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The Effectiveness of Sensory Integration Education for Parents of Children with Sensory Needs

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Abstract

When working with children who have sensory processing disorders (SPD), occupational therapists (OTR) will utilize a wholesome approach by providing sensory-based treatments, relationship-based interventions, developmental skill-based programs, and parent education (Case-Smith & Arbesman, 2008). A current challenge in the field of occupational therapy is many therapists may not have ample time to engage in their therapy sessions as well as allow time for parent education on SPD. The purpose of this Doctoral Capstone project is to work one-on-one with parents to educate and empower them to implement sensory strategies to their children. The student utilized interviews and observations to create a sensory diet for the parents. Sensory diets were reviewed by the child's OTR before being given to the parents. The diets were discussed and modified with the help of the parents each week until an effective and appropriate schedule was complete. Each family that participated in the program reported it to be effective for their family as a whole.

Literature Review

Defining the Aspects of Sensory Processing Disorder

Sensory Integration (SI) refers to an individual's ability to feel, understand, and organize the sensory input they are receiving from their environment and body, to respond in an appropriate manner (Emmons & McKendry, 2005). SI is an occupational frame of reference theorized by the occupational therapist (OTR) and psychologist, Dr. A. Jean Ayres (Cole & Tufano, 2008). SI is not something an individual has or does not have; it is a spectrum in which one has his or her own unique response to sensory input (Ayres, 1982, p. 7). In many people, SI is something that comes naturally; SI does not have to be sought after, and it is something that is often taken advantage of (Ayres, 1982, p. 3). Sensory processing disorders can be broken down

into three different components: sensory discrimination disorder, sensory modulation disorder, and sensory-based motor disorder (Miller, 2014). When a child has sensory modulation disorder, they may be over or under reactive to touch, appear “high energy” or lethargic, be sensory “seeking”, or may have a delayed or heightened response to sensory input (Miller, 2014). A child who has a sensory-motor disorder will have inappropriate motor responses to sensory input (Miller, 2014, p. 41). These disorders can be categorized into dyspraxia and postural disorder (Miller, 2014, p. 41). Finally, sensory discrimination disorder presents as the inability to interpret and distinguish between similar sensations (Miller, 2014, p. 37). These children will have difficulty distinguishing between objects in a bag without looking, using appropriate pressure with writing utensils, and recognizing the differences between the tastes of different foods (Miller, 2014, p. 37).

Sensory challenges are different than SPD in that they may not affect every area of a child’s life (Emmons & McKendry, 2005). An example of a sensory processing challenge is a preschooler having an adverse reaction to the feeling of sand and avoids playing in it during recess, however, engages in all other school activities without trouble (Emmons & McKendry, 2005). A child who has SPD may be overly sensitive to all tactile stimuli, therefore they cannot engage in feeding, eating, dressing, and playing without experiencing some amount of distress or anxiety (Emmons & McKendry, 2005). Since SPD is so broad it can be difficult to diagnose. Signs and symptoms of SPD are typically reported by parents, teachers, or caregivers (Schoen & Miller, 2018). Whether a child has few sensory challenges or is diagnosed with SPD, an occupational therapist can provide intervention through sensory and play-based activities to improve their participation in everyday tasks (Kashefimehr et al., 2017).

SPD and Occupational Therapy

Past studies have demonstrated a correlation between sensory integration and engagement in functional tasks such as selfcare, play, and school activities (Bar-Shalita, Vatine, & Parush, 2008). When working with children who have SPD, occupational therapists will utilize a wholesome approach by providing sensory-based treatments, relationship-based interventions, developmental skill-based programs, and parent education (Case-Smith & Arbesman, 2008). Sensory integration therapy (SIT), based on Dr. Jean Ayres' frame of reference, is a common method many OTs implement to improve a child's ability to process and organize sensory input (Case-Smith & Arbesman, 2008). Sensory integration therapy incorporates play and sensory-based interactions to elicit the child's adaptive response (Kashefimehr et al., 2017). The therapist encourages the child to engage in activities that challenge their sensory processing and motor planning skills through activities that incorporate play, school, and self care (Kashefimehr et al., 2017). The therapist will continue adjusting and adapting the treatment plan to a "just-right" level in order to increase therapeutic results (Kashefimehr et al., 2017).

