

Effectiveness of Interactive Module of Occupational Therapy for Children with Autism Spectrum Disorder

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To Link this Article: <http://dx.doi.org/10.6007/IJARPED/v13-i4/23804> DOI:10.6007/IJARPED/v13-i4/23804

Published Online: 29 November 2024

Abstract

Children with Autism Spectrum Disorder (ASD) often face challenges in communication, social interaction, and sensory processing, which affect their ability to engage in everyday tasks. Occupational therapy (OT) has been recognized as an effective intervention to improve the functional skills of children with ASD. In response, interactive modules of occupational therapy have been developed to enhance the therapy experience by offering personalized, engaging, and accessible therapeutic tools. This study evaluates the effectiveness of the interactive module of occupational therapy in enhancing participants' understanding and practical skills in handling children with ASD. The module aims to address core areas of motor skills, sensory integration, and social participation through interactive learning tools that are engaging and user-friendly. This study used a pre-test and post-test quantitative approach to measure participants' knowledge before and after undergoing the module. Results showed significant increases in understanding across all areas: autism therapy needs improved from 37% to 81%, early home interventions from 43% to 85%, and home-based intervention simulations from 39% to 86%. Participants also expressed high satisfaction with the program content (mean: 3.961) and the speaker's effectiveness (mean: 3.968), indicating a well-received and impactful learning experience. The findings align with previous research on the benefits of hands-on, simulation-based learning in improving understanding and retention. Overall, the interactive module of occupational therapy proved to be a valuable educational tool, equipping participants with practical strategies to support autistic children both at home and in therapeutic settings. The findings of this study provide insights into the potential of interactive therapeutic tools as a supplementary intervention to traditional occupational therapy for children with ASD, ultimately contributing to more effective treatment strategies.

Keywords: Autism Spectrum Disorder, Interactive Module Of Occupational Therapy, Module-Based Intervention

Introduction

Occupational therapy plays a crucial role in supporting the development and well-being of autistic children, providing tailored interventions to address their unique needs and challenges. Besides, occupational therapy is a dynamic and versatile field that aims to empower individuals, regardless of age or ability, to engage in meaningful occupations and achieve their full potential. At its core, occupational therapy recognizes that the ability to participate in everyday activities, or occupations, is essential for physical, emotional, and social well-being (WFOT, 2023; Hines et al., 2022). Traditional occupational therapy approaches have proven effective; however, they often rely on methods that may not fully engage the child or cater to their specific interests and abilities. In response to this challenge, interactive modules have been developed to enhance the therapy experience. These modules incorporate technology and personalized, engaging tools that not only capture the child's attention but also allow for more adaptive and individualized therapeutic approaches (Soref et al., 2023; Novak & Honan, 2019). By integrating interactive learning tools, the therapy process becomes more dynamic, providing children with ASD a platform to actively participate and practice the skills they need to function in their daily lives. These interventions often involve a combination of behavioral, developmental, and sensory-based approaches to improve social communication, self-regulation, and overall functioning. Furthermore, studies have shown that early and intensive interventions can lead to more significant improvements in various outcome measures, including social communication and parent-child interactions (Mazza & Pino, 2016; Brian et al., 2015).

Literature Review

Autism Spectrum Disorder (ASD) is characterized by challenges in social communication, sensory processing, and repetitive behaviors, all of which can hinder a child's ability to participate in daily life activities (Posar & Visconti, 2018; Yela-González et al., 2021). Occupational therapy (OT) plays a critical role in addressing these challenges by focusing on sensory integration and functional skills that improve the child's capacity for independent living. Recent studies emphasize the significance of early intervention, particularly in the home environment, where children feel more secure and comfortable. Early interventions enable therapists to design personalized modules tailored to the individual child's developmental stage, which has been shown to enhance the child's adaptive skills and social interactions (Asya et al., 2020). The home environment is especially important in providing continuous reinforcement of therapeutic strategies, which helps generalize the skills learned in therapy to daily life. Studies highlight that incorporating family members into these interventions amplifies the benefits, as parents and caregivers become active participants in the child's therapy. Through guided interactions, parents are empowered to implement the same techniques outside of therapy sessions, further reinforcing the skills their child is learning. The effectiveness of this approach lies in the collaborative nature of the intervention, where the child, family, and therapist work as a cohesive team (Simpson, 2015).

