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The Development of Sensorimotor and Executive Functioning Group Programs

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THE DEVELOPMENT OF SENSORIMOTOR AND EXECUTIVE FUNCTIONING GROUP
PROGRAMS

A Capstone Project Entitled

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Submitted to the School of Occupational Therapy at University of Indianapolis in partial fulfillment for the requirements of the Doctor of Occupational Therapy degree.

By

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Abstract

Theracare Outpatient Therapy Services provides skilled therapies to children in order to maximize independence in their lives. Prior summer programs have been implemented in the past but with limited research and organization. The purpose of this Doctoral Capstone Experience (DCE) project was to utilize evidenced-based interventions in research in order to develop summer group programs, as well as clearly outline program interventions, skill sets being addressed, timeline of activities, and goals and objectives. A sensorimotor group and executive functioning group program were developed and partially implemented in order to address skills beginning with sensory regulation and sensorimotor functioning, progressing to executive functioning and social skills. Staff were educated and implemented similar group interventions in individual treatment sessions by pairing up clients based on timing of treatment sessions, age, and goals. Families were educated on the purpose of the group programs as well as provided with a resource addressing goals and objectives. The staff understood program goals and objectives and were comfortable implementing the groups based on the outlines provided for each day. Full implementation of the programs will be implemented in the summer of 2019 by the occupational therapists.

Background

Occupational therapy's role in pediatrics is to work not only with the child, but with families and caregivers to allow for a more active role in participating in activities/occupations that are meaningful (More, 2015). Pediatric occupational therapists recommend appropriate interventions for all abilities and skill levels to enhance the child's development, play, learning, and overall occupational performance (More, 2015). A holistic approach is taken in the

occupational therapy (OT) profession in that OT practitioners often communicate with parents, caregivers, and other professions to ensure collaborative care so that maximal potential can be met for the child and their family. The occupational therapist's specific role is to identify barriers or deficits and provide individualized interventions, adapt activities, environmental conditions, and needed materials to improve the overall functional performance for the child (More, 2015).

The four overarching themes that occupational therapists target are needs relating to development, education, injuries, and emotional-behavior skills (More 2015). Within these main themes, a number of subsections are addressed. These can include, but are not limited to; meeting developmental milestones, activities of daily living, social skills, executive functioning skills, school performance, strengthening, cognition, sensory processing, visual motor and perception, coping strategies, emotional regulation skills, and self-advocacy skills (More, 2015).

Purpose

The Doctoral Capstone Experience (DCE) project was completed at Theracare Outpatient Therapy Services (TOTS) clinic in Fishers, Indiana. The majority of children served at the clinic are school-aged children; therefore, a majority of treatment sessions are held in the afternoon and evening hours to accommodate school schedules. Due to the majority of children being school-aged, a common theme of skills treated include executive functioning, visual motor/perceptual skills, social skills, sensory processing, motor functioning, fine motor skills, and school performance.

With this population in mind, the TOTS clinic concluded a summer group program would be beneficial. The purpose of the DCE project was to utilize research supporting the central nervous system's pyramid of learning and how implementing sensory integration can improve sensory dysregulation and motor performance, progressing to executive functioning social skills

(Williams & Shellenberger, 1996). With the children being school-aged, group environments are age-appropriate and social skills were crucial to target in the group dynamic. There were two summer groups, a younger group targeting sensory integration, motor performance, and social skills, and an older group, targeting motor planning, executive functioning, and social skills.

Theory/Model

The model that was utilized throughout this experience is the Person-Environment-Occupation-Performance (PEOP) model. This model encompasses the function between the interaction of the person, their environment, and their occupations (Cole & Tufano, 2008). People perform occupations within their different environments, which can positively or negatively impact occupational performance (Cole & Tufano, 2008). For the purpose of the development of group programs, the therapist is aware of the barriers and deficits a client faces that hinder the optimal occupational performance for a person in their environment. This model will guide the development in improving occupational performance for a client in their home, school, and community-based environments.

An overarching theory that is believed to capture the purpose of the program development and targeted skills is the Sensory Integration frame of reference. Beginning in the 1960's, Jean Ayres was an occupational therapist and first research to explore sensory integration's impact on brain processes (Cole & Tufano, 2008). Resulting from this research, the sensory integration approach known as Ayres Sensory Integration was fully developed in the 1970s. Ayres created standardized and nonstandardized tests, intervention principles, and a theoretical framework to capture effective ways to identify sensory deficits and to improve sensory dysfunction (Cole & Tufano, 2008). Interventions will promote optimal postural control, ocular motor areas, bilateral coordination, motor control, and motor praxis (Cole &

Tufano, 2008).

Sensory integration is present across the lifespan, which can result in sensory function or sensory dysfunction. Ayres explored the tactile, vestibular, and proprioceptive systems and how these senses progress throughout life (Case-Smith & O'Brien, 2015). Development of these senses allow for sensory integrative abilities to mature resulting in skills such as postural control, grasping of objects, sustaining prone positioning, self-feeding, and crawling/walking to occur within the first year of life (Case-Smith & O'Brien, 2015). As the child becomes more mobile in the second year, novel movements are performed introducing new sensory experiences. Motor skills, praxis, and ideation are developing, allowing for the child to use sensory integration to engage in more movements (Case-Smith & O'Brien, 2015).

