SENS“ABILITY” COACHING: INSPIRE AND EMPOWER PARENTS WITH OCCUPATIONAL PERFORMANCE COACHING AND DUNN’S MODEL OF SENSORY PROCESSING – A MANUALIZED EDUCATION PROGRAM FOR CLINICIANS

By

Kelby Christian

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Kelby Christian

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Donnamarie Krause, Ph.D.
Graduate Coordinator

Jefferson Kinney, Ph.D.
Graduate Program Chair

Alyssa Crittenden, Ph.D.
Vice Provost for Graduate Education & Dean of the Graduate College

Abstract

Introduction: The current literature found a need for improved collaboration styles and programs that can adapt to the needs of the various mental health diagnoses. This capstone project focused on creating a manualized education program called SensABILTY Coaching, which aims to improve clinicians' confidence in educating caregivers of children with autism spectrum disorder (ASD) on Dunn's Model of Sensory Processing using principles of Occupational Performance Coaching (OPC). Improving clinicians' confidence increases positive reactions and enhances caregiver and clinician collaboration. This capstone project outlines the benefits of using the principles of OPC intervention styles and sensory-based strategies for their effectiveness when used with clients. One benefit of these two methods, when utilized in conjunction, is that they create an intervention that can adapt to the needs of the caregivers and their children based on the principles of OPC and the different strategies found within the manuals of SensABILITY.

Methods: The project design focused on program development spanning fourteen weeks. The planning and preparation phase started with convenient sampling and providing surveys and interviews to the samples of 34 caregivers and 10 clinicians. During the implementation phase, a PowerPoint presentation on data collection and research on OPC was provided to the clinicians. A manual, one section on OPC and another on sensory processing was also provided to describe the program and how it was implemented. Last, the program review phase was conducted by giving surveys to assess feasibility and quality using a quality improvement survey containing a strengths, weaknesses, opportunities, and threats (SWOT) analysis.

Results: The results showed a statistically significant increase with a p-value of 0.005 in clinician confidence in the program SensABILITY from a Wilcoxon Signed Rank test with a

pre/post confidence survey for clinicians. From the needs assessments, the program created manuals that answered questions and scheduled sessions to guide the therapy process with the collaboration of the caregivers. The capstone project also included a SWOT analysis with multiple key findings for strengths and opportunities, including increased collaboration with caregivers, numerous resources and data for clinicians and caregivers, and possible generalizability. The weaknesses and threats to this project included time requirements, and some caregivers may not be interested in OPC due to the demand for more time on their part.

Conclusion: The capstone project concluded that this program benefits clinicians and can help them gain confidence in educating and guiding caregivers to achieve goals at home and in the clinic.

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Introduction

Occupational therapists (OTs) focus on the relationship between mental well-being and engagement in meaningful activities, which has led to the current promotion of occupational therapy engagement in occupations toward health-independent living. Through the ever-changing and dynamic relationship between the individual, society, and the environment, individuals with and without disability need to learn how to engage in meaningful activities to gain independence in their lives. The SensABILITY program aims to build on the clinician's confidence and provide sensory-based coaching strategies to help the parents and their children live whole and happy lives. This program examined the current problems and research related to this topic and the target population. Lastly, the clinicians at Ability Innovations, located in Layton, Utah, developed and evaluated the program.

Overview of The Problem

Research suggests that there currently needs to be more emphasis on caregiver education regarding sensory processing (Fondacaro et al., 2022; Gee & Peterson, 2016). OT practitioners should consider implementing structured caregiver education to improve caregiver and therapist collaboration through a shared understanding of sensory processing. This collaboration would lead to a more significant therapeutic process for their clients with sensory processing disorders. One article by Miller-Kuhaneck and Watling (2018) found that parents have reported dissatisfaction because of difficulties obtaining desired information and displeasure with discussions about their child’s development that lack description and detail from clinicians. Parents have also reported wanting to understand their children better and learn supportive strategies to help them engage more in activities. These are the reasons a method known as

coaching has been developed and structured to create this collaboration between therapist and caregiver.

One reason for the need for increased caregiver education is that children with ASD struggle with participation in daily occupations due to multiple factors/ predictors. An article by Hilton et al. (2023) found these predictors to be sensory processing, emotional regulation, behavioral variables, and social variables through a retrospective cross-sectional complex sample design. The solution they provided was that occupational therapists should address sensory differences: low registration, sensory sensitivity, sensory avoiding, and sensory seeking. Addressing these sensory patterns can help this population increase their participation in home life and friendships.

Physical activity is a vital daily occupation for children and adolescents because it affects their endurance, strength, and participation ability. For children 5 to 17 years old, the World Health Organization recommends performing at least sixty minutes of physical activity daily. In the United States, 1/54 children have ASD and 95% of those children also have sensory processing disorder, which affects the child's ability to participate in physical activity and affects their ability to meet these standards (Kranowitz, 2022). Physical activity for this population could include structured activities, sports or physical education classes, or unstructured activities. This includes playing at home or during recess. The problem is that these physical activities are not tailored to individuals diagnosed with ASD, and the physical activity can become too over- or under-stimulating (Fondacaro et al., 2022; Must et al., 2015). Due to the decreased physical activity, these children tend to choose a sedentary lifestyle, which increases possible physical and mental complications (Jones et al., 2016; Kozlowski et al., 2021; Lin, 2020). Najafabadi et al. (2018) and Kozlowski et al. (2020) found that there is currently a lack of exercise treatments

developed for children with ASD and interventions adapted to sensory processing preferences. These interventions would benefit this population by increasing overall participation in physical activity.

Proposed Solution

Occupational therapists are aware that sensory processing from clinical experience or continued education needs to be passed on to caregivers for use in the home. Unfortunately, research has found that most caregivers do not fully understand sensory processing and how to implement it effectively. Hence, occupational performance coaching is a beneficial framework/ method for educating parents because it is well structured, client-centered, and founded on improving clinicians' and parents' confidence.

The proposed solution for this problem is to develop a manualized education program using principles of OPC to improve clinicians' confidence and combine this intervention with the ability to communicate sensory-based strategies to caregivers. This program, called SensABILITY Coaching, provides therapists with the tools and guidance to communicate the sensory preferences gathered from the sensory profile and other needs and ideas to parents of children diagnosed with ASD. The program's overall goal was to indirectly encourage increased participation for these children in daily activities such as sports, leisure, and play via the education of the clinicians that can be passed to caregivers. The SensABILITY program contains manuals for clinicians and caregivers to further their knowledge of the principles of OPC and sensory processing strategies that can be implemented in various situations.