The implementation of home-based interventions for children with ASD has shown to be one of the most effective methods for ensuring skill retention and transfer. These interventions often utilize simulations of daily tasks and routines that the child is expected to perform. For example, modules may focus on teaching the child how to dress independently, prepare simple meals, or engage in social play. Research indicates that these home-based simulations help children develop a greater sense of independence and reduce anxiety related to real-life

situations. The repetitive, familiar nature of the home environment provides a low-stress setting where the child can comfortably practice new skills, promoting long-term success (Asya et al., 2020). Interactive simulations are also particularly beneficial when they include the active participation of family members. Studies have shown that when parents are trained to facilitate these interventions at home, children show greater improvement in social engagement and motor skills. Furthermore, the inclusion of interactive content such as sensory toys and multimedia components enhances the child's motivation to participate in therapy. This integrative approach ensures that the child is not only practicing skills but also enjoying the process, which is critical for maintaining long-term engagement in therapy (Sams et al., 2006).

The use of interactive modules of occupational therapy for children with autism is highly effective in addressing their unique developmental challenges. It supports the use of personalized therapy modules that are delivered in familiar environments, such as the child's home. These modules, which include early home interventions, interactive simulations, and sensory-based activities, provide children with the tools they need to function independently and adapt to new situations. The integration of gamified therapy tasks and interactive content further enhances engagement, ensuring that children remain motivated and focused throughout therapy. Finally, the active involvement of therapists, who serve as interactive speakers and guides, helps build a trusting, supportive relationship that facilitates long-term success. The combination of these elements creates a comprehensive, adaptable approach that significantly improves the quality of life for children with autism.

Methodology

This study employed a quantitative approach to evaluate the effectiveness of the interactive module of occupational therapy for autistic children. A pre-test and post-test instrument was used to gather data from participants, including parents, caregivers, educators, and professionals. The questionnaire aimed to assess participants' initial understanding of autism therapy and measure improvements in their knowledge and skills following the workshop. The collected data was analyzed using descriptive statistics to compare the pre-test and post-test responses, determining the overall impact of the module on participants' understanding of autism therapy interventions.

Result and Finding

The interactive module of occupational therapy demonstrated a clear positive impact on the participants' understanding of autism therapy, home interventions, and simulation-based practices. The substantial improvement in all sessions, as reflected in the post-session averages, highlights the effectiveness of the interactive module-based approach in delivering knowledge and fostering practical skills. Table 1 shows the results validate the workshop's design and delivery as an effective method for educating parents, caregivers, educators, and professionals working with autistic children.

Table 1

Pre-Test and Post-Test Results for Interactive Module of Occupational Therapy

Slot	Pre-test	Post-test
Understanding Autism Therapy Needs	37%	81%
Early Home Interventions	43%	85%
Home-Based Intervention Simulations	39%	86%

Table 1 demonstrates a significant improvement in participants' understanding across all three slots, thereby highlighting the effectiveness of the program. In Slot 1, the pre-test average understanding was 37%, indicating limited initial knowledge among participants. However, after the session, the average understanding increased significantly to 81%, showing a notable improvement of 44 percentage points. As a result, this suggests that the session effectively enhanced participants' awareness of the therapy needs of autistic children. Similarly, in Slot 2, participants had a moderate pre-test average understanding of 43%. Upon completing the session, their understanding rose to 85%, reflecting a 42 percentage point increase. This improvement further indicates that the workshop successfully equipped participants with practical strategies to implement early interventions at home. Thus, reinforcing the value of early, proactive involvement in supporting autistic children.

Moreover, slot 3 shows the most substantial improvement, with participants' average understanding increasing from 39% before the session to 86% after the session, an impressive 47 percentage point rise. Consequently, this result underscores the effectiveness of simulation-based learning in boosting practical skills and confidence among participants, thereby allowing them to better understand how to apply intervention strategies within a home environment. From the result, the module delivered considerable benefits to participants, with significant gains in knowledge and practical skills across all three slots. In conclusion, the findings show that the interactive module was highly effective in enhancing participants' ability to support autistic children through therapy and intervention strategies.

