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ORIGINAL ARTICLE

Focus Group Discussion on the Design of a Sensory-based Intervention Module for Children with Autism Spectrum Disorder

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ABSTRAK

Kajian ini menekankan keperluan untuk modul intervensi berasaskan sensori (SBI) yang diselaraskan, direka sebagai modul dan mudah disesuaikan untuk ahli terapi cara kerja (ATCK) dalam menyokong kanak-kanak dengan gangguan spektrum autisme (ASD). Perbincangan kumpulan berfokus (FGD) dengan 14 ATCK telah dijalankan untuk mengumpul pandangan mengenai reka bentuk dan struktur modul tersebut, dianalisis menggunakan analisis tematik. Lima tema telah dikenalpasti: (i) keperluan untuk modul SBI; (ii) faedah modul; (iii) struktur pelaksanaan; (iv) kandungan modul; dan (v) alat pengukuran intervensi. Para peserta menekankan kepentingan modul yang berstruktur tetapi fleksibel dan kandungan modul yang terdiri daripada aktiviti berasaskan bukti serta menyokong ATCK yang kurang berpengalaman. Kajian ini menyokong pengesahan empirikal selanjutnya untuk mengoptimumkan intervensi untuk kanak-kanak dengan ASD.

Kata kunci: *Gangguan spektrum autisme; intervensi berasaskan sensori; perbincangan kumpulan berfokus*

ABSTRACT

This study emphasises the need for a standardised sensory-based intervention (SBI) module designed as a single, adaptable guideline for occupational therapists to support children with autism spectrum disorder (ASD). Focus group discussions (FGD) with 14 occupational therapists were conducted to gather insights on the design and structure of the module, analysed using thematic analysis. Five key themes identified: (i) the need for an SBI module; (ii) the benefits of the module; (iii) implementation structure; (iv) module content; and (v) an intervention measurement tool. Participants highlighted the importance of structured yet flexible guidelines and the module's contents in selecting evidence-based activities and supporting less experienced therapists. The study supports further empirical validation to optimise interventions for children with ASD.

Keywords: Autism spectrum disorder; focus group discussion; sensory-based intervention

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INTRODUCTION

Autism spectrum disorder (ASD) is characterised by persistent impairments in social interaction, communication and repetitive and restrictive behaviours, according to the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition, Text Revision (DSM-5-TR) (APA 2022). According to the World Health Organisation, ASD affects 1 in 160 children worldwide (Roșca et al. 2022). While in another study by Gulsrud & Renno (2021), ASD affects 1 in 59 children globally and presents a myriad of developmental challenges, notably in sensory processing, social interaction and play (Hodges et al. 2020; Zwaigenbaum & Penner 2018). The complexity of ASD necessitates a collaborative approach, integrating various therapeutic modalities to cater to the diverse needs of affected children (Berry & Sharma 2021). Besides that, the challenge in the intervention of children with ASD is the variability in overcoming the needs. Structured intervention is one of the interventions that can highlight the needs of children with ASD. Ala'i-Rosales et al. (2018) suggest that occupational therapy (OT) expand its evidence-based interventions for children with ASD. OT is a profession that provides intervention to children with ASD to improve their sensory processing (Richardson et al. 2022), social skills (Grigore & Rusu 2014), and play abilities (Miller-Kuhaneck et al. 2019). OT is increasingly acknowledging the importance of evidence-based and standardised interventions for children with ASD (Novak & Honan 2019). Furthermore, studies have yielded varied outcomes on the effectiveness of OT intervention for children with ASD in sensory processing, social skills and play (Miller-Kuhaneck et al. 2019; Saneii & Esmaili 2019). Therefore, there is a need to develop a structured module for consistency in OT interventions for children with ASD (Kashefimehr et al. 2017).