Ayres considered years three through seven a crucial period for a child due to the impact of sensory integration and how the brain organizes the information. Children are challenged with age-appropriate tasks that include visual-motor skills, motor-planning skills, fine motor skills, and behavioral regulation, such as crafts, drawing, playground equipment, scissors, musical instruments, and completing homework (Case-Smith & O'Brien, 2015). When the brain has difficulty organizing and interpreting sensory integration, challenges in functional performance in these activities occur (Case-Smith & O'Brien, 2015). In this age range, children are often around peers in a school-based setting, which can impact social skills and functional communication as well.

The majority of children at TOTS clinic are challenged with functional tasks in everyday life due to sensory disorganization. Currently, children begin their sessions with vestibular, deep tactile, and proprioceptive input to help organize the sensory system to be able to improve functional performance in age-appropriate tasks. When creating the groups, a social aspect was

included when group interventions were utilized, while also working on emotional regulation, coping mechanisms, and functional communication.

Literature Review

According to central nervous system development, a pyramid of systems is developed throughout childhood (Tarver, 2018). The foundational layer is development of the sensory system, followed by sensorimotor development. More complex functions of visual perceptual and visual motor skills are then developed leading to the top of the pyramid which is cognitive intellect development, including executive function, academia, and social skills (O'Connor, Lambe, Gleeson, & Henry, 2016). Within this pyramid of development, the foundational layer of developing and regulating the sensory systems is crucial for proper development of more complex skills. Without proper development and organization of the sensory systems, motor functioning, visual perceptual skills, and higher cognitive skills are then impacted negatively impacting academic performance and social and emotional development (O'Connor et al., 2016; Tarver, 2018). The following subsections outlined follow the pyramid of development and effective treatment strategies improving the foundational layers of sensory regulation, leading up to more complex skills as executive functioning and social skills.

Sensory Integration Approach on Sensory Dysregulation

Sensory processing disorders may include deficits related to detecting, modulating, interpreting or responding to sensory stimuli. Sensory modulation disorders indicate difficulty related to regulation of the degree or intensity of a response to sensory input (Miller, Coll & Schoen, 2007). Sensory modulation disorder is a common comorbid diagnosis estimated from 40% to 80% for people diagnosed with a developmental disability (Miller et al., 2007). Dysfunction in sensory processing can also lead to behavioral problems due to the inability to

interpret sensory information; therefore, a child may lack the ability to regulate or organize behavioral responses. (Wan Yunus, Liu, Bissett, & Penkala, 2015). Lacking these skills allows for inappropriate behavioral responses to occur, impacting school performance, social skills, and daily activities (Wan Yunus et al., 2015).

In a study looking at the effectiveness of occupational therapy for children with sensory modulation disorder, occupational therapists provided ten weeks of sensory integration therapy to children five years or older, while a control group received either no treatment, or an activity protocol in which interventions did not target specific deficits. (Miller et al., 2007). The sensory integration therapy was found to be effective in that the treatment group made significant changes compared to the control group on the Goal Attainment Scale as well as on the Attention and Cognitive/Social subtests on the (Leiter-R Parent Rating Scale) (Miller et al., 2007).

Functional performance and participation in daily activities have also been improved by sensory integration. Interventions followed by the principles of sensory integration as outlined by Ayres, which include tactile, vestibular, and proprioceptive input activities, have been proven effective with functional outcomes, as well as positive changes in behavioral problems in children (Schaaf et al., 2014; Wan Yunus et al., 2015). In past research, functional outcomes have been measured using the Goal Attainment Scaling, in which higher scores have been recorded after sensory integration therapy (Schaaf et al., 2014). Additional improvements in functional performance have included higher independence in self-care tasks and social activities, decreased sensory behaviors, and overall less reported caregiver assistance during daily life activities (Schaaf et al., 2014; Wan Yunus et al., 2015).

Sensory Integration Approach to Motor Performance

Sensory integration has been proven to show multiple positive effects on motor performance. As indicated in several studies, the impact of a sensory integration program can show improvements in motor performance among a variety of populations. In research, a variety of sensory-based interventions targeting the vestibular, proprioceptive, and tactile systems have been suggested to be effective in improving motor performance in children. Examples of activities that can be used to target these systems include weight bearing, jumping, carrying heavy objects, incorporation of balance, swinging board, climbing, spinning chairs, and more (Humphries et al., 2002; Shemy & Mohamed, 2017). Fine motor activities that can be used in combination with these activities include zipping, puzzles, scissors, locks and keys, maintaining proper pencil grip, writing, manipulation, or games that require finger control (Shemy & Mohamed, 2017). From this type of treatment, motor performance areas that have been improved include upper-limb coordination, bilateral coordination, balance, fine motor skills, and motor planning skills (Humphries et al., 2002; Karim & Mohammed, 2015; Shemy & Mohamed, 2017).

Five articles in a meta-analysis indicated a significantly positive treatment effect in motor outcomes after using a sensory integration approach in treatment (May-Beson & Koomar, 2010). These authors noted that research indicated that a sensory integration approach is successful in improving motor performance related to fine and gross motor skills, motor planning skills, and praxis (May-Benson & Koomar, 2010). In another article in the meta-analysis, moderate effects in motor performance areas after using a sensory integration approach. (May-Benson & Koomar, 2010).

