to have a minimum of two years' working experience in a South African setting with children with CP presenting with a speech disorder, aligning with van Eeuwijk and Angehrn's (2017) rule of thumb. The FGDs gave the researcher the opportunity to compare different participant viewpoints, offering a more comprehensive understanding of the topic and providing sufficient data to identify patterns and themes (Krueger & Casey, 2000).

Data Collection

Instruments

Online Survey. The study employed an online survey comprising predominantly closed-ended questions, as this was considered an effective way to collect data from a large

population within a brief timeframe. Online surveys were also cost-effective, making them an ideal method for collecting data (Singh & Sagar, 2021).

The online survey primarily included closed-ended questions, generated from the reviewed literature, the theory undergirding the study, and the researcher's experience. These included multiple-choice questions (offering several response options), yes/no questions, and a five-point Likert scale. Multiple-choice questions were considered suitable, as they allowed respondents to answer quickly and accurately in a structured format, making them ideal for a large-scale survey (Krosnick & Presser, 2010). Additionally, they helped reduce response bias by providing respondents with a limited set of predetermined answers, which encouraged participants to engage and respond (Hyman & Sierra, 2016).

Closed-ended questions are typically used to collect quantitative data, which can be analysed using statistical methods (Creswell, 2014). They can be used to collect data from many participants within a relatively short period, making them a cost-effective option (Bryman, 2016). These questions can also be used to identify areas for further exploration, which in this study were examined in the FGD. Although closed-ended questions are commonly used in surveys, they can introduce bias and inaccuracy by limiting respondents' ability to provide detailed information and new insights (Hyman & Sierra, 2016; Kumar, 2019). This limitation could lead to an incomplete understanding of participants' true opinions and experiences (Kumar, 2019). Therefore, open-ended questions were incorporated in the online survey to gain deeper insights into, and understanding of, participants' perceptions.

The online survey was accessed via a Uniform Resource Locator (URL) link posted on online platforms and completed after the participant clicked 'Next page' on the participant information sheet. By clicking on 'Next page', consent was implied. Given the length and complexity of the questions, the survey took between 20 and 30 minutes to complete. Table 2 provides a description of each section and sub-section of the online survey.

Table 1*Description of Online Survey*

Main Section	Sub-sections	Question Items	Rationale
Demographics		1–19	These questions were designed to ensure that recruited participants aligned with the inclusion criteria and met the study’s objectives for valid data collection. Understanding of the participant’s clinical caseload enabled the researcher to gain insights into, and assess, environmental factors contributing to the success or challenges of service provision to children with CP diagnosed with a speech disorder (WHO, 2001).
Scope of practice	Knowledge	20–22	Exploring participants’ knowledge and skills related to CP, speech disorders, disability, and associated guidelines was key to ensuring appropriate diagnoses, assessments, and management strategies (Pascoe, 2011).
	Skills	23–25	
	Assessment	26–30	
	Management	31–38	
Facilitators		36	Exploring the facilitators and enablers for SLTs within a clinical setting could help improve and sustain the quality of services provided to children with CP (Watson & Pennington, 2015).
Barriers		40	Exploring the challenges within a clinical setting could help identify the activity limitations and participation restrictions that children with CP diagnosed with a speech disorder face. Reducing these limitations and restrictions could aid in improving personal and environmental factors for children with CP diagnosed with a speech disorder (Schneider, 2006).

Main Section	Sub-sections	Question Items	Rationale
Recommendations		41	Identifying recommendations suggested by SLTs involved exploring possible solutions to enhance the quality of services provided to children with CP diagnosed with a speech disorder in a fully holistic setting, considering healthcare, personal, and environmental aspects (Coombe, 2017).
Cultural responsiveness		42–50	Identifying the cultural responsiveness of SLTs provided a deeper understanding of clinicians' approaches to therapy and the frameworks they used. Adhering to specific guidelines set out by South African and CP association bodies enhanced clinicians' knowledge and awareness. Adjusting resources and the delivery of therapy to be more culturally and linguistically appropriate enabled clinicians to provide a higher quality service (Watson & Pennington, 2015)

Note: Refer to Appendix A for survey question items

Semi-Structured Interview Questions. A semi-structured interview (SSI) schedule was used in this research study to guide and facilitate discussion and elicit responses from participants. The SSI is a valuable tool for gaining insights into participants' experiences and perspectives, providing a flexible framework for the interviewer to explore topics in-depth while allowing for the emergence of new topics and themes (Ruslin et al., 2022). It is particularly useful when seeking to understand participants' subjective experiences, as it allows for the exploration of topics in a more open-ended manner than structured interviews (Ruslin et al., 2022). However, as Kakilla (2021) explained, SSIs may restrict participants' willingness to delve into topics or themes not considered by the researcher, potentially resulting in a one-dimensional, and perhaps even rigid, discussion. Therefore, the researcher utilised prompts during the discussion to guide, facilitate, and expand participant responses.

The open-ended questions in the SSI schedule were generated from previous literature, the researcher's experience, and an analysis of the survey responses. Although open-ended questions can be beneficial, they present certain challenges: they may introduce interviewer bias, as the interviewer may unintentionally lead the participant to a particular answer, and their responses can be difficult to analyse due to their length and complexity, impeding the identification of patterns and the drawing of conclusions (Ruslin et al., 2022). Furthermore, maintaining consistency in question delivery can be challenging, as variations in phrasing may lead to inconsistencies in the data (Ruslin et al., 2022).

To address these challenges, the researcher considered the potential drawbacks of using open-ended questions, carefully planning and preparing for the FGDs to reduce interviewer bias. This was achieved through reflexivity and self-awareness strategies to minimise personal biases and preconceived beliefs, while establishing rapport and neutrality with participants during the introductory phase of the discussion (Bergelson et al., 2022).

Participants from the online survey were invited to join an FGD. Those interested were required to provide their first names and email addresses to enable contact. To ensure confidentiality, this information was stored in a secured online folder and was not shared with any third parties. Participants received written notification of these privacy measures before submitting their details. The researcher facilitated the online FGD in English via Microsoft Teams, aiming to complete the discussion within 45 to 60 minutes. With participants' permission, the discussions were audio recorded, and notes were taken to ensure accurate transcription.

The researcher had less control over the data generated—as participants' interactions with one another lead the discussion and conversation in unpredictable directions at times. Therefore, making data analysis more challenging as responses are not standardized. However, the focus groups also allowed for rich and spontaneous insights due to interaction

between participants- enabling the researcher to gather more information in a shorter period (Stewart & Shamdasani, 2014). Research indicates that participants typically feel more at ease answering questions in a group setting, as opposed to one-on-one interviews (Stewart & Shamdasani, 2014). The group dynamic encouraged participants to challenge each other's perspectives and explore topics more deeply, providing the interviewer with richer and more comprehensive information (Stewart & Shamdasani, 2014). This approach achieved a holistic view of how SLTs perceive their role in the assessment and management of speech disorders within the CP population.

Table 3 below indicates and explains the types of questions and prompts used to facilitate the focus group discussion.

Table 2

Description of Semi-Structured Interview

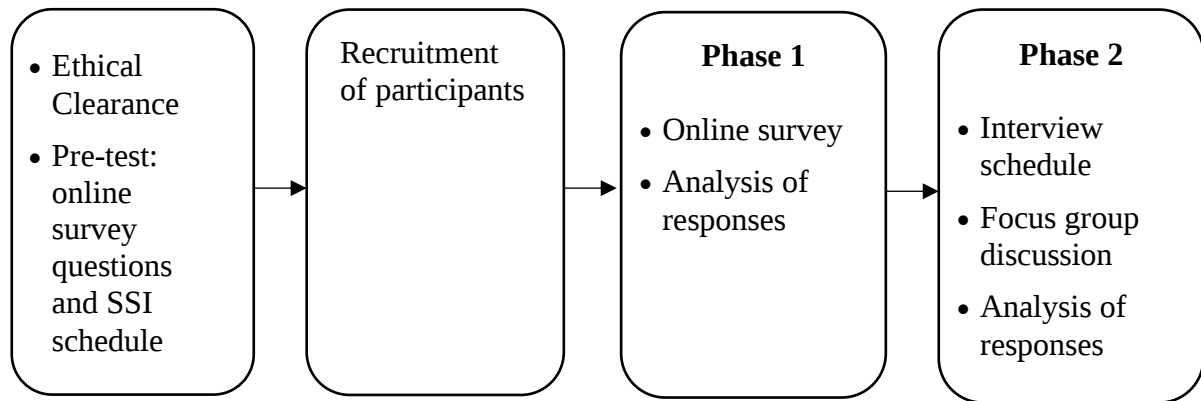
Section Questions	Prompts	Rationale
Scope of practice	Can you elaborate on that point? What guides your decision making in providing services? How so? In what ways? Please expand further.	Exploring participants' knowledge and skills around CP, speech disorders, disability, and associated guidelines is key so that the appropriate diagnoses, assessments, and management strategies are put into place (Wickenden, 2013).

Section Questions	Prompts	Rationale
Barriers and facilitators	How does this affect the quality of services provided?	Exploring the challenges within a clinical setting for SLTs can help identify gaps in service provision, thus resulting in activity limitations and participation restrictions faced by a child with CP diagnosed with a speech disorder (Watson & Pennington, 2015).
	Can you provide an example of a personal experience?	
	How so?	
	Can you be more specific?	Exploring the facilitators within a clinical setting for SLTs can lead to better and more sustainable services provided to children with CP diagnosed with a speech disorder (Gostin & Meier, 2020).
	Elaborate further please.	
	What is your opinion on the availability of resources in South Africa?	
Recommendations	Any other suggestions?	Identifying recommendations means exploring possible solutions to improve healthcare services and enhances a child's quality of life (Lydall & Gerber, 2021).
	Explain further.	

Note: Refer to Appendix B for focus group discussion points.

Data Collection Procedures

Figure 3 illustrates this study's procedure and processes. The researcher began by obtaining ethical clearance for data collection to commence; then, by utilising a pre-test, the reliability of data collection tools was assessed. The questions in the research instruments, online survey, and interview schedule were analysed and assessed accordingly. Recruitment of participants for the pre-testing phase was performed through various online platforms to implement Phase one and Phase two of the study. Phase one included the completion of the online survey by participants and analysis of responses by the researcher. Phase two included the use of an SSI schedule to facilitate the FGDs, and the researcher analysed the discussion responses.

Figure 3*Study Procedure – Online Survey****Ethical Clearance***

Application was made to the University of the Witwatersrand's Human Research Ethics Committee (Non-Medical) for permission to proceed with the research study and commence data collection, which was subsequently granted (clearance number H23/07/58).

Pre-Testing

The aim of a pre-test is to evaluate the validity and reliability of the study's instruments—the online survey and the SSI schedule (Hurst et al., 2015). This was conducted with participants from a smaller target group before the full scale of the study took place. Eleven participants took part in the online survey and three in the FGD, which used the SSI schedule. This phase of the research process gave the researcher the opportunity to revise the research instruments, specifically the type of questions asked. The pre-test ensured the comprehensiveness, non-ambiguity, and relevance of the questions to the research study (Hurst et al., 2015).

Feedback from the pre-test was gathered through a short online survey (Appendix C), which was distributed as an online link via email to a small group of participants who had completed both the pre-test online survey and the FGD. Their email addresses were obtained

when they agreed to take part in the FGD phase. This short online survey, comprising multiple-choice questions, examined the accessibility of the research instruments, participants' feelings and attitudes towards the questions asked, and their general experience with these instruments. By clicking on the link, participants' consent was implied, which was clearly stated in the email. To ensure anonymity, no identifiable questions were asked, and participants submitted answers anonymously via the online link. Feedback provided from participants via multiple-choice questions included participants being satisfied with the type of questions used in the online survey and length of the survey, as well as the type of questions proposed in the FG discussion and the length of the discussion. After reviewing the feedback, the researcher determined that no adaptations or edits were required for the survey questions or SSI schedule, thereby enabling the use of data gathered during the pre-testing phase in the main analysis of the study. The same recruitment procedure used for the pretesting phase of this study was used for the main study's procedure.

Phase 1: Online Survey

An advertisement, which included the study's title and aims, participant inclusion criteria, and researcher contact details, was posted on various online social media platforms such as Facebook groups, WhatsApp groups, and the SASLHA website. This advertisement had a URL attached, directing potential respondents to the participant information sheet (Appendix D) and the online survey (Appendix A) linked to the SurveyMonkey online platform.

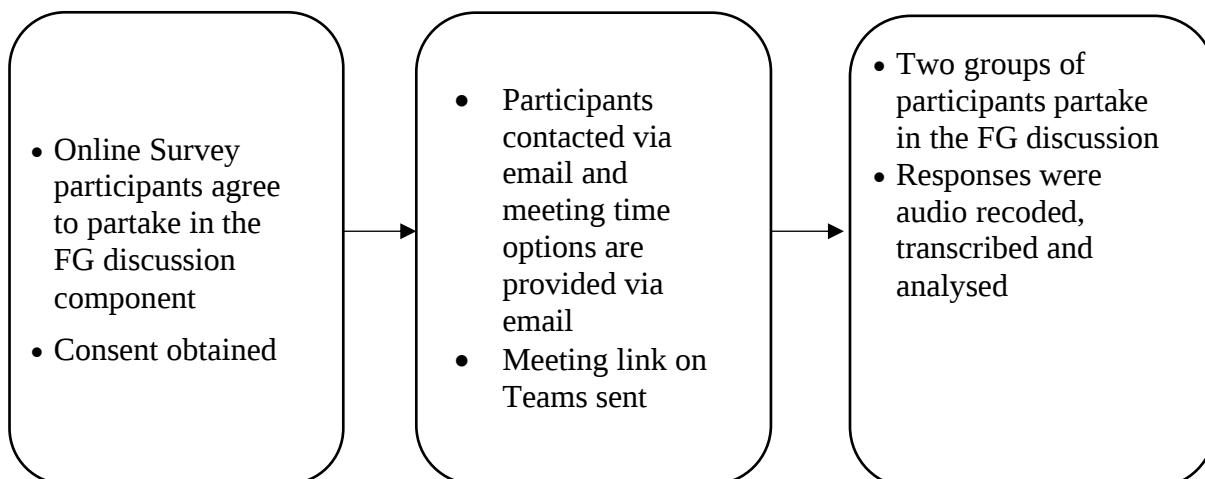
Confidentiality was ensured by using secure data collection methods, such as encryption and password protection, as well as ensuring that the data collected was not shared with any third parties besides the researcher's supervisors. Anonymity was achieved by not collecting any personally identifiable information, such as full names, contact numbers, or IP addresses, and by using a unique identifier for each respondent.

Voluntary participation in the online survey was achieved by providing clear instructions on how to opt in or opt out of the survey, as well as a clear explanation of the survey's purpose and expected time commitment (expected duration: between 20 and 30 minutes, determined by the length and complexity of questions, as well as pre-test findings). Consent was implied by clicking on the link, completing, and submitting the survey. This was made clear to participants in writing on the participant information sheet and at the beginning of the online survey. If participants required any further details or had questions regarding the study, they had access to the researcher's contact details.

The researcher made use of snowball sampling and posted the study advertisement online to encourage participation if saturation was not met. Two reminders were posted via online platforms to encourage participation.

Figure 4

Study Procedure – Focus Group



Phase 2: Focus Group Discussion

Participants who completed the online survey component of the study were invited to take part in the second phase—the FGD. Those willing to continue were instructed to click a ‘continue to next page’ button at the end of the survey for FGD recruitment. A separate participant information sheet (Appendix E) was provided, which included a section requesting participants’ first names and email addresses, enabling the researcher to contact the participant at a later stage regarding FGD details. The Protection of Personal Information Act (POPIA) requirements were met by ensuring participants’ personal information was securely stored, not shared with any third parties, and used solely by the researcher. Participant confidentiality and anonymity were also ensured in the research study write-up. This was clearly communicated in writing on the participant information sheet. Participants were informed that providing their email addresses would be understood as permission for the researcher to contact them. They were also notified that they would be able to opt out of the study’s focus group at any time. Confidentiality and anonymity could not be guaranteed in FGDs, as the researcher could not control participant responses or engagement before or after the study. This was communicated verbally and in writing before the discussion.