In a qualitative study by Fondacaro et al. (2022), parents participated in interviews and focus groups so the researchers could learn more about how the parents felt about physical activity. The parents in the study discussed how symptoms of ASD improved with physical

activity due to the calming effect and promotion of a healthy lifestyle. The same study also found that each of the parents agreed that physical activity is essential and that increased participation in physical activity is their primary goal for their child. Therapists who understand sensory preferences and use them more often during interventions can help these caregivers meet their children's goals. The next step is to communicate these strategies with the parents so that they can then use the information to improve participation in physical activity.

This capstone project was completed at Ability Innovations outpatient pediatric center. This site uses the Sensory Profile (SP) and strategies daily for children with sensory processing disorders to create techniques for managing decreased emotional regulation. The program has benefited the site by providing effective parent education based on sensory preferences and physical activity. As mentioned earlier, parents want to increase their children's participation in physical activities, which can be done using sensory strategies tailored to their child. SensABILITY Coaching encourages using sensory-based strategies within the principles of OPC, which has been found to improve the perceived confidence of therapists in educating parents on this topic.

Significance of the Project to OT

This project is essential to occupational therapy as occupational therapists have the ability and knowledge to address sensory processing difficulties and promote self-regulation (American Occupational Therapy Association [AOTA], 2020). These sensory preferences affect participation in daily occupations and their motivation. When therapists consider the role of Dunn’s Model of Sensory Processing in daily occupations, they could help parents by providing necessary information and resources to improve participation in daily occupations, including play participation, physical activity (sports and unstructured play), and leisure participation.

Occupational therapy aims to build meaningful occupations for these individuals, creating a healthier and meaningful life by increasing participation in daily occupations and improving sensory processing. This program gives the therapists the tools and knowledge to give parents the answers they seek. OPC is one tool that benefits clinicians as this intervention method helps build effective and meaningful collaborations, so the caregiver is more inclined to use the strategies discussed within SensABILITY. Every OT interviewed for this program development addressed a need and a desire to collaborate more with the caregivers. As OTs, the profession requires methods of cooperation to improve holistic interventions.

Statement of the Problem

Research has suggested that there needs to be more programs and facilities that use sensory strategies when focusing on sensory preferences, possibly due to a need for more public awareness (Fondacaro et al., 2022). Occupational therapists have the tools and knowledge to educate parents on this topic to help parents understand and implement sensory-related interventions based on the child's sensory preferences. Using an exploratory study, Gee and Peterson (2016) found that there needs to be more emphasis on caregiver education regarding sensory processing. Therapists should use more caregiver training to increase caregiver and therapist collaboration by fostering a shared knowledge of sensory processing. One of the principles of OPC is to create this method of shared knowledge and improve on any gaps of knowledge that caregivers may have.

Caregiver and clinician collaboration can result in a more effective therapeutic procedure for those with sensory processing disorders. The problem is that caregivers typically need help understanding the information therapists have provided. This gap creates a need for a more practical approach to improving caregivers' knowledge of sensory preferences and confidence in providing these strategies to their children (Gee & Peterson, 2015). According to Miller-Kuhaneck & Watling (2018), parents have expressed frustration when discussing their child's development with medical professionals due to the challenges in acquiring desired information and needing more details. Parents have also reported a desire to understand their children better and to learn supportive strategies to help their child to be more engaged in activities. Based upon the research process and the conclusion of multiple systematic reviews, occupational therapy practitioners made few contributions to the research supporting its usefulness in the educator role for parents.

An essential function of occupational therapy services for children with challenges in sensory processing is the identification and use of appropriate methods to help teach parents to learn about and understand their child's difficulties, improve specific areas of deficit in their child's performance that are of concern, use or maximize child strengths, and maintain their health and wellness. Additional research on parent coaching from occupational therapy experts focused on meaningful occupations and engagement for children with ASD who have sensory processing concerns is needed (Gee & Peterson, 2015; Miller-Kuhaneck & Watling, 2018). Occupational therapists are well-equipped to coach parents, but continued research is still required and is an essential area for growth (American Occupational Therapy Association [AOTA], 2020).

The proposed educational program contains two parts: to develop a manualized program for clinicians using OPC to effectively communicate with parents of children with ASD when discussing sensory preferences. This program also provides evidence and resources for clinicians to use in therapy and for parents to bring home to encourage participation in daily activities via sensory-based strategies, including play, sports, and other leisure activities. The illustration of this program's need is demonstrated in various articles for more programs explicitly designed for ASD and their sensory preferences. A strength-based client-centered approach encourages participation in occupations identified as parents' primary goal for their child (Kozlowski et al., 2021; Ismael et al., 2018). From this capstone project, SensABILITY Coaching has improved clinicians' confidence and ability to educate these caregivers on sensory processing and their perceived confidence in helping caregivers implement these strategies at home. The research found a need for more effective and consistent parental education.

PIO Question

Will a manualized educational program incorporating Dunn's Model of Sensory Processing and Occupational Performance Coaching (OPC) improve clinicians' confidence in educating parents of children with autism spectrum disorder (ASD) in sensory preferences to enhance participation in meaningful occupations?

Anticipated Outcomes

The SensABILITY Coaching program aimed to increase clinicians' confidence in educating caregivers on principles of sensory processing using concepts of OPC and increase the use of said strategies in other contexts besides the clinic.

Operational Definitions

These definitions are essential components of the research and practice within this program. They are the foundation for ensuring consistency, reliability, and validity in experimental procedures and clinical interventions. This discussion elucidates operational definitions within sensory processing and (OPC), aligning with Dunn's Model of Sensory Processing.

- *Occupational therapy* is a client-centered health profession that promotes health and well-being through meaningful activities or occupations. It is characterized by a holistic approach that addresses individuals' physical, cognitive, emotional, and social aspects across the lifespan.
- *Dunn's Model of Sensory Processing* is a theoretical framework that seeks to understand how individuals process and respond to sensory stimuli from their environment. This model provides a comprehensive framework for assessing and addressing sensory processing difficulties across various populations, including

children and adults with sensory processing disorders, autism spectrum disorders, developmental disabilities, and other neurological conditions.