Sensory-based intervention (SBI) is described as adult-directed sensory modalities that can be implemented in clinic, community, school or home settings (Watling 2011). SBI is an intervention that does not adhere to fidelity (Parham et al. 2011). However, SBI does use an occupational therapist-recommended OT-SI frame of reference (Camarata et al. 2020). In addition, SBI can offer environmental changes in addition to single or multimodal stimulation (Reis et al. 2018). A survey in Malaysia by Kadar et al. (2015) found that 79% of OTs who work with children with ASD rely heavily on SBI in their practice, highlighting its vital role in their interventions. SBI and Ayres Sensory Integration® (ASI) share a focus on addressing sensory processing disorders, yet they differ in their structure and application. ASI follows a highly structured, fidelity-based framework requiring certification and adherence to specific protocols (Schaaf & Davies 2010). In contrast, SBI offers greater flexibility and can be implemented without stringent fidelity criteria, making it more accessible for various settings and OT (Watling & Hauer 2015). While ASI emphasises child-directed activities tailored through formal assessments, SBI allows for environmental modifications and multimodal sensory strategies adaptable to individual needs (Parham et al. 2011; Reis et al. 2018). This distinction underlines the need for standardised SBI modules to ensure consistent and effective practice without the rigorous prerequisites of ASI. SBI has demonstrated promising outcomes in addressing sensory processing disorder in children with ASD (Peña et al. 2020). Despite the increasing prevalence of children with ASD and the growing reliance on SBI, there is still a substantial gap in the standardised protocols and guidelines, leading to variations in practice (Stahmer et al. 2017) and its effectiveness (McKee et al. 2021).

Several studies conducted on SBI have shown efficacy in improving activity of daily living (ADL) (Reynolds et al. 2017) and cognition in children with ASD (Case-Smith et al. 2014). However, there are limited studies conducted on the standardisation of protocol and guidelines for SBI within the field of OT for children with ASD (Case-Smith et al. 2014; Lane et al. 2009). This gap highlights the need for further research and development of guidelines, protocols and modules in OT interventions for children with ASD that specifically target sensory processing

(Barton et al. 2015). In this study, the term sensory-based intervention (SBI) module refers to a comprehensive, structured module that guides therapists in selecting and implementing sensory activities. This SBI module is designed to ensure consistency in intervention by incorporating specific SBI activities and approaches for children with ASD. Unlike a "sensory diet," it consists of an activity plan tailored for a child to provide specific sensorimotor experiences for participation in daily life (Wilbarger & Wilbarger 2002).

The diversity in sensory processing disorders (SPD) among children with ASD highlights the importance of creating personalised interventions that address individual sensory needs rather than relying on a uniform approach (Lane et al. 2014; Schaaf et al. 2013). However, a flexible, one-size-fits-all framework can still be practical if it allows adjustments to accommodate different sensory profiles in children with ASD (Watling & Hauer 2015). Therefore, future intervention plans should include a customisable core structure that can be adapted based on individual needs. This approach would involve developing flexible modules incorporating various strategies and tools, ensuring each child's sensory needs are met within a consistent and broadly applicable framework (Kilroy et al. 2019; Schaaf & Case-Smith 2014).

The first objective of this study was to identify the need to develop a structured SBI module. The second objective was to explore its design, structure and content. Thus, the study aimed to gain the ccupational therapists' perspectives on the needs, designs and structural elements of the SBI module for children with ASD.

MATERIALS AND METHODS

Study Design

This qualitative study utilised a focus group discussion (FGD) to gather consensus insights and opinions from OT participants. This design was chosen for its ability to facilitate interactive discussions, uncovering diverse and in-depth insights through consensus discussions. The study was guided by the interpretive paradigm, which aligned with qualitative inquiry to understand the participants' experiences and interpretations in the context of their professional practices. The phenomenological lens allowed the study to explore the meanings attributed by participants to their experiences, providing rich, detailed data that informed the development of the module.

Ethics Approval

The Universiti Kebangsaan Malaysia Ethics Committee approved the study protocols for ethical consideration (JEP-2022-576). The protocols adhered to ethical principles and regulations governing research involving human participants.