Executive Functioning

Progressing to more complex skills in the central nervous system's pyramid of learning, executive functioning and social skills are considered to be skills utilizing cognitive intellect,

which are crucial for independence in academic learning, activities of daily living, and behavior. (Williams & Shellenberger, 1996). Executive functioning involves a set of skills used to perform activities that require planning, organizing, strategizing, paying attention, remembering details, and managing time and space (Understood Team, 2013). Children who have learning disabilities or Attention-Deficit/Hyperactivity Disorder (ADHD) often have difficulty using these skills which causes difficulties in school performance, socialization, and daily activities (Understood Team, 2013). As occupational therapists, interventions can be provided to improve these executive functioning skills to maximize participation and performance.

Diamond & Lee (2011) assessed effective interventions used to improve executive functioning skills four to twelve years old. Interventions included computerized training, noncomputerized games, aerobics, martial arts, yoga, and mindfulness (Diamond & Lee, 2011). Results indicated that interventions of aerobics, martial arts, and yoga were effective in improving executive functioning skills (Diamond & Lee, 2011). Additionally, an intensive five week working memory training program was implemented in children with the diagnosis of ADHD between the ages of 7-17. The working memory training program included both visuo-spatial and verbal exercises on a computer-based training program. Participants completed 25 sessions over six weeks (Beck, Hanson, Puffenberger, & Benninger, 2010). Improvements were noted in working memory, initiation, and planning and organizing skills (Beck, et al., 2010).

Social Skills

School-aged children who have difficulties with peer interactions or general social skills often demonstrate deficits in school performance, executive functioning skills, play skills, and independence in daily activities or routines (Elksnin & Elksnin, 1998). Lacking basic skills such as sharing, responding to social cues, problem-solving, cooperative play, and turn taking can

limit participation and performance in children with a variety of diagnoses, including autism and ADHD (Wilkes-Gillan, Bundy, Cordier, Lincoln & Chen, 2016). As a result of these deficits, children have fewer meaningful relationships and have fewer opportunities for social interactions such as play dates (Wilkes-Gillan et al., 2016). Children are then at risk for falling behind same aged peers developmentally and socially in school, home, and community-based settings.

There are several therapeutic benefits that group interventions can offer to children with disabilities to improve functional outcomes. Targeting basic social skills in play-based interventions as well as meaningful occupations such as art, games, or cooking, have been found to improve social skills, motor functioning skills, and executive functioning skills (Gol & Jarus, 2005). Also within a group setting, increased parallel play and decreased solitary play can be facilitated to improve overall play skills among children (Wilkes-Gillan et al., 2016).

Screening and Evaluation

There is limited research that has been conducted that has focused on effectiveness of group therapy in the pediatric setting that target more than social skills. For the purpose of this project, a combination of evidence-based research that supports targeted interventions addressed in the literature review and evidence-based research that supports group interventions were used to create a four-session program for a sensorimotor group and an executive functioning group. After discussions with staff, staff wanted a clearly outlined program to follow along with educational resources to provide for families. Staff also indicated this need by reporting that there is a need for social skills to be addressed due to lack of skills observed in individual treatment sessions. The group with children aged seven and younger targeted sensory integration, social skills, and the effects on motor performance and sensory dysregulation (Charney et al., 2017; Karim & Mohammed, 2015; Shemy & Mohamed). The group with children ages seven

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and older would target executive functioning skills in daily life tasks, some motor performance, and social skills (Diamond & Lee, 2011; Beck et al., 2010, Charney et al., 2017). Clients who were seven would be placed in the group that the therapist felt most appropriate for the client.

The questionnaire created for the younger age group was titled the Sensorimotor Group Questionnaire, and the questionnaire created for the older group was titled the Executive Functioning Group Questionnaire. Both the sensorimotor and executive functioning group questionnaires consisted of 12 questions and was paper-based. Quantitative questions were created including yes/no responses, a Likert Scale of 1-5, and multiple-choice responses to retrieve subjective and objective information regarding the client's skill sets and were provided to caregivers. Questions targeted experience in group settings, opinions of a group-based program, the knowledge of their child's current plan of care, targeted skills that parents believe their child would benefit from based on the level of knowledge, education of program goals and objectives, and if their child planned to participate in the group program in the summer. The questionnaires were distributed to families whose children were appropriate for a group-based program and who had similar goals in individual plans of care.

The intervention-based questions in the sensorimotor group questionnaire included were related to sensory dysregulation (Miller et al., 2007; Schaaf et al., 2014 Wan Yunus et al., 2015;), bilateral coordination (May-Benson & Koomar, 2010; Shemy & Mohamed, 2015), motor planning (Humphries et al., 2017; Shemy & Mohamed, 2015), emotional regulation (Wan Yunus et al., 2015), social skills (Charney et al., 2017; Gol & Jarus, 2005), and fine motor skills (May-Benson & Koomar, 2010; Shemy & Mohamed, 2015). The intervention-based questions in the executive functioning group questionnaire included sensory dysregulation (Miller et al., 2007; Schaaf et al., 2014; Wan Yunus et al., 2015), general executive functioning skills (Beck et al.,

2010; Diamond & Lee, 2011), fine motor skills (May-Benson & Koomar, 2010; Shemy & Mohamed, 2015), emotional regulation (Wan Yunus et al., 2015), social skills (Charney et al., 2017; Gol & Jarus, 2005) and motor planning (Humphries et al., 2017, May-Benson & Koomar, 2010; Shemy & Mohamed, 2015)..