The researcher contacted participants via email to outline the aims of the FGD and inform them that an audio recording would take place. Participants were required to sign a consent form (Appendix F) and return it to the researcher before the FGD date. Meeting options (dates and times) were distributed via email containing a SurveyMonkey URL link. Based on participant availability, the researcher scheduled the FGDs and sent Microsoft Teams meeting reminders via email to participants 24 hours in advance.

Data Analysis

Online Survey

As no changes were made to the online survey tool, participants from the pre-testing phase were included in the main study's data collection and analysis process. Therefore, a total of 52 participants completed the online survey.

All participant responses were analysed collectively. Data from the closed-ended questions were analysed using both descriptive and inferential statistics. Descriptive statistics are methods used to summarise data, organise data, and describe the characteristics of a population or sample (Kakilla, 2021). The benefits of using descriptive statistics for closed-ended survey questions include providing an efficient way to summarise large volumes of data and helping to identify patterns and trends. Descriptive statistics analysed frequencies for nominal data (categories) and were displayed as frequency distribution tables (Sharma, 2019). For continuous data, tables measured the mean, standard deviation, minimum values, and maximum values for information pertaining to number of years practising as an SLT, number of SLTs in the workplace, and knowledge, skills, and confidence as an SLT working with children with CP. Frequency distributions and percentages were analysed and represented visually using infographics.

Inferential statistics were used to determine the relationship between knowledge, skills, and the number of years practising as an SLT. This approach allowed the researcher to identify relationships between different variables in the study, enabling further exploration of the data (Guetterman, 2019). To assess normality, the Kolmogorov-Smirnov and Shapiro Wilk tests were run, and histograms were created (Mishra et al., 2019). Based on these results, the non-parametric correlation test Spearman's rho was used to assess the relationship between these variables (Mishra et al., 2019). Inferential statistics were presented in tables (See Appendix G).

Semi-Structured Interview Responses

As no changes were made to the SSI schedule, participants from the pre-testing phase were included in the main study's data collection and analysis process. Therefore, two groups comprising three participants each were included in the FGD.

The researcher transcribed the SSI responses from both FGDs verbatim and analysed them in accordance with the research aim. The researcher immersed herself in the data to gain a broad view and understanding of the interview responses, organising them into a data matrix, where themes began to emerge (Appendix H).

Data from both focus groups and open-ended questions from the online survey were analysed together, using a thematic analysis, specifically the inductive approach (Braun & Clarke, 2021). Thematic analysis is a qualitative data analysis method that involves identifying, analysing, and interpreting patterns of meaning in data (Braun & Clarke, 2021). It was used to explore the underlying themes discussed in the FGDs.

Thematic analysis entails six key steps (Braun & Clarke, 2006). This approach began with the researcher familiarising herself with data gathered and transcribing the SSI responses from the FGD verbatim. Step 2 involved generating codes from the data and aligning these with the study's aims and objectives. Step 3 included searching for themes across these codes, and aligning them to the study's aims and objectives. Step 4 entailed reviewing these themes, and in Step 5, the themes were defined in relation to the Collaborative Care Model (CoCM). Lastly, Step 6 included reporting these findings in the final study write-up.

Within a thematic analysis, an inductive approach using components of the CoCM was used to help formulate various themes and interpret the data (Braun & Clarke, 2021). An inductive approach can be defined as a 'bottom-up' method that is used to develop themes from datasets and further used to develop a theory (Braun & Clarke, 2021). This approach is particularly useful for open-ended questions in FGDs, as it allows the researcher to identify

and explore the underlying meanings and themes emerging from the data. The benefits of using an inductive approach for open-ended questions in FGDs include the ability to identify emergent themes that may not have been anticipated by the researcher, as well as the ability to capture the nuances of the participants' responses (Braun & Clarke, 2021).

To ensure quality assurance, the coding and categorisation of themes were reviewed by two external parties, namely the researcher's supervisors, to confirm the accuracy and reliability of the data (Creswell, 2014). External parties provide an independent review of the data and help identify any potential errors or inconsistencies in coding, ensuring accurate and reliable results (Johnson et al., 2020).

Validity and Reliability

Pre-Testing

The use of a pre-test helped ensure the validity and reliability of the survey questions and the SSI schedule. Validity refers to the extent to which the research study measures what it is intended to measure (Kumar, 2019). The pre-test confirmed the validity of the research study by testing the comprehensibility of the survey and interview questions. This eliminated any ambiguity in the questions. Reliability refers to the extent to which the research study produces consistent results (Kumar, 2019).

Reliability

The use of descriptive statistics allowed the researcher to calculate the reliability of the questions in the online survey (Section B, Questions 20–25). Internal consistency was calculated and the Cronbach's alpha values ($\alpha = .77$ for knowledge and $\alpha = .97$ for skill) were close to 1, therefore confirming the reliability of the questions used in the online survey tool (refer to Table 9 in Appendix G).

Reliability is crucial in qualitative research because it guarantees that the data collected are accurate and can be used to draw meaningful conclusions (Tourangeau, 2021). If a survey is unreliable, the results may be skewed, leading to inaccurate conclusions.

Closed-ended questions in the survey component of the study also provided a way to measure the reliability and validity of the data collected. By asking the same questions in the same format to multiple participants, the researcher was able to compare the responses to determine whether the data were consistent across participants. This helped ensure that the data collected were accurate and reliable (Creswell, 2014). Techniques, such as using comprehensive data, comparison of data, and employing tables and graphs to record data, supported the reliability of the research in both form and context (Leung, 2015).

Validity

Using face validity, the researcher informally and subjectively assessed the suitability of the questions used in this research study (Taherdoost, 2016). This was achieved through pre-testing, participant feedback, and convenience sampling. Moreover, SLTs with two or more years of experience in the field determined and evaluated whether the questions used elicited responses measuring the construct under investigation during the pre-test phase.

Rigour and Trustworthiness

Using multiple datasets, triangulation was applied to determine rigour. Rigour refers to the accurate reporting of the study's findings through systematic and precise data methods (Johnson et al., 2020). To ensure the accuracy and integrity of the research study and research process, credibility, transferability, confirmability, and dependability were maintained.

Credibility refers to the confidence the researcher has in the veracity of the study findings (Johnson et al., 2020). Credibility was ensured by conducting a pre-test before the data collection of the full-scale study took place. Note-taking and audio recording during the FGD also ensured credibility. Triangulation maintained credibility, as using more than one

method to collect data ensured that the research question was answered, thus adding validity to the study (Carter et al., 2014). External reviewing of coding from the data obtained from the survey responses and focus groups discussions assessed whether the interpretation of the data was accurate (Kumar, 2019), thereby ensuring credibility.

To guarantee that the interpretation of data was trustworthy, the researcher ensured the confirmability of this study's findings (Korstjens & Moser, 2018). This was achieved by having two external academic parties from the University of Witwatersrand (the researcher's supervisors) review the transcripts. The supervisors checked the thematic analysis of transcripts to ensure comprehensive and sound data interpretation by the researcher. An audit trail was also followed to ensure confirmability by keeping a record of the raw data collected, the details of the data analysis, the process of data reduction, and the decisions that led to the study's findings (Hadi & José Closs, 2016). An audit trail enables the reviewer to follow the researcher's decisions throughout the study (Hadi & José Closs, 2016).

The dependability of this study relied on purposive sampling, which ensured a specific representation of participants, resulting in stable data collection (Creswell, 2014). Dependability was also established through consistency and reliability from pre-testing and the use of reliable instruments. Consistency and reliability of the research findings were upheld by tracking precise methods for data collection, taking notes, keeping diaries of information and experiences, triangulation, and record keeping.

Furthermore, member checking and external reviewing were conducted to improve accuracy, credibility, and transferability (Korstjens & Moser, 2018). Transferability was also achieved by providing an accurate and honest description of the research processes, context, and participants.

Ethical Considerations

Informed Consent and Confidentiality

Participants were given a participant information sheet (Appendices D and E) and a consent form (Appendix F), clearly detailing the purpose and aims of the study. Transparency regarding how participant responses would be used in the study, along with an assurance of participant anonymity, was clearly explained. Consent could be withdrawn at any time during the study without penalty (Nijhawen et al., 2013). Proceeding to the next question of the online questionnaire and a consent form signed by the participant for the FG discussion were the two methods used to obtain consent.

Within the online survey component, confidentiality and anonymity were ensured. During the research process and study write-up, participants remained anonymous and no identifiable information (such as full names, contact number, and IP addresses) of participants was gathered or displayed. The researcher could not guarantee anonymity and confidentiality during the FGDs because the participants would be known. However, the researcher ensured anonymity and confidentiality during the study write-up by assigning letters and numbers to participant responses.

Justice

Justice refers to the fair and equal treatment of all participants (Miteu, 2024). All participants were treated fairly and equally throughout the study by ensuring they received the same information, resources, interventions, and outcomes.

Non-Maleficence

Non-maleficence is a fundamental ethical principle that ensures participants are protected from harm by taking appropriate precautions (Creswell, 2014). The researcher asked clear, open-ended questions to elicit comprehensive responses from the participants

and created an engaging environment that made the participants feel comfortable and open to sharing information.

Beneficence

Beneficence refers to participants' welfare, requiring the researcher to prioritise decisions in their best interests (Steinberg, 2009). This study was classified as low risk, with its benefits significantly outweighing any associated risks or costs (Steinberg, 2009). The participants gained valuable insights from their involvement, which they could apply in future interventions to enhance service delivery within their clinical setting for the CP population.

Chapter 4: Results

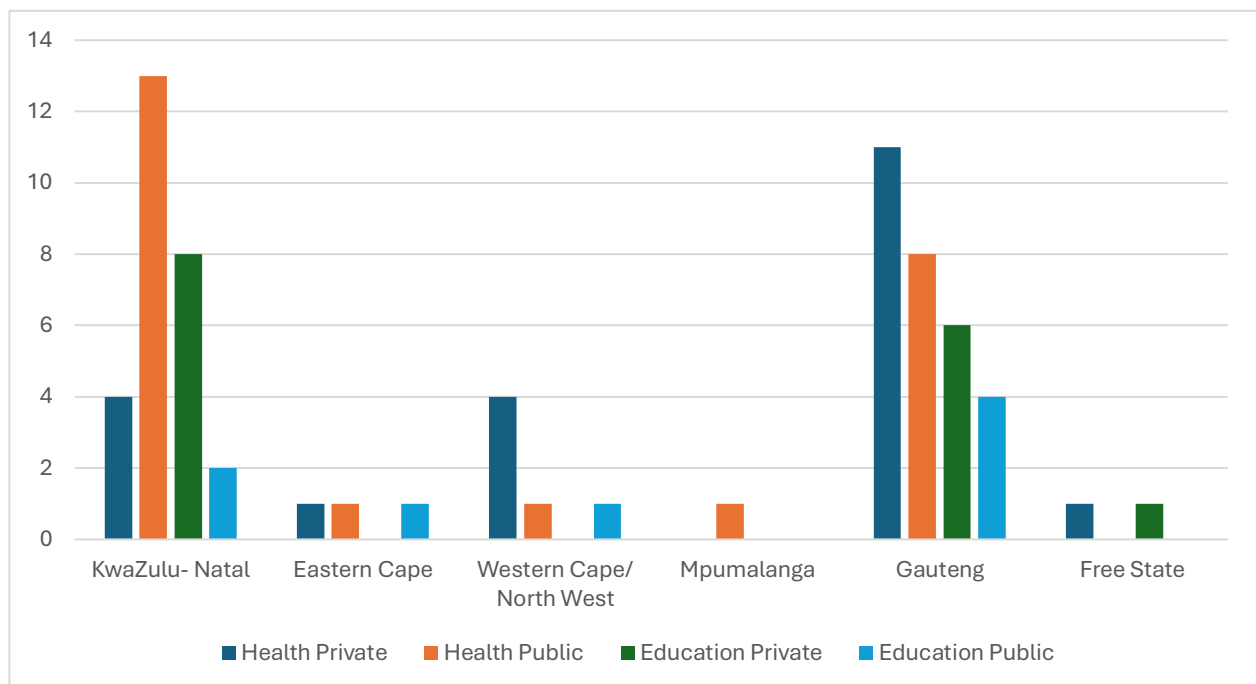
As outlined in Chapter 3, an online survey and focus group discussion (FGD) were administered to speech-language therapists (SLTs) working with children with cerebral palsy (CP) presenting with a speech disorder within the South African context. The results discussed in this chapter provide descriptive and inferential statistics of the closed-ended questions from the survey. The results also present the themes identified from open-ended survey questions and two FGDs, which were analysed through thematic analysis, namely the inductive approach.

Data gathered from the thematic analysis will be presented as themes and sub-themes, and data from the descriptive and inferential statistics will be presented as tables and graphs. Direct quotations from focus group participants (FG A and FG B) and online survey participants (OS P) will be used to reinforce and support the data. These quotes were specifically selected through coding and by using a data matrix (Appendix H) to align with this sub aims of this study. Qualitative and quantitative data will be presented in an integrated manner and structured to align with the study's aims, providing a holistic view of the findings.

Demographics

Using descriptive statistics, the researcher analysed the key characteristics and demographic information of the participants. Survey questions included multiple-choice options. The data gathered from questions 1–19 provided the necessary information for analysis.

Figure 4 presents information about each participant's work setting according to the province in South Africa where they delivered speech and language therapy services and the clinical context (health: private/public, and education: private/public).

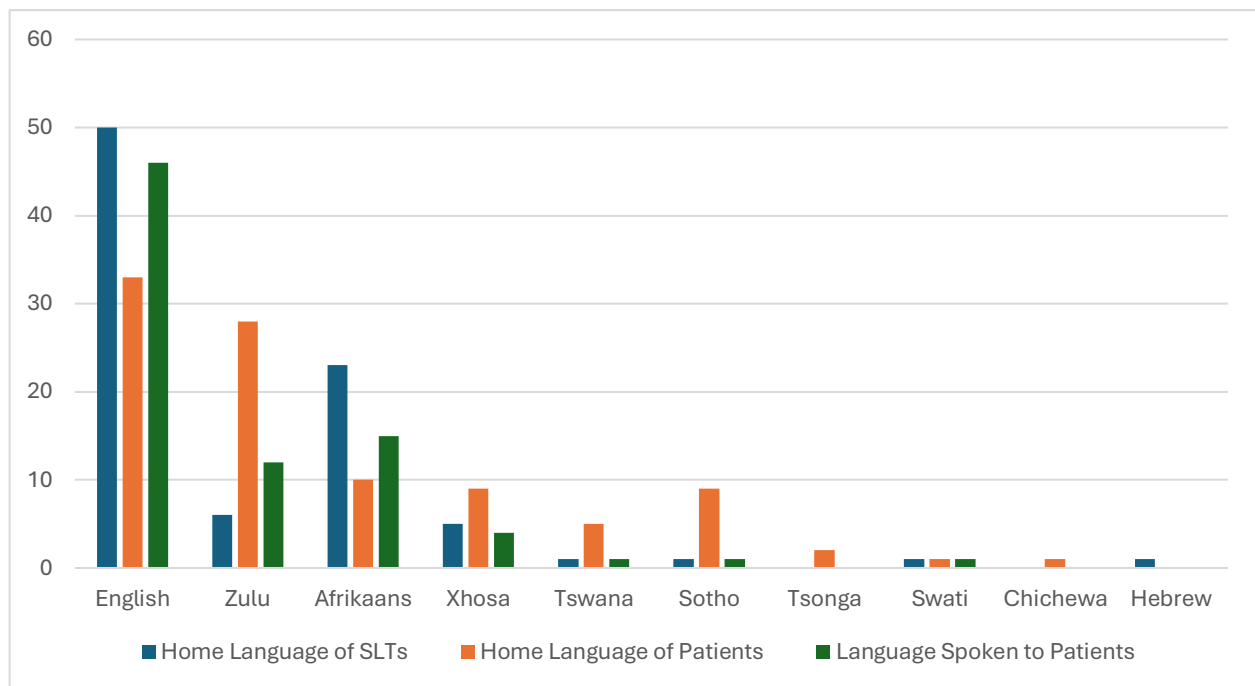
Figure 4*SLTs' Work Settings Across Provinces in South Africa*

The majority of this study's participants worked in KwaZulu-Natal ($n = 13$) within the public health sector, whereas SLTs were most prevalent within the private health sector in the Western Cape/North West ($n = 4$) and Gauteng ($n = 11$) regions. Similarly, reasonable participation was noted from SLTs working in the private education sector amongst KwaZulu-Natal ($n = 8$) and Gauteng ($n = 6$). Conversely, lower participation across all provinces was noted with SLTs working in the public education sector.