- *Sensory processing* refers to the complex neurobiological process by which the central nervous system receives, interprets, and organizes sensory information from the environment and the body. Within Dunn's Model of Sensory Processing framework, sensory processing encompasses the modulation, discrimination, and integration of sensory stimuli across multiple sensory modalities, including auditory, visual, tactile, gustatory, proprioceptive, vestibular, olfactory, and interoception sensations.
- *Occupational Performance Coaching* (OPC) is a client-centered intervention approach within occupational therapy that aims to facilitate the achievement of meaningful and personally meaningful goals by enhancing occupational performance. OPC integrates coaching psychology, occupational therapy, and client-centered practice principles to empower individuals to overcome barriers, develop skills, and maximize their participation in valued life activities.

Literature Review

This literature review focuses on multiple articles examining each component of the PIO question. The review will investigate Dunn's Model of Sensory Processing, one of the frameworks used for this capstone, and how it affects occupation participation. Dunn's Model synthesizes the four sensory processing preferences: low registration, sensory avoiding, sensory sensitivity, and sensory seeking. The articles within this section describe what activities individuals with ASD prefer when considering sensory preferences. The following section focuses on educating and coaching clinicians and discussing Occupational Performance Coaching. This section describes the benefits of therapists using this approach when coaching parents on sensory processing. The last section focuses on the benefits of physical activity for this population. This section examines why this project's outcome is valuable and essential to occupational therapy.

Dunn's Model of Sensory Processing

Lin (2020) conducted a cross-sectional study comparing activity participation and sensory processing patterns in children with autism spectrum disorder (ASD) and typically developing (TD) children using Dunn's Model of Sensory Processing and participation assessments. Children with ASD exhibited statistically significant differences in participation compared to TD children, with higher scores in the four sensory quadrants from the Short Sensory Profile (SSP-2). Higher scores in the sensor quadrant correlated with lower participation in play and social activities, as did in the bystander quadrant. Children with high sensory over-responsiveness were less likely to engage in diverse activities. However, intrinsic motivation increased when children participated in activities of interest, suggesting the importance of leveraging strengths to encourage participation. Lin (2020) recommended that occupational

therapists utilize children's strengths and interests to facilitate activity participation and educate parents on employing a strength-based approach. This study supports the need to incorporate sensory preferences into interventions and promote child-led activities within the manualized education program of SensABILITY.

Delahunt and Lawson (2017) conducted a correlational study examining the relationship between adolescent BMI, sensory processing, and physical activity. They utilized the Adolescent/Adult Sensory Profile (AASP) and the Physical Activity Questionnaire - Adolescent (PAQ-A) to analyze sensory preferences and physical activities. The study revealed significant associations between sensory quadrants and various activities, with sensory seeking linked to higher participation in aerobics, tag, skipping, and dancing due to their need for increased sensory input. Adolescents with low registration were more engaged in dance and basketball, while those with sensory avoidance preferred swimming for its consistent pressure and noise suppression. Sensory sensitivity correlated with reduced participation in contact sports like football, likely due to discomfort with protective padding. The findings underscore the impact of sensory processing on activity choices, suggesting that therapists should tailor interventions to align with individual sensory preferences. The results of the capstone project differed from the results of Delahunt and Lawson (2017), as the surveys found that the participation and pleasure for each activity for each sensory quadrant were similar. The different results could be due to multiple factors; however, this finding shows the need for the program SensABILITY as the sensory quadrant should be only a piece of the puzzle, and the clinicians need to ask the caregivers for preferred activities instead of relying on a standardized assessment alone.

Lawson and Foster (2016) investigated the relationships between sensory patterns, obesity, and physical engagement in children with ASD using a retrospective correlational

method. To study these children, the researchers utilized a demographic form, a recreation participation log, a sensory profile caregiver questionnaire, a body mass index and percentile, and a weight-for-age percentile. As an outcome, the researchers observed a significant connection between BMI and sensory avoidance. They also discovered that when it comes to sensory-seeking behaviors, these youngsters engaged in more physically active leisure activities. They found that sensory avoidance had a significant impact on daily living skills and activity participation in persons with ASD. Children who exhibit this avoidance pattern notice more stimuli and withdraw from their environment to avoid sensory overload. As a result, adolescents are less likely to participate in daily activities, including sports. Understanding how sensory processing patterns impact physical activity participation allows practitioners to better construct interventions for individual clients, groups, and communities. Structured environments with low sensory input, such as silent walking or jogging, stationary riding, tae kwon do, swimming, and yoga, can aid children with avoidance behaviors (Lawson & Foster, 2016). This study provides a beneficial insight into how sensory preferences affect participation in daily occupations. Lawson and Foster's article also offers insight into the manualized education program for clinicians, the types of physical activity to suggest to caregivers, and other strategies for increased participation of children with ASD.

Ismael et al. (2018) used a systematic review of the literature on Dunn's Sensory Processing Framework to find the relationship between sensory processing and participation in daily occupations in children with ASD. The benefit of this article to the capstone project is that it only included articles that contained Dunn's Sensory Processing Framework and the Sensory Profile. With these measures and others, Ismael et al. (2018) found that sensory processing significantly influenced participation in daily activities. More specifically, one article found that

sensation-seeking children performed more self-improvement activities in their homes for leisure. They also found that the higher the child's tactile sensitivity, the higher the intensity of their participation in physical activities. For taste and smell sensitivity, the higher the score, the lower the child's participation. Then, for movement sensitivity, the higher the score meant more recreational and informal activities in the home. Children with higher visual or auditory sensitivity performed more self-improvement activities with others. This systematic review also looked at other occupations such as education, social participation, mealtime, sleep, and any other areas of occupation and found that high scores in one or multiple of the quadrants of sensory preferences were negatively associated with those various occupations. The systematic review suggested that higher scores on the sensory profile negatively influence participation in everyday activities across occupations and contexts.

This data brought the author to the conclusion that it is essential to know the child's sensory processing patterns and to consider the contextual factors for clinicians when planning interventions to increase participation for children with ASD (Ismael et al., 2018). For the capstone project, this review demonstrated the importance of understanding the clients' sensory preferences when considering participation. The program's goal is to help clinicians be confident in using Dunn's Model of Sensory Processing when considering physical activity and to communicate effectively with parents to have the tools and resources to increase their children's participation in occupations.