Procedure

The data collection was carried out by conducting two FGDs, each comprising seven occupational therapists who have experience in implementing SBI, specifically targeting sensory processing and modulation disorders in children with ASD. The primary objective of FGD was to gather essential background information regarding the professional expertise of each participant, their views on the need for it, and the design of the proposed SBI module. The FGD was intended to explore suggestions from OTs on the practical aspects of the module's design, contents, structure and applicability, aiming to shape the module as a useful guideline for practice without extending into pilot testing or identifying the effects of the module. During the FGD, participants discussed the module's structure as a single adaptable module, encompassing various activities and intervention strategies that could be customised to the needs of individual children with ASD. As a result, the FGD focused on design components and recorded specific comments and ideas about the suggested module and structure.

Participants shared insights on making the module adaptable and beneficial for children with ASD, providing suggestions on the structure

of the SBI module. A moderator and an assistant moderator were among the researchers who facilitated the FGD. The moderator led the FGD, while the assistant moderator assisted by recording and transcribing the discussions. The study utilised purposive sampling to choose appropriate participants for the FGD. The inclusion criteria consisted of two requirements: (i) OTs must have at least three years of working experience and (ii) they must be chosen based on their substantial experience in applying SBI to address sensory processing and modulation disorders in children with ASD. The study excluded non-Malaysian citizens who worked as OTs.

At first, a list of potential participants was compiled from those who had completed a Sensory Integration intervention course. Later, the researchers contacted these participants via WhatsApp to offer an opportunity to participate in the study. The potential participants were provided with detailed information about the study through the respondent information sheet and consent form via email. A concise message was sent to them via WhatsApp, explicitly stating the date and time of the FGD. A pre-FGD email with discussion points was provided to the respondents one week before the session to give them an idea of what will be discussed (Boateng 2012). Each FGD session spanned approximately two hours and was conducted in a virtual setting via Webex. The moderator asked each question and guided the conversation following the FGD question protocol.

The FGD sessions were conducted following the guidelines outlined by Nyumba et al. (2018). The FGD followed a semi-structured format, utilising the interview guide developed through research questions and an extensive literature review. This approach ensured coverage of all key aspects of designing the SBI module. The moderator began each session with introductory remarks to establish context and an ice-breaker question to foster open dialogue (Krueger & Casey 2015). Throughout the FGD, the moderator skilfully guided the participants using an interview guide, promoting in-depth discussions and ensuring all participants had opportunities to share their thoughts and experiences. The dynamics within each FGD were carefully observed, with particular attention to how different viewpoints were expressed, including areas of consensus and disagreement among participants. Therefore, to preserve the fidelity of data collection, every session was comprehensively recorded in visual and audio formats.

Data Analysis

The data analysis process began with transcribing video recordings from the FGD. The interviews were transcribed verbatim, and each transcription was meticulously cross-referenced with the video recording. Next, the transcripts were sent to the 14 participants for verification before being analysed. This member-checking process was done to increase the validity and reliability of the data (Liamputtong 2019). The data Braun and Clarke's (2019) thematic analysis was employed to ensure a rigorous examination of the FGD transcripts, allowing the researchers to debrief on initial coding thoughts and address any subjective views. The analysis method comprised six unique phases: (i) getting familiar with the data; (ii) creating initial codes; (iii) identifying themes; (iv) reviewing themes; (v) defining and naming themes; and (vi) preparing the report (Braun & Clarke 2019). Every stage was essential to ensure a comprehensive and contemplative examination that caught the complex nature of the data. The first step was familiarisation, in which the researcher (the first author) read the transcripts line by line to understand the data thoroughly, identified initial insights and patterns and generated initial codes. Coding was done inductively or deductively in the second phase (Pizetta et al. 2022). In the third phase, the researcher (the first and second authors) collated codes into potential themes, such as needs and challenges, to understand the broader implications of participants' experiences (Forbes 2021). The fourth phase involved reviewing themes by the researcher's team (the first, second, and third authors) to ensure they accurately represented the dataset and reflected

participants' experiences authentically (Pritchard et al. 2022). The fifth phase consisted of defining and naming themes, capturing each theme's essence and significance within the context of the research question (Mahoko 2023). The reviewing, defining and naming themes process involved peer review (Rens & Joosten 2014) between all three researchers. The final report synthesised findings into a coherent narrative, contextualising them within existing literature and contributing to broader discussions in the field (Ta'amneh 2021) between researchers. This process can be beneficial in qualitative research on community health, where the final report can inform policy changes by highlighting populations in this study. ATLAS.ti 22 (Bergmannstraße 68, Berlin, Germany), a computer-assisted qualitative data analysis software, was employed in analysing the transcription, offering sophisticated tools for managing and interpreting qualitative data.