Sensory integration education is an important component in OT intervention to allow parents to fully understand and successfully interact with their child, as well as maximize the child's strengths (Miller-Kuhaneck & Watling, 2018). Kashefimehr et al. (2017) utilized SIT techniques on a sample of children who have ASD and SPD. One aspect of SIT the researchers utilized was parent education and training (Kashefimehr et al., 2017). Through proper training and education, the parents were able to modify their home environment and routines to provide ample opportunities for their child to self-regulate and engage in their meaningful occupations (Kashefimehr et al., 2017). The results of this study support the effectiveness of SIT on improving occupational performance in the home of children diagnosed with ASD and SPD (Kashefimehr et al., 2017).

Benefits of Sensory Education for Parents

SPD may present as the child being uncooperative, having poor frustration tolerance, and frequent temper tantrums (Freese, Porter, & Pelham-Foster, 2016). Parents experience decreased confidence in their role as a parent when their child engages in a behavior that is commonly seen as socially unacceptable (Freese, Porter, & Pelham-Foster, 2016). The care that children with SPD require include accommodations for elevated irritability levels, emotional challenges, and behavioral challenges (Freese, Porter, & Pelham-Foster, 2016). As a result, parents of children with SPD have a higher stress level and greater difficulties in their family life than parents of typically developing children (Freese, Porter, & Pelham-Foster, 2016).

Family-centered practice (FCP) is an intervention technique focused on parent education and can be used to work with parents of children with SPD (Freese, Porter, & Pelham-Foster, 2016). It has been found to decrease stress and increase parent self-efficacy, ultimately leading to improved engagement in family-centered activities (Freese, Porter, & Pelham-Foster, 2016). Education and training is a large factor in parents' ability to understand their child and his or her improvements, to interact with their child and relate to them, and overall improved family quality of life (QOL) (Freese, Porter, & Pelham-Foster, 2016).

Parent Reports on Sensory Education

In 2008, Elizabeth Dunstand and Sian Griffiths sought to identify the thoughts and attitudes toward sensory integration in the home by interviewing parents of children with SPD. Their findings suggest that the most important role of an OT in the home environment is to train, reassure, educate, and empower parents to become the main provider of sensory strategies used with their children (Dunstand & Griffiths, 2008). Researchers conclude that when a child has SPD, their needs and limitations affect the entire family dynamic (Dunstand & Griffiths, 2008).

The participants reported that every day activities such as bathing, dressing, eating, and sleeping could be the most challenging parts of the day (Dunstand & Griffiths, 2008). One participant, Lucy, reported that all members of her family had to accommodate to meet the needs of James, her child with SPD (Dunstand & Griffiths, 2008). Participants felt an ongoing uncertainty on whether or not they were doing the best they could for their children (Dunstand & Griffiths, 2008). Lucy reinforced the importance of the OT providing reassurance: “it is really important to validate... that whole attitude of yes, you are a good parent, yes, this is an issue that you’re dealing with, and yes, you haven’t made this up” (Dunstand & Griffiths, 2008).

One participant from the same study highlighted the importance of SI parent education (Dunstand & Griffiths, 2008). She felt that by understanding her son’s feelings she was better able to sympathize and communicate with him (Dunstand & Griffiths, 2008). Lucy discussed the positive results from the sensory strategies training she received regarding self-care (Dunstand & Griffiths, 2008). Her son finally began to tolerate bathing and tooth brushing, something that was a large struggle for both of them (Dunstand & Griffiths, 2008). “I cannot tell you how huge it is to be able to do that,” she stated (Dunstand & Griffiths, 2008).

Despite Lucy’s gratitude for the sensory training and education she received, she found the delivery of information to be overwhelming and too much at once (Dunstand & Griffiths, 2008). The findings from this study suggest that parent training should focus on increased support from the therapist in the early stages (Dunstand & Griffiths, 2008). Hands on assistance and support should then reduce over time as the child makes improvements and the parents feel more confident implementing strategies (Dunstand & Griffiths, 2008). When working with a child the occupational therapist needs to allow time to sit down with the parents to discuss and identify the treatment option that best fits the family as a whole (Dunstand & Griffiths, 2008).

