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Occupational therapy support methods valued by parents of children with sensory integration difficulties

AUTHORS
*Stefanie Pyne-James [a]
https://orcid.org/0009-0008-4381-9493
Marica Botha [a]
https://orcid.org/0000-0002-6607-186X

AFFILIATION
[a] Department of Occupational Therapy, University of the Witwatersrand, Khanya Block, Wits Education Campus, Parktown, Johannesburg, South Africa.
*Postgraduate student at time of the study. Current: Sensory Spot Occupational Therapy Practice, Fourways, Johannesburg, South Africa.

CORRESPONDING AUTHOR
Stefanie Pyne James
Email: stef@sensoryspot.co.za

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https://orcid.org/0000-0002-7890-3635

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ABSTRACT

Introduction: There are various stressors associated with parenting a child with sensory integration difficulties and although family-centered practice is essential in paediatric occupational therapy, there is limited research focused on the needs of the parent. This study aimed to identify what therapist-parent support methods are valued by South African parents of children with sensory integration difficulties.
Methodology: A non-experimental cross-sectional descriptive study was conducted. A self-administered online survey was completed by 103 South African parents living in Gauteng province whose children attended occupational therapy for sensory integration difficulties.
Results: Most parents (62.14%) reported that they were 'very satisfied' with the support they receive from their child's occupational therapist. The most common therapist-parent support currently in place included electronic communication (72,82%), followed by therapy 'homework' (66,99%) and verbal feedback (65.05%) after therapy sessions. The least utilised support included parent support groups (0.97%), parent education seminars (1.94%) and home visits (1.94%). Support methods that were rated the most helpful by participants included parent-therapist consultations or feedback meetings (69.90%), formal reports (62.75%) and electronic communication (60.78%).
Conclusion: This paper outlines the importance of using multi-component parent support methods in the context of family-centered care, and presents factors which can guide South African occupational therapists in their selection thereof.

Implications for practice:
- Occupational therapists working with children with sensory integration difficulties should use multi-component support methods to support parents throughout the therapy process.
- This study provides a comprehensive list of parental support methods that therapists can use when treating children with sensory integration difficulties.
- Consideration should be given to context and parental preferences when selecting and implementing methods.

INTRODUCTION AND LITERATURE REVIEW

Parenting a child with sensory integration difficulties

The integration of sensory information from sight, smell, taste, touch, vestibular and proprioceptive senses is considered an essential aspect of typical development. When these senses are adequately filtered, processed and integrated, a child can interact meaningfully with their environment[1]. Sensory integration difficulties can present in various ways, such as difficulties with sensory reactivity or sensory perception in one or more sensory systems or a specific pattern of sensory integrative dysfunction, such as somato-dyspraxia, visuo-dyspraxia and bilateral integration and sequencing dysfunction[2]. For this article, 'sensory integration difficulties' is an inclusive term for all of the above. Children with sensory integration difficulties struggle to regulate their behavioural responses to sensory input or perceive the qualities of

sensory input to the extent that it impacts their functional engagement with their environment. Manifestations of sensory integration difficulties include difficulties with social skills, learning, attention, behaviour and motor skills which can result in a referral to an occupational therapist[3]. Occupational therapists working in the field of paediatrics are concerned with the assessment of and intervention for sensory integration difficulties, with the aim of promoting meaningful engagement for children in their childhood occupations[4].

Studies in the United States estimate that around 5% to 5.3% of typically developing children meet the criteria for having a sensory integration disorder[3,5]. The prevalence of sensory integration difficulties in children with disabilities is as high as 88% in other countries. Lecuona et al.[6] claims that toddlers from low social economic environments have been found to be more likely to have difficulties with sensory integration, specifically postural control, bilateral integration and reflex integration. Common comorbidities and correlations include attention-deficit/hyperactivity disorder (ADHD), developmental coordination disorder (DCD), childhood anxiety, premature birth and other neurodevelopmental disorders[7,8,9,10]. The most prevalent is the incidence of sensory integration difficulties and autism spectrum disorder (ASD), which ranges from 80% to 96% [11,12]. The prevalence of Autism and sensory integration difficulties in South Africa is not well known, with significant delays in early detection due to long waiting times for assessments within the public health system[13].

The occupational performance and behavioural challenges associated with sensory integration difficulties can place increased stress on parents and caregivers. Therefore, family-centered practice is essential throughout the therapy process[14]. Families of children with Autism and sensory integration difficulties in South Africa face significant challenges in accessing specialised healthcare, funding and appropriate schooling[13,15]. Therefore, the need to provide accessible, cost-effective and family-centered occupational therapy practice within this context is essential.

Ayres Sensory Integration®

Occupational therapists can employ diverse approaches to address sensory integration difficulties. When a child is referred, the occupational therapist should begin with an assessment, and their role is to use standardised and non-standardised assessment tools to unde. rstand the underlying factors of the child's presenting difficulties and how they impact the child's participation and behaviour[4,9]. The most frequently requested, valued and used assessment and intervention frame of reference for children with Autism and sensory integration difficulties is Ayres Sensory Integration® (ASI®)[12]. ASI® outlines a specific assessment and treatment approach for the management of children with sensory integration difficulties and requires advanced training[16,17]. This training in ASI® is advantageous in equipping therapists with these assessment and clinical reasoning skills to determine the most suitable treatment plan[18].

The treatment principles of ASI® encourage intervention planning to be family-centered through collaboration with key stakeholders in the child's life, including teachers and caregivers[16]. The ASI® intervention approach is distinguished from other approaches by its ten essential principles for direct therapist-child intervention, known as the fidelity measure[12,19].This treatment approach has been trademarked to help distinguish it from other interventions which draw on some of the same principles; however, do not adhere to all the core principles and the fidelity measure. This trademarking was done to protect the integrity of the research that has examined and continues to examine its effectiveness[16].

Although there are various online resources related to ASI® intervention, it can be difficult for parents to know which information is evidence-based and appropriate for their child. A recent stride in ASI® and parent support was a parent guidebook for occupational therapy using ASI®, which was developed in 2022[12]. This guidebook was reviewed by experts in the field who agreed that it was consistent with ASI® principles, easy to follow, and included useful caregiver strategies. Three parents also reviewed the guidebook and considered it to be user-friendly. Although this is a helpful addition to promoting family-centered practice in the context of ASI® therapy, the authors acknowledged the need for more research with larger sample sizes[12]. The access, use and availability of this guidebook among South African practitioners and families has not been documented.