This thorough methodology ensured a comprehensive and in-depth understanding of occupational therapists' perspectives on SBI for children with ASD, providing valuable insights for the field.

RESULTS

The study participants consisted of 14 OTs selected based on their expertise in SBI for children with ASD. Table 1 showed the demographic characteristics of the participants, including gender, age, years of experience in pediatric occupational therapy and their respective workplaces. These details provided a comprehensive understanding of the participants' professional backgrounds, which was critical for contextualising the findings.

Data saturation was achieved as no new themes or subthemes emerged after generating themes and subthemes from the first group and second group FGD. This confirmed that the number of participants and the depth of discussions were sufficient to comprehensively explore the research objectives. Achieving data saturation ensured that the findings were

TABLE 1: Demography characteristics of participants (n= 14)

Participants	Gender	Age	Working experience in pediatric occupational therapy (years)	Workplace
A1	Female	28	5	Pediatric Rehabilitation Centre
B1	Female	36	12	Government Hospital
C1	Female	32	9	Government Hospital
D1	Male	42	18	Public Health Clinic
E1	Female	29	5	Private School
F1	Female	34	9	Government Hospital
G1	Female	34	5	Government Hospital
H2	Female	36	12	Pediatric Rehabilitation Centre
I2	Male	27	3	Pediatric Rehabilitation Centre
J2	Male	27	3	Pediatric Rehabilitation Centre
K2	Female	27	3	Government Hospital
L2	Female	36	12	Government Hospital
M2	Female	29	5	Pediatric Rehabilitation Centre
N2	Male	29	5	Government Hospital

Note: A to N represent identification for each participant; numbers 1 and 2 are referred for each group session in focus group discussion

representative and reliable, capturing the collective perspectives of the participating OTs on the development of the SBI module.

Five main themes and 22 sub-themes emerged from the analysis of the FGD data, revealing the opinions of OTs regarding the development of SBI modules in the intervention of children with ASD. The main themes were (i) the need for an SBI module; (ii) the benefits of the SBI module; (iii) the SBI implementation structure; (iv) the content of the SBI module; and (v) the SBI intervention measurement tool. All the main themes and subthemes that arose from the data analysis were displayed in Table 2.

Theme 1: The Need for SBI Module

Participants emphasised the importance of the SBI module by OTs for consistency and efficacy of intervention on children with ASD.

(i) Thoughts and agreements on the SBI module

All fourteen participants agreed on the need for an SBI module and the importance of SBI module development. *"I strongly agree with the development of the SBI module,"* said B1. *"Sometimes I use the sensory integration module as well but cannot follow all the fidelity, so I hope SBI has a module too,"* J2 mentioned.

Theme 2: The Benefits of SBI Module

Participants highlighted the benefits of SBI modules in guiding therapy selection and ensuring safety. Five subthemes emerged in theme 2, which highlighted the benefits of the SBI module.

(i) SBI as a guideline

Participants highlighted the SBI module as a crucial guideline for intervention selection. As Participant B1 reflected, *"Modules are beneficial for less experienced OTs and help a lot in terms of providing them with structured guidance for*

TABLE 2: Theme and subtheme from FGD

Theme	Subthemes
1: The need for SBI module	(i) Thoughts and agreements on the SBI module
2: The benefits of SBI module	(i) SBI as a guideline (ii) SBI as a safe intervention (iii) SBI saves time (iv) Facilitate the implementation of SBI (v) Improve SBI more effectively
3: SBI implementation structure	(i) Frequency, duration, and follow up (ii) Individually and group session
4: Content of SBI module	(i) Steps in SBI (ii) The value of SBI (iii) SBI setting or layout (iv) SBI equipment needed (v) Estimated Expenses in SBI (vi) Execution guide in SBI (vii) Precautions of SBI (viii) Checklist in SBI (ix) Implementation structure of SBI (x) Execution procedure of SBI (xi) Contraindications of SBI
5: SBI intervention measurement tool	(i) Sensory processing (ii) Social skills (iii) Play abilities