In 2009, a study was implemented to identify parents' thoughts regarding their child's sensory experiences during preschool (Dickie, Baranek, Schultz, Watson, & McComish, 2009). The researchers unexpectedly found that parents were confused by the concept of sensory and could not define or identify it in their child's daily experiences (Dickie et al., 2009). Researchers concluded that parents do not typically deconstruct their child's experiences and categorize them into different components, such as sensory aspects (Dickie et al., 2009). This leads to the idea that sensory aspects of a child's behavior are not noted unless they are unusual (Dickie et al., 2009). These results support the need for parent SI education when working with a child with SPD to ensure understanding and competence when providing sensory strategies at home.

Methods

The placement for this Doctoral Capstone project was an outpatient pediatric clinic in Indianapolis. The clinic provides occupational, physical, speech, and developmental therapy to children and a small percentage of adults. The clinic is also a First Steps provider. A thorough needs assessment was conducted at the site to identify areas of concern, aspiration, and intention for the staff members and clients. A semi-structured interview was completed with the owner and director of the site, who is also an OTR. Several other short interviews were held with two onsite practicing OTRs and one First Steps OTR. These interviews transitioned into constructive discussions that determined an area in which the student's services would be most beneficial.

It was identified that an SI training program providing parents with the tools needed to implement sensory strategies in the home would be most beneficial to the site. The clinic director was adamant about the need for this program, as it would relieve the OTRs of some parent education responsibilities, therefore allowing them to spend more time with the child one-on-one. She also stated that a program of this nature would likely provide families with a greater

quality of life by reducing stress in the home. Research supports parent education as an advantageous tool to increase QOL when working with children who have SPD (Freese, Porter, & Pelham-Foster, 2016). The director also stressed the importance of building rapport with the parents. Rapport will allow the student to understand the participants' perceptions of daily life with their child, therefore resulting in a trusting and strong relationship (B. Blain, personal communication, 2018).

Recruitment of participants occurred after the needs assessment and systematic review of the literature was completed. The onsite OTRs assessed their caseloads and identified several clients whose parents would benefit from this program. The student then completed thorough chart reviews to ensure the clients fit the study's criteria and fit into a large spectrum of sensory processing difficulties. All clients are children who receive occupational therapy in the clinic. Children were not required to have a formal diagnosis; however, they must have sensory processing difficulties as identified by the parents and OTRs. The parents of these children were then asked if they would like to join the program. They were given a permission form and detailed program outline to ensure understanding of what was expected for the program. Five parents of six children agreed to be participants in the program. One of the parents had two children who received OT at the clinic.

To measure results of the program, a pre-test and post-test survey were created for the parents. The tests used a 5-point Likert scale, which assumes that the strength of an experience is linear; the scale ranges from strongly disagree to strongly agree (McLeod, 2008). The six statements are qualitative and address the parents' understanding of their child's sensory difficulties, perception of quality of life within the home, and their ability to seek out resources and services to assist their child and family. These statements were created under the supervision

of the clinic director. Statements were carefully chosen to ensure parents would not feel criticized. Pre-tests were distributed during the first parent session to establish a baseline. Post-tests were completed on the last day of the program to determine outcomes.

This program can be compared to a study conducted in 2017 exploring the effectiveness of an education program for the caregivers of stroke patients (Anand, Sumeet, & George, 2017). The researchers found that after a 60-minute course the participants had a significantly greater knowledge regarding strokes and how to care for a person who has had a stroke (Anand et al., 2017). The SI parent education program was held weekly for 30-60 minutes each, and spanned over two and a half months. With more frequent parent meetings, the parents gained an even greater amount of knowledge than with a singular session.