Although ASI® does highlight the importance of parental support and involvement, occupational therapists should still consider the implementation of multi-component interventions to support families based on their needs. Therapist-parent support includes a variety of interventions that are carried out by the occupational therapist to promote family-centered care. Family-centered care should be prioritised when working with children. It involves inviting and sharing information, shared decision making and family collaboration and is described by Delany & Galvin[20] as a ethical necessity[4].

Parent-focused research and interventions

Most of the research on children with sensory integration difficulties has focused on the child's needs and not the parents[4]. In previous studies, parents have expressed mixed reviews, some reporting dissatisfaction with the information available about their child's sensory integration therapy[14]. Parents have also expressed the desire to develop a better understanding of their child's behaviour and the challenges they experience. In these cases, the occupational therapist has the responsibility to identify and use appropriate and effective methods to do so[21,22].

In their systematic review examining parent education and coaching to support participation in children with sensory integration challenges, Miller-Kuhaneck and Watling [14]. highlighted the importance of parent-focused interventions that are tailored to a child's specific difficulties following thorough assessment. However, the assessment methods used within the included studies were not consistently comprehensive in identifying the full range of children's sensory integration difficulties and family needs. Similar limitations were noted in a scoping review involving the same population[4]. Variability in terminology and assessment approaches further complicates the accurate identification and understanding of sensory integration difficulties. Therefore, this highlights the importance of up-to-date training for ASI® therapists and the use of comprehensive, standardised clinical assessments.

The need for parental support for children with sensory integration difficulties has been documented by various authors and is not only limited to children with a comorbid diagnosis[12,16]. Studies included in the reviews mentioned above were limited to parents of children with sensory integration difficulties and comorbid Autism. This does not consider the unique challenges of a larger parental cohort, namely those whose children have sensory integration difficulties without comorbid Autism. These reviews also did not have sufficient evidence to prescribe a manual or fidelity of the most effective multi-component parent support methods, with regard to duration, dosage and delivery method[4].

The benefits of parent-focused interventions can include improved parental knowledge, improved therapy progress, reduction of parental stress, parental feelings of competence and self-efficiency, as well as improved parent-child interactions and understanding of their child[4,14,22]. Despite the many benefits, parent-focused interventions are described as underused in the context of sensory integration difficulties[4]. Within a South African practice setting, facilitators and barriers experienced by parents of children attending ASI® therapy have been explored through a qualitative research study conducted by Smit de Jongh & Cook[23]. The identified barriers included limited information on their child's therapy, the use of jargon and limited collaboration in the implementation of home programmes. This highlights the need to understand parent-focused interventions

within South Africa as a unique practice setting. Parent training and parental-implemented strategies can be both efficient and cost-effective when appropriately structured and, therefore, could be a suitable intervention considering the many socioeconomic challenges and access issues faced by this population[14].

The objectives of this study were all focused on parents of children who attend occupational therapy for sensory integration difficulties. The objectives were to identify: 1) which therapist-parent support methods are currently in place, 2) the current level of satisfaction with the therapist-parent support methods in place and 3) the methods of therapist-parent support that are valued by parents.

METHODS

Research design

The study was a quantitative, non-experimental cross-sectional descriptive study[24]. The data collection method was a self-administered online survey developed by the researcher . The survey items were informed by existing evidence regarding parent-focused interventions, and underwent a content-validity study before distribution.

Research population

The study population consisted of parents of children between 12 months and 8 years of age who attended a regular (at least once a month) occupational therapy intervention with a certified ASI® therapist due to sensory integration difficulties or a diagnosed sensory integrative dysfunction. The child could have received therapy in a private practice, a private school or a public-school setting for a minimum of three months. However, parents of children receiving occupational therapy from the Department of Health or outside of the Gauteng province, were excluded from participation in the study due to time constraints and the scope of the study which limited the possibilities of securing the permissions needed to access participants. Parents of children with comorbid diagnoses such as Autism, ADHD, Dyslexia or Cerebral Palsy were eligible to participate in the study if they met all other inclusion criteria noted above.

The research sampling method was non-probability sampling, namely convenience sampling and snowball sampling[25]. To recruit participants for the study, the researcher enlisted ASI® aligned therapists (SASI® C2 and above) practicing in Gauteng within the specified study settings to distribute surveys to parents meeting the inclusion criteria. The SASI® C2 level requirement was included to ensure that the children of participating parents whose parents participated in the research were comprehensively assessed to have sensory integration difficulties or a diagnosed sensory integrative dysfunction[18].

Research tool

The research data collection tool was a survey compiled by the principal investigator (See Appendix A). The first section of the survey gathered demographic information relating to the child and their occupational therapy attendance. Thereafter, the participants were asked to select the support methods which were currently available to them as parents and to rate their helpfulness or perceived helpfulness. For the questions relating to their perceptions and attitudes towards different support methods, and levels of parental satisfaction, the survey used a Likert-type scaling for the answering of questions, which is a valid measure of latent constructs[26]. The final section of the survey included two open-ended questions to give participants the opportunity to name any further support methods which are available to them or any additional support which they would find helpful in future. The researcher drafted an initial survey based on a comprehensive literature review focusing on types of support methods used and offered to parents of children who are attending occupational therapy for sensory integration difficutlies. During the initial drafting, non-essential questions were eliminated, and unclear questions were edited and clarified based on preliminary feedback from five experts in the field . The researcher recruited these experts who a mix of clinical and academic experience within the field of occupational therapy and ASI®. After receiving ethical clearance (ethical clearance number: M22/09/10) from the University of Witwatersrand Human Resources Medical Ethics Committee, a comprehensive content validity study of the survey items was conducted before distribution [27]. The experts were involved again in formal testing of the content validity of the questions. They were asked to rate the questions on the degree of relevance, clarity, simplicity and ambiguity. The content validity index scores were 80% or higher and, therefore, the content validity of the survey was deemed acceptable[27,28]. The survey was administered in the Research Electronic Data Capture (REDCap) online software.