Both the sensorimotor group and executive functioning group questionnaires were distributed among families dependent on if the child was appropriate for the group program based on the topics and interventions listed above. The following responses to the questionnaires are included in Appendix A: Sensorimotor Group Questionnaire and Appendix B: Executive Functioning Group Questionnaire. There were nine sensorimotor group questionnaires distributed and fifteen distributed to the executive functioning group, with 100 percent completion rate for both groups. Results from the surveys indicated that a group format would be beneficial and that group members engaging in similar skill sets would be beneficial for the children as well. The majority of parents felt educated on their child's plan of care; therefore, there is higher accuracy in responses of skills their child is working on. The results of the surveys were used to facilitate the summer group program development.

Group-based interventions are more appropriate in some settings compared to others. Within traditional practice settings, group interventions may be beneficial among inpatient rehabilitation, school settings, long term care facilities, community-based settings, or skilled nursing facilities. Cole & Tufano (2008) states that group interventions can be beneficial with adults in adult day care or skilled nursing facilities by targeting sensory stimulation to promote optimal arousal level in clients. In these settings, other skills such as strengthening, endurance, social participation, or cognition may be common skills worked on, allowing for positive benefits of group interventions. In older adults with chronic illness, group interventions have

been found to be effective in improving quality of life and occupational performance by goal setting, psychoeducation, and problem-solving through achieving skill mastery (AOTA, 2018).

For emerging practice areas, people with mental illness may benefit from group interventions targeting motor planning and the sensory system. Lorna Jean King was successful in creating group interventions for clients with mental illness by utilizing sensory integrative techniques, similar to techniques Ayres used with children (Cole & Tufano, 2008). Interventions targeted gross motor movements via proprioceptive or vestibular input to normalize muscle patterns and improve range of motion to promote spontaneous motor responses (Cole & Tufano, 2008).

Emerging practice areas and some traditional practice areas that may not benefit from group-based interventions could include driving rehabilitation, home health, early intervention, outpatient orthopedics, outpatient neurology, and acute care. Possible reasons that group interventions would not be beneficial would be because of length of stay, skills, age range, and locations. For example, early intervention or home health settings would not be ideal for group-based interventions due to individualized interventions being completed in the client's home. For acute care, the goal is to stabilize the patient's medical status, so implementing group activities would be difficult due to individual restrictions or critical medical condition (AOTA, 2019). Driving rehabilitation would also not be ideal for group interventions due to the difference of activity demands, risks, and goals that would vary among individuals (AOTA, 2019).

For the purpose of the program being developed at TOTS clinic, common factors of age, diagnoses, goals, duration of individualized treatment, and skills being worked on allowed for successful creation of group-based interventions. Activities could be graded for individuals, but still targeted the same goals due to the previous common factors listed. After completion of a

needs assessment, parents and caregivers of patients indicated the need for a summer group program and felt education on goals and objectives for the group members would be beneficial.

Implementation

During the implementation phase, the programs were fully developed for the sensorimotor and executive functioning groups and organized into a binder for staff to implement in their entirety during the summer of 2019. Unfortunately, the full program was not able to be implemented during spring of 2019 because group programs are only scheduled for summers due to patient and therapist schedules. Implementation of interventions did occur among groups of two to four clients at a time. The binder outlined the list of interventions and time allotted for each activity for each day. Included with the list of interventions were all the skill sets that would be targeted within each specific activity. Interventions were created so that grading of activities could be applied when necessary in an attempt to allow for maximum participation among all group members.

The DCE student spent time early on in the implementation phase discussing with families the purpose of interventions. The DCE student allowed time to educate the families of other occupational therapists' clients as well. Families were educated on the process of how the DCE student collaborated with therapists and matched up clients to put them in groups of two to four based on similar goals and abilities. The DCE student also provided education on the incorporation of social skills and focusing on appropriate social interactions throughout the sessions. Families were accepting of the education and gave their consent for the client to participate with peers.

Three occupational therapists were educated in an informal in-service on the purpose of the replication of interventions, types of interventions, and skill sets being targeted. Following

the education, time was spent looking into the occupational therapists' schedules and plans of care to correlate incorporating the interventions among two or more patients who were working on similar skills. Once schedules were matched up, collaboration among the DCE student and occupational therapists occurred to allow for maximum pairing of clients. The DCE student planned the sessions and collaborated with the therapists before, during, and after sessions.

As a result of the needs assessment, group interventions heavily focused on social skills in the small groups. Social skills that were addressed included: introductions, telling the peer(s) something about themselves, asking the peer(s) something about their self, explanation of instructions to activities and games, impulse control with appropriate timing of stories, and turn-taking. The DCE student and other therapists found it beneficial to target appropriate social interactions to allow for maximum participation. Clients were more engaged in sessions and interacted more with peers once social skills were targeted more frequently in sessions.