FGD: Focus group discussion; SBI: Sensory-based intervention

intervention decisions." Participant M2 added, *"Easy to be an intervention reference for the selection of activities by the patient's problem."*

(ii) SBI as a safe intervention

The SBI module was viewed to ensure safer intervention practices. Participant G1 explained that the module would increase safety during the intervention: *"The therapist will give safer intervention by following the developed module."* Participant K2 commented, *"Surely the conducted SBI will be safer by following the module."*

(iii) SBI saves time

The module was seen as a tool to save time on intervention activity selection and evaluation. Participant G1 explained, *"Save time on intervention selection and evaluation."* Participant H2 pointed out: *"Save time for assessment selection, intervention (activities) and report writing after intervention."*

(iv) Facilitate the implementation of SBI

The SBI module was believed to assist less experienced therapists primarily. Participant B1 commented that this module would help less experienced therapists with decision-making: *"It is difficult to do this SBI to OTs who are still less experienced; therefore if there is a module, it greatly facilitates those who are still new."* According to Participant H2, *"Also, this module is beneficial for the less experienced."*

(v) Improve SBI more effectively

Focused implementation with the SBI module assists in better outcomes. Participant E1 pointed out: *"It shall be good even like Ayres Sensory Integration if we are focused, we follow the protocol, and we will get a significant result."* Participant M2 also agreed that more efficient SBI will be implemented, *"Module consists of activities that showed significant results, I hope that it contributes to more efficient implementation because therapists usually adopt trial and error in selecting activities during SBI implementation"*

Theme 3: SBI Implementation Structure

Participants discussed the need to design the module based on individual-to-group progress. In addition, frequency and duration were essential in providing intervention to children with ASD. Participants also discussed the module's structure for safe, comprehensive and efficient development.

(i) SBI as an individual or group session preferences

Individual sessions were preferred at the initial phase of the intervention. A transition from individual to group settings based on the patient's readiness. Participant C1 suggested this: "The recommendations for *the first individual month and the second month in the group depend on the patient's condition. If he is ready, we can continue; if he is not, he would still be in the individual session."* However, Participant I2 felt that the session could progress*: "For the effectiveness, I can usually see after in 5 to 6 sessions. Normally, the session must be done individually at the early stage to overcome the root problem and needs."* Other participants also agreed that integrating small group sessions was suggested as beneficial after individual sessions. Participant F1 commented, *"I think that the end of the second month can be introduced to grouping already."* Participant L2 also commented, *"From the individual to the group, I would prefer a checklist to determine what is appropriate for the child to progress from individual to group."*

(ii) Frequency and duration

Participants suggested varying frequency and adjusting to patient progress. Participant E1 commented, *"Start with individual sessions three times a week. In two months, in terms of individuals, we can see that they can adapt to the environment and focus more. We will still give three times a week in a group setting. Sometimes, behaviour in these children will change if an individual and in groups."* Participant K2 remarked, *"I recommend two to three sessions a week for patient adherence to come to the*

appointment. They need to normally get 2-3 sessions until the client is stable and can reduce it to once a week. Next, we can bring into the group session according to the patient's suitability." Besides that, session duration was discussed, with different activities requiring varied lengths of time. According to Participant D1*, "One activity is enough for five minutes, max 15 minutes, for social activity in group 45 minutes".* Participant N2 suggested, *"It is sufficient to give 5-15 minutes per circuit."*

Theme 4: Content of SBI Module

This theme encapsulated specific concerns and suggestions from participants, reflecting a comprehensive approach to developing and executing a practical SBI module tailored for children with ASD. It underscores the multifaceted considerations essential in designing useful and adaptable SBI modules that align with the therapeutic needs of children with ASD.