Data collection

As mentioned above, therapists with a SASI® C2 level requirement or above were recruited to assisted with distribution of the survey to potential participants. To recruit therapists working within private practice settings the researcher contacted the South African Institute for Sensory Integration (SAISI) to assist with sending information to Gauteng-based therapists via their mailing list. The researcher also contacted ASI® aligned therapists listed on the SAISI online directory, as well as therapists known to the researcher to request assistance with distribution of the survey. Therapists were given a detailed information sheet regarding the research process and their willingness to distribute the survey constituted their consent. To recruit therapists working in government schools, the researcher selected school with ASI-informed therapists on staff and requested approval from the Gauteng Department of Education for these sites. After gaining permission from the principal and School Governing Body (SGB), the researcher was put in contact with the occupational therapist to share further information and request assistance with distribution of the survey.

Each therapist who agreed to distribute the online survey received a standard set of instructions that described the inclusion and exclusion criteria to guide them in selecting parents to send the survey link to. The survey link was then shared electronically for distribution to prospective participants. To ensure objectivity during the data collection process, the researcher did not distribute the survey to parents of their own clients, the survey results were anonymous and were returned directly to the researcher. The researcher asked the recruited therapists to note the number of parents to whom they distributed the survey to calculate the survey response rate.

Data set and analysis

Of the 43 therapists who agreed to help with distribution of the survey, 11 did not respond to follow-up communication or were unable to share the survey. Four of the therapists confirmed that they distributed the survey but were unable to give the exact number of parents they shared it with. The remaining 28 therapists confirmed that they shared the survey with a total of 285 parents. A total of 106 responses were received and, therefore, the maximum response rate was estimated at 37.19%. Three survey responses were excluded from the study as they did not meet the stipulated inclusion criteria. Therefore, the final data set was 103 surveys. If a survey response omitted some questions, the completed responses were included in the analysis, with the percentages adjusted accordingly. Descriptive statistics and demographic information were compiled and converted into tables and graphs for analysis using Microsoft Excel's statistical functions. Responses to the few open-ended questions were noted and included in the discussion where relevant.

Ethical considerations

Ethical clearance for this study was obtained from the University of the Witwatersrand Human Research Ethics Committee (Medical) (clearance number: M22/09/10). Permission to conduct the study was obtained from the Gauteng Department of Education and relevant

participating schools. A Therapist Information Form was given to the therapists who agreed to assist with distribution of the study. Participants received an information sheet outlining the purpose of the study, and informed consent was obtained electronically prior to participation. Participation was voluntary, and participants were informed of their right to withdraw at any stage without negative consequences. Confidentiality was ensured through anonymous survey responses, and all data were stored securely on password-protected systems accessible only to the researcher. Data will be retained for 10 years post-publication in accordance with SAJOT data availability requirements. Completion of the survey had no risks.

RESULTS

Participant demographics

The demographics of the participants have been summarised in Table I (below). The ages of the children whose parents participated in the study varied. Of a total of 103 responses, the most common ages were five years (21.36%), nine to twelve years (19.42%) and four years (17.48%). The duration of different treatments ranged from three months to more than two years of therapy. Of the children with sensory integration difficulties, 62 (60.19%) did not have an additional co-morbid diagnosis. Other diagnoses represented in the sample included ADD or ADHD (24.27%), Autism (10.68%), anxiety or depression (9.71%) and learning disabilities (11.65%). Other diagnoses included congenital rubella syndrome, Torticolous, Kleefstra syndrome, dyspraxia, epilepsy, Down syndrome and Duchenne muscular dystrophy. All children attended in-person therapy sessions with the majority (82.52%) attending individual sessions only, while 13.59% of the children attended both group and individual therapy. Various therapy settings and funding avenues were represented; however, the majority were seen in private practice settings (62.14%) and their therapy was mostly funded by parents themselves (72.82%) and medical aid funds (28.16%). For both practice setting and therapy funding, participants were able to select multiple applicable options.

Table I: Participant Demographics (n=103)

Child's Age (n = 103)		***Practice Setting (n = 103)**	
1 year old	1	Private Practice	64
2 years old	2	Government School	6
3 years old	7	Private School	34
4 years old	18	Mainstream School	2
5 years old	22	Remedial School	9
6 years old	10	Special Needs School	4
7 years old	12	Other	1
8 years old	11		
9–12 years old	20		
Treatment Duration (n = 103)		**Individual or Group (n = 103)**	
3–5 months	28	Individual Therapy	85
6–11 months	28	Group Therapy	1
1–2 years	26	Both Individual and Group	14
2+ years	21	*All in-person therapy*	
***Diagnosis (n = 103)**		***Therapy Funding (n = 103)**	
No additional diagnosis	62	Parent Funds Therapy	75
Comorbid diagnoses (n=66)	41	Medical Aid	29
Autism Spectrum Disorder	11	Included in School Fees	5
ADD or ADHD	25	Free at School/Institution	7
Anxiety or Depression	10	Third-Party Funding	2
Neuromotor Difficulties	0	Government Funding	0
Learning Disability	12	Other	0
Other	8		