The sessions were outlined in that half of the session would be individual-based and the second half would be group-based. The first part of the session primarily focused on organization of the sensory system, targeting the vestibular, deep tactile, and proprioceptive systems. The second half of the session included introductions among group members followed by completing activities that could target a variety of skills. All of the interventions allowed for functional communication and the skill sets that would address the clients' goals.

Overall, the replication of interventions among groups of two or more clients went very well during the implementation phase. An example of a session included targeting executive functioning skills among four clients. Specifically, social interactions, motor planning, working memory, impulse control, and reading were all a part of the activity. One patient would pick three cards, each with a different motor planning direction written on it. The client would read

the directions to another group member who would then carry out the movements. The client who read the directions would work on encouraging the patient if they were having a difficult time, or to assist them in carrying out the motor plan.

Another example of a session was between three patients who engaged in the game of Candy Land. This time, the younger age group engaged in the activities targeting motor planning, sensory integration, sequencing, bilateral coordination, and social skills. Each color represented a different task that was to be completed. For example, red was buttoning, blue was using a scooter board, orange was telling a short story or fun fact, purple was completing an obstacle course. This activity was successful in that any skill could be targeted while also in a co-treatment with another discipline, activities could be graded, and social skills could be targeted.

Implementation of small group interventions was insightful in that the DCE student was able to target multiple skills in one activity. By utilizing this method, the clients were more engaged since there were opportunities to perform multiple skill sets rather than only targeting a challenging skill. The DCE student also allowed for the children to choose parts of activities to make the sessions more meaningful and engaging. This form of implementation was organized, gave the clients some control of activities, and addressed multiple goals.

Leadership

Leadership skills were required to promote a successful implementation phase. Leadership qualities that were utilized were: strong communication, being assertive and direct, creative and innovative, confidence, and maintaining a positive attitude. I provided group interventions to children that I had no previous experience with, so utilizing these qualities promoted for successful therapy sessions.

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I was assertive with collaborating multiple times a day with other occupational, physical, and speech therapists to ensure quality care was provided during the small group sessions. Along with collaboration among therapists, I utilized confidence and a positive attitude to build rapport with families and educate them on the interventions and skill sets being targeted. Families were very receptive to their child's plan of care, so education was provided week by week on the progress made in sessions. With implementing a somewhat new program to the clinic, frequent questions were asked during the implementation phase that I was required to answer and educate on. This promoted the opportunity for leadership skills to become further developed since education of the groups solely came from me. Over the course of the weeks, families became even more accepting of group implementation and would ask me more questions compared to the client's familiar therapist. This allowed me to develop more confidence and assertiveness when providing individual and group interventions.

Staff Development

During the implementation phase, staff development was improved. As I correlated schedules, I also educated staff on select interventions that would be appropriate for them to implement if I was not available to implement. I would receive feedback from the other therapists as well as therapists collaborating among themselves, further promoting staff development. Interventions were implemented between occupational therapists or an occupational therapist with a speech or physical therapist. The occupational therapists would lead the session regarding addressing social skills and setting up activities that the physical or speech therapists could be involved in as well. Overall, the implementation phase facilitated my growth, as well as the employed therapists on site. Staff development will further develop once I

complete the project, evidenced by the staff continuing to implement group interventions going forward due to the clearly outlined binder that was created.

Outcomes & Discontinuation

An in-service was presented at the clinic for the four occupational therapists on staff. The presentation specifically covered the information in the binder including interventions and schedules of each day. After familiarization of implementing similar interventions during the implementation phase, the occupational therapists were then educated on specific interventions that the DCE student created and provided. Positive feedback was provided from the occupational therapists as well as comments, questions, and further ideas that were discussed to ensure optimal implementation in the summer of 2019. The occupational therapists agreed to implement the program as developed by the DCE student and to continue incorporating small group interventions when appropriate until the summer program was implemented. The occupational therapists also agreed to use similar formatting of group programs in future summers because of the organization and clarity of skill sets that were outlined in the binder.

A short survey was provided following the in-service to serve as a simple outcome measure. The outcome measure addressed understanding of interventions, comfort implementing provided interventions, ability to grade activities, comfort educating families, feasibility of following the day-to-day timeline, and available space and resources. (See Appendix C: Staff Survey). The general results indicated that the therapists would feel comfortable implementing the program, the activities were able to be graded when needed, and that the outline of the program would be easy to follow.

A resource that was provided in the binder was a goals and objectives sheet for therapists to pass out to families in preparation for the summer groups (See Appendix D: Goals and

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Objectives Resource). The DCE student chose to use this resource in the discontinuation phase so that the therapists would be responsible for handing them out after the DCE student leaves, allowing for more carryover. A resource of goals and objectives would allow for a clear and concise educational handout that families can read and take home. In the implementation phase, families were educated on the purpose of group interventions as well as the purpose for targeting social skills. With a goals and objectives resource, families will already understand the overall purpose of group interventions but will then be able to understand specific goals and objectives with the use of this resource. During the implementation phase, objectives were not addressed in full due to time restraints and availability of participants, but targeted activities did address each goal to some extent.