Figure 5 illustrates the relationship between an SLT's home language, a patient's home language, and the language of service delivery between the SLT and patient. Building on the analysis presented in Figure 4, the data revealed how an SLT's work context and setting influenced the language spoken. Significant disparities were noted by the SLTs between patients' home language and the languages used in service delivery, particularly for the four most prevalent languages in South Africa: IsiZulu, Afrikaans and IsiXhosa (Statistics South Africa, 2022).

Figure 5

Home Language of SLTs and Patients Versus the Language of Service Delivery



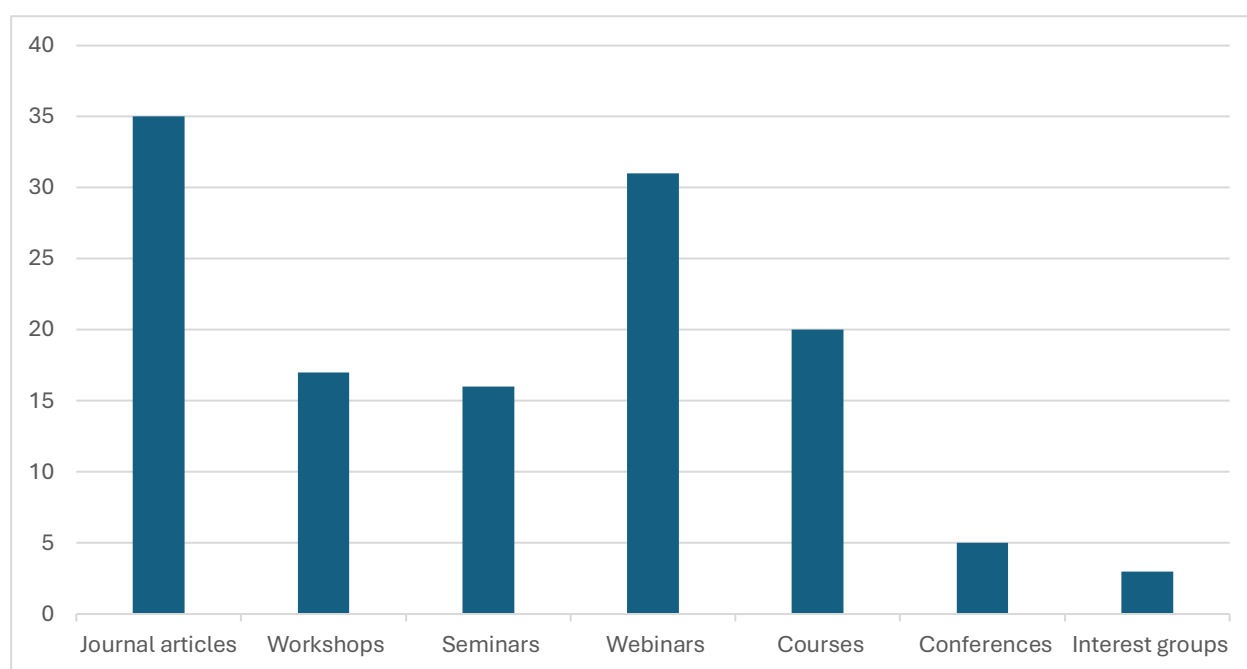
In analysing the languages spoken in service delivery between SLTs and patients, as depicted in Figure 5, the researcher needed to analyse how frequently SLTs used interpreters when consulting with children with CP and their families whose home language differed from that of the SLT. This is significant, as it provided the researcher with a more holistic view of the resources available to SLTs, enabling her to assess the quality of service provided to patients and their families by considering the linguistic challenges they experienced. Descriptive statistics indicated that a large majority of SLT participants (75%) reported that they did not work alongside an interpreter when managing a patient. Additionally, only 54.5% of the SLTs who worked with interpreters reported having been trained to work with or alongside an interpreter.

The researcher assessed training among SLTs in the areas of continuous professional development (CPD) activities. Descriptive statistics revealed that most participants (46.2%) reported that they ‘sometimes’ attended CPD courses/training, whereas 17.3% of participants

reported they ‘rarely’ did so, and 17.3% of participants reported ‘often’ attending. Speech-language therapists engaged in CPD courses were most involved in CPD activities, such as, journal articles ($n = 35$) and webinars ($n = 31$), as depicted in Figure 6.

Figure 6

Types of Continuous Professional Development Activities



The table below (Table 1) highlights the percentage of SLTs working with children with CP, and more specifically children with CP who present with a speech disorder. Results display that majority of SLTs provide therapy to children with CP who present with a speech disorder and who lie within the age category of below 10 years old.

Table 3

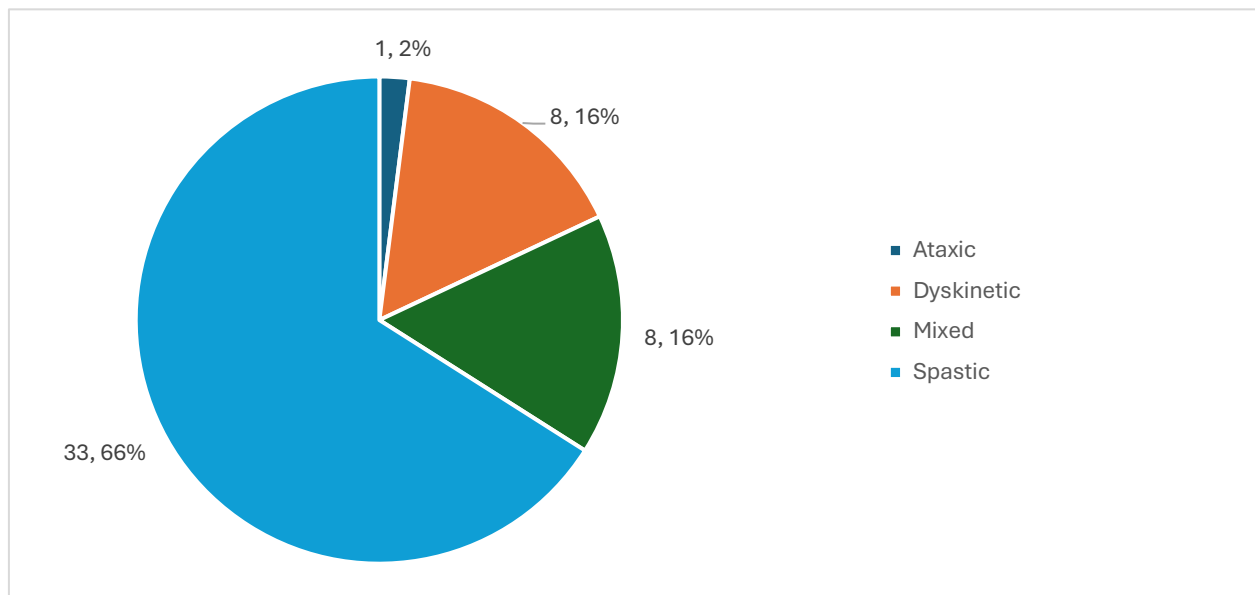
Frequency Statistics Pertaining to Demographic Variables (N = 50)

Variable	N	n (%)
Children with CP on SLT caseload	*50	
0		1 (1.9%)

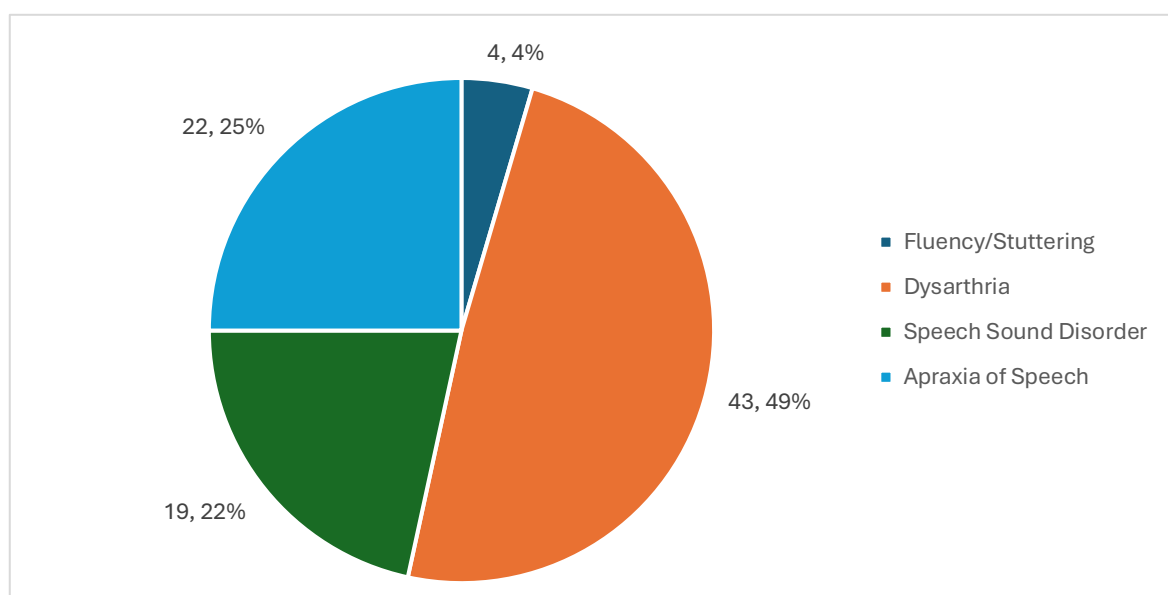
Variable	N	n (%)
> 10		24 (46.2%)
11–30		17 (32.7%)
31–50		3 (5.8%)
< 50		2 (5.8 %)
Unsure		2 (3.8%)
SLTs working with children with CP diagnosed with a speech disorder	50	
Yes		44 (84.6%)
No		6 (11.5%)

*Note** The total number of participants did not equate to 50 as not all participants responded to all the survey questions.

To understand SLT management practices, the researcher needed to understand the type of patients SLTs typically assess and manage, as well as gain a more holistic understanding of a typical caseload. Figure 7 shows that most participants' caseloads (63.5%) involved children with spastic CP.

Figure 7*Type of CP Within an SLT's Caseload*

The type of speech disorder was another factor to be considered. As depicted in Figure 8, SLTs reported that much of their caseload among children with CP included dysarthria (82.7%), followed by apraxia of speech (42.3%).

Figure 8*Types of Speech Disorders Most Common in Children with CP*

Results in Relation to the Study's Aims

Aim 1: SLTs' Assessment and Management Practices

Descriptive Statistics. Using descriptive statistics, the researcher assessed and analysed SLTs' assessment and management practices when working with children with CP diagnosed with a speech disorder, focusing on questions 26–38. Survey questions consisted of yes/no responses and multiple-choice options.

Table 4 presents participant responses when assessing children with CP diagnosed with a speech disorder. The majority of participants (59.6%) found the resources they used for assessment effective. Most participants reportedly adapted the standardised assessments, or chose to use informal assessments. Additionally, 71.2% of participants found that the resources for assessment were not linguistically or culturally appropriate.

Table 4

Frequency Statistics for Survey Questions Pertaining to the Assessment of Children with CP Presenting with a Speech Disorder (N = 52)

Question Item	Yes n (%)	No n (%)
Are the types of resources you use or have access to when assessing a child with CP presenting with a speech disorder effective?	31 (59.6)	15 (28.8)
Do you find the resources you use to assess children with CP linguistically or culturally appropriate?	9 (17.3)	37 (71.2)
Do you use standardised assessments?	12 (19.2)	34 (65.4)
Do you make any adaptations to these standardised assessments?	30 (57.7)	15 (28.8)
Do you use informal assessments?	44 (84.6)	2 (3.8)

Note: The total does not equate to N = 52 as not all participants responded to all survey questions.

Figure 9 reveals that SLTs (n = 35) commonly use a combination of patient-centred, family-centred, and International Classification of Functioning, Disability and Health (ICF) approaches in the management of children with CP presenting with a speech disorder.

Figure 9

Approaches Used in the Management of Children with CP Presenting with a Speech Disorder

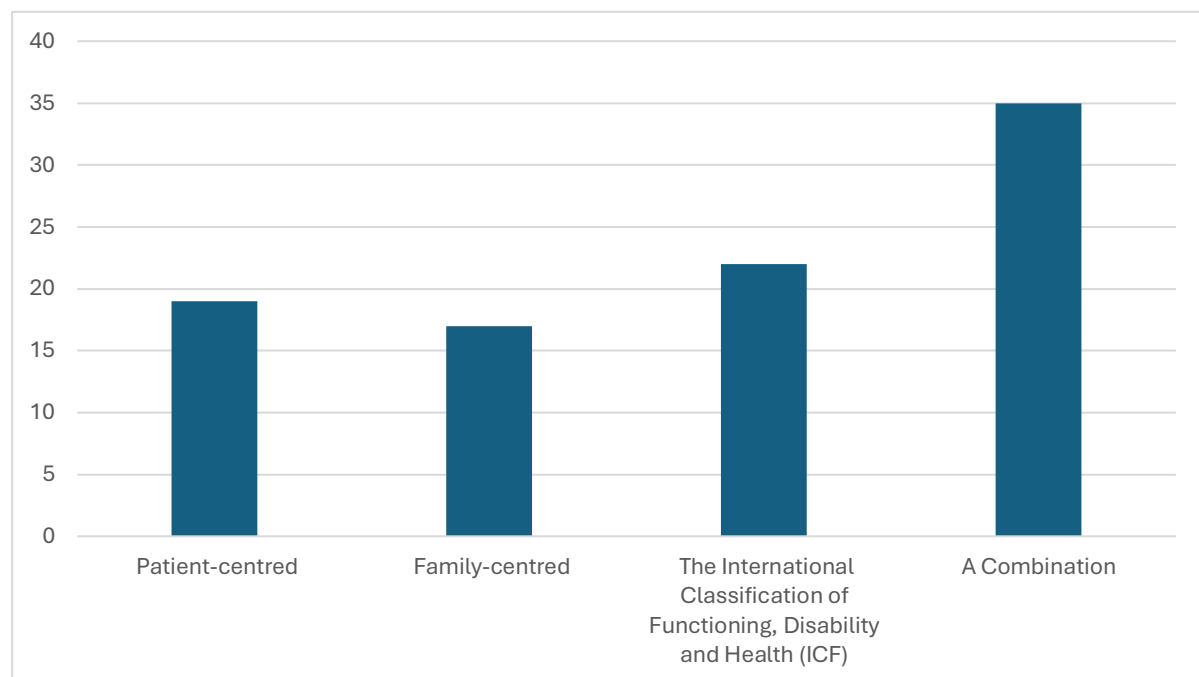


Table 5 outlines participant responses when managing children with CP. As with the results in Table 4, many SLTs (55.8%) found that the resources they used or had access to were effective, but very few agreed that the resources accessible were linguistically appropriate (21.2%) and culturally appropriate (32.7%). Subsequently, most SLT participants (80.8%) believed that insufficient financial resources were set aside to manage children with CP presenting with a speech disorder.

Table 5

Frequency Statistics for Survey Questions Pertaining to the Management of Children with CP

Presenting with a Speech Disorder (N = 52)

Question Item	Yes n (%)	No n (%)
Are the types of resources you use or have access to when managing children with CP who present with a speech disorder effective?	29 (55.8)	16 (30.8)
Do you find the resources you use to manage children with CP linguistically appropriate?	11 (21.2)	34 (65.4)
Do you find the resources you use to manage children with CP culturally appropriate?	17 (32.7)	30 (57.7)
Do you incorporate home programmes in the management of your clients?	44 (84.6)	1 (1.9)
Do you use any assistive devices in your treatment of children with CP?	30 (57.7)	13 (30.8)
Do you find that there are enough financial resources set aside to manage children with CP who present with a speech disorder?	3 (5.8)	42 (80.8)

Note: The total does not equate to N = 52 as not all participants responded to all the survey questions.