**More than one response per survey was possible*

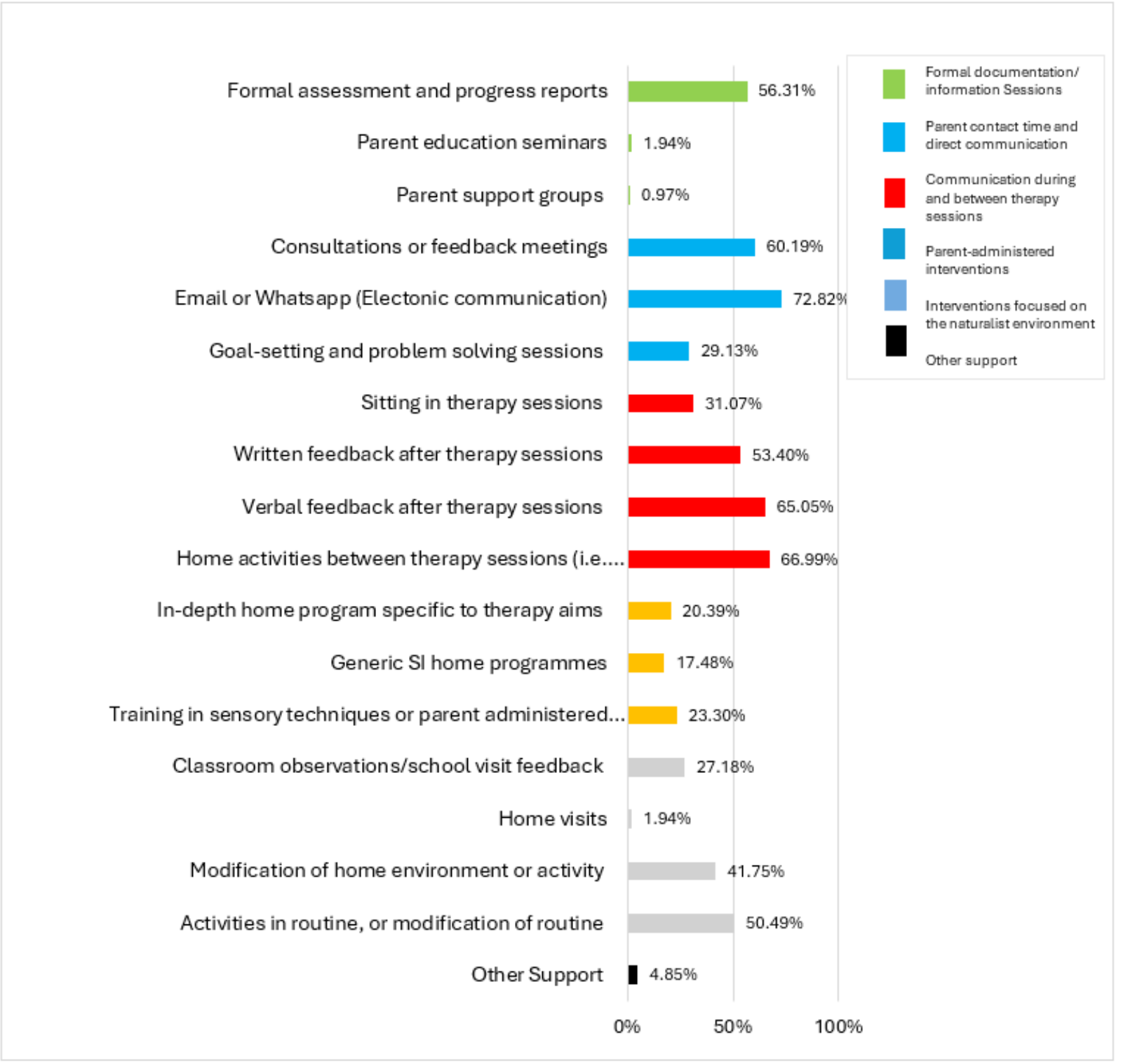


Figure 1: Therapist-Parent Support Methods in Place (n=103)

In the survey, participants were asked to select which parent support methods were available to them, with or without an additional charge. Figure 1 (above) shows that the highest frequency of therapist-parent support currently in place included electronic communication (72,82%), followed by suggestions for homework activities after sessions (66,99%) and verbal feedback after therapy sessions (65.05%). The lowest frequency of therapist-parent support methods in place included parent support groups (0.97%), parent education seminars (1.94%) and home visits (1.94%). "Other" support methods identified by the participants included: therapist-teacher communication, online videos (3,88%) and the use of a mobile application (which would qualify as electronic communication).

Parental satisfaction with therapist-parent support

As shown in Figure 2 (below), most parents reported being 'very satisfied' with the support they receive from their child's occupational therapist (62.14%). There were also 27.18% of parents who reported being 'satisfied', 4.85% were 'neutral' and 5.83% were 'very unsatisfied' with the support they receive from their child's occupational therapist. The open-ended questions answered in the survey, related to the therapist-parent support, were mostly very positive. For example:

- *'…our support is incredibly comprehensive'*
- *'…my OT is on the ball and on top of everything'*
- *'…so far, she is going the extra mile for my son'*
- *'…our therapist is an angel sent from heaven who goes above and beyond'*
- *'I receive more than expected support and information from my child's therapist'*