The societal need that was addressed was targeting social skills for children with disabilities during functional activities in order to improve overall independence and participation in meaningful occupations. As stated in the literature review, social behaviors have been found to improve from the combination of sensory and social group interventions (Charney et al., 2017). The group program aimed at targeting social skills while using a sensory and sensorimotor approach. Reports of higher independence in self-care tasks and social activities, decreased sensory behaviors, and overall less reported caregiver assistance during daily life activities are all benefits from implementing sensory and social interventions (Schaaf et al., 2014).

By addressing social skills in a group-based setting, children with disabilities were allowed an opportunity to work on functional communication that could be transferred to the classroom setting, home setting, and community settings. Education on social skills occurred very frequently with caregivers following individualized therapy sessions. Social skills were a

topic that parents and caregivers raised concerns about regarding how to improve these skills with their child. The DCE student emphasized the importance of the exposure to address social skills while working on functional skills too.

Overall Learning

Communication Styles

Communication was a vital factor during this experience in many ways. I communicated with several individuals including therapists, families, teachers, staff, and the clients themselves throughout the entire process. Communication was expressed in a variety of ways in order to ensure success of the program, build a good rapport with families, and have a strong work relationship with the therapists on site. I was expected to communicate progress and education to families, rationale of interventions to teachers or staff, communicate problems or concerns, and advocate for clients. Communication was expressed through written, non-verbal, and oral methods to effectively provide a holistic care approach to meet the needs of the clients.

Written communication was provided throughout the project with clients who received therapy somewhere other than the clinic. Communication between these families occurred via a written daily note that was sent home to families. Regarding the group programs, the written paperwork of the questionnaires and added notes in the daily note were the primary forms of communication. This form of communication was effective in that families would reach out via text or email to the therapist confirming the education or notes that were sent to them.

Verbal communication was provided with different professionals throughout the entire process. I communicated with the families and kept them informed of the purpose of the program, what to expect in the process, continuous education throughout, and receiving verbal consent for having their child participate in peer-to-peer interactions. Verbal communication was

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also utilized daily with other therapists. I had to keep these therapists informed of the timeline of the project, coordinate and communicate which clients would be appropriate for peer to peer interactions and communicate the types of interventions that would be implemented in sessions. Finally, verbal communication was frequently utilized when engaging with teachers or staff from centers that children would be seen at. The DCE student communicated the purpose of the programs to staff and in return, learned that some of the centers were implementing groups at their site too. The DCE student and staff were then able to communicate regarding which specific skills were being worked on at the centers, as well as which skills would be targeted in the group programs. The staff was responsive in that they wanted to work on some of the skills that would be targeted in the group programs so the clients would have experience leading up to the summer programs.

Non-verbal communication was used on a day-to-day basis with every encounter I made. Active listening, proper eye contact, and appropriate attire are a few examples of non-verbal communication utilized when communicating with caregivers, health professionals, staff, and clients. Non-verbal communication was essential in building rapport with the individuals that I engaged with and felt this form of communication was improved throughout this experience.

Leadership

Leadership skills were utilized throughout the experience in multiple ways. A leadership skill that was significantly improved was time management. As a student focusing primarily on clinical skills, I needed to manage my time in order to stay on top of daily notes, evaluations, progress notes, preparing for sessions, as well as developing appropriate resources such as the needs assessment, the interventions, a staff survey, and a resource of goals and objectives. Time

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management skills were challenging to utilize at the beginning of the experience but grew a lot by the end as the day-to-day tasks were able to be completed earlier in the day.

Leadership skills were also utilized when leading small group interventions. When implementing interventions, the other therapists would let me lead and facilitate assistance to their child when necessary. I was required to exhibit flexible thinking and adapt when needed throughout implementation. Time management skills were also required and utilized in that some interventions required more time than originally expected. I had to adapt and provide more assistance in order to achieve task completion and have the participants feel successful.

Advocacy

Advocacy skills were utilized in the implementation phase when actual interventions were implemented among children. I advocated for each child when implementing the group interventions. The children were often shy and initially hesitant to engage socially with peers. I focused on advocating for the child by building their self-esteem, demonstrating what was expected, and providing praise afterward. This method of advocacy was successful in that social interaction and functional communication was achieved in all sessions as well as the children became more engaged once they fully understood what was expected of them.

Another area in which advocacy skills were utilized was in family education following therapy sessions. Initially, most parents were surprised their child performed socially and engaged in activities as well as they did when I reported positive progress in those areas. I advocated for the children and made families aware of their child's capabilities and skills. I also advocated for the child's progress made thus far compared to the progress that still needs to be made. Families typically see a child on a day-to-day basis whereas I saw the child on a weekly

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basis, so highlighting improved skills from week to week really seemed to make a difference to families in their outlook on their child.

Overall, this experience provided several opportunities for growth, advocacy, improved independence, confidence, skill sets, and improved communication. I was able to improve in clinical skills in individual and in small group sessions. All of these skills that were utilized and improved throughout this experience will be beneficial in future opportunities of developing and implementing group interventions in my work as an occupational therapist.