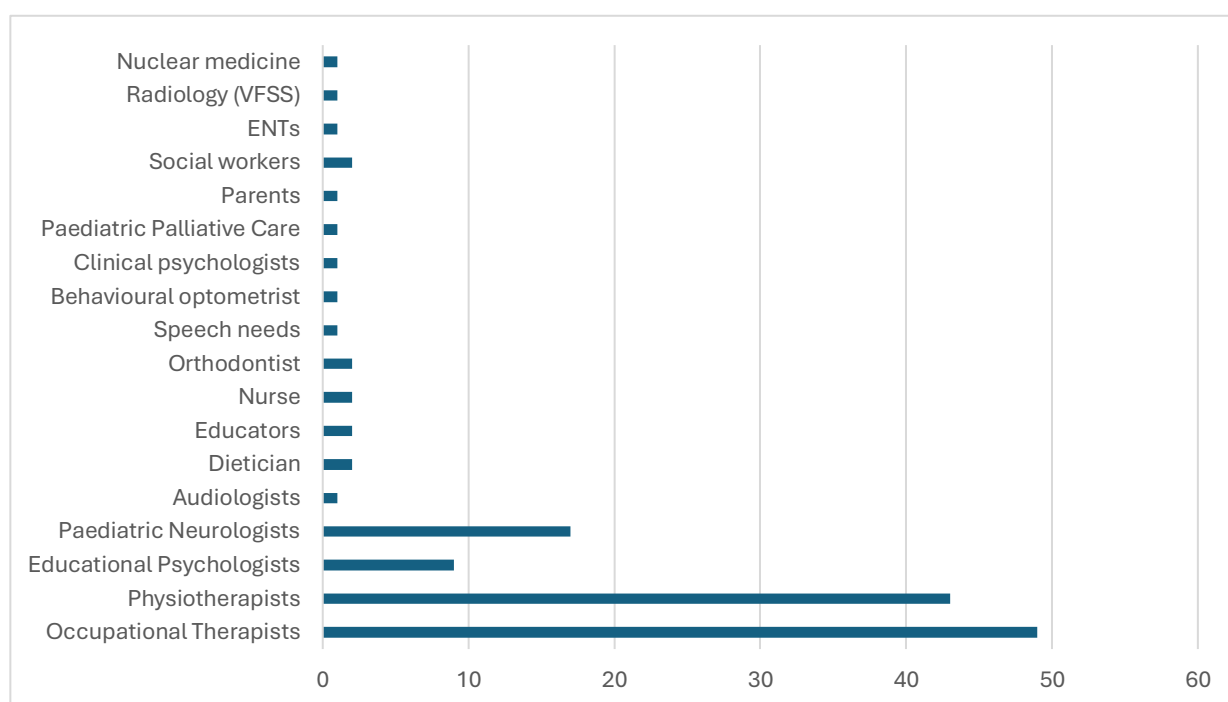
The most common treatment approaches when managing children with CP presenting with a speech disorder include parent/caregiver-based work (83%), followed by articulation work or motor skills training (81%), and then core vocabulary (69%). The least common management approaches included neurodevelopmental treatment (NDT), discrete trial training, Lee Silverman Voice Treatment, and DIRFloortime courses (3%). Participants reported that these treatment approaches were typically used to manage children on their caseload with CP in the areas of expressive language (92%), receptive language (86%),

augmentative and alternative communication (86%), motor speech (78%), and oro-motor/non-speech skills (72%).

Figure 10 indicates that SLTs work most closely with occupational therapists, followed by physiotherapists and paediatric neurologists in the management of children with CP. This was further supported by a response rate of 57.7% of SLTs who reported 'often' engaging with other health professionals when working with children with CP.

Figure 10

Other healthcare professionals SLTs work with in the management of children with CP



Note: VFSS = Videofluoroscopic Swallowing Study, ENTs = Ear, nose, and throat specialists

The researcher wanted to analyse SLTs' scope of practice further by exploring their knowledge, skills, and confidence when performing assessment and management practices (see Table 6).

Based on the mean and standard deviation in Table 6, participants indicated that they felt generally positive about their abilities to assess ($\mu = 3.1$, $\sigma = 13$), intervene ($\mu = 3.09$, $\sigma = 16$), and provide evidence-based practice ($\mu = 3.02$, $\sigma = 1$) for children with CP presenting with a speech disorder, with all responses being positive. However, in terms of SLTs' knowledge and experience when working with children with CP presenting with a speech disorder, participants expressed ambivalence ($\mu = 2.79$, $\sigma = .977$), as the responses were skewed towards a fair rating.

Table 6

Descriptive Statistics for Knowledge Versus Skills and Confidence Regarding the Management of Children with CP

Variable (Question)	N	Mean (μ)	Std dev. (σ)	Min	Max
Knowledge					
How would you rate your knowledge or experience working with children with CP presenting with a speech disorder?	47	2.79	.977	1	5
How would you rate your level of awareness regarding South African-based policies or legislation related to children with CP?	47	1.74	1.01	1	5

Variable (Question)	N	Mean (μ)	Std dev. (σ)	Min	Max
Skills and Confidence					
How confident do you feel assessing children with CP presenting with a speech disorder?	47	3.1	13	1	5
Are you confident as an SLT that you are engaging with evidence-based practice to deliver effective services to children with CP who are diagnosed with a speech disorder?	47	3.02	1	1	5
How confident do you feel in providing interventions to children with CP who present with a speech disorder?	47	3.09	16	1	5

Note: Min = minimum, Max = maximum, Std dev. = standard deviation

Thematic Analysis. Through thematic analysis, the main theme extracted from the dataset was Therapeutic Approaches and Techniques, with the following sub-themes:

- Assessment Methods
- Intervention Strategies
- Adaptions and Modifications

Assessment Methods. Tools and procedures used by SLTs to evaluate speech disorders were analysed. According to SLTs who participated in the online survey, 57.7% of SLTs adopted tests such as the TACL (Test of Abstract Language Comprehension), CFCS (Communication Function Classification System), PROMPT, and the Viking Speech Scale. Although SLTs who participated in the online survey reported adapting more tools for assessment, participants in the FGDs reported on the assessment approach that they used,

including informal assessments, as confirmed by a focus group participant: *“At our centre, we [SLTs] do more informal assessments.”* (FG 1, P3).

Intervention Strategies. SLTs’ techniques and practices tailored to children with CP diagnosed with a speech disorder were analysed further. Across both the online survey responses and focus group responses, management tools commonly used among SLTs included augmentative and alternative communication (AAC) devices (high-tech and low-tech): *“AAC immediately, just to ensure that they [children with CP] do have another means to communicate.”* (FG1, P3), and PROMPT: *“I use mainly the PROMPT approach with them.”* (FG 1, P2).

Other common intervention strategies among participants included individualised interventions plans: *“I want to always come from a holistic approach, where I look at the classification . . . find a treatment approach that matches all of their strengths and weaknesses.”* (FG 2, P2), building rapport with families and caregivers: *“In those first few weeks . . . just giving them [the family] a bit of information and guiding them in counselling helps a lot.”* (FG 1, P3), and guiding families and caregivers through the management process: *“. . . a lot of caregiver or parent training . . . to try to give strategies . . . but really try to help the parent and caregiver understand the nature of the child's difficulty . . . give them [the family] something to take home.”* (FG 2, P1).

Adaptations and Modifications. Participants in FG 2, as well as FG 1 (P3), reported that they *“. . . Bring their [patient] resources from home . . . adapting resources or making suggestions that would kind of suit every individual family's needs as well as the child's needs”*. One participant (FG 2, P2) stated: *“Most of the resources that I use, especially with my CPs, I make myself.”* Another (FG 1, P3) added: *“I individualise it [therapy] towards their [patient's] very own preferences . . . making sure that their [patient's] identity also comes through.”*

Aim 2: The Relationship Between SLTs' Perspectives and Demographic Variables

Inferential Statistics. Using the Spearman's rho test, the non-parametric test was used to guide the researcher to understand the strength of the relationship between the three variables (years of experience, knowledge and skills, and confidence) noted in Table 7.

Table 7 reveals a moderately positive relationship between the number of years practising as an SLT and total knowledge ($r = 0.381$, $p = 0.006$). A moderate to significant positive relationship exists between the number of years practising as an SLT and total skills and confidence ($r = 0.550$, $p < 0.001$). Moreover, a strong positive relationship exists between the variables of knowledge and total skills and confidence ($r = 0.783$, $p < 0.001$). Overall, a significant positive correlation suggests that more years of experience as an SLT are associated with increased knowledge, skills, and confidence.

Table 7

Correlation Results Showing the Relationship Between Knowledge, Skills and Confidence, and Years of Practice Among SLTs

Variable	No. years practising as an SLT	Total knowledge	Total skills and confidence
No. years practising as an SLT	1	.381** 0.006	.550** < .001
Total knowledge	.381** 0.006	1	.783** < .001
Total skills and confidence	.550** < .001	.783** < .001	1

*Note**:* Correlation is significant at the 0.01 level (2-tailed).

Thematic Analysis. Through thematic analysis, the main theme extracted from the dataset was Years of Experience, with the following sub-themes:

- Knowledge
- Skills and Confidence

Knowledge. Participants shared how their years of experience practising as an SLT had affected their knowledge in this field, and thus their practices when managing children with CP diagnosed with a speech disorder.

Six (12%) participants from the FGDs felt that they lacked sufficient knowledge in the area of CP despite their years of practice as an SLT: *“Even though I've done it for a few years, I still have to do a lot of research, investigating, asking for assistance.”* (FG B, P1).

Confidence. Similarly, six (12%) participants from FGDs reported a lack of confidence when managing children with CP: *“I would say quite intensively in the sense [working with CP] . . . I still don't really feel entirely confident in treating CP.”* (FG B, P1).

Moreover, participants revealed that, despite their number of years practising as an SLT, their confidence was still affected: *“[After more than 15 years practising as an SLT] . . . if I look at my, where I am still to this day, I still don't feel as if I'm particularly confident in what I do.”* (FG B, P3).

This contradicts the inferential statistics that indicated a positive correlation between years of experience and confidence.

Aim 3: Facilitators

Descriptive Statistics. Using descriptive statistics, the researcher identified and analysed factors that aided in intervention practices for SLTs when working with children with CP diagnosed with a speech disorder. The survey question required a yes/no response and asked participants to elaborate on their responses by providing an explanation, comment, or reasoning in a follow-up open-ended question.

Participants were asked whether any procedures or resources were in place at their workplace to facilitate effective assessment and management of children presenting with a speech disorder. Responses indicated that 70.2% of participants (n = 26) felt that the resources and procedures they had access to were effective when implementing interventions, compared to 29.7% (n = 11) who felt they were ineffective.

Thematic Analysis

Through thematic analysis, the main theme extracted from the dataset was Facilitators, and the sub-themes were:

- Support Systems
- Training and Resources

Support Systems. Responses from the online survey and FGDs revealed that SLTs relied on multidisciplinary team (MDT) support to guide interventions: *“Needing to collaborate with other professionals or draw on someone else's knowledge to know how to manage.”* (FG 2, P1).

Another participant (FG2, P3) revealed how support amongst MDTs is beneficial to SLTs: *“I worked a lot with physios and OTs that had quite a lot of experience working with kids with cerebral palsy . . . that are extremely vital in understanding and trying to support.”* The sharing of knowledge and skills with and among SLTs were also noted: *“We work in a team; I am NDT trained, and another therapist has done the PROMPT course.”* (OS, P15).

Training and Resources. Training and resources identified among SLTs in the online survey included augmentative and alternative communication (AAC) and PROMPT training: *“AAC, PROMPT trained, NDT trained”* (OS, P1). Participant responses also revealed using and sharing of resources among other health professionals at their place of work: *“Team resources bank.”* (OS, P12).

The responses from the focus group participants enabled the researcher to identify and understand how the training and resources (identified by online survey participants) facilitated the clinical management and outcomes of therapy for children with CP and helped build skills confidence in SLTs. In line with the online survey responses, focus group participants endorsed PROMPT: *“I did PROMPT . . . and that's really useful. And I did see some effectiveness of that with the individuals I did try to work on speech with.”* (FG2, P1), and NDT training: *“Because of my NDT training, I understand the impact of their classification on their movement and their function and the muscle, control of muscles.”* (FG2, P2).

These were identified as the most common and most valuable courses they had taken for the management of children with CP.

Aim 4: Barriers to Therapy Management

Descriptive Statistics. Using descriptive statistics, the researcher analysed factors that were found to be challenging regarding therapy management when working with children with CP presenting with a speech disorder. The survey question offered multiple-choice answers.

When implementing interventions for children with CP who had a speech disorder, the greatest challenges reported by participants were the lack of therapeutic resources (71%) and limited training/knowledge (60%), followed by lack of human resources (46%).

Thematic Analysis

Through thematic analysis, the main theme extracted from the dataset was Challenges, with the following sub-themes:

- Personal Challenges
- Courses and Training
- Resources and Accessibility
- Socio-Economic Challenges

Personal Challenges. A common thread noted among many participants in the survey and FGDs (n = 43) was feelings of pressure when providing therapy, self-doubt, and lack of confidence: *“There's pressure in providing progress.”* (FG 1, P3); *“It's not a good feeling in our positions when you know that you're supposed to be doing something and you're not.”* (FG 1, P1); *“I still don't really feel entirely confident in treating CP.”* (FG 2, P1).

Courses and Training. Many of the feelings expressed above were linked to participants feeling that they lacked sufficient knowledge: *“My knowledge is very limited.”* (FG 1, P2); *“Too few therapists with knowledge”* (OS, P4).

These viewpoints were attributed to a lack of training and continuous upskilling in CP management at an undergraduate, community service, and postgraduate level: *“I just don't feel as though we were exposed enough during our varsity years, and I feel like there's an element of like terror, you know. That's also the lack of education”.* (FG 1, P2). Another participant further supported this by stating: *“... And I didn't feel as if university properly prepared me ...”* (FG 2, P3).

Difficulties surrounding the affordability, accessibility and sustainability of these courses and training were also reported: *“I can't afford that. Even though it'll be so beneficial to some of my kids ...”* (FG1, P2).

The courses were also reported to be difficult to apply in practical settings: *“It's one thing to have the knowledge. It's another thing to be able to physically, you know, do it.”* (FG1, P2); *“I feel as though what we were taught on cerebral palsy in varsity is very surface level and not specific.”* (OS, P11); *“... The training, the post-grad training, is always very expensive, time consuming, and especially if people are in private practice.”* (FG 2, P2).

One focus group participant expressed the view that a lack of knowledge and training had affected the way SLTs use and optimise resources for therapy, thus affecting the quality

of services provided to children with CP: “. . . people [SLTs] will just jump into AAC, as they assume that they [children with CP] won't speak.” (FG 2, P2).

Resources and Accessibility. Challenges experienced by SLTs in the clinical setting, as well as challenges around SLTs accessing appropriate resources within their clinical setting, were further explored. Many participants voiced their concerns about the lack of availability of resources: “*There is no available assessment tools or screening tools or resources.*” (FG 1, P1); “*Under-resourced department*” (OS, P9). Furthermore, the resources available and used for assessment and management purposes lacked cultural and linguistic sensitivity towards the diversity of the population receiving CP management, resulting in further challenges for SLTs: “*Trying to adapt tests are quite challenging . . .*” (FG 2, P3); “*Assessment, generally, it's always hard when the resources are limited to have to show that cultural diversity.*” (FG 2, P1); “*Lack of South African-based, culturally appropriate resources.*” (OS, P6).

Despite participants’ concerns regarding the availability and appropriateness of resources, time and financial constraints were reported as additional challenges: “*We often just do not have enough time available to give optimum input to these learners.*” (OS, P7); “*They [resources] all cost a fortune.*” (OS, P5).

Socio-Economic Challenges. Numerous participants drew attention to the financial barriers that have hindered access to services and quality of services provided to children with CP: “*I only get to see my patients once a month because they can't afford taxi fare.*” (FG 1, P2); “*Lack of resources or just funding going towards CP management*”. (FG 1, P2).

This concern was expressed by participants as a broader challenge within the South African public healthcare sector: “. . . bigger public health system issue . . .” (FG 2, P1); “*The lack of support from government for our children with diagnoses.*” (FG 2, P2).