Hertzog et al. (2019) conducted a quantitative study examining physical activity patterns in children with sensory processing challenges (SPC) and their participation in daily activities. Using the Sensory Profile (SP) and Participation in Physical Activity Questionnaire (PQ), they found significant differences in SP scores between control and experimental groups and in

structured physical activity participation. Children with SPC participated in 2.5 fewer hours of physical activity weekly than typical children, although variability was noted. Additionally, SPC children showed higher performance difficulty and lower activity enjoyment scores in the Participation in Childhood Occupations Questionnaire (PICO-Q). The study highlights fewer SPC children engaging in structured physical activities and underscores positive associations between physical activity level, enjoyment, and frequency of play and leisure activities. This emphasizes the relevance of the manualized education program, suggesting that increased physical activity can positively impact participation in essential occupations. The study also indicates the importance of considering sensory preferences in promoting participation and advocates for structured group physical activities in clinical settings tailored for children with SPC, which also outlines the importance of developing the program SensABILITY Coaching.

Little et al. (2016) conducted a longitudinal study to explore the interplay between sensory response patterns and the frequency of activity participation among children diagnosed with autism spectrum disorder (ASD). Their findings revealed that several factors, including autism severity, chronological age, and developmental age, significantly influenced activity participation. Specifically, higher levels of autism severity were associated with reduced participation rates, whereas older chronological age correlated positively with scores on the Home and Community Activities Scale (HCAS) dimensions. The study also highlighted the impact of sensory response patterns on activity participation. Children with heightened hyper-responsiveness exhibited lower scores on HCAS dimensions, indicating decreased overall participation in various activities. Conversely, those with heightened hypo-responsiveness showed increased participation in community and neighborhood-social activities. Additionally, the research identified a preference for parent-child activities over outdoor pursuits among

children with sensory interests, repetitions, and seeking (SIRS) tendencies.

The study underscored the influence of child characteristics and sensory response patterns on activity participation across different settings. Specifically, children with high hyper-responsiveness tended to participate less in activities outside the home, possibly due to the unpredictable nature of external environments. Conversely, those with high hypo-responsiveness demonstrated greater engagement in outdoor activities, suggesting a preference for more stimulating environments. These insights are invaluable for therapists in designing tailored interventions that align with the sensory preferences of children with ASD. Considerations such as indoor versus outdoor settings, surface types (e.g., grass vs. turf), and activity contexts should be carefully evaluated to optimize participation and enhance the therapeutic experience.

Gee and Peterson (2015) utilized a pre-test/post-test, single-group design to evaluate the impact of a caregiver education group on increasing knowledge and competency in managing sensory-related behaviors in caregivers of children with ASD. Participants completed various measures, including the Sensory Processing Learning Tool (SPLT) and the Sensory Processing Knowledge Assessment (SPKA), to assess perceived and actual knowledge of sensory processing concepts. Changes in self-perceived competency were measured using the Caregiver's Self-Efficacy with Sensory-related Behavior in ASD questionnaire. Results indicated an increase in self-perceived knowledge post-education sessions. The authors concluded that structured caregiver education programs could enhance collaboration between caregivers and therapists by fostering a shared understanding of sensory processing. This aligns with the goal of the capstone project, which aims to improve clinician confidence in educating parents on sensory processing to enhance participation in meaningful occupations. The project has incorporated the Caregiver's Self-Efficacy with Sensory-related Behavior in ASD questionnaire from this study into the needs

assessment for caregivers.

The studies conducted by Lin (2020), Delahunt and Lawson (2017), Lawson and Foster (2016), Ismael et al. (2018), Hertzog et al. (2019), and Little et al. (2016) collectively provide valuable insights into the intricate relationship between sensory processing, activity participation, and caregiver education in children with autism spectrum disorder (ASD) and sensory processing challenges (SPC). Lin's cross-sectional study revealed significant differences in activity participation and sensory processing patterns between children with ASD and typically developing children, emphasizing the importance of leveraging children's strengths and interests to facilitate participation. Delahunt and Lawson's correlational study highlighted the impact of sensory preferences on physical activity choices, emphasizing the need for tailored interventions aligned with individual sensory profiles. These studies collectively emphasize the multifaceted nature of sensory processing and its profound impact on activity participation and caregiver education in children with ASD and SPC. The findings provide critical insights for developing tailored interventions, such as the SensABILITY Coaching program, to improve clinician confidence, promote participation in meaningful occupations, and enhance caregiver knowledge and competency in managing sensory-related behaviors. By integrating evidence-based approaches and considering individual sensory profiles, clinicians can effectively support children with ASD and SPC in achieving optimal participation and quality of life.

Occupational Performance Coaching for Clinicians

Miller-Kuhaneck and Watling (2018) conducted a systematic review of studies on interventions that involve training or coaching parents or teachers of children and adolescents with sensory processing difficulties to provide evidence to occupational therapy practitioners to support their decision-making. This review also offers therapists information to help them direct

treatments, such as training or coaching for parents or teachers of children with sensory processing issues to enhance their development and growth. In their systematic review, the four articles reported improvements in either child or parent stress or distress and child performance or behaviors after multiple training sessions with parents. These articles also reported improved ability of parents to implement interventions with fidelity, improved child self-regulation, and enhanced parental self-efficacy, as was found by parent reports. A limited number of articles met their inclusion criteria, affecting the strength of evidence for these results overall. This systematic review discusses a need for more research on parent and teacher training and coaching via occupational therapy professionals and longitudinal studies to examine the impacts of new training and coaching models. Miller-Kuhaneck and Watling (2018) concluded that parent training and coaching interventions are effective and that practitioners should be encouraged to increase involvement with parents. As for this program, SensABILITY, the purpose is to create a program for clinicians to coach parents on sensory strategies, which is the focus of this article. With the parents being more involved in the process and coached on the benefit of sensory-based strategy, the outcomes include increased participation and decreased maladaptive behaviors.

Ghaffari et al. (2022) used a single-blinded, parallel-group randomized clinical trial to investigate the efficacy of Occupational Performance Coaching (OPC) with and without the Four Quadrant Model of Facilitate Learning (4QM) in mothers of children with Specific Learning Disorders (SLD). This study recruited 30 participants for the control (only OPC) and 30 for the experimental (OPC and 4QM) groups. The OPC approach protocol focused on emotional support, information exchange, and process structure. The 4QM protocol concentrates on teaching and learning methods using direct and indirect teaching strategies. Also, it focused on

clustering the initiation source, first the mother as a facilitator and then the child as a learner. This article suggests that adding 4QM to OPC may enhance the learning needs of mothers from their child's level of learning, which leads to superior outcomes for mothers and their children with SLD. The study also concluded that OPC might improve participation in activities outside of school for children with SLD, with multiple assessments that look at involvement before and after coaching sessions. This article applies to the capstone project as one of the indirect goals of this program is to improve the participation of children with ASD in daily occupations, including physical activity, by coaching the parents on sensory processing techniques. 4QM with OPC is the theoretical framework this capstone program uses to develop a holistic and client-centered approach to coach understanding sensory preferences and participation in daily occupations.