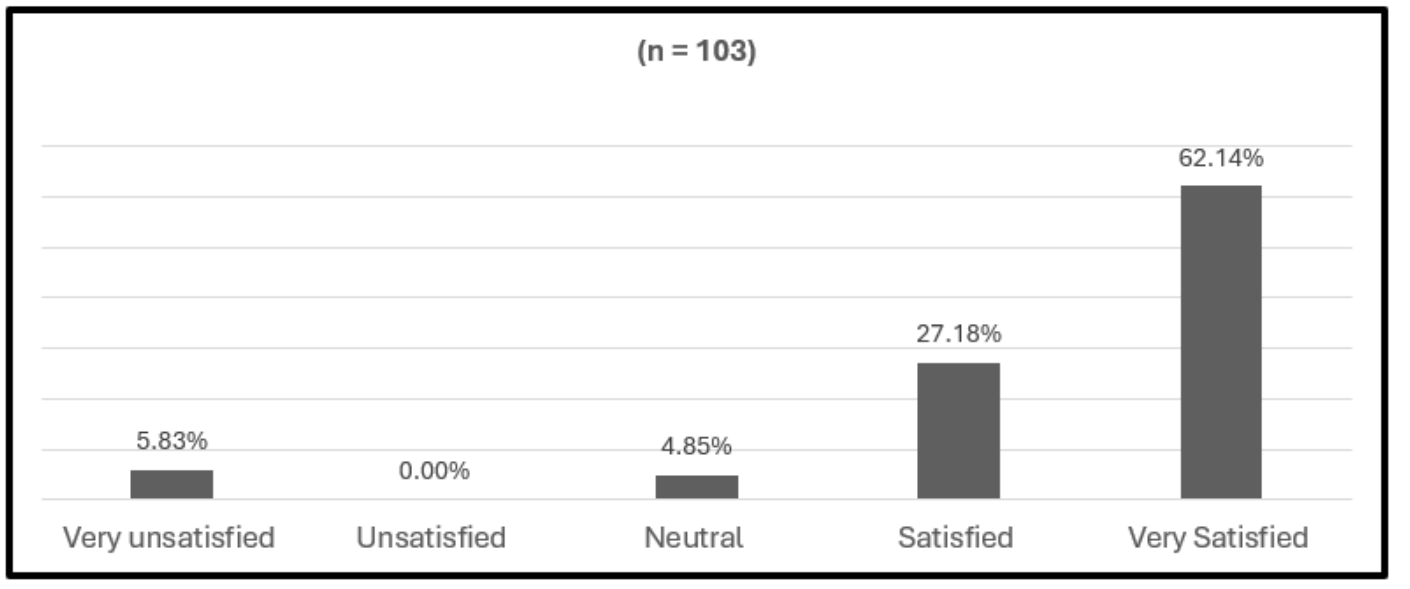


Figure 2: Parental Satisfaction with Therapist-Parent Support

Parental value placed on therapist-parent support methods

Each participant was asked to rate the helpfulness or perceived helpfulness of each of the therapist-parent support methods on a five-point Likert scale, and the results are summarised in Table II (below) . The support methods that received the highest percentage of 'very helpful' ratings included parent-therapist consultations or feedback meetings (69.90%), formal assessment and progress reports (62.75%) and electronic communication with the child's therapist (60.78%). Additionally, routine activities or routine modifications were positively rated by participants, with 94% of them rating this support as either 'very helpful' (56%) or 'helpful' (38%). Routine activities or routine modifications were preferred over environmental or activity modifications, and feedback related to school or classroom visits within the category of 'interventions focused on the naturalistic environment'. Supports related to parent contact time and direct communication had positive results, overall.

Support methods with the highest 'neutral' rating included home visits (60.81%), parent support groups (40%) and generic home programmes (35.35%). Participants preferred home programmes and training sensory techniques that were specific to their child's needs. Support methods that received the highest 'very unhelpful' ratings included home visits (11.11%), parent support groups (10%) and parent education seminars (7.0%). 'Sitting in their child's therapy sessions' received mixed feedback. This support method was rated as 'very unhelpful' by 5% of the participants, 'unhelpful' by 8% of the participants and 28% of the participants gave a 'neutral' response. Compared to other supports within the 'communication during and between therapy sessions', written feedback, verbal feedback or homework suggestions were preferred.

Participants were given the opportunity to share additional helpful support methods that they had received from their therapists, as well as additional support that they would find helpful with an open-ended survey question. Some additional support indicated as being valuable to parents included receiving electronic communication with pictures or videos, the use of mobile therapy applications, book recommendations, referrals to other health professionals, multi-disciplinary communication, helping with homework, product suggestions and informal discussions. Some parents expressed the need for monthly or termly status updates and home programmes, more frequent progress reports, parent-focused sessions, parenting advice and tips and more frequent homework activities.

Table II: Parental value placed in therapist-parent support methods (n=103)

	Therapist-Parent Support Method	Very Unhelpful	Unhelpful	Neutral	Helpful	Very Helpful
Formal Documentation/Information Sessions	Formal assessment and progress reports (n = 100).	0,00%	0,00%	9,80%	27,45%	62,75%
	Parent education seminars on SID in-person/online (n = 100).	7,00%	3,00%	32,00%	34,00%	24,00%
	Parent support groups with other parents of children attending OT (n = 100).	10,00%	5,00%	40,00%	27,00%	18,00%
Parent contact time and direct communication	Parent-therapist consultations/feedback meetings (n = 103).	0,00%	0,00%	4,85%	25,24%	69,90%
	Email/WhatsApp (other electronic) communication with therapist (n = 100).	1,96%	0,00%	5,88%	31,37%	60,78%
	Goal-setting and problem-solving sessions/conversations with therapist (n = 99).	1,01%	1,01%	11,11%	42,42%	44,44%
Communication during and between therapy sessions	Sit in child therapy sessions and observe/ask therapist questions (n = 102).	5,00%	8,00%	28,00%	29,00%	30,00%
	Written feedback from the therapist after therapy sessions (n = 100).	0,97%	0,00%	16,50%	33,98%	48,54%
	Verbal feedback from the therapist after therapy sessions (n = 102).	0,00%	0,00%	11,00%	33,00%	56,00%
	Suggestions/ideas about home activities to do between therapy sessions (i.e., homework) (n = 100).	0,00%	1,96%	6,86%	35,29%	55,88%
Guidance on parent-administered interventions	In-depth home programmes specific to the child's therapy aims (n = 99).	2,00%	0,00%	28,00%	31,00%	39,00%
	Generic home programmes to support the child's sensory integration (n = 100).	3,03%	4,04%	35,35%	32,32%	25,25%
	Training in specific sensory techniques/activities for parents to administer (n = 102).	1,00%	2,00%	24,00%	28,00%	45,00%
Interventions focused on naturalistic environment	Classroom observations/school visits with feedback to the parent on how the child copes in the learning environment (n = 100).	2,00%	2,00%	22,00%	31,00%	43,00%
	Home Visits (n = 100).	11,11%	8,08%	60,61%	12,12%	8,08%
	Suggestions to modify home environment/activity, to support sensory needs (n = 99).	3,00%	0,00%	18,00%	31,00%	48,00%
	Suggestions of activities to incorporated into routine/modification of routine to support sensory needs (n=99).	0,00%	1,00%	5,00%	38,00%	56,00%

DISCUSSION

Parental satisfaction with therapist-parent support

In this study, most participants were satisfied with the support received from their child's occupational therapist. This mirrors the findings of another South African qualitative study that explored the facilitators and barriers experienced by parents with regards to sensory integration occupational therapy[23]. However, the small sample size and qualitative nature of that study limited the generalisability of the findings. To gain an understanding of the broader perspective, the current study sought the perspectives of a larger group. However, despite attempts to gain perspectives from a variety of practice settings, the demographics of the participants were not necessarily representative of all practice settings within a South African context, with the majority attending therapy within the private health sector. Possibly due to this, the results of this study were similar.

D'Arrigo et al.,[29] found that parents who took their child to a private practice for a concern they had identified, were more motivated to be involved in their child's therapy journey and appeared more committed to the therapy process, compared to therapy sites that are funded by NGOs. However, this study was not specific to children with sensory integration difficulties. Therefore, practice setting could be an important contributor. A study in India found that when a child worked with a school-based therapist, their parents expressed dissatisfaction with the support they received because of barriers to open communication within this practice setting[30]. School-based therapists can be limited in their implementation of family-centered interventions if they do not align with school policies and prescribed caseload or roles and responsibilities of the therapist [31]. For this study, the therapists who were willing to distribute the survey to parents of children on their caseloads may have had easier access to communication with parents compared to those who were unable or unwilling to distribute the survey, hence the under representation of the government school demographic within the study.