Aim 5: Cultural Responsiveness

Descriptive Statistics. Using descriptive statistics, the researcher analysed participant responses around cultural awareness and cultural responsiveness. The survey question required a yes/no answer and participants were asked to provide explanations for their answers, as outlined in Table 8.

Table 8

Frequency Statistics for Survey Questions Pertaining to Cultural Awareness and Responsiveness to Children with Cerebral Palsy Presenting with a Speech Disorder (N = 52)

Question Item	Yes (n)	No (n)
Are you aware of the principles and guidelines stipulated by the Health Professions Council of South Africa (HPCSA, 2019) around a culturally and linguistically diverse and equipped health professional?	27	14
Do you often experience a language barrier between the client and yourself?	27	14
Are you confident with your level of awareness around different cultures and the appropriate etiquette or protocols?	24	17
Do you consider the home language of the patient or the patient's family when interacting (greeting, counselling, relaying/explaining information, etc.)?	37	4
Do you consider which language(s) you provide the service in by consulting with the patient or the patient's family?	37	4
Do you adapt the tools you use to assess/manage the patient to suit their cultural or linguistic needs?	35	2
Do you actively involve the caregiver/patient's family in your therapy approaches and management?	36	1

Note: The total does not equate to 52 as not all participants responded to all the questions.

Thematic Analysis. Through thematic analysis, the main theme extracted from the dataset was Cultural Responsiveness, with the following sub-themes:

- Cultural Sensitivity
- Cultural Awareness
- Communication and Interaction

Cultural Sensitivity. Participants revealed how their therapeutic management strategies incorporated cultural sensitivity towards patients. Evidence-based research, obtaining case histories, and building rapport were some of the strategies applied:

“[Through] case history, finding out whether an approach is culturally appropriate, having discussion with families regarding expectations and applicability of approaches for their contexts.” (OS, P5); *“I am sure [to] be culturally sensitive. Learn about their [family’s] culture.”* (OS, P15).

Cultural Awareness. Table 8 reveals that more than 50% (n = 27) of SLT participants were culturally responsive when providing therapy to children with CP. The table also shows that most participants (n = 27) are aware of the HPCSA (2019) guidelines and principles. As a result of language barriers experienced between SLTs and patients, more SLTs (n = 27) take into consideration the language of the patient, the language of service delivery, and the adaptation of resources to meet the patient’s cultural and linguistic needs. Additionally, SLTs (n = 36) actively involve the caregiver/patient’s family when providing therapy to the patient.

Participants stated how they ensured and managed cultural awareness within the management of children and families with CP by taking the time to research the patient’s culture: *“[I] attempt to research culture to incorporate values in therapy.”* (OS, P8); *“By researching the culture and asking the family questions which may be relevant to my therapy.”* (OS, P16).

Communication and Interaction. Cultural responsiveness was highlighted through SLTs' relationships with the family and caregivers of children with CP. They affirmed that building rapport and trust with the patient's family and caregivers was key when facilitating management: *"I try to understand what they [the family] expect[s] and want[s] from therapy and try to deliver."* (OS, P6); *"I build rapport with them [the family]. Engage with them honestly about how they do things in their culture"* (OS, P15).

Aim 6: Recommendations Made by SLTs

Thematic Analysis. Through thematic analysis, the main theme extracted from the dataset was Recommendations, with the following sub-themes:

- Improving Practice
- Policy Changes

Improving Practice – Education and Training. Participants revealed the need to revisit the field of speech-language therapy in terms of improving service delivery. One participant expressed a desire for training programmes and courses to be more affordable: *"Make some of these courses free"* (FG1, P2), while another suggested ensuring accessibility to these programmes and courses: *"... to be able to access courses that allow them [SLTs] to gather more training."* and FG2, P3, *"... Just expose us to more"* (FG 2, P3). Ensuring sustainability for SLTs was also recommended: *"More training relevant to the South African context ..."* (OS, P4); *"More undergraduate training, ongoing training in the workplace"* (OS, P5).

Many participants (n = 43) emphasised the need to expand the speech-language therapy curriculum at an undergraduate level. However, one participant indicated that this may not be the best approach due to time constraints, suggesting postgraduate opportunities instead: *"I think it's difficult to say that the pre-grad [pre-graduate course] needs to do more,*

because the course is already extremely full . . . universities could do more to disseminate information about post-grad courses that are beneficial” (FG 2, P2).

Similarly, another emphasised the need to collaborate more with tertiary institutions, especially at a postgraduate level: “. . . Okay, let's start with the Delphi panel . . . move on to a pilot study . . . taking the time to do the research . . . [at] universities, because that's where research can be done . . . Master's and your PhD affordable and reliable so that we can do the research and gain from it.” (FG 1, P1).

Improving Practice – Resources. Participants stated the need to provide and have access to resources that were culturally and linguistically appropriate to improve practice and service delivery to all patients with CP: *“Access to more researched intervention and assessments; culturally appropriate resources and intervention.”* (OS, P10); *“Contextually and linguistically appropriate therapy materials”* (OS, P22).

One participant emphasised how culturally and linguistically appropriate therapy resources can be integrated into the correct therapy context within South Africa: *“I think South Africa can do with a few centres of excellence [for CP] . . . mentoring sessions with other therapists. They [SLTs] can do assessments, they [SLTs] can go out as a team and assist with children . . . really beneficial . . . empower the local therapists as well as the families and the children.”* (FG 2, P2).

Policy Changes. Participants suggested that to provide quality services, upskill SLTs, and improve speech-language therapy practice, policy changes among South African bodies and councils were essential. Most participants mentioned adjusting registration guidelines within the HPCSA: *“Specialised registration [within HPCSA], so that you're not allowed to work with CP children unless you've done certain basic criteria.”* (FG 2, P2).

Furthermore, one respondent (FG 2, P3) reported on *“The idea of therapists having to prove that they have the sufficient training to be able to work with such kiddos and their families”*.

Participants also emphasised the importance of reviewing funding provided by the South African government: *“Financial support to provide therapy”* (OS, P12); *“Financial support for children with CP to ensure fair access to resources that aid service delivery.”* (OS, P27).

Summary of Results

The following key findings were noted within each aim:

Aim 1. This aim examined assessment and management practices reported by SLTs. From the descriptive statistics, many participants reported that their assessments were believed to be effective. A combination of approaches was used in managing CP, specifically with a heavy reliance on an MDT approach. Additionally, the results indicated that therapists needed to adapt resources, as these were found to be neither culturally nor linguistically appropriate for patients.

Through thematic analysis, the theme and sub-themes that emerged included individualised assessment methods, holistic intervention strategies, and the incorporation of considerations regarding the patient’s family into management. Additionally, SLTs adapted tools and resources to align with cultural and linguistic needs.

Aim 2. The results from Aim 2 were analysed using Spearman’s rho test, which revealed a positive correlation between SLTs’ years of working experience and their knowledge, skills, and confidence.

Thematic analysis indicated a weak correlation between an SLT’s confidence and their years of experience.

Aim 3. This aim explored facilitators. Through thematic analysis, two sub-themes emerged—Support Systems and Training and Resources.

The results revealed that speech therapists required MDT support and mentorship to guide interventions for managing children with CP presenting with a speech disorder. Training and courses such as AAC, PROMPT, and NDT were identified as most effective for CP management among SLTs.

Aim 4. Barriers to therapy management in children with CP were shaped by various influencing factors. A common thread running throughout each sub-theme was the lack of training, exposure, and knowledge perceived by therapists at an undergraduate and postgraduate levels, leading to a lack of overall confidence in therapy management. Inaccessibility and availability of appropriate cultural resources also contributed to low confidence in achieving effective therapy management. Lastly, this aim highlighted how broader socio-economic factors within South Africa's healthcare system affect patient treatment.

Aim 5. This aim explored SLTs' cultural responsiveness. Descriptive statistics revealed that more than 50% of participants were culturally responsive, as they continuously reflected on their positionality and the power relations between themselves as therapists and their patients. This was achieved through various factors such as building familiarity with HPCSA guidelines, considering the patient's language, involving caregivers in management, and adapting resources accordingly.

Through thematic analysis, the majority of participants revealed that cultural responsiveness was considered during management by researching the patient's culture, taking time to build rapport and trust with the patient and family, and obtaining a thorough case history to achieve cultural sensitivity, cultural awareness, and effective communication and interaction.

Aim 6. This aim explored recommendations for improving practice through more specialised and affordable training. Additionally, it addressed changing policies to support CP management and ensure therapists were qualified to work with such a complex population.

Chapter 5: Discussion

This chapter examines the results analysed using descriptive statistics, inferential statistics, and thematic analysis, which are discussed and presented in alignment with the study aims. The objective of this chapter is to interpret and explain the key findings regarding assessment and management practices, facilitators, barriers, recommendations, and cultural responsiveness of South African speech-language therapists (SLTs) working with children with cerebral palsy (CP) presenting with a speech disorder.

Aim 1

The findings from Aim 1 revealed the assessment and management practices reported by SLTs. From the descriptive statistics, many participants found assessments to be effective but reported needing to adjust these assessment tools. A combination of approaches was used in the assessment and management of CP, specifically, a combination of informal and formal assessments and a heavy reliance on a family and multidisciplinary team (MDT) approach. Additionally, the results found that therapists needed to adapt their resources, which they found to be neither culturally nor linguistically appropriate for patients.

These findings align with a study conducted by Pascoe et al. (2010), who stated that the majority of SLTs used a combination of informal and formal assessments, and more than 50% of these SLTs made procedural or linguistic adjustments to resources to better suit the local context. This was reflected in a statement made by a focus group participant (FG A, P3): *“I individualise it [therapy] towards their [patient’s] very own preferences . . . making sure that their [patient’s] identity also comes through.”*

Adjusting resources to meet the needs of patients is supported by Moonsamy et al. (2017), who emphasised the need to respond to the diversity within South Africa by making contextual and linguistically appropriate resources available. This is further supported by Mdlalo et al. (2019), who explained that SLTs have a responsibility to ensure culture-fair

assessments by acknowledging patients' cultural and linguistic backgrounds. This study's findings revealed that participants found the assessment tools to be effective despite the adjustments that needed to be made. Evidence from studies conducted by Watson and Pennington (2015) and Mdlalo et al. (2019) reveals that informal testing, adaptations to tools, and a lack of robust evidence-based practice can influence the success of therapy. This is because assessment results, comparison of therapy outcomes, time, and continuity of therapy are immeasurable, highlighting the need to create and use tools and resources appropriate for the context of the patient.

Through thematic analysis, the results revealed individualised assessment methods and holistic intervention strategies. Participants suggested incorporating individualised therapy, as described by Pennington et al. (2019), to accommodate the variation of speech disorders in CP and meet the needs of the child and their family.

In terms of intervention, participants indicated that management methods needed to be more holistic, focusing on a family-type model: *"Just giving them [the family] a bit of information and guiding them in counselling helps a lot."* (FG A, P3).

This is supported by Dlamini et al. (2023), who explained how a family-centred approach could achieve collaboration and clear communication between health professionals and caregivers, thereby empowering the families of children with CP.

Aim 2

The results from Aim 2 were analysed using Spearman's rho test, which revealed a positive correlation between SLTs' years of working experience, knowledge, skills, and confidence. This suggests that participants with more years in the field of speech-language therapy found themselves continuously growing and developing skills while providing therapy to children with CP diagnosed with a speech disorder, thus contributing to increased confidence in the work they carried out. This finding aligns with that of Dawson (2018), who

suggested that therapists with more clinical experience reported higher levels of self-efficacy, confidence, and flexibility in applying their knowledge to clinical work.

Contrary to what was found in the survey analysis, the thematic analysis revealed varied viewpoints and perceptions shared during the focus group discussions (FGDs). Although some therapists believed that their years of experience had aided in their ability to manage CP effectively, others revealed a lack of confidence when providing therapy to a child with CP, irrespective of their years of experience: “[*After more than 15 years practising as an SLT*] . . . *if I look at my, where I am still to this day, I still don't feel as if I'm particularly confident in what I do.*” (FG B, P3).

Some justified their lack of confidence by citing reasons such as insufficient exposure and training in the area of CP, despite their years of experience. This finding is supported by Southwood and van Dulm (2015), who revealed that SLTs with less experience but more complex training may deliver better therapy to a diverse population of patients compared to SLTs with more clinical experience. This, in turn, would lead to increased confidence, stemming from enhanced skills, suggesting that skills and knowledge have a direct link to a therapist’s confidence rather than years of experience in the field.

Aim 3

Aim 3 discussed the factors that aided in intervention practices for SLTs when working with children with CP diagnosed with a speech disorder.

The results revealed that speech therapists required MDT support and mentorship to guide interventions for the management of children with CP presenting with a speech disorder: “[*Needing to collaborate with other professionals or draw on someone else's knowledge to know how to manage.*” (FG 2, P1).

This finding is supported by Ngubane and Chetty (2017) and Keforilwe and Smit (2021) who stressed the importance of a multidisciplinary approach to improve the quality of

service delivery. Therefore, the findings suggest that SLTs can draw on the expertise of other health professionals to provide more holistic and effective treatment outcomes for the patient.

Furthermore, PROMPT, augmentative and alternative communication (AAC), and neurodevelopment treatment (NDT) courses were highlighted as the most common and most valuable courses taken by SLTs to expand their knowledge and improve their skills and understanding in the area of paediatric CP and associated speech disorders. These courses were reported to be beneficial in providing management strategies for speech development and expressive language development, and enhanced their physiological understanding of CP, ultimately leading to the provision of quality services. Although the researcher understands and respects the value in a course like PROMPT, one must also consider the implementation and equitable access of PROMPT. This type of resource-intensive therapy requires specialized training and one-on-one sessions, which may be difficult to sustain in South Africa's under-resourced public healthcare system (Pascoe and Norman, 2011).

Aim 4

This aim discussed the factors hindering effective therapy management for SLTs when working with children with CP presenting with a speech disorder.

A common thread running throughout the research was the lack of training, exposure, and knowledge perceived by therapists at an undergraduate and postgraduate level, resulting in a lack of overall confidence in therapy management: *"I really wasn't familiar with having honestly not covered too much of it when I was studying . . . I think we didn't get a lot of exposure to it."* (FG B, P1).

The findings revealed gaps in training available to SLTs, specifically regarding accessibility, affordability, and practicality of courses and training. Lack of accessibility and limited training for SLTs is experienced on a global scale, as explained by de Villiers (2021) who attributed fewer training opportunities to a lack of resources because of discrepancies

between high- and middle-income regions. This suggests that South Africa's context as a upper-middle-income country has fewer training opportunities for clinicians due to past systemic challenges and the absence of resources (de Villiers, 2021). Moreover, participants indicated that training courses that were accessible were not always applicable in a practical setting: *"It's one thing to have the knowledge. It's another thing to be able to physically, you know, do it."* (FG A, P2).

The concerns expressed about the limited practicality of training courses highlighted by the participants are aligned with findings by Lydall (2020). The study concluded that although effective training and courses are available to SLTs, gaps existed in certain CP training programmes, particularly regarding CP management techniques (Lydall, 2020).

Research by Pitt et al. (2023) aligns with this study's findings, which found that a lack of training affects the confidence of clinicians when carrying out therapeutic services. The authors concluded that participants preferred active learning activities, or a combination of active and passive learning over purely passive learning coursework, as it aided in building confidence and knowledge (Pitt et al., 2023).

Inaccessibility and unavailability of appropriate cultural resources also contributed to low confidence in achieving effective therapy management. Participants raised concerns regarding having to adapt the resources they had to become more culturally and linguistically appropriate. Khoza-Shangase and Mophosho (2021) discussed speech therapy tools and programmes developed around Western culture and language, noting that failure to acknowledge South Africa's linguistic diversity has created a barrier for effective training in African languages. Although it is evident that participants account for and acknowledge the diversity within their patient caseload, the quality and the linguistic features of adapted resources cannot be assessed or measured, thereby impacting the quality of service provided to patients. Similarly, Pascoe et al. (2010) stated that therapists had expressed feelings of

uncertainty and lacked confidence when adapting or modifying resources to suit the needs of a diverse and/or multilingual context. This suggests that clinicians who are required to adapt and adjust resources to meet the linguistic or cultural needs of the patient will not feel entirely confident in therapy management.