Graham et al. (2013) used a one-group time series design to examine the effectiveness of occupational performance coaching in improving children's and mothers' occupational performance and parenting self-competence. This coaching method or OPC included three domains: emotional support, information exchange, and a structured process. According to the study results, the children's performance differed significantly before and after OPC sessions. With a 6-week follow-up, Graham et al. found that the improvements were maintained, and mothers' satisfaction with their child's performance on the goals addressed during OPC sessions improved significantly during that time. The initial scores on the Parenting Sense of Competence Scale (PSOC) were low overall; after the OPC sessions, researchers found that the mothers' self-confidence in parenting roles improved significantly. The researchers found clinically significant improvements in all goals after OPC intervention and at a 6-week follow-up. The researchers discussed that this could be due to the parents collaborating on the goals, making it more meaningful for them and their children. This study concludes that using OPC when working with

mothers toward goals is beneficial and may lead to generalized improvements in children's performance in other occupations beyond specific activities or goals addressed during the intervention. Some limitations of the study include the absence of a control group and potential biases, as there was a lack of control of extraneous variables. This study is beneficial to this capstone program, which used OPC as a framework to focus on improving performance goals identified by the client. When discussing sensory processing strategies, the idea is to have therapists also use the three domains of OPC, as outlined in this study. The clinicians would also use the goal attainment scale (GAS) to keep the goals client-centered, just as this article did.

In a qualitative study, Foster et al. (2013) wanted to understand the perceptions of mothers of children with ASD who participated in ten one-hour coaching sessions. The study's researchers interviewed mothers after the process of OPC intervention using open-ended questions and subsequent probing questions to understand the mother's perceptions of the coaching process. The researcher found five common concepts in the mothers' answers from these interviews and the data analysis. These included parent-coach relationships, analysis, and reflection explaining the change mechanism during coaching. The other two concepts, mindfulness and self-efficacy, were outcomes of the coaching intervention. Foster then concluded that coaching could lead to a perceived sense of mindfulness and self-efficacy for mothers of children with ASD. The mothers found coaching as a way to become more mindful of the contextual factors and routines related to their child and family's performance. Mothers from the study also reported feeling empowered after the interventions, which gave them confidence when being active problem solvers with the therapist. A limitation of the study was that they only interviewed ten caregivers, which affected their ability to generalize. Even with this limitation, this study has benefited the program development of SensABILITY as the caregivers

expressed how much they appreciated talking with therapists using the OPC intervention strategies and mentioned the benefits of OPC to the caregivers and their children.

Graham et al. (2014) conducted a mixed-methods study to examine the effectiveness of OPC in enabling the occupational performance of parents and children with occupational performance difficulties. These researchers used surveys from mothers of children with intellectual disabilities and Asperger's syndrome, some of whom did not have any medical diagnosis. In those surveys of mothers who had experiences with OPC, they reported that the work and time it took to move towards goal achievement was worth the effort as each experienced change and began recommending the intervention to other caregivers. The most common response (90%) from mothers was very positive. As in the previous article, the mothers felt empowered by the requirement to think deeper about the situation and their children.

Graham et al. (2015) used a qualitative study to examine strategies mothers reported as effective in facilitating children's successful performance in activities they identified as goals during OPC. The mothers discussed valuable opportunities to learn and adapt to challenging situations and felt that OPC had led them to improvements in their children's performance. One of the limitations found within the article is the inability to generalize to multiple populations due to a low sample size, and the mothers all had high education and were located in wealthier neighborhoods. The findings could be biased as these mothers were experienced in OPC and preferred the intervention. The researchers concluded that these mothers have gained valuable experience learning new ways of helping their children and themselves achieve occupational performance goals. In answering their question, the authors believed that coaching is an effective tool for working with mothers of children with occupational challenges. As in the previous article, this intervention was adequate for a few mothers and their children. The program

development of SensABILITY focuses on using principles of OPC to help caregivers feel empowered and able to make decisions in their therapeutic care. To enhance the participation of children in activities of daily living.

Kahjoogh et al. (2018) used a parallel single-blind randomized controlled trial to assess the efficacy of OPC in mothers of children with cerebral palsy. The author gathered thirty participants and used the Canadian Occupational Performance Measure (COPM) and the Sherer General self-efficacy scale to understand the efficacy of OPC. Both measures were found to be both valid and reliable. As evident from the measures, those who participated in OPC have increased their performance and satisfaction with their identified goals compared to those in their control group, who were given Neuro-developmental Treatment (NDT). The researchers reasoned that the mothers were more motivated than the control group to complete their goals as they were treated as equal partners and could create their own goals. Participants of OPC also experienced significant progress with their self-efficacy as they learned to find solutions and use effective strategies to overcome their existing challenges. Unlike the other articles, the therapists of the study were not formally trained in OPC; therefore, adherence to the OPC approach could not be confirmed. Another limitation is that demographics, such as socioeconomic status, were not considered, which would affect the manner of the mother's life. The researchers also realized within their study that they could have used the Gross Motor Function Classification System (GMFCS) to examine the changes in the child's physical functioning and behavior. This would have been beneficial since it is a more direct assessment than surveys and interviews. This article is helpful in the development of SensABILITY because it has a different population than the other articles used within this literature review. Showing that OPC is impactful to multiple populations increases the generalizability of the intervention.

Graham et al. (2018) conducted a qualitative study exploring physiotherapists' and occupational therapists' experiences with Occupational Performance Coaching (OPC) and its implementation factors. Sixteen therapists participated in interviews and focus groups, highlighting OPC's perceived benefits, such as enhanced caregiver disclosure, empowerment through self-discovery, and improved goal setting. Therapists noted challenges in relinquishing control and ethical dilemmas in shared responsibility with caregivers. While many found OPC beneficial, some expressed discomfort and difficulties in implementation, particularly in interdisciplinary settings. The study aligns with the SensABILITY project's aim to boost clinicians' confidence in caregiver education, underscoring the value of OPC in supporting caregivers. However, the study's focus on only two therapist types limits generalizability, suggesting further research across diverse therapist populations and patient demographics to expand OPC's applicability.