(i) Steps
There was an emphasis on clearly defined steps and assessment tools. Participant D1 pointed out, *"Need to clearly explain steps, for example, when we get a patient what to do, need to value, need to assess."* Participant N2 suggested, *"I prefer a module with a brief explanation of steps."*

(ii) Valuation
The importance of valuation in assessments was stressed. Participant D1 claimed, *"Then, examples of assessments that can be used later."* Participant M2 suggested, *"Please add an assessment to see any improvement."*

(iii) Setting or layout
There was a discussion on the importance of physical layout in planning. Participant A1 described that, *"The module should have the layout."* Participant J2 agrees: *"Yes, I strongly agree to have the layout for SBI activities."*

(iv) Equipment
Basic and specific equipment was needed for sensory-based intervention. Participant C1 asked, *"What basic equipment should be available for this module?"* Participant J2 also asked, *"What equipment should be available for the activities?"*

(v) Estimated expenses
Budgeting considerations for SBI were discussed. Participant C1 suggested adding an approximate budget, *"Approximate budget calculation to start SBI will help me."* Participant K2 suggested putting the *"Put the approximate price of the equipment."*

(vi) Execution guide
A necessity for precise individual and group intervention guidelines was pointed out. Participant B1 explained, *"We need to know when to go to the intervention individually or in the group."* Participant N2 queried, *"I want to know how long individual activities are done before going to the group."*

(vii) Precautions
The importance of safety precautions was highlighted. Participant D1 emphasised, *"Precautions should also be emphasised in the module."* Participant H2 commented, *"There should be a footnote for precautions if there is a different category or classification."*

(viii) Checklist
There is a need for a progress-tracking checklist. Participant D1 commented, *"A checklist looks at the kids' achievements."* Participant L2, *"I want a module with a checklist that can see the latest achievements before going to the next level."*

(ix) Implementation structure
Planning for weekly interventions is important. Participant D1 suggested, *"Plan for weekly intervention."* Participant M2 asked, *"What is the content of SBI activities?"*

(x) Execution procedure
Detailed descriptions for activity execution are also important. Participant C1 commented, *"If possible, there is an explanation of how*

the activities in this module are carried out." Participant I2, *"Place pictures at the explanation for each planned activity so that OTs can easily use the module."*

(xi) Contraindications
Discussion on contraindications in activities was conducted. Participant G1 suggested, *"There should be contraindications to the activities carried out."* Participant J2 explained, *"Contraindications should be included, so I think we can insert that one to make it easier for them to identify any contraindication that needs to be modified."*

Theme 5: SBI Intervention Measurement Tool

The need for a robust measurement tool to assess the effectiveness of SBI was highlighted.

(i) Sensory processing
Participants discussed the importance of tools that could measure sensory processing effectively and provide qualitative and quantitative data, facilitating a comprehensive understanding of the intervention's impact. Participant M1 suggested *"Sensory profile 2,"* while Participant I2 suggested *"Goal Attainment Scale for social and sensory."*

(ii) Social skills
Participants discussed the importance of tools that could measure sensory processing effectively and provide qualitative and quantitative data, facilitating a comprehensive understanding of the intervention's impact. Participant C1 suggested a *"Social development checklist,"* and Participant G2 suggested *"Denver."*

(iii) Play skills
Participants discussed the importance of tools that could measure sensory processing effectively and provide qualitative and quantitative data, facilitating a comprehensive understanding of the intervention's impact. Participant A1 said "*Stages of Play*," and Participant H2 said "*Knox Preschool Play Scale*."

DISCUSSION

The Need for and Benefits of the SBI Module

The findings reveal a unanimous agreement among participants on the necessity for standardised SBI modules in OT practice for children with ASD. This could be the case in the Malaysian context, where there is no SBI module currently in Malaysia or a lack of guidelines in SBI. However, the findings also align with previous research that highlights inconsistencies in SBI implementation due to the absence of clear protocols (Allen et al. 2021; Andeizi et al. 2022; Case-Smith et al. 2014; Pineda et al. 2016). Thus, developing an SBI module with clear and comprehensive intervention guidelines is necessary to assist occupational therapists, especially fresh graduates or less experienced therapists.