Lastly, this aim highlighted broader socio-economic factors within South Africa's healthcare system that are affecting patient treatment. Although South Africa has improved the availability of rehabilitation services, a study by Lydall (2020) emphasised the systemic challenges that have hindered the effectiveness of therapy. This study highlighted the financial barriers and lack of support nationally, which have hindered access to services and the quality of services provided to children with CP: *"The lack of support from government for our children with diagnoses"* (FG 2, P2).

Although the National Rehabilitation Policy (2000) has been established to rectify these matters, deep-rooted deficiencies still exist on a social, economic, and political level, contributing to the limited availability of resources and inadequate service provision in South Africa (Sherry, 2014).

Aim 5

This aim explored SLTs' cultural responsiveness. Descriptive statistics revealed that more than 50% of participants were culturally responsive, as they continuously reflected on their positionality and the power relations between themselves as therapists and their patients. This was achieved through various factors such as building familiarity with the Health Professions Council of South Africa (HPCSA) guidelines, considering the patient's language, involving caregivers in management, and adapting resources accordingly. These findings are supported by Mdlalo et al. (2019), who emphasised acknowledging the patient's cultural and linguistic background to ensure a fair and high-quality service.

Through thematic analysis, the majority of participants revealed that cultural responsiveness was considered during therapy management by researching the patient's culture, taking time to build rapport and trust with the patient and family, and obtaining a thorough case history to achieve cultural sensitivity, cultural awareness, and effective communication and interaction.

Results found that many SLTs in South Africa are generally culturally responsive, as SLTs built trust and rapport with caregivers by initially establishing a relationship with them. *"I build rapport with them [the family]. Engage with them honestly about how they do things in their culture."* (OS, P15).

By engaging with and talking to the caregivers and families, SLTs can establish appropriate and agreed upon expectations for therapy. Participants appeared to have followed a family-centred approach when considering the cultural needs of the patient and their family. This supports the literature of Manyuma et al. (2023), who recommended a family-centred approach to support caregivers in caring for children with CP in rural areas in South Africa. This study showcased participants prioritising family-based models and caregiver approaches in therapy management. A study by Wickenden (2013) revealed the importance of SLTs educating and improving community understanding of communication disabilities, both at an individual and structural level, beyond clinical practice. However, given the lack of resources, such as a shortage of healthcare professionals and time frame limitations in management, conducting a community-level approach may pose a challenge for health professionals in South Africa.

Aim 6

This aim explored the recommendations by improving practice through more specialised and affordable training, as well as the development and use of context-appropriate resources. The results revealed the need for courses and training to be more specific to the

management of CP and speech disorders. This was stressed for undergraduate training and workplace training, specifically in government settings: *“More training relevant to the South African context . . .”* (OS, P4); *“More undergraduate training, ongoing training in the workplace”* (OS, P5).

Additionally, participants remarked that these courses or training should be accessible and affordable or sponsored when working at a government institute. Contrary to what many participants revealed as a recommendation to improve practice regarding improving undergraduate training, a few participants mentioned that undergraduate training might not be feasible due to time constraints and intensive course content. Instead, postgraduate training and increased collaboration with tertiary institutions at a postgraduate level was suggested. This finding is supported by Bakuwa et al. (2020) who investigated the complexities and challenges of training and readiness with newly qualified SLTs in South Africa. The study carried out a postgraduate practical training programme and found positive results in improving confidence, changing attitudes, perceptions, and practice intentions, as well as enhancing self-perceived readiness in the area of CP amongst SLTs (Bakuwa et al., 2020). Similarly, Fiori et al. (2022) recommended enhancing training programmes to ensure that SLTs are well prepared to implement effective interventions for populations with complex communication challenges, such as CP. This supports the findings of this study, which call for more focused and tailored training on CP management.

The participants also stressed the importance of training and adapting curricula in the field. This finding aligns with Khoza-Shangase and Mophosho (2021), who stated that to address linguistic and cultural barriers and improve quality of care for patients, culturally and linguistically responsive training and resources must be developed. This would ensure the availability of appropriate resources relevant to context and culture, and that upskilled therapists are working in these diversifying contexts.

Additionally, the study underlined the importance of changing policies to support CP management and ensure therapists are qualified to work with such a complex population. Participants noted changes and adaptations to policy guidelines by SASLHA and HPCSA. These changes included the criteria an SLT must meet for specialised registration to work with children with CP, ensuring that patients receive the best management by trained and knowledgeable therapists. Adjustments to guidelines and policies also included reviewing the financial support therapists received to provide effective therapy and resources to children with CP. Whilst changes to policies and guidelines may be beneficial to ensure better quality of care and accountability towards this population, one must consider the implications and practicality of these changes in a context like South Africa. For example, implementing gatekeeping could further limit access to already scarce services, especially in under-resourced settings, exacerbating inequalities in healthcare.

The policies and guideline reforms corresponds with studies by Patel (2014) and Hussein El Kout et al. (2022), who explained that, despite noteworthy progress in developing and structuring legislation, the execution of these policies is stagnant within South Africa's healthcare context.

Collaborative Care Model

Findings from the study indicate that principals from the CoCM are subconsciously used amongst SLTs in South Africa. Due to the country's diverse nature both culturally and economically; it is somewhat inherent for SLTs to use factors of the model to support intervention. Therefore, this study's findings corroborate with what is suggested by the CoCM. The principles of the model are based on collaboration, interdisciplinary teamwork, and holistic care. Intervention methods and facilitators, outlined in Aims 1 and 3, reveal that participants make use of a multidisciplinary team approach in therapy management to increase knowledge around CP and guide intervention accordingly. Therefore, this model

ensured that SLTs could draw on the expertise of other health professionals to provide more holistic and effective treatment outcomes for patients. The findings of this study revealed SLTs cultural responsiveness, described in Aim 5. Owing to South Africa's diverse cultures and challenges to healthcare, a model like the CoCM highlights the importance for collaboration between clinicians, caregivers, and the community. This ultimately ensures cultural sensitivity and responsiveness from healthcare professionals, therefore aiding in quality care management.

Summary of Discussion

This study and its findings highlighted numerous key points such as gaps in existing literature and policies around CP and the lack of effective management amongst speech therapists primarily due to a lack of confidence, a lack of specialized training and skills in CP and the lack of appropriate resources. However, this study also highlighted the holistic approach to therapy speech therapists use, that accounts for their cultural responsiveness and thus supporting the CoCM as an ideal approach to be used in the South African Healthcare context.

Chapter 6: Conclusion

This chapter provides an overview of the study and its findings. The chapter also discusses the implications, limitations, and recommendations of the study to add value to future research in the field of speech and language therapy.

Summary of the Study

This explorative research study investigated the perceptions of speech-language therapists (SLTs) in South Africa regarding the management of children with cerebral palsy (CP) diagnosed with a speech disorder. Using descriptive statistics from online surveys and thematic analyses from the FGDs, six sub-aims and various emerging themes and subthemes were investigated and discussed.

From the descriptive statistics, it can be concluded that most SLTs (59.6%) found that the resources they used and had access to were effective for assessing children with CP diagnosed with a speech disorder. Through thematic and descriptive analyses, the researcher investigated why this was the case and evaluated the effectiveness of the assessments used. The researcher concluded that more than half of the participants (57.7%) adapted resources to better suit the cultural and linguistic context of the patient. The literature suggests that adapted resources cannot be measured and, therefore, indicates that assessment methods may not be as effective as SLTs perceive.

Thematic analysis determined that, given the complexity of CP, participants' assessment methods were more patient-centred and individualised, whereas management strategies adapted a more holistic approach that was family-centred and emphasised a multidisciplinary team (MDT) approach. Owing to the patients' cultural and linguistic diversity and the country's socio-economic status, participants adapted their assessment and management resources to align more closely with patients' needs.

The relationship between SLTs' perspectives and the demographic variables—years of experience, knowledge and skills, and confidence—were analysed using inferential statistics such as Spearman's rho test. Spearman's rho test results indicated a direct, positive correlation between participants' years of experience and the knowledge, skills, and confidence they acquired. However, 12% of participants from the FGDs explained that their years practising as an SLT had not fully equipped or prepared them to manage the complexities of CP. Their feelings, supported by personal accounts, revealed a lack of confidence when managing CP cases.

Descriptive and thematic analysis showed that facilitators for SLTs included the resources and/or procedures put in place at their place of work, training and courses, and support from interdisciplinary or multidisciplinary teams. Many participants emphasised the value of the MDT approach. This approach supported SLTs in the management of CP as it provided guidance and knowledge around CP from other health professionals.

Although courses facilitated the management of CP, participants indicated that their effectiveness could act as a barrier to successful therapy. This arises from gaps in affordability, accessibility, and practicality, particularly in courses offered at a tertiary level. This finding revealed an overall lack of knowledge and confidence among participants when managing children with CP. By the same token, the results indicated that participants found that the resources they used were effective in therapy but had to be adapted to suit patients' needs. This, in turn, created a challenge in conducting effective therapy with measurable outcomes.

Owing to the diversifying and changing context of South Africa, addressing the cultural responsiveness of SLTs was vital. The results revealed that more than 50% of participants continuously reflected on their positionality and relationship with the patient and their family to ensure cultural sensitivity and cultural awareness. Cultural responsibility by

SLTs was aided and supported by family and caregiver approaches in therapy management. However, participants' responses indicated a lack of community involvement in the therapy management of CP.

Notwithstanding the focus of this research on understanding and exploring barriers and facilitators voiced by SLTs when managing children with CP diagnosed with a speech disorder, it also aimed to identify solutions and recommendations made by SLTs to better support therapy management. Participants shared recommendations that they believed could strengthen the profession and result in better management of children with CP diagnosed with a speech disorder. These recommendations included more extensive, ongoing, and CP-specific training (particularly at a tertiary level), resources appropriate to the South African context (culturally and linguistically), and adjustments to policies to allow for effective therapy management.

This study was supported and guided by the Collaborative Care Model (CoCM), which allowed participants' perspectives to be expressed in a truthful manner. Additionally, the model guided the research in making connections and analysing the relationships between SLTs and the speech-language profession, along with South Africa's health system and communities. Moreover, the CoCM enabled this study to analyse and discuss results holistically, considering various contexts, approaches, and relationships. This flexibility is crucial for a model applied in a diverse and unstable South African context, particularly for a condition like CP, which involves a complex diagnosis.

Implications

Clinical Implications

The results of the study highlighted the need for the field of speech and language therapy to further develop and engage with research on the assessment and management of speech disorders in CP. Advancing research in this area, could contribute to the development

of more effective assessment and management techniques, ultimately leading to greater confidence among therapists and improved therapy outcomes for the specialised management of speech disorders in CP.

This study demonstrated the need to produce SLTs who are aware of and committed to becoming more culturally responsible and sensitive to the diverse population of patients within a South African context. This should be promoted and ensured through curriculum teachings, training, courses, and speech and language therapy policies.

This study also emphasised the need for SLTs to adopt more collaborative and community-driven approaches in managing children with CP who have a speech disorder. Given the diverse and complex nature of South Africa's context, SLTs must take a more holistic approach to therapy to ensure a fair and successful therapy outcomes for their patients.

Theoretical Implications

The information acquired from this study has drawn attention to the importance of incorporating the CoCM into therapy management. This model provides a structured yet flexible guide for SLTs to manage a complex disorder such as CP in a diverse setting like South Africa. The framework used to support this model could help and guide SLTs in the assessment and management of CP. The CoCM combines patient-centred, family-centred, and community-centred approaches to aid in holistic therapy. Additionally, the model supports SLTs within a multidisciplinary team setting to ensure collaborative treatment, resulting in more widespread sharing of knowledge and skills.

Policy Implications

This study's findings identified the gaps in education and training, pointing to a need to revise and rework the curriculum at a tertiary level. This could be achieved by emphasising the role of SLTs within the assessment and management of CP and speech disorders,

analysing the resources and tools needed for CP management, and ensuring SLTs become culturally responsive therapists. Furthermore, increased exposure to research, and the affordability and accessibility to training and courses at a postgraduate level, has the potential to promote sustainability in equipping SLTs with knowledge, skills, and confidence when managing children with CP presenting with a speech disorder.

This study challenged the practicality and effectiveness of policies and guidelines stated in the White Paper on the rights of persons with disabilities (Office of the Deputy President, 1997), the Health Department's Access to Fair Treatment and Quality Healthcare for all Act, and the regulations outlining the scope of the speech-language therapy profession by the Health Professions Council of South Africa (HPCSA). Despite improvements in the content development of these policies, their applicability and feasibility have not been adequately integrated to address the challenges within South Africa's healthcare system and the complexities of CP. Therefore, the development of practice and policy around CP and the speech-language discipline must be reconsidered to ensure effective management of CP.

Limitations

Although this study provided valuable insights into the perspectives of SLTs managing children with CP presenting with a speech disorder in South Africa, several limitations should be acknowledged. Not all participants were able to answer all the survey questions, either due to technical issues or survey fatigue. This was mitigated, where possible, by making survey questions easy to read and understand, as well as providing multiple-choice options to facilitate an easier and faster response rate. This was noted when presenting the data.

During the participant recruitment phase, reminders were posted on online platforms to encourage participation so that saturation could be reached. However, this study was limited by its small sample size, which may contribute to random variation in the results, and

may limit the generalisability of the findings. Smith and Caddick (2018) explained that qualitative research aims to provide rich, detailed descriptions of phenomena, which are valuable even when not generalisable. Therefore, the lack of generalisability was deemed acceptable, as this study focused on gaining in-depth perspectives from SLTs with more than two years' experience. These SLTs shared valuable insights gathered from the online survey responses and FGDs, contributing significantly to a deeper understanding of the context-specific issues being investigated in South Africa.

Finally, many participants in this study were based in urban or peri-urban areas, which may have limited the generalisability of the findings. This was mitigated through snowball sampling and posting the study's advertisement across numerous online platforms and speech therapy associations to reach and appeal to SLTs across various demographics.

Strengths of Study

This study provided a valuable platform for SLTs to have their voices heard and respected in the management of children with CP who present with speech disorders—an area that remains under-researched. The findings not only identified key barriers to effective intervention but also allowed SLTs to offer recommendations they believe could positively influence the profession. These insights merit further exploration, research, and evaluation to ensure the field of Speech and Language Therapy is thoughtfully integrated into training and practice from the undergraduate level onward. Additionally, the study introduced the use of a CoCM framework, which holds promise for enhancing assessment and management practices within South Africa's healthcare system.

Future Directions of Study

The researcher recommends that future studies compare the perspectives of SLTs from different settings and health contexts, such as urban versus rural settings. Further

research into the perspectives of SLT's from different settings will also highlight and rationalise the different therapy approaches used in management. Furthermore, how resources are adapted to suit the context/ setting of the therapy conducted and its effectiveness. Whilst this study highlights South Africa's past inequalities and systemic challenges, it would be useful to further analyse how systemic challenges have influenced the perspectives of SLTs. The researcher also recommends a study that looks into the effectiveness of the CoCM in a real-life context specifically with the CP population in South Africa. Additionally, comparing the perspectives of caregivers of children with CP would provide a more holistic understanding of the barriers and facilitators. Finally, it is recommended that future research be conducted with a larger sample size to enhance generalisability and validate the findings.

Conclusion

This research study effectively explored the perspectives of SLTs assessing and managing children with CP who have a speech disorder in South Africa. It adopted a mixed-methods approach, comprising an online survey and FGD. This approach enabled the researcher to draw conclusive results regarding assessment and CP management practices voiced by SLTs. These included the appropriateness of the resources and tools utilised in therapy; therapeutic, personal, and environmental facilitators and barriers, SLTs' cultural responsiveness, and future recommendations made by SLTs working in a South African context when managing children with CP.

The results revealed several key points, including gaps in existing literature and policies surrounding CP, as well as the lack of accessibility to training, courses, and appropriate resources. These issues have affected therapists' confidence and the quality of service provided to children with CP. However, this study also highlighted the holistic approach to therapy employed by SLTs, which incorporates their cultural responsiveness. This makes the Collaborative Care Model an ideal and practical framework for the South

African healthcare context among health professionals, guiding holistic and effective therapy management for the CP population.