The evidence from various studies on this topic section underscores the effectiveness of interventions to train or coach parents and teachers of children with sensory processing difficulties and other related challenges. Miller-Kuhaneck and Watling's (2018) systematic review highlights the positive outcomes of parent training and coaching interventions, emphasizing improvements in child and parent stress, child performance, and parental self-efficacy. This supports the rationale behind programs like SensABILITY, which aims to empower clinicians to coach parents on sensory strategies, ultimately leading to increased participation and decreased maladaptive behaviors in children.

Additionally, research such as that conducted by Ghaffari et al. (2022) and Graham et al. (2013) demonstrates the effectiveness of Occupational Performance Coaching (OPC) in enhancing learning needs, improving child performance, and boosting parental self-confidence.

Foster et al. (2013) further elucidate the positive impact of coaching interventions on mindfulness and self-efficacy for mothers of children with ASD, emphasizing the empowerment gained through the process. The studies by Graham et al. (2014, 2015) and Kahjoogh et al. (2018) provide insights into the efficacy of OPC across diverse populations, including children with intellectual disabilities, Asperger's syndrome, and cerebral palsy. Despite limitations in some studies, such as sample size and generalizability, the evidence supports the integration of OPC into therapeutic interventions like SensABILITY to improve caregiver education and enhance participation in daily occupations.

Lastly, Graham et al.'s (2018) qualitative study highlights the perceived benefits and challenges of implementing OPC among therapists, emphasizing the importance of further research across diverse therapist populations and patient demographics to expand OPC's applicability. Overall, these findings contribute to a growing body of knowledge supporting the efficacy of coaching interventions in improving outcomes for children with sensory processing difficulties and their families and the benefits it has to add to this capstone project.

Participation in Meaningful Occupations: Physical Activity

Kozlowski et al. (2021) investigated strategies to enhance physical activity levels in children with ASD, who often face challenges due to social and motor deficits and restricted interests. The program comprised 19 sessions on skill development, workouts, and game-related activities. Data collection included measures of work production, activity levels within sessions, and pre/post-test exercises targeting aerobic endurance, strength, flexibility, and more. The interventions emphasized various physical components tailored to participants' age and skills, with sessions comprising a mix of exercises. A response-cost behavior system assessed behaviors, and fidelity checklists and satisfaction surveys were used to gauge success. Results

indicated benefits for children and staff, demonstrating the feasibility of modified physical activity. The authors emphasized the importance of interventions improving motor skills and social interactions, especially for children with more severe cognitive and language functioning. They highlighted the need for tailored exercise interventions for this subgroup, as the study identified a gap in the research for this area. Overall, the study underscores the importance and feasibility of physical activity interventions for children with ASD, aligning with the goals of the capstone project to enhance overall participation in occupations, including physical activity, through effective coaching on sensory processing strategies.

Najafabadi et al. (2018) investigated the efficacy of the Sports, Play, and Active Recreation for Kids (SPARK) program in improving motor and behavioral skills among children with autism spectrum disorder (ASD). Employing a quasi-experimental design, the study randomly assigned 12 participants to the SPARK intervention group and 14 to the control group. The SPARK program consisted of three 40-minute weekly sessions, focusing on healthy fitness activities, such as aerobic dancing and jogging games, and skill-fitness activities, including various sports like soccer and basketball. The research findings indicated significant enhancements in motor skills, particularly in balance and coordination, and improvements in social interaction skills among children with ASD who participated in the SPARK program. The study underscored the importance of daily physical activity for this population, emphasizing its role in strengthening muscles, increasing frequency through repetitive exercises, boosting motivation and self-esteem, and refining cognitive strategies to enhance task performance. The authors highlighted the value of offering diverse activities within the SPARK program, allowing children with ASD to choose activities that align with their comfort levels and preferences. They suggested that clinicians could draw upon the SPARK program's principles to design engaging

and tailored interventions for children with ASD, fostering participation and skill development in physical activities.

Vella Fondacaro et al. (2022) conducted a retrospective analysis of parental perspectives regarding individual and group physical activity in youth with ASD, exploring associated challenges. The study involved 10 participants across varying ASD severities, employing semi-structured interviews and focus groups for data collection. Results revealed that most parents perceived their children's social interaction and communication during physical activities as passive. Preferences for individual versus group sports varied among parents, with some indicating a lack of opportunities and ASD-friendly resources and facilities. The study highlighted the need for increased public awareness and reduced stigma surrounding ASD, emphasizing the potential benefits of physical activity in improving ASD symptoms and promoting a healthy lifestyle. The findings underscored the importance of equipping therapists with sensory strategies to coach parents on facilitating their children's participation in daily occupations, including physical activity. Additionally, the study recommended staff training to create ASD-friendly environments and parental support services to alleviate caregiving burdens, ultimately enhancing public awareness and reducing stigma. These insights align with the objectives of the proposed manualized education program, which aims to train staff on sensory processing and enhance the participation of children with ASD in their daily activities.

The studies by Kozlowski et al. (2021), Najafabadi et al. (2018), and Vella Fondacaro et al. (2022) collectively highlight the significance of tailored interventions to enhance physical activity levels and overall well-being in children with autism spectrum disorder (ASD). Kozlowski et al. (2021) demonstrated the feasibility and benefits of a modified physical activity program, emphasizing the importance of improving motor skills and social interactions,

especially for children with more severe cognitive and language functioning. Similarly, Najafabadi et al.'s (2018) investigation into the efficacy of the SPARK program highlighted significant improvements in motor and social interaction skills among children with ASD, reinforcing the importance of diverse and engaging physical activities tailored to individual preferences. Furthermore, Vella Fondacaro et al.'s (2022) retrospective analysis illuminated the challenges faced by parents in facilitating physical activity for their children with ASD, emphasizing the need for increased public awareness, ASD-friendly resources, and parental support services. Together, these findings align with the goals of the proposed manualized education program to train clinicians on sensory processing strategies and enhance the participation of children with ASD in daily activities, including physical activity, thereby promoting holistic well-being and reducing the stigma associated with ASD.

Conclusion of Literature Review

In summary of this literature review, to be a client-centered and holistic profession and when working with ASD, therapists need to understand sensory processing and how it can intervene with daily occupations. The collective body of research underscores the critical importance of tailored interventions in addressing the multifaceted needs of children with autism spectrum disorder (ASD) and sensory processing challenges (SPC). The studies reviewed provide valuable insights into the intricate relationship between sensory processing, activity participation, caregiver education, and overall well-being. These findings underscore the complex interplay between sensory processing and activity engagement, informing the development of programs like the SensABILITY Coaching program to enhance clinician confidence and caregiver competency.