Parental satisfaction may not only be associated with providing support and parental upskilling[29]. Other factors to consider include the skill level of the therapist, therapy progress and the help-giving style of the therapist [32]. Parents showed increased satisfaction with services when they perceived their child's therapist to be good communicators who are trustworthy, flexible, approachable and empathetic. Factors

found to negatively impact parental satisfaction with the therapist-parent relationship have included strained power dynamics, limited information sharing and a lack of collaboration [30,33]. Pragmatic issues, such as high staff turnover, inconsistency of therapy and limited therapist availability can also negatively impact the parent-therapist relationship[30].

While a strong therapist-parent relationship can be a means to empower parents in their occupation of parenting, the above highlights the complexity of factors which may impact parental satisfaction[32]. Therapists should also be mindful that parents may differ in their willingness to engage with the therapist or in the therapy process[34]. Further research to unpack these influences within diverse practice settings could be beneficial.

Formal documentation and information sessions:

The support methods used in paediatric occupational therapy were grouped into five broad categories to facilitate discussion.

Formal report writing is a means of communicating assessment findings to relevant stakeholders and is a vital component of recordkeeping and accountability[35]. In general, formal assessment and progress reports were rated the second most helpful strategy by participants in the current study. There are various factors that can influence the perceived helpfulness of written reports to parents. The language used in the reports should be clear and understandable, and the use of terminology should be accompanied by explanations or functional examples. Parents have perceived jargon and impairment-focused language as unhelpful in therapy reports[36]. Parents appreciated when the report content included the reason for referral, explanations of terminology and assessments used, functional interpretations of scores and observational information. Recommendations were also an important section of the report for parents, where the inclusion of additional recommended support and practical strategies specific to child needs and family routine were perceived to be valuable[35,36]. When written well, reports can be an effective platform for sharing information and family engagement[35]. Although report writing may be a laborious task for therapists, it can be a helpful means of communication and collaboration. Within family-centered care, the parent is the primary audience of the report and, therefore, their feedback is essential in improving report-writing practices[36].

Although parents value formal reports or progress reports, within this study, only 56.31% of parents had this support method in place. Both occupational therapists and speech therapists have questioned the usefulness of reports, finding report writing to be a non-preferred component of their job[35]. Therapists may find it challenging to balance the need to write reports that are understandable to parents while maintaining professional writing standards that they perceive to be necessary when sharing reports with other healthcare professionals. This may be particularly challenging in resource-constrained practice settings with lower levels of parental health literacy[37]. Parental health literacy is an important factor to consider within a South African context, as if a report is not understandable to a parent, they may feel inadequate or disincentivised to read or share the report[36]. A South African study based on some Learners with Special Education Needs (LSEN) schools in the Western Cape found poor standards of occupational therapy record-keeping. Barriers to record-keeping included its time-consuming nature, high caseloads and limited storage space[31].

In comparison, the other two support methods that fall into this category were rarely accessible to parents in the study, namely education seminars (1.94%) and parent support groups (0.97%). The benefits of web-based parent education programmes have included a reduction in travel time, costs and the need for child-care arrangements(12,38). Information sessions which help parents to reframe and understand their child have been beneficial in helping to shift parental expectations, validating parental feelings and increased feelings of empowerment to support and advocate for their child's needs[14]. Allen et al.[4] identified positive results from parental education programmes, even within a short period. However, within the current study, information sessions were rated poorly by participants in terms of their perceived helpfulness. However, as these support methods were rarely accessible to parents within the sample, this could have impacted the participants views on its perceived helpfulness.

Informal and formal forms of social support have been associated with improved parental and child well-being[23]. Support groups can be helpful in resource-restricted or school-based practice settings, where parents don't always have frequent opportunities to interact with other parents or their child's therapist[23]. However, studies cautioned against assuming that all parents and therapy settings would find support groups valuable[22]. Despite these potential benefits, the participants in this study did not highly value the support groups.

It is possible that parents are not exposed to the benefits of education seminars and support groups. Alternatively, these strategies are just not as valuable to South African parents of children with sensory integration difficulties as they are in other communities or countries. As these methods can be cost and time effective, more research on their efficacy within a South African context would be beneficial.

Parent contact time and direction communication

Regular parent meetings from the outset of therapy are a possible avenue that may increase parental understanding and engagement. The use of verbal consultations to supplement written reports is frequently mentioned in literature. These meetings are an opportunity to increase the parents' understanding of their child's assessment findings, as well as improve the readability of reports[35,36]. Having access to direct communication between parents and the therapist has been associated with positive impacts on parental satisfaction[32,33]. Communication can take various forms, and within this study, electronic communication was the most frequently available support method and was of most value to the participants. However, parent-therapist consultations or feedback meetings received more "very helpful" ratings, suggesting that electronic communication should not substitute in-person meetings. The content of these meetings was not explicitly stated.

Setting goals and problem solving in collaboration with the parent can help parents feel empowered within their child's therapy journey[4]. Less than a third of the participants in the current study had goal-setting and problem-solving sessions made available to them, therefore, indicating that this may be a relatively under-used strategy for this demographic of therapists. This strategy can also be referred to as 'parent coaching', which draws on the principles of adult learning, collaborative goal setting and strength-based approaches(14,39). Within a coaching framework, the therapist uses observation, reflection and feedback to improve parents understanding. These elements also present opportunities for the parent and therapist to problem solve together, resulting in the implementation of appropriate strategies, rather than the therapist merely prescribing them[14,40].

In the context of sensory integration difficulties, parent coaching has been associated with reduced parental stress, improved confidence and sense of control as well as progress in therapy aims[4,14]. Within the current study, this support was not rated as helpful by participants, compared to feedback meetings and electronic communication. However, there is potential for the problem-solving and goal-setting approach to be incorporated into such interactions. As parental coaching aligns well with family-centered principles and has evidence of positive outcomes in the context of sensory integration therapy, it could be beneficial for South African occupational therapists to include this approach in their interaction with parents. Miller-Kuhaneck and Watling[14] identified the need for further research on the specific characteristics that make coaching approaches effective, as well as longitudinal research comparing parental coaching with traditional professional-led parent training.