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Appendix A

Sensorimotor Group Questionnaire

1. My child is _____ years old
9 Respondents: 3-5 years old
2. My child has participated in a summer group program before (circle one)
 - a. Yes- If Yes, Where? _____
0 respondents (0%)
9 respondents (100%)
 - b. No
3. The occupational therapist is currently working on which of the following skills with my child: (circle all that apply)
 - a. Sensory dysregulation 8 respondents (89%)
 - b. Sequencing 3 respondents (33%)
 - c. Bilateral coordination 6 respondents (67%)
 - d. Motor planning 7 respondents (78%)
 - e. Fine motor skills 5 respondents (56%)
 - f. Handwriting skills 3 respondents (33%)
 - g. Emotional regulation 6 respondents (67%)
 - h. Other _____ (please list)
4. I feel group interventions focusing on the above checked skills would be beneficial to my child: (circle one)
 - a. Strongly agree 5 respondents (56%)
 - b. Agree 3 respondents (33%)
 - c. Neither agree nor disagree 1 respondent (11%)
 - d. Disagree 0 respondents (0%)
 - e. Strongly disagree 0 respondents (0%)
5. I feel fully educated on the skills my child is working on in therapy: (circle one)
 - a. Strongly agree 4 respondents (44%)
 - b. Agree 5 respondents (56%)
 - c. Neither agree nor disagree 0 respondents (0%)
 - d. Disagree 0 respondents (0%)
 - e. Strongly disagree 0 respondents (0%)
6. I feel a group therapy program with children in the same age range working on the same skills as my child would be beneficial
 - a. Strongly agree 5 respondents (56%)
 - b. Agree 3 respondents (33%)
 - c. Neither agree nor disagree 1 respondent (11%)
 - d. Disagree 0 respondents (0%)
 - e. Strongly disagree 0 respondents (0%)
7. I feel that education on the type of activities that will be implemented in the group program would make me more likely to sign up my child for the group program
 - a. Strongly agree 4 respondents (44%)
 - b. Agree 5 respondents (56%)
 - c. Neither agree nor disagree 0 respondents (0%)
 - d. Disagree 0 respondents (0%)
 - e. Strongly disagree 0 respondents (0%)
8. I feel that education on the goals of the group program would be beneficial
 - a. Strongly agree 4 respondents (44%)
 - b. Agree 4 respondents (44%)
 - c. Neither agree nor disagree 1 respondent (11%)
 - d. Disagree 0 respondents (0%)
 - e. Strongly disagree 0 respondents (0%)
9. How often does your child participate in group settings? When?
 - a. Always 3 respondents (33%)

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- b. Usually 4 respondents (44%)
 - c. Sometimes 1 respondent (11%)
 - d. Rarely 1 respondent (11%)
 - e. Never 0 respondents (0%)
 - f. _____ (please specify)
10. I feel my child would benefit from the social skills aspect with a group program
- a. Strongly agree 5 respondents (56%)
 - b. Agree 3 respondents (33%)
 - c. Neither agree nor disagree 1 respondent (11%)
 - d. Disagree 0 respondents (0%)
 - e. Strongly disagree 0 respondents (0%)
11. My child plans to participate in the group therapy program this summer if the time allows
- a. Yes 4 respondents (44%)
 - b. No 0 respondents (0%)
 - c. Maybe 5 respondents (56%)
12. I would prefer:
- a. 1x a week for eight weeks
 - b. Monday-Thursday for two hours each for one week during the summer
 - a. 5 respondents (56%)
 - b. 4 respondents (44%)

Appendix B:

Executive Functioning Group Questionnaire

1. My child is _____ years old
15 respondents: 7-12 years old
2. My child has participated in a summer group program before (circle one)
 - a. Yes-If Yes, Where? _____
 - b. No
a. 6 respondents : (40%)
b. 9 respondents (60%)
3. The occupational therapist is currently working on which of the following skills with my child: (circle all that apply)
 - a. Sensory modulation 6 respondents (40%)
 - b. Visual/working memory 7 respondents (47%)
 - c. Sequencing 4 respondents (27%)
 - d. Task monitoring 11 respondents (73%)
 - e. Task initiation 13 respondents (87%)
 - f. Task completion 13 respondents (87%)
 - g. Multi-step tasks 13 respondents (87%)
 - h. Strengthening 9 respondents (60%)
 - i. Fine motor skills 11 respondents (73%)
 - j. Emotional regulation 10 respondents (67%)
 - k. Motor Planning 6 respondents (40%)
 - l. Other _____ (please list)
4. I feel group interventions focusing on the above checked skills would be beneficial to my child: (circle one)
 - a. Strongly agree 6 respondents (40%)
 - b. Agree 6 respondents (40%)
 - c. Neither agree nor disagree 3 respondents (20%)
 - d. Disagree 0 respondents (0%)
 - e. Strongly disagree 0 respondents (0%)
5. I feel fully educated on the skills my child is working on in occupational therapy: (circle one)
 - a. Strongly agree 4 respondents (27%)
 - b. Agree 8 respondents (53%)
 - c. Neither agree nor disagree 3 respondents (20%)
 - d. Disagree 0 respondents (0%)
 - e. Strongly disagree 0 respondents (0%)
6. I feel a group therapy program with children in the same age range working on the same skills as my child would be beneficial
 - a. Strongly agree 5 respondents (33%)
 - b. Agree 8 respondents (53%)
 - c. Neither agree nor disagree 2 respondents (13%)
 - d. Disagree 0 respondents (0%)
 - e. Strongly disagree 0 respondents (0%)
7. I feel that education on the type of activities that will be implemented in the group program would make me more likely to sign up my child for the group program
 - a. Strongly agree 4 respondents (27%)
 - b. Agree 10 respondents (67%)
 - c. Neither agree nor disagree 1 respondent (.07%)
 - d. Disagree 0 respondents (0%)
 - e. Strongly disagree 0 respondents (0%)