The synthesis of these studies contributes to a growing body of knowledge supporting the efficacy of tailored interventions in improving outcomes for children with sensory processing difficulties and ASD. By addressing the diverse needs of these individuals through evidence-based approaches, such interventions have the potential to promote holistic well-being, reduce stigma, and empower both clinicians and caregivers in supporting children with ASD to achieve optimal participation and quality of life. Further research and implementation efforts are warranted to expand the applicability and effectiveness of these interventions across diverse populations and settings. The question of this program is whether the principles of OPC and the material from Dunn's Model can benefit clinicians in educating parents to get their children more engaged in their daily occupations. The literature discussed that OPC is an effective strategy for educating parents as they feel more empowered and engaged in the intervention process, improving overall caregiver education. Dunn's model and other sensory strategies have improved the client's interaction with daily occupations, as shown in the research. Therefore, based on the research, one can theorize that these two principles can improve a clinician's confidence in educating caregivers on sensory processing to improve participation in daily occupations.

Statement of Purpose

The SensABILITY Coaching program aimed to create a manualized educational program to provide data on OPC sensory processing patterns and principles. This allows the occupational therapist to consider interventions to encourage increased physical activity based on those identified preferences in collaboration with the caregiver. This capstone project hypothesizes that implementing a manualized educational program utilizing OPC significantly increases therapists' perceived confidence in addressing Dunn's Model of Sensory processing and its impact on participation in daily occupations for children diagnosed with ASD when educating parents.

Developing an educational program for therapists addressing Dunn's Model of Sensory Processing was meant to improve the participation of children diagnosed with ASD in physical activities and advance current parent education. The project's outcome was to increase confidence in using Dunn's Model of Sensory Processing when considering interventions for physical activity and overall confidence in caregiver collaboration via the use of the domains of OPC. Other objectives of SensABILITY Coaching after use were to build an effective power-neutral relationship between each of the caregivers and find methods for increased use of sensory strategies in multiple contexts.

Theoretical Frameworks

The chosen theoretical frameworks are the Four-Quadrant Model of Facilitated Learning (4QM) used with Occupational Performance Coaching (OPC) and Dunn's Model of Sensory Processing Framework. The 4QM provides a framework for understanding the teaching-learning process and planning the facilitation of learning for critical skills related to occupational goal attainment. This framework is an effective strategy for guiding the participants in carrying out occupational tasks by identifying and overcoming barriers to participation. This framework has

four quadrants for completing these goals. The first quadrant focuses on the characteristics of the task and the performance requirements. The second quadrant encourages decision-making by those included in the program through indirect facilitator-initiated prompts. Quadrant three encourages the participants through prompts to recall key points, and Quadrant four consists of a series of metacognitive and cognitive strategies that help the participant's autonomy and independence. This learning process encourages occupational performance through supporting task mastery, involving the therapist acting as a learning facilitator (Ghaffari et al., 2021; Ghaffari et al., 2022; Greber et al., 2011).

OPC is a strength-based approach for working with people affected by occupational performance challenges. OPC focuses on improving performance as identified by the client and caregivers. Coaching is used as a collaborative approach with the family to identify and detail these goals focused on improvements in performance and participation. OPC uses four domains: emotional support, information exchange, structured process, and collaborative performance analysis. These domains are beneficial to empower parents and the whole family so that they feel competent in their roles in providing for their child with ASD (Graham et al., 2013). With the addition of the 4QM as a reinforcement tool, the OPC can enhance parents learning needs and facilitate the teaching of necessary skills by clinicians to parents to achieve increased overall confidence in helping their children to participate in their desired occupations (Ghaffari et al., 2021; Ghaffari et al., 2022). The 4QM with OPC was used as the framework for the manualized education program following the four quadrants to provide therapists with steps for educating parents and giving parents the tools for increased participation in physical activities for their children with ASD.

Dunn's Model of Sensory Frameworks focuses on a person's reaction to daily sensory events to reflect a particular threshold, either high or low, and a self-regulation or responding strategy (passive or active). Four patterns of sensory processing emerge from a person's potential reactions to these daily sensory events, which include Low registration, which represents a high threshold, and a passive self-regulation strategy, meaning that these individuals typically do not register sensory events that others do; Sensation seeking, which represents a high threshold and an active self-regulation strategy, meaning that these individuals enjoy and extend their sensory experiences; Sensory sensitivity, which represents a low threshold and a passive self-regulation strategy, meaning that these individuals notice more sensory event than others usually do; and Sensation avoiding, which represents a low threshold and active self-regulation, meaning that these individuals typically find ways to limit sensory events and prefer to create rituals for their daily routines. Dunn's Model uses these sensory patterns/ preferences to assess participation and predict reactions to stimuli in different contexts such as the home, school, and community. This framework also focuses on activity demands and environmental aspects of participation rather than emphasizing performance skills and client factors.

Dunn's Model of Sensory Processing framework assessed the children's sensory preferences via the Sensory Profile and the demands of physical activity in various environments (Ismael et al., 2018). The demands of each activity and environmental factors cater to specific sensory patterns, which is why it is beneficial to understand the children's sensory processing patterns when developing interventions at the clinic and in the home (Little et al., 2015). Together, these frameworks can create a cohesive educational program using the 4QM with the OPC to be client-centered and collaborative in goal-making by identifying potential barriers to participation, such as sensory processing challenges/ preferences found in Dunn's Model of

Sensory Processing framework. This is meant to find activity demands, identify potential barriers to participation, and find possible solutions with sensory-based strategies.

Methodology

Site: Ability Innovations

This educational program was implemented at the Ability Innovations outpatient clinic in Layton, Utah, with the site mentor, Aarone Cefalo, OTD/ OTR/L, and manager. Ability Innovations uses play-based therapy and client-led interventions to create a cohesive/ collaborative atmosphere with the child. Ability Innovations also frequently uses the Sensory Profile and sensory-based interventions and is a beneficial clinic for this program. The clinicians there were well-versed in sensory preferences and helped provide valuable feedback on the research and changes to the project. This project added a manualized education program comprising sensory-based strategies and handouts for parents that can be used at home and in the clinic to encourage participation in daily activities. It also focused on creating methods for clinicians to communicate these sensory needs and ideas to parents using OPC. The third-year student and author of the program implemented a fieldwork level II rotation at this site, which gave the author of this program the chance and opportunity to observe the daily functions of the site and establish communication with staff that currently work there. This opportunity provided the author with time at the facility to learn more about their processes and the potential need for additional education on effective communication with parents on sensory patterns and the use of participation in meaningful occupations.