Communication during and between therapy sessions

Providing the opportunity for parents to sit in their child's therapy sessions is a way of involving parents during the therapy process and can be used with a variety of treatment approaches, including ASI® therapy. This provides an opportunity for parents to check in on therapy goals, raise any concerns, collaborate and problem solve, be directly involved in therapeutic activities or improve their understanding of the difficulties of their child, as well as the treatment approach of the therapist. It is also an avenue for the therapist to make additional suggestions to the parent, of strategies to carry over to the home environment without having to take additional time after the session to communicate[23,41]. Working with the parent during the session is an opportunity to grow the parent-therapist connection through shared moments of interaction. This support method is most advantageous when the therapist is skilled at being flexible, responsive and considerate during treatment sessions and when they can draw on coaching and problem-solving principles when interacting with the parent during sessions[41,42].

Despite these benefits, this form of support was available to less than a third of the study participants and received the lowest perceived helpfulness score within this category. When parents receive limited explanations about their child's difficulties and the treatment approach, they may feel that sitting in therapy sessions is not particularly helpful. Parents who are overwhelmed or grieving over their child's difficulties may find it difficult to participate in sessions[29]. Logistics may also contribute to less frequent use of this support method in a South African context, for example, limited treatment space, therapy taking place during the school day or another caregiver bringing the child for therapy. In these settings, less contact time with parents makes it difficult to gauge their level of engagement in the therapy process[29]. Therefore, this support method may not be appropriate or accessible for all families or therapy settings, highlighting the importance of context-specific multi-component support.

Compared to sitting in on sessions, parents' access to written feedback and verbal feedback after therapy sessions was more common amongst the participants. The perceived helpfulness of these strategies was also more positive. Along with feedback after sessions, therapists can also provide suggestions of appropriate activities to parents, aimed at improving their child's performance between sessions[14]. This 'therapy homework' had a high frequency of use amongst treating therapists in this study, as it was the second most frequent support method after electronic communication. The 'electronic communication' item in the survey was not specific, in terms of content, but it has been assumed that feedback and homework suggestions are frequently communicated through this platform. Further research on the content of electronic communication, preferred platforms, frequency of feedback and actual implementation of 'therapy homework' could provide valuable insight into how to structure this communication to make it more beneficial for the child's family and therapy progress.

Parent-administered interventions

Included in this study was the support method in which the therapist trains the parent in a sensory technique or suggests a sensory-based activity to be administered by the parent. In the literature, these are referred to as sensory-based interventions (SBI) or parent-performed somatosensory strategies[14,43]. Occupational therapists with or without advanced training in ASI® can recommend the use of SBI to parents. These are interventions that can draw on principles of the ASI® framework without adhering to all the fidelity principles[10,44]. Sensory based interventions include a variety of strategies that aim to help children carry out their daily occupations by trying to improve their self-regulation, attention and behavioural organisation[43].

These strategies can be informed by specific protocols, such as the Wilbarger therapeutic brushing protocol, or they could be incorporated into the child's daily routine, for example, using a weighted jacket, adaptive seating strategies, movement breaks, heavy work, massage, oral regulation tools, joint compressions and many more[5,44]. Despite limited research on the effectiveness of single sensory SBI, 23.30% of participants in this study had this kind of support available[44]. Dunstan and Griffiths[43] suggested that the success of the SBI is dependent on the parents' willingness and ability to implement the suggested strategies, and that is why it is so important to consider their views and preferences before utilising this support method. Barriers to implementing SBI could include the cost of suggested therapeutic equipment, parents' uncertainty about when and how to implement the strategy effectively, as well as the child not wanting to participate in the strategy[44]. Therefore, SBIs should be implemented with careful consideration on a case-by-case basis, but overall, were still perceived to be helpful by the participants of this study. This mirrored Peña et al,'s.[44] Canadian study that found, in general, most participants of children with Autsim generally valued and accepted SBIs as an intervention method. Within this study, parents valued ongoing support from their child's therapist in the implementation of the intervention and reported that they were more likely to apply the suggested interventions when they had received training, and the equipment used was affordable or readily available in their household[44].

Sensory based interventions are often combined with or presented as a 'sensory diet' which is implemented with the help of a parent, caregiver or teacher. This is a planned programme of activities that the child performs throughout the day to regulate their behaviour and attention by meeting their unique sensory needs[43]. There has been research which found that within a school context, implementation of sensory diets help improve child activity levels, engagement and socialisation[17].

A South African study which explored parents' perceptions and experiences of occupational therapy using a sensory integrative approach, suggested that the best way to develop an effective home programme is when it is developed through a collaborative process with the parents and is specific to the needs of the child[45]. It is unsurprising, then, that in this study participants rated home programmes that were specific to their child's needs as more helpful compared to those that were generic. Mothers of children with cerebral palsy also preferred to incorporate therapy activities into their routine rather than following a prescribed home program[34].

Smit, de Jongh & Cook's[23], South African study had mixed reviews from parents about home programmes in the context of sensory integration therapy. As with mothers of children with cerebral palsy, value was placed on practical suggestions that were specific to difficult situations with their child and could be incorporated into their daily routine. Some home programmes were perceived to be time-consuming and exhausting and, therefore, contributed to parents feeling guilty or worn out. These factors should be taken into account by the therapist when considering a home programme as a possible support method. The child's interests and parental preferences must be included in the development of home programmes. In addition, home programmes should include a variety of suggestions, not only limited to SBIs but also environmental, routine or activity adaptations[23,45,46]. The home programme should not be just a once-off; outcomes should be evaluated and monitored, allowing flexibility and adjustments. When implemented thoughtfully, home programmes have the potential to be a cost-effective strategy to supplement in-person therapy sessions in resource-constrained environments[46]. Home programmes developed in collaboration with the parent have been more effective in improving function, increasing parental satisfaction and achieving therapy goals[46].