This study has contributed to future literature by offering insightful perspectives into the relationships between speech and language intervention, the complexity of CP, and South Africa's richly diverse nature.

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Appendices

Appendix A: Online Survey



SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Dear participant, you are going to be participating in the online survey component of this research study. Your completion and submission of the survey applies consent.

Managing speech sound disorders in children with Cerebral palsy: South African Speech Therapists'

Perspectives

Online Survey Questions

Online Survey Questions

A. Demographics/ General

1. In which work setting(s) do you work? Please tick that apply.

- ☐ Health Private
- ☐ Health Public
- ☐ Education Private
- ☐ Education Public

2. Which province(s) do you work in?

- ☐ KwaZulu-Natal
- ☐ Limpopo/ Eastern Cape
- ☐ Western Cape/ Northwest
- ☐ Northern Cape
- ☐ Mpumalanga
- ☐ Gauteng
- ☐ Free State

3. What language(s) do you speak?

- ☐ English
- ☐ Zulu
- ☐ Afrikaans
- ☐ Xhosa
- ☐ Tswana
- ☐ Sotho
- ☐ Venda
- ☐ Tsonga
- ☐ Swati
- ☐ Ndebele
- ☐ Other_____ (Please specify)

4. What language(s) do the majority of your patient case load speak?

- ☐ English
- ☐ Zulu
- ☐ Afrikaans
- ☐ Xhosa
- ☐ Tswana
- ☐ Sotho
- ☐ Venda
- ☐ Tsonga
- ☐ Swati
- ☐ Ndebele
- ☐ Other_____ (Please specify)

5. What language(s) do you speak to your patients with?

- ☐ English
- ☐ Zulu
- ☐ Afrikaans
- ☐ Xhosa
- ☐ Tswana
- ☐ Sotho
- ☐ Venda
- ☐ Tsonga
- ☐ Swati
- ☐ Ndebele
- ☐ Other_____ (Please specify)

6. Do you work with an interpreter?

- ☐ Yes
- ☐ No

If yes, have you received training to work with/ alongside an interpreter?

- ☐ Yes
- ☐ No

7. How many years have you been practising as a Speech-Language Therapist?

8. How often do attend CPD courses/ trainings in the area of CP?

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

9. What are the types of CP CPD activities you engage with? Please tick the following that apply.

- ☐ Journal articles
- ☐ Workshops
- ☐ Seminars
- ☐ Webinars
- ☐ Courses
- ☐ Conferences
- ☐ Interest groups

10. Do you work with children with CP who present with speech difficulties?

- ☐ Yes
- ☐ No

11. How many children with CP do you have on your caseload?

12. Which type of CP do the children on your caseload have? Please tick the type that apply.

- ☐ Spastic
- ☐ Ataxic
- ☐ Dyskinetic
- ☐ Mixed

13. What type of CP comprises much of your caseload? Please tick the type that apply.

- ☐ Spastic
- ☐ Ataxic
- ☐ Dyskinetic
- ☐ Mixed

14. Which type of speech disorders are most common that you see in children with CP? Please tick the type that apply.

- ☐ Fluency Stuttering
- ☐ Dysarthria
- ☐ Speech Sound Disorder
- ☐ Apraxia of Speech

15. What percentage of children with CP present with a speech disorder?

16. Please tick the following factors that you typically deal with when managing a child with CP on your case load.

- ☐ Proficiency/Competence
- ☐ Cognition/memory
- ☐ Augmentative and Alternative Communication (AAC)
- ☐ Receptive Language
- ☐ Expressive Language
- ☐ Oro-motor skills/non-speech skills
- ☐ Motor speech
- ☐ Phonology
- ☐ Pragmatics
- ☐ Literacy

17. Which health professional(s) do you work with closely with in the management of children who have CP? Please tick that apply.

- ☐ Occupational Therapists
- ☐ Physiotherapists
- ☐ Educational Psychologists
- ☐ Paediatric Neurologists
- ☐ Other_____ (Please specify)

18. How frequently do you engage with these health professionals when providing intervention to a child with CP? Please tick that apply.

- ☐ Always
- ☐ Often
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

19. Are there any other SLTs in your workplace?

- ☐ Yes
- ☐ No
- ☐ If yes, how many? _____

B. Scope of Practice

Knowledge

20. How would you rate your knowledge /experience in working with children with CP who present with a speech disorder? Please tick that apply.

- ☐ Poor
- ☐ Fair
- ☐ Good
- ☐ Very Good
- ☐ Excellent

21. How would you rate your level of awareness regarding international-based practice regarding children with CP and co-occurring speech disorders?

- ☐ Poor
- ☐ Fair
- ☐ Good
- ☐ Very Good
- ☐ Excellent

22. Based on your understanding in the area of CP, can you name and describe the policies you are aware of?

Skills confidence level

23. How confident do you feel assessing children with CP who present with a speech disorder? Please tick that apply.

- ☐ Not confident at all
- ☐ Slightly confident
- ☐ Somewhat confident
- ☐ Confident
- ☐ Completely confident

24. Are you confident, as an SLT, that you are engaging with evidence-based practice to carry out effective service delivery to children with CP who are diagnosed with a speech disorder.

- ☐ Not confident at all
- ☐ Slightly confident
- ☐ Somewhat confident
- ☐ Confident
- ☐ Completely confident

25. How confident do you feel in providing interventions to children with CP who present with a speech disorder?

- ☐ Not confident at all
- ☐ Slightly confident
- ☐ Somewhat confident
- ☐ Confident
- ☐ Completely confident

Assessment

26. Are the types of resources you use/ have access to when assessing a child with CP who presents with a speech disorder effective?

- ☐ Yes
- ☐ No

27. Do you find the resources you use to assess children with CP linguistically/culturally appropriate?

- ☐ Yes
- ☐ No

28. Do you use standardised assessments?

- ☐ Yes
- ☐ No
- ☐ If yes, what assessment do you use? _____

29. Do you make any adaptations to these standardised assessments?

- ☐ Yes
- ☐ No

30. Do you use informal assessments?

- ☐ Yes
- ☐ No

Management

31. What approach(es) do you use in your intervention plan to a child with CP diagnosed with a speech disorder? Please tick those that apply.

- ☐ Patient-centred
- ☐ Clinician-centred
- ☐ Family-centred
- ☐ The International Classification of Functioning, Disability and Health (ICF)
- ☐ A mixture

32. Are the types of resources you use/ have access to when managing children with CP who present with a speech disorder effective?

- ☐ Yes
- ☐ No

33. Do you find the resources you use to manage children with CP linguistically appropriate?
- ☐ Yes
☐ No
34. Do you find the resources you use to manage children with CP culturally appropriate?
- ☐ Yes
☐ No
35. Below is a list of common treatment approaches used to treat speech disorders. Please tick the approaches you use in clinical practice.
- ☐ Auditory discrimination (focus on recognising, comparing and distinguishing between distinct and separate sounds)
- ☐ Contrast therapy (contrasting two speech sounds in minimal pairs in order to aid in phonological learning) (Weiner, 1981)
- ☐ Articulation work/ motor skills training (teaching one how to produce the sound through visual aid and physical prompting) (Van Riper & Emerick, 1984)
- ☐ Non-speech oro-motor work (oral-motor exercises) (Lancaster & Pope, 1989)
- ☐ Core Vocabulary (an individualised set of specific vocabulary used to improve a child's speech clarity) (Dodd, 2005)
- ☐ Whole language approach (top-down approach, teaching whole words first through reading and based on the principles of oral language acquisition) (Hoffman, Norris & Monjure, 1990)
- ☐ Auditory bombardment (exposing a child to sounds in words repeatedly in a short space of time in order to develop awareness of sounds and eventually learn new sounds/words) (Hodson & Paden, 1991)
- ☐ Cued articulation (forming a visual picture of each sound that one can remember and produce) (Passey, 1991)
- ☐ PROMPT (a tactile-kinaesthetic approach to help one move their speech articulators correctly to form words) (Hayden, 1984)
- ☐ Parent/ caregiver-based work
- ☐ Other, please specify: _____
36. Do you incorporate home programmes in the management of your clients?
- ☐ Yes
☐ No
37. Do you use any assistive devices in your treatment of children with CP?
- ☐ Yes
☐ No
☐ If yes, please specify.
38. Do you find that there are enough financial resources set aside to manage children with CP who present with a speech disorder?
- ☐ Yes
☐ No

C. Enablers in your work environment

39. In your place of work, are there any procedures/ resources in place to facilitate effective assessment and management of CP children who present with a speech disorder?

- ☐ Yes
☐ No

Elaborate on your responses _____

40. Challenges in your work environment

What are the greatest challenges/barriers you are faced with when assessing and managing a child with CP who presents with speech difficulties, in a South African context? Please tick that apply.

- ☐ Limited training/ knowledge
☐ Lack of therapeutic resources
☐ Lack of human resources
☐ Other (please specify)

Elaborate on those you have checked _____

D. Recommendations

41. What would you require, as a clinician, to ensure effective service delivery to children with CP?

E. Cultural Responsiveness

The following set of questions are based on the *Professional Board for Speech, Language and Hearing Professions – Guidelines for Practice in a Culturally and Linguistically Diverse South Africa* (Health Professions Council of South Africa [HPCSA], 2019)

42. Are you aware of the principles and guidelines stipulated by the HPCSA (2019) around a culturally and linguistically diverse and equipped health professional?

- ☐ Yes
☐ No

43. Do you often experience a language barrier between the client and yourself?

- ☐ Yes
☐ No

Elaborate on your answers _____

44. Are you confident with your level of awareness around different cultures and the appropriate etiquette or protocols?

- ☐ Yes
☐ No

45. Do you consider the home language of the patient or patient's family when interacting (greeting, counselling, relaying/ explaining information, etc.)

- ☐ Yes
☐ No

Why? _____

46. Do you consider which language(s) you provide the service in by consulting with the patient or patient's family?

☐ Yes

☐ No

Why? _____

47. Do you adapt the tools you use to assess/ manage the patient to suit their cultural or linguistic needs?

☐ Yes

☐ No

Why? _____

48. Do you actively involve the caregiver/ patient's family in your therapy approaches and management?

☐ Yes

☐ No

Why? _____

49. How do you manage patients seeking (or wanting to seek) alternative methods in therapy? Please explain.

50. How do you manage patients who are of a different culture to you? Please explain.

Should you wish to take part in the focus group discussion please continue to next page.

Appendix B: Semi-Structured Interview Schedule



SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Managing speech sound disorders in children with Cerebral palsy: South African Speech Therapists' Perspectives

Semi-Structured Interview Schedule

Intro:

- Greetings to participants – Researcher to introduce herself and introduce topic.
- Researcher to explain benefits of this research study taking place.
- Researcher to ensure all participants understand the research study and ensure all ethical considerations are factored and understood through verbal confirmation as well as ensuring participants have read, understood and have signed the form on the participant information sheet. The researcher is responsible for reminding all participants that all opinions and discussions that are shared in the focus group are not to be discussed outside of the focus group due to confidentiality issues.
- Any questions from participants – These will be answered and clarified by the researcher.
- Ground rules/rules of engagement addressed by researcher will include:
 - For all participants to participate actively in the discussion.
 - Speak one at a time.
 - Treat everyone's opinions/ ideas/ suggestions with respect.
 - Minimise side conversations.
 - Keep focused on the topic/ questions at hand.
 - Mic to be switched to mute if participant is not talking to avoid audio feedback and disturbances.
- Researcher to remind participants and to get verbal confirmation that this discussion will be recorded.
- Researcher to remind participants that the focus group discussion duration will be 45–60 minutes.
- Researcher to remind participants that the discussion will be audio recorded.
- Each participant to introduce themselves – first name only, how long they have been practising for, where they practice (private/ practice/ school, etc.), description of caseload (specifically CP related).

Closing:

- Researcher to thank participants for their participation and time taken to partake in the study.
- Any questions regarding the study will be answered by the researcher.

A. Scope of Practice

1. Describe how you go about working with children who have CP and who are diagnosed with a speech disorder?

B. **Facilitators and Barriers**

2. Describe the support, resources or any other factors that assist you in your service provision to children with CP and communication difficulties?
3. Describe the lack of support, resources or any other factors that hinder or prevent you providing the services you would like to children with CP and communication difficulties?

C. **Recommendations**

4. Do you have any recommendations to stakeholders (employers, HPCSA, caregivers, non-governmental organisations, the Department of Health, Department of Education, etc.) regarding how you could provide services to children with CP who have accompanying speech disorders?

Appendix C: Online Survey and Focus Group Discussion Pre-Test Participant

Feedback Survey



SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Managing speech sound disorders in children with Cerebral palsy: South African Speech Therapists' Perspectives

Online Survey

1. Was the online survey easy to access?
Yes/No
2. Were the questions easy to understand and non-ambiguous?
Yes/No
3. Were the survey response options suitable and applicable to the question?
Yes/No
4. Do you feel that the survey questions were suitable to the study's aims and objectives?
Yes/No
5. How long did it take you to complete the survey online?
> 15–30 minutes, < 15–30 minutes

Focus Group Discussion

1. Did you find the discussion appropriate and suitable to the study's aims and objectives?
Yes/No
2. Did you feel safe and ease when expressing your viewpoints and opinions during the discussion?
Yes/No
3. Did you feel that the researcher was unbiased throughout the discussion?
Yes/No
4. Did you feel that the questions and interview guideline facilitated a comprehensive and analytical discussion?
Yes/No
5. How long did it take you complete the discussion?
> 45 minutes, < 45 minutes, > 60 minutes, < 60 minutes
6. Did you feel that the time spent on the discussion was appropriate?
Yes/No

Appendix D: Participant Information Sheet – Online Survey



SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Good day Sir / Madam

My name is Nicol Randeria. I am a Master's student in the discipline of Speech-Language Pathology School of Humanities at the University of the Witwatersrand, Johannesburg. My supervisor is Dr Anniah Mupawose and co-supervisor Miss Lavanya Naidoo. My master's research is entitled **Managing speech sound disorders in children with Cerebral palsy: South African Speech Therapists' Perspectives'**. This study will be exploring speech therapists' perceptions around the assessment and management practices toward the cerebral palsy paediatric population diagnosed with a speech disorder.

You are invited to participate in my study by completing an online survey on Survey Monkey. The survey will include open and closed-ended questions. The survey will ask questions about clinical caseloads, assessment and management practices, facilitators, barriers, and recommendations around the cerebral palsy population diagnosed with a speech disorder. You will take part in this once off online survey questionnaire requiring your response to multiple-choice questions, open-ended questions and closed-ended questions. If you decide to take part, completing the online survey is estimated to be completed between 20 and 30 minutes. Clicking the link, completing, and submitting your survey responses will indicate consent. The online survey will be accessible at any time of day for future participants between the following dates: __/__/2024 and __/__/2024. Your completion of the online survey will imply informed consent to participate.

This data will be stored in a secured online folder on a password protected laptop for 5 years and deleted after 5 years. Only I, the researcher (Nicol Randeria) and my supervisors (Dr. Anniah Mupawose and Miss Lavanya Naidoo) will have access to the data.

If you are willing to partake in the next phase of this research study, a separate page titled 'Focus Group Discussion Recruitment of Participants' will be attached at the end of the survey, where you will be required to answer some personal information. Personal information will include your first name and email address as a way of the researcher to contact you. This will be filled in and submitted online along with the online survey responses. Personal information will be stored securely online for at least 5 years and thereafter personal information will be

deleted. Personal information will not be shared with any third parties and POI guidelines will be adhered to by ensuring participant anonymity and confidentiality of information.

The online survey will be confidential and anonymous. Participants will not have to provide any identifying information to complete the survey study. When I share the results of the research study, I will not include your name or anything else that could identify you. With your permission, other researchers may use the data collected from this research study, but your name and any personal information will not be used or passed on.

If you decide to take part in the research study, it should be because you want to volunteer. You do not have to take part. You can stop being in the study at any time. You do not have to answer any questions if you do not want to. You will not get any direct benefits if you choose to join the research study. You will not lose any services, benefits, or rights you would normally have if you decided not to join. Taking part in the research study will cost you data costs. You will not be paid for being in this research study.

This is a minimal risk study as questions about participants' everyday lives, activities and opinions will be asked and discussed.

This research study will be written up as a research report. The report will be available on the university library website.