Participants highlighted the difficulties in adhering to the fidelity standards of established interventions such as the Ayres Sensory Integration (ASI) module. They emphasised the necessity of an SBI module that is more user-friendly and convenient to use without the need to adhere to high-criterion fidelity strictly. This is because SBI has no criteria to adhere to use it as an intervention for children with ASD. As compared, ASI needs to fulfill the fidelity criteria to use ASI as an intervention (Parham et. al 2011; Rahman et al. 2022). Besides that, participants identified several potential benefits of the SBI module, including improved intervention guidelines, enhanced safety practices, time efficiency and support for less experienced practitioners. These perceived advantages suggest a drive towards practice enhancement and improved outcomes for children. The focus on evidence-based activities within the proposed module aligns with the World Health Organisation's emphasis on evidence-based interventions for achieving Sustainable Development Goals (Taylor et al. 2021).

SBI Implementation Structure Proposal

The findings reveal a consensus among

participants on the need for a flexible and individualised approach in SBI module implementation for children with ASD. Therapists proposed a structured yet adaptable framework that encompasses both individual and group sessions, with adjustable frequency and duration based on each child's progress. This approach aligns with recent research emphasising the importance of tailored interventions for this population (Lawson et al. 2022; Uyanık et al. 2003; Wallis et al. 2023). Participants provided recommendations on the frequency and duration of sessions for optimal effectiveness. They suggested that individual sessions occur two to three times per week initially, transitioning to group sessions as the child's skills develop. These sessions may vary from 15 to 45 minutes depending on the type of activity and the child's engagement level. Such details were included in the module to offer flexibility while maintaining consistency in practice. The proposed structure balances individualised care with opportunities for social skill development through group sessions. This flexibility allows therapists to adjust interventions based on each child's unique needs and responses, reflecting the importance of adaptive strategies in achieving optimal outcomes (Lawson et al. 2022).

Content of SBI Modules and Intervention Measurement Tools

The findings highlight the need for a comprehensive SBI module with detailed guidelines and effective measurement tools, addressing the current lack of consensus on specific components and assessment methods. Participants identified key content elements and outcome measures for the SBI module, reflecting the complexity of the intervention and the need for thorough implementation guidance. This aligns with research emphasising the importance of comprehensive intervention plans for effective outcomes (Pineda et al. 2016). The suggested components include practical considerations such as budgeting and equipment needs, indicating a holistic approach to module development. The proposed multi-faceted measurement tools address key developmental areas for children with ASD, supported by research on the importance of comprehensive assessment methods (Allen et al. 2021).

However, the suggestions are based on qualitative data and therapist preferences, which may not cover all aspects of SBI across different settings. The effectiveness of components in the SBI module has not been empirically validated. Future research should conduct research implementing the SBI and determining its effectiveness. Additionally, according to these suggestions, testing them in real-world settings, and comparing the effectiveness of different measurement tools. Identifying the effectiveness of the SBI module using randomised control trials represents a significant step toward standardising SBI practices. Still, it requires rigorous empirical validation to ensure improved outcomes for children with ASD.

CONCLUSION

This study highlights the development of an SBI module tailored for children with ASD, which addresses a critical gap in OT practice. Insights from experienced OTs underline the importance of a structured, flexible and evidence-based module to ensure consistency, and improve therapeutic outcomes. The proposed module aims to provide clear guidelines, adaptable implementation strategies and comprehensive tools to support experienced and less experienced OTs in their practice. The findings emphasise the module's potential to enhance sensory processing, social skills and play among children with ASD. This work contributes significantly to advancing OT interventions for children with ASD, paving the way for standardised practices and improved outcomes.

The current study acknowledges limitations in accounting for all possible variables affecting SBI module implementation across different settings and recognises that optimal session frequency and duration may vary based on the child's individual needs and resource availability. Future research

should incorporate mixed-method approaches, involve a more diverse participant pool and focus on longitudinal studies to assess the long-term effectiveness of the module. Pilot testing in real-world settings is also recommended to refine the module and address practical implementation challenges.

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