Interventions focused on the naturalistic environment

Parent education, support and training may take place within the clinic environment but can also be extended to natural environments such as the child's home and school[38]. To facilitate improved participation and regulation of the child, occupational therapists can suggest activity or environmental modifications that take place within

the natural environment[11,19]. This includes advising caregivers on how to adjust tasks' demands to support their child's regulation and participation in daily life[19,47]. Examples of environmental modification include changes in the intensity, complexity or quality of sensory elements in the child's environment[5]. This category of interventions links with that of parent-administered interventions but speaks more specifically to the environment or occupational engagement. Environment and context are essential considerations within occupational therapy practice. This is highlighted both within family-centered practice and ASI® treatment literature. The treating occupational therapist should consult with key stakeholders, including the child's parents, caregivers and teachers to suggest contextual activity and routine adaptations that support the child's participation in occupation[5,14]. At the start, it is also important to gauge the willingness and capacity of parents to implement the suggested strategies and adjustments, with the opportunity to provide honest feedback on the usefulness and efficacy throughout[29].

According to two other South African qualitative studies, parents of children with sensory integration difficulties valued practical strategies that were to be incorporated into the naturalistic environments and routines of the child[23,45]. However, research with larger sample sizes was needed. In the current study, 41.75% of the participants had support that pertained to suggestions from their therapist on how to modify the child's home environment or an activity itself, to meet the sensory needs of their child. Around half of the participants had access to support related to routine modification or activities that can be incorporated into the child's daily routine. This support method related to routines was rated either 'helpful' or 'very helpful' by 94% of the participants, compared to 79% for environmental or activity modification. Therefore, general routine modification was perceived to be the most helpful strategy in this category and could potentially be utilised more frequently by South African therapists working with children with sensory integration difficulties. The parent guidebook for occupational therapy using ASI®, mentioned in the literature review, also included the use of routine analysis and modification as a valuable way of supporting parents[12].

Various authors have advocated for the use of interventions for children with disabilities in their home and communities[48,49]. Home visits can be helpful for monitoring and evaluating the implementation and effectiveness of home programmes, environmental and activity adaptations[46]. They may also provide an opportunity for coaching, collaborative problem solving and training parents in SBIs within the context they will be implemented[42]. In the current study, there was a very low percentage of participants who had access to home visits. However, therapists were still often making suggestions related to home environment modification and routine changes without observing the child within this environment. The low frequency of home visits could be associated with the resource and time-intensive nature of this support method and brings into question the viability of this support method for a South African practice setting. Telehealth services and electronic communication could be a viable option to assess the child's home environment and provide suggestions when home visits are not logistically possible[50]. As with education seminars and support groups, home visits were not accessible to most of the participants of this study, and this corresponded with lower levels of perceived helpfulness.

Parents have reported increased satisfaction with occupational therapy services when the therapist was able to offer a school visit with feedback to parents thereafter[32]. School visits or classroom observations with parents' feedback was more frequent than home visits with 27.18% of parents having this support available. Most parents rated this to be a 'helpful' or 'very helpful' support method (74% combined). One would assume, that this may be easier for therapists based in school settings to implement, having more direct access to the classroom setting. However, within this setting, therapist and parents have expressed barriers to open communication and parental involvement[29,30].

Research limitations within a South African setting

When selecting appropriate parental support methods, South African occupational therapists working with children with sensory integration difficulties should also consider factors related to their unique practice context. As in the current study, previous research on sensory integration therapy in a South African setting has not represented its multiracial and multicultural population in different practice settings or income brackets[23,45]. Most participants from this study's children were receiving occupational therapy services in private practice where parents were funding their child's therapy. Factors such as high stress, high crime rates, working parents, financial constraints, sedentary play and high learner-to-teacher ratios within classrooms can all impact occupational performance and parental involvement[23]. Within government practice settings in South Africa, access to multidisciplinary and occupational therapy intervention is limited. Within rural areas, children lack access to developmentally appropriate resources to support sensory integration within their homes and schools[7]. Therefore, therapists should always consider the practice context when determining the best methods to support families.

In addition, sensory integration is a specialised field of occupational therapy and most advanced ASI® -trained South African therapists work within the private sector limiting access to one-on-one intervention for many children[51]. Therapists often face high caseloads along with time and financial constraints, which can hinder their ability to provide family-centered interventions[7]. This highlights the need for interventions that consider the values of parents and practice context. Although the quantitative nature of this study provided information on the parental preferences of a larger parental cohort than previous South African studies, it provides limited data on a variety of practice settings as well as limited explanations as to why parents preferred some support methods over others. Other limitations include the data analysis excluding correlations between demographic data and research findings, for example whether the length of treatment correlated to parental satisfaction and knowledge. The frequency and length of treatment for participant's children was also not strictly aligned with the ASI® fidelity measure, as the child only needed to attend therapy at least once a month for their parent to be eligible to participate in the study. Finally, the support needed by families may also change over time. Research has indicated that there is often a need for more support during the initial stages of intervention with this decreasing over time[43,45]. Parental satisfaction, compared to the duration of therapy and practice setting, was not included in this study's analysis.

CONCLUSION

Overall, most of the study participants were satisfied with the support they received from their child's occupational therapist. However, when considering this result, the reader should be cognisant that most study participants children received therapy in a private practice setting. Therapists who were able and willing to distribute the survey to prospective participants were in direct communication with the parent, and by taking the time to complete the survey, one can infer a certain level of parental engagement in the therapy process.

Support methods that were most frequently in place included electronic communication, suggestions for homework activities after sessions and verbal feedback after therapy sessions. Support methods that were rated the most helpful for parents included parent-therapist consultations or feedback meetings, formal assessment and progress reports and electronic communication with the child's therapist. Support methods that were rarely available to parents, had lower levels of perceived helpfulness. For example, both education seminars and support groups were not often available to parents in the current study, and both support methods were not highly valued by participants in their perceived helpfulness. This could indicate that parents are not exposed to the benefits of parent-focused interventions to which they do not have access. Alternatively, it may

indicate that these strategies are not as valuable to South African parents of children with sensory integration difficulties.

Irrespective of the limitations of the study, the study outlines various parental support methods and factors that can guide South African occupational therapists in their selection of methods to foster family-centered care. The provision of family-centered care should be emphasized when training therapists working with children with sensory integration difficulties.

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Conflicts of Interest

The author confirms that there were no conflicts of interest related to this study.

Author Contributions

Stefanie Pyne-James was the principal investigator and conducted this study as part of their Master's degree. The principal investigator was responsible for the study conception and design, data collection, analysis, and drafting of the manuscript. Marica Botha supervised the research process, provided methodological guidance, contributed to data interpretation, and critically reviewed and revised the manuscript. Both authors approved the final version of the manuscript.

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