Implementation

Implementation of the program began week seven of the student's doctoral capstone placement. Participants attended a one-on-one session with the OTS in a private room for confidentiality. The first session was an interview consisting of eleven questions addressing family dynamics, areas of daily living, sensory barriers for the child, current parent sensory strategies, and any areas of concern. To build rapport, the OTS first explained her role and personal reason for wanting to create the program. Program goals were explained to ensure the parents understood the OTS's intent. At the end of the session parents were given a folder of informative handouts regarding SPD. The OTS found it important for the parents to understand the basics of SPD before implementing sensory strategies. The parents were encouraged to review the information at their convenience so that during the next session these topics could be broken down into greater detail.

The week in between interviews and creating the sensory diet was spent gathering research related to each child's individual sensory difficulties. The OTS observed multiple weeks of OT sessions to ensure a comprehensive understanding of the child's sensory needs. She then created a sensory diet based on the information found during interviews and OT observations. Sensory diets are a schedule of sensory activities chosen specifically for a child to assist with attention, motor organization, arousal, and adaptive response (Kelly, n.d.). Each sensory diet was uniquely modified to fit the child and family. The OTS then discussed the diet with the child's OTR to ensure it would be appropriate for the child's specific needs. The OTS then presented the sensory diets to the families and discussed why certain activities were chosen. The OTS ensured the sensory diet would be plausible to implement based on the parents' schedules. The parents were then trained on how to facilitate these strategies in a safe and inviting manner. Parents were encouraged to try the strategies and record outcomes of each one to discuss with the OTS the following week.

Once parents implemented the sensory strategies for a week or two (dependent upon parents' schedule) there was a follow-up session to discuss outcomes. The focus of this session was to identify strengths and weaknesses of the strategies. The OTS spent the next week modifying the strategies and schedule to better fit the family. Some sensory strategies were discontinued if they were too difficult to implement or did not yield positive results. The program ended at week fifteen of the OTS' doctoral capstone rotation, allowing for 4-8 training sessions with parents.

Leadership Skills and Staff Development

The setting of this doctoral capstone traditionally offers occupational therapy. My site supervisor has offered guidance throughout my program. However, as she is the director and

owner her time is limited. I had to independently create my pre/post tests, parent interviews, permission forms, and sensory strategies. I had assistance when necessary from my supervisor and the onsite OTRs. It has been a huge learning experience thus far as I have had to navigate this program on my own terms and find a way to fit into the model of the site.

Connecting with staff has been an enjoyable experience as they have all been so kind and inviting. The on-site OTRs have taken time out of their schedules to assist me with recruiting my participants and creating my sensory diets. As they have helped me I have also returned the favor. When the therapists need assistance with a treatment activity or preparation for one, I have come forward to offer help. In this way, we have learned to trust and respect one another, and I believe this to be an important aspect of the OTR and student relationship. I have learned a lot about sensory integration, child development, and school development from these OTRs and appreciate the knowledge I have gained.

Discontinuation

During OT sessions and my program sessions I have observed a trend in the children with SPD. When a child becomes overstimulated, they begin displaying signs of stress, frustration, and discomfort (Kostelyk, 2018). These signs vary from child to child, but once they have a sensory meltdown, it is hard to calm them down. A sensory meltdown can include anything from shutting down to a panic attack (Kostelyk, 2018). During my sessions, I have observed several sensory meltdowns. The children experiencing these do not explain to the OTR what they are feeling, therefore, without prior sensory intervention it becomes difficult to prevent a meltdown.

I have found that it is crucial for the OTR to observe and study a child's body language, facial expressions, and behaviors in any situation to gain an understanding of their sensory

difficulties. When a child is not able to explain how they feel, they are subject to occupational injustice, as they cannot independently engage in their occupations. I often see children becoming discouraged and frustrated by small tasks because they seem scary to them. Through sensory play and exploration, the OTR is able to pinpoint areas of stress and find a way to address them in an occupation-based intervention. This is often difficult and frustrating to the child, but as they learn that they can succeed, it yields greater confidence and quality of life for the child.

Through the parent education program, the parents learned how to successfully implement sensory strategies through the use of handouts and individualized sensory diets. Parents reported having a greater understanding of their child's needs as well as understanding what they can do to help their children (Dunstand and Griffiths, 2008). To allow for continuation of this program, I compiled evidence, program instructions, program responsibilities, sensory handouts, and examples of sensory diets and how to create them into a binder for the clinic. The clinic will now be able to utilize this binder as a tool in parent SI education.