Table 2

Participant Evaluation on the Content of the Interactive Module of Occupational Therapy

Code	Question	Average
Q1	The content of the module reflects the overall objective of the program	3.979
Q2	The information presented is easy to understand and clear	3.957
Q3	The effectiveness of the activity/demonstration sessions conducted	3.979
Q4	Notes/modules given during the program	3.957
Q5	The program delivery approach is appropriate	3.936
Q6	The duration of the program is appropriate	3.957
Average		3.961

Table 2 shows the overall content of the module is presented through six key questions (Q1 to Q6), with the individual scores ranging from 3.936 to 3.979. The highest scores, 3.979, were observed for Q1 and Q3, indicating that participants were highly satisfied with certain aspects of the program content. On the other hand, Q5 recorded the lowest score at 3.936, though still relatively high, suggesting that participants found the program content to be valuable overall. The overall mean score for the program content was 3.961, indicating that the

participants generally rated the module content positively. The high overall score suggests that the content delivered met the expectations of the participants and provided substantial value in understanding and applying the information presented during the workshop.

Discussion

The autism therapy workshop highlights the effectiveness of the interactive module of the occupational therapy approach in improving participants' knowledge and practical skills across various aspects of autism therapy. The data in Table 1 shows significant improvements in pre-test and post-test scores. That demonstrates the workshop successfully enhanced participants' understanding in all three critical areas, which are autism therapy needs, early home interventions, and home-based intervention simulations. These results align with previous research on the effectiveness of interactive and experiential learning, which suggests that hands-on, scenario-based learning approaches can significantly improve understanding and retention of therapeutic practices (Başer et al., 2024; Dudding & Ginsberg, 2024).

The participants' understanding of occupational therapy shows significant improvement in the aspect of knowledge and understanding. This is consistent with Matthews et al. (2018), who highlight the role of structured learning in enhancing parents' and caregivers' understanding of autism-specific therapies. Similarly, the increase in participants' understanding of early home interventions emphasizes the importance of early interventions at home. It significantly improves developmental outcomes in children with autism (Blanc et al., 2021; Estes et al., 2015). The workshop provided participants with practical strategies to implement these interventions, reflecting the findings of Rojas-Torres et al. (2020) on the effectiveness of early intervention programs. Lastly, the substantial improvement in home-based intervention simulations demonstrates the importance of simulation-based learning. This method empowers participants to apply intervention strategies in real-life settings on the benefits of simulations for building practical skills and confidence (Champion et al., 2022; Yu et al., 2019).

In addition to the knowledge and practical skills gained, participants showed positive responses and satisfaction which indicates that the workshop was well-received and met the participants' expectations. Specifically, participants rated the program's alignment with its overall objectives and the effectiveness of activity sessions highly, reflecting the well-structured and engaging nature of the program. These results are consistent with evidence suggesting that well-designed content that integrates theory with practical application is more effective in achieving learning outcomes (Law & Liang, 2020).

Conclusion

The interactive module of occupational therapy demonstrated a clear and positive impact on participants' knowledge and practical skills. The substantial improvement in pre-test and post-test understanding across all three slots is understanding autism therapy needs, early home interventions, and home-based intervention simulations. That confirms the effectiveness of the interactive, module-based format. The module successfully equipped participants, including parents, caregivers, educators, and professionals, with the necessary tools to support autistic children both in therapy settings and at home. The positive feedback underscores the importance of well-structured programs and skilled facilitators in fostering an engaging and effective learning environment. The findings from the workshop suggest that

the interactive module of occupational therapy combined with high-quality facilitation was highly effective in enhancing participants' knowledge and skills in autism therapy. The significant improvements in post-session understanding and the positive evaluations of both content and delivery confirm that such workshops are valuable educational tools for parents, caregivers, educators, and professionals working with autistic children.

Acknowledgment

The authors would like to acknowledge the research funding from Universiti Teknologi Malaysia (UTM) through Knowledge Transfer Program code KTP/2023/00017 titled "Development of Autism Spectrum Disorder Community from the aspect of knowledge, handling, and early intervention in the locality of Bandaraya Iskandar Puteri".

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