If you have any questions during or afterwards about this research study, feel free to contact me or my supervisors on the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za.

Yours sincerely,
Nicol Randeria



Researcher:
Nicol Randeria, 1616911@students.wits.ac.za, +27 718715217

Supervisors:
Dr Anniah Mupawose, anniah.mupawose@wits.ac.za, 011 717 4571 (supervisor)
Miss Lavanya Naidoo, Lavanya.naidoo@wits.ac.za, 011 717 4571 (co-supervisor)

Appendix E: Participant Information Sheet – Focus Group



SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Good day Sir / Madam

My name is Nicol Randeria. I am a Master's student in the discipline of Speech-Language Pathology School of Humanities at the University of the Witwatersrand, Johannesburg. My supervisor is Dr Anniah Mupawose and co-supervisor Miss Lavanya Naidoo. My master's research is entitled **'Managing speech sound disorders in children with Cerebral palsy: South African Speech Therapists' Perspectives'**. This study will be exploring speech therapists' perceptions around the assessment and management practices toward the cerebral palsy paediatric population who are diagnosed with a speech disorder.

You are invited to take part in a once off online focus group discussion. This discussion will require your opinions and perceptions to be shared and debated freely between you and the other participants on the research topic by engaging in open-ended questions, which will be facilitated by the researcher, Nicol Randeria. If you decide to take part, your participation in this research study will last about 45–60 minutes. The online focus group discussion will take place online, on Microsoft Teams, after working hours, between 18:30 and 19:30 SAST on the 29/08/2024.

With your permission, I would like to audio record the focus group discussion. Audio recordings and data will be stored in a secured online folder on a password protected laptop for 5 years and deleted after 5 years. Only I, the researcher (Nicol Randeria) and my supervisors (Dr. Anniah Mupawose and Miss Lavanya Naidoo) will have access to the data.

Participating in the focus group does not guarantee confidentiality and anonymity during the discussion. However, confidentiality and anonymity can be guaranteed during the write up of the research. When I write up the results of the research study, I will not include your name or anything else that could identify you. Direct quotations from focus group discussion responses, which will remain anonymous, will be used in the final write-up of the research report. With your permission, other researchers may use the data collected from this research study, but your name and any personal information will not be used or passed on.

If you decide to take part in the research study, it should be because you want to volunteer. You do not have to take part. You can stop being in the study at any time. You do not have to answer any questions if you do not want to. You will not get any direct benefits if you choose

to join the research study. You will not lose any services, benefits, or rights you would normally have if you decided not to join. Taking part in the research study will cost you data costs.

This is a minimal risk study as questions about participants' everyday lives, activities and opinions will be asked and discussed.

This research study will be written up as a research report. The report will be available on the university library website.

If you have any questions during or afterwards about this research study, feel free to contact me or my supervisors on the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za.

Yours sincerely,
Nicol Randeria



Researcher:
Nicol Randeria, 1616911@students.wits.ac.za, +27 718715217

Supervisors:

Dr. Anniah Mupawose, anniah.mupawose@wits.ac.za, 011 717 4571 (supervisor)
Miss Lavanya Naidoo, Lavanya.naidoo@wits.ac.za, 011 717 4571 (co-supervisor)

Appendix F: Consent Form – Focus Group Discussion

Title of project: Managing speech sound disorders in children with Cerebral palsy: South African Speech Therapists' Perspectives

Name of researcher: Nicol Randeria

I,, agree to participate in this research project.

I agree to the following:

(Please circle the relevant options below)

The research study was explained to me. I understand what this study is about.	YES	NO
--	-----	----

I understand that I can volunteer to take part in the study.	YES	NO
--	-----	----

I agree that the focus group discussion may be audio recorded.	YES	NO
--	-----	----

I agree that direct quotations from my focus group may be used by the researcher in their research report.	YES	NO
--	-----	----

I agree that my participation will remain anonymous, that is my name will not be used by the researcher in their research report.	YES	NO
---	-----	----

I agree that other researchers may use the information I provide in the focus group discussion but my name and any personal information will not be used or passed on.	YES	NO
--	-----	----

..... (Signature)

..... (Name of participant)

..... (Date)

..... (Signature)

..... (Nicol Randeria – Researcher)

..... (Date)

Appendix G: Data Analysis Information

Normality Tests for Knowledge and Skills

Variable	Kolmogorov-Smirnov (p)	Shapiro-Wilk (p)
Total knowledge	.004	.028
Total skills	.009	.004

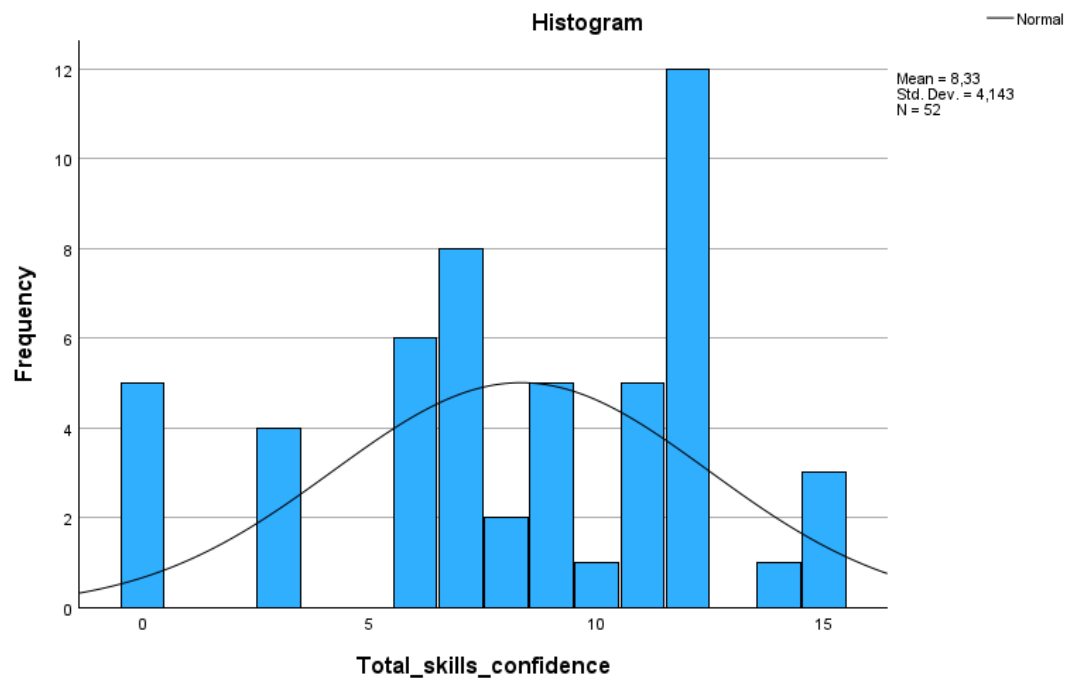
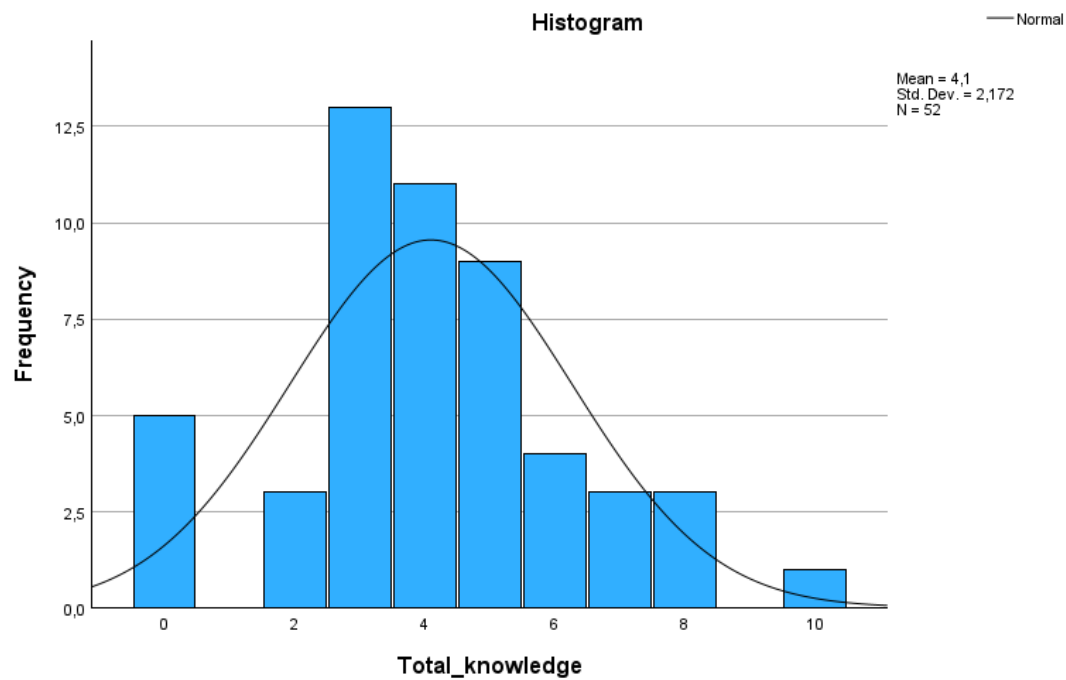


Table 9*Data Analysis for Skills and Knowledge*

Variable	N	Mean	Std. deviation	Minimum	Maximum	Skewness	Internal consistency reliability
How would you rate your knowledge or experience working with children with CP presenting with a speech disorder?	47	2.79	.977	1	5	.304	
How would you rate your level of awareness regarding South African-based policies or legislation related to children with CP?	47	1.74	1.01	1	5	1.47	
<i>Total Knowledge</i>	47	4.1	2.17	2	10	.206	.77 α
How confident do you feel assessing children with CP presenting with a speech disorder?	47	3.11	1.13	1	5	-.217	
Are you confident as an SLT that you are engaging with evidence-based practice to deliver effective service to children with CP who are diagnosed with a speech disorder?	47	3.02	1.1	1	5	-.15	
How confident do you feel in providing interventions to children with CP who present with a speech disorder?	47	3.09	1.16	1	5	-.17	
<i>Total Skills</i>	47	8.33	4.14	3	15	-.52	.97 α

Appendix H: Data Matrix

FG Group A

Themes	P1	P2	P3
Assessment	Lack of standardised tools and use of informal ax for CP	Expressed feelings of unpreparedness due to lack of university exposure	Heavy reliance on informal ax tools and highlighted lack of functional ax available
Management	Informal strategies used. Focus on therapy that is functional for home environment	Expressed the challenges on moulding vocalisations into speech	Use of PROMPT and AAC devices
Facilitators	Working with CGs to translate	Multidisciplinary team approach – heavy reliance due to lack of knowledge on CP	Working with CGs, parents – especially with AAC goals
Barriers	Limited resources – lacking in cultural and linguistic value	Financial constraints – noted esp. in public sector E.g. AAC devices	Pressure for results Limited resources in NPOs setups, stigma with AAC
Recommendations	Tools and resources which are CP specific	Free courses More exposure at tertiary level	More family-centred approaches Collaborative goals making
Strategy/ approach	Child centred	AAC paired with speech-shaping strategies to ensure functional use	PROMPT AAC

Themes	P1	P2	P3
Framework	Uncertain about which approaches would work best with this population	Expressed the lack of CP specific frameworks	MAES – highly recommended
Tools	Adapting tools	Limited access to tools in the hospital	AAC PROMPT
Training/ courses	CP specific trainings recommended	High costs for courses Limited funding	MAES – highly recommended – promising results
Collaboration/MDT	With families	Interdisciplinary	CGs and other health professionals
Experience/ exposure	Limited exposure during university	Limited exposure to academic literature	Highlighted need for training to be more practical based

FG Group B

Themes	P1	P2	P3
Assessment	Main focus is feeding ax Struggles with speech ax in CP due to lack of standardised test	Works with classification systems, informal observations, PROMPT ax	Holistic ax used- more home based
Management	Emphasis on CG training and home programmes	PROMPT – address breathing and speech	Works closely with MDT Home based mx
Facilitators	Familiar resources – from home, Involves CGs	MDT	MDT Family and CGs

Themes	P1	P2	P3
Barriers	Limited resources, difficulty adapting resources to be more culturally appropriate	Trainings are expensive, lack of support from Govt	Inaccessibility, affordability, pressures and stresses within home environment
Recommendations	More funding, better exposure at a university level	Specialised registration required for SLTs working with CP	Empowering CGs and parents, creating appropriate resources
Strategy/ approach	Patient-centred	Holistic approach	Family-centred
Framework	NDT and DIR/Floortime	CP classifications systems (GMFCS and EDACS) to guide framework	No specific framework used
Tools	Talk Tools OPT Materials made for CG	PROMPT AAC NDT	Eye gaze AAC Home adaptations
Training/ courses	Recommends more CP specific training	High cost Inaccessibility	Recommend that Govt funds courses
Collaboration/MDT	MDT, sharing of knowledge between therapists	MDT	CGs, MDT
Experience/ exposure	Limited exposure during university – reduced confidence and readiness	Recommends the need for early exposure to CP cases at tertiary level	Exposure to be more practical based

Appendix I: HREC Certificate



Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)

R14/49 Randeria

CLEARANCE CERTIFICATE

PROTOCOL NUMBER: H23/07/58

PROJECT TITLE

South African Speech-language Therapists' perceptions regarding service provision for children with cerebral palsy and with a speech disorder: An explorative study

INVESTIGATOR(S)

Miss N Randeria

SCHOOL/DEPARTMENT

Human and Community Development/

DATE CONSIDERED

21 July 2023

DECISION OF THE COMMITTEE

Approved
Risk Level: Minimal

EXPIRY DATE

11 February 2027

DATE

12 February 2024

CHAIRPERSON

(Professor J Watermeyer)

cc: Supervisor : Dr A Mupawose and Dr L Naidoo

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **A SIGNED COPY** returned to the Secretary electronically. Unreported changes to the application may invalidate the clearance given by the HREC (Non-Medical)

I/we fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure be contemplated from the research procedure as approved I/we undertake to submit an amendment of the protocol to the Committee. **I/we agree to completion of a regular progress report. For Minimal and Low Risk studies, this is due annually on 31 December. For Medium and High Risk studies, this is due twice annually on 30 June and 31 December.**

Signature

13 / 02 / 2024

Date

Appendix J: Screenshot of pages from online survey that participants were directed to when wanting to participate in FG discussion

South African Speech-language Therapi...peech disorder: An explorative study.
Upgrade
Add collaborators

SUMMARY → DESIGN SURVEY → CONNECT APPS → COLLECT RESPONSES → ANALYZE RESULTS
Preview survey

+ Build
Style
Logic
Question bank
Options
Format

South African Speech-language Therapists' perceptions regarding service provision for children with Cerebral palsy and a speech disorder: An explorative study.

Participant Information Sheet: Focus Group

Please find attached the Participant Information Sheet, which details more information around the second phase of this study.

Participant Information Sheet: Focus Group

PARTICIPANT INFORMATION SHEET

FOCUS GROUP

UNIVERSITY OF THE
WITWATERSRAND
JOHANNESBURG

SCHOOL OF HUMAN AND COMMUNITY DEVELOPMENT
SPEECH PATHOLOGY AND AUDIOLOGY

Good day Sir / Madam

My name is Nicol Randeria. I am a Masters student in the discipline of Speech- Language Pathology School of Humanities at the University of the Witwatersrand, Johannesburg. My supervisor is Dr Annah Magwene and co-supervisor Miss Leranya Naidoo. My master's research is entitled 'South African Speech-language Therapists' perceptions regarding service provision for children with Cerebral palsy and a speech disorder: An explorative study'.

This is a minimal risk study as questions about participants' everyday lives, activities and opinions will be asked and discussed.

This research study will be written up as a research report. The report will be available on the university library website.

If you have any questions during or afterwards about this research study, feel free to contact me or my supervisors on the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1498, email hrec@wits.ac.za.

Yours sincerely,

South African Speech-language Therapists' perceptions regarding service provision for children with Cerebral palsy and a speech disorder: An explorative study.

Phase Two: Focus Group Discussion

By filling out the information below, it is understood as an acknowledgement of permission for the researcher to contact you at a later stage for phase two of this study.

51. Please state first name only

First Name

52. Please fill in your email address

Email Address