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8. I feel that education on the goals of the group program would be beneficial
- a. Strongly agree 5 respondents (33%)
 - b. Agree 9 respondents (60%)
 - c. Neither agree nor disagree 1 respondent (.07%)
 - d. Disagree 0 respondents (0%)
 - e. Strongly disagree 0 respondents (0%)
9. How often does your child participate in group settings? When?
- a. Always 5 respondents (33%)
 - b. Usually 7 respondents (47%)
 - c. Sometimes 2 respondents (13%)
 - d. Rarely 1 respondent (.07%)
 - e. Never 0 respondents (0%)
 - f. _____ (please specify)
10. I feel my child would benefit from the social skills aspect with a group program
- a. Strongly agree 6 respondents (40%)
 - b. Agree 7 respondents (47%)
 - c. Neither agree nor disagree 2 respondents (13%)
 - d. Disagree 0 respondents (0%)
 - e. Strongly disagree 0 respondents (0%)
11. My child plans to participate in the group therapy program this summer if the time allows
- a. Yes 5 respondents (33%)
 - b. No 1 respondent (.07%)
 - c. Maybe 9 respondents (60%)
12. I would prefer:
- a. One time a week for eight weeks
 - b. Monday-Thursday for two hours each for one week in the summer
 - a. 9 respondents (60%)
 - b. 6 respondents (40%)

Appendix C:

Staff Survey

Please answer the following questions based on 1: strongly disagree, 2: disagree, 3: neutral, 4: agree, and 5: strongly agree

1. I feel comfortable implementing the group program based on education provided and experience in the implementation phase:
 - a. Strongly agree 3 respondents (75%)
 - b. Agree 1 respondent (25%)
 - c. Neither agree nor disagree
 - d. Disagree
 - e. Strongly disagree
2. I feel that the program is clearly outlined and easy to follow with the timeline and types of activities:
 - a. Strongly agree 4 respondents (100%)
 - b. Agree
 - c. Neither agree nor disagree
 - d. Disagree
 - e. Strongly disagree
3. I feel I have received enough education from the DCE student in order to educate families about the group programs:
 - a. Strongly agree 3 respondents (75%)
 - b. Agree 1 respondent (25%)
 - c. Neither agree nor disagree
 - d. Disagree
 - e. Strongly disagree
4. I feel the activities are able to be graded in order to meet a variety of skill sets in the group:
 - a. Strongly agree 4 respondents (100%)
 - b. Agree
 - c. Neither agree nor disagree
 - d. Disagree
 - e. Strongly disagree
5. I fully understand the purpose of the program as well as the goals and objectives:
 - a. Strongly agree 4 respondents (100%)
 - b. Agree
 - c. Neither agree nor disagree
 - d. Disagree
 - e. Strongly disagree
6. I feel I could fully implement interventions and have adequate space and resources to complete all activities:

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- | | |
|-------------------------------|---------------------|
| a. Strongly agree | 3 respondents (75%) |
| b. Agree | 1 respondent (25%) |
| c. Neither agree nor disagree | |
| d. Disagree | |
| e. Strongly disagree | |

Appendix D:

Goals and Objectives Resource

WHAT TO EXPECT: Your child will be engaging in fun activities while addressing social skills, sensory regulation, motor planning and coordination, fine motor skills, and executive functioning skills! These skills will be addressed in exciting games, obstacle courses, multi-sensory crafts, and teamwork activities. Below is a list of goals and objectives, if you have any further questions, please ask your child's therapist! Hope to see you then!

Goal 1: Participant will engage in functional communication skills in group activities

Objective 1: Participant demonstrate ability to introduce themselves to all group members

Objective 2: Participant will demonstrate ability to share 3 facts about themselves

Objective 3: Participant will demonstrate ability to share short story with group members

Objective 4: Participant will demonstrate ability to communicate appropriate turn taking during activities

Objective 5: Participant will demonstrate ability to give or explain simple directions during games and activities

Goal 2: Participant will engage in motor coordination and planning in group activities

Objective 1: Participant will demonstrate ability to work with group members in order to complete steps in activities

Objective 2: Participant will demonstrate ability to complete motor planning or coordination movements independently or with assist from group members or therapist

Objective 3: Participant will demonstrate ability to sequence through 4-5 step motor planning actions

Goal 3: Participant will engage in executive functioning skills in group activities

Objective 1: Participant will demonstrate ability to setup, complete, or change steps of an obstacle course

Objective 2: Participant will demonstrate ability to initiate steps to activities

Objective 3: Participant will demonstrate ability to utilize working memory during activities

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Objective 4: Participant will demonstrate ability to organize materials to create activities or crafts