Outcomes

To find outcomes, the OTS utilized the same pre/post test likert scale utilized during the first session. The post test was completed by participants on the last session of the program. On average, parents reported a higher level of understanding of their child's sensory needs, responses to sensory stimuli, improvement in ADL participation, improvement of stress in the family, and ability to find resources (see Appendix). In addition to the pre/post test, the student gave each parent an "End of Program Questionnaire" to identify areas of strength and weakness in the program. Each parent reported the program to be beneficial in understanding and implementing of sensory strategies. On average, the parents reported the educational sensory

handouts to be the most helpful for them. One parent reported a weakness of the program to be insufficient time during each session. The same parent stated, “it was sometimes hard to communicate in waiting area with my other child present.” No other parent reported an area of weakness of the program.

A limitation of this program is there were five parents who participated in the program. One of the parents was absent during the last program session, therefore she did not complete the post test or “End of Program Questionnaire.” This group would have been more reliable if more families had participated. Another limitation is one of the parents started the program later, so she did not receive as much feedback on her sensory diets as some other parents did. Despite these limitations, the program was seen as efficient and beneficial at this pediatric clinic, and the parents reported positive feelings towards it. More programs similar to this should be conducted in other settings and clinics to ensure reliability.

Overall Learning

This DCE has been wonderful in many ways. I have met many amazing people at this site and have learned so much from each of them. The OTs at the site have truly immersed me in the subject of sensory integration and have passed on much knowledge, from how to observe a child with SPD to how to create a sensory diet specific for their needs. The other disciplines at the site have taught me a lot about interdisciplinary teamwork and how I can be of help to them regarding sensory issues. I have also been working closely with six other OT students of various schools and it has been a huge learning experience to collaborate with them in treatment and during the camp we held one week during my DCE.

Although I have learned a lot from the individuals I work with, I have learned the most from the parents of my clients. Through working closely with parents, I have grown immensely

in professionalism. In the past it has been difficult for me to speak with the families of my clients, but through this DCE I finally feel confident and comfortable giving recommendations and advocating for these families. It has been a heartwarming and gratifying experience to provide assistance to these families and hear about their successes throughout this program. I think a program similar to this could be effective in many other settings, not just exclusive to pediatric outpatient.

Conclusion

Children who have SPD often have a difficult time with self-regulation, selfcare tasks, play activities, and school engagement, leading to poor social skills, stressful family relationships, and low self-esteem (Dunstand & Griffiths, 2008) Studies show that SPD also affects the child's parents, causing increased stress and family issues, as well decreased confidence when interacting with their child (Freese, Porter, & Pelham-Foster, 2016). SPD is most commonly diagnosed in children, however sometimes it is not caught nor treated (About SPD, n.d.). Adults with SPD may have a difficult time engaging in work, relationships, and leisure and often experience depression, under achievement, and social isolation (About SPD, n.d.). For these reasons, parent SPD and SI education is necessary to ensure individuals are getting the treatment they need starting in childhood to improve overall QOL for families (About SPD, n.d.). Through this DCE, I have advocated for individuals living with SPD and the daily challenges they face, raised awareness of signs and symptoms of SPD, and provided an educational program for parents at this outpatient pediatric outpatient clinic. Parents reported this program to have several strengths, and to be an aid in improving overall quality of life of their children and themselves.

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Appendix: Pre/Post Test Results of Parent SI Education Program

Below are the results of the Parent SI education program, displaying an average increase in score. The pre/post test was a likert scale ranging from “1 Strongly Disagree” to “5 Strongly Agree.” The statements are as follows:

Statement 1: I know what my child’s sensory needs are.

Statement 2: I understand my child’s reactions to sensory stimuli.

Statement 3: My child’s sensory processing difficulties do not cause stress in my family.

Statement 4: Everyday activities, such as mealtime, dressing, bathing, etc., are easy to maneuver.

Statement 5: I feel confident implementing sensory strategies to my child when necessary.

Statement 6: I know where to find resources regarding sensory processing difficulties.