Design of Program

This project focused on program development design. Program development includes four phases: the design and planning phase, which lasted from January to the beginning of February 2024; the preparation phase, which lasted from February into the beginning of March;

the implementation phase, which lasted for the rest of March; and the program review and evaluation phase, which lasted the month of April (see Appendix D).

Planning and Preparation

Sampling and Criteria

The planning phase started with finding participants who were parents of children diagnosed with ASD ages 5-17 willing to participate in the needs assessment. The sampling method used was convenience sampling, which was gathered via the database provided at the clinic and suggested participants by clinicians. A total of 50 participants were recruited, with 25 males and 25 females. The severity of the diagnosis or other demographics were not gathered. Next, the facility's clinicians were asked to participate in the program development, with 10 licensed OTs agreeing to participate in the pre-and post-confidence survey. For the quality improvement, 10 clinicians agreed to participate. This included six OTs, one occupational therapist assistant (COTA), one Speech-Language Pathologist (SLP), and one Physical Therapist (PT). The participating clinicians had 2 to 10 years of experience in their fields. All the clinicians who participated were female. After selecting participants, they were asked if they would be interested in participating in the program development process, and they were given an Informed Consent Form (see Appendix A). They were notified of what assessments they would be a part of and the objectives/ outcomes of the program (see Appendix C).

Needs Assessment

An on-the-ground needs assessment was conducted via in-person interviews/ surveys with the clinicians and interview/online surveys with the parents (Appendix B). This procedure allowed for an increased understanding of the gaps in communication between parents and clinicians, the perceived confidence and knowledge of sensory processing, and how it affects

participation in physical activities, including play, sports, and other leisure activities (structured or unstructured). This author created the questions for the interviews and surveys for the clinician confidence questionnaire, which multiple professionals evaluated to assess if the questions were valid and reliable for the program's goals. The needs assessment created for the parents was used from a survey called A modified version of The Caregiver Self-Efficacy with Sensory-related Behavior in ASD questionnaire written by Gee & Peterson, 2015. It was beneficial to assess the thoughts and perceived understanding of the clinicians and the parents because they showed how effective the therapists believe in their parents' education and their current confidence levels. The parents provided an understanding of how much is being understood and their ability to use sensory-based strategies. This information has shown the necessity of the education program to guide clinicians in providing effective parent education that was used and implemented in other contexts. The surveys and interviews helped to develop goals and objectives for the program. A pre-and post-confidence interval for communication with parents was provided to clinicians to assess current confidence in educating parents on sensory processing. Questions were vetted and evaluated for validity and reliability by the site mentor, faculty mentor, and other professionals.

Sensory Profile and Modified Child Participation Questionnaire

The assessments that were administered to the parents as interviews were the Child Sensory Profile 2 (SP-2) (for children ages 3-14) or the Adolescent Adult Sensory Profile (AASP) (for children ages >14). Both were used as parent interviews, which find the sensory preferences of the parent's children and are valid and reliable (Lin, 2020; Hertzog et al., 2019; Ismael et al., 2018; Delahunt & Lawson, 2017; Lawson & Foster, 2016; Schaaf et al., 2013). The parents were also given a Modified Child Participation Questionnaire (M-CPQ), an assessment

given to the parents to fill out for their child during an interview for any additional questions on the assessment. This questionnaire provided information on the child's activities and their pleasure in said activity. It was created using activities found within the physical activity questionnaire and an actual assessment used by Rosenberg et al., 2010, which both were found to be reliable and valid (Hertzog et al., 2019; Delahunt & Lawson, 2017; Bandini et al., 2012).

The next step in the planning phase included reviewing and researching similar existing programs and continuing education units. A thorough examination and inspection of other programs relevant to this education program to improve clinician confidence in educating parents on Dunn's Model of Sensory Processing and OPC was performed to provide a greater context of the strengths and weaknesses of such program. More research benefited the program by continuously improving the literature review of the effectiveness of this manualized education program by reviewing sensory processing strategies and the manner of effectively using OPC. Participating in continuing education units was done throughout the planning and preparation phases of the program via videos, books, and in-person training. They also provided additional guidance in communication styles with parents and sensory processing strategies for children with ASD. More recent research provided relevant, current, and evidence-based information for the capstone experience, leading to the author's further education and knowledge base.

The following program development phase was the preparation phase, in which the AASP or SP-2 and the Modified Child Participation Questionnaire were scored during this phase. The data gathered from the sensory profile was correlated with the Modified Child Participation Questionnaire to assess if there are certain daily occupations in which children with specific sensory preferences participate more and find more pleasure. This was done by taking the data from the Sensory Profile, and if the child, for example, had much more than others for

sensory seeking, they were put into Excel with their preferred activities. The data for participation and pleasure for each activity was taken and correlated similarly to each sensory preference. This data was then added to the manualized educational program, and data was collected from other research on this topic. These results helped provide clinicians with the resources and ideas for interventions for these clients. The data from surveys and interviews also provided the depth required for the educational program and the specific goals parents and clinicians want to address when communicating and collaborating. The next step was to create a manualized education program based on the data received.

Program Implementation

The implementation phase was used as a time to educate therapists on the manualized program using OPC strategies when communicating with parents to increase confidence in their ability to communicate Dunn's Model of Sensory Processing (sensory preferences) and how it relates to daily activity participation, the education consisted of two 45 min training on OPC and sensory-based strategies for improved participation. Along with the presentation, two manuals were created, one educating clinicians on aspects of OPC and its benefits. The other manual was geared toward educating parents on the importance of sensory processing and strategies for helping to self-regulate their child. Then, a quality improvement questionnaire was administered via an online survey to assess feedback concerning the program, which also consists of a SWOT analysis. The clinicians of Ability Innovations completed these questionnaires, including Speech-language pathologists, Physical therapists, and Occupational therapists. This survey was sent to all therapists for a larger sample and to see the thoughts of other disciplines. To minimize bias and to assess if the questionnaire is valid and reliable for measuring quality improvement, they were evaluated by multiple professionals, such as the site mentor, faculty mentor, and other

professionals. The occupational therapists also participated in an in-person interview post-confidence questionnaire.

Program Review and Evaluation

The final phase of the program development design was the review and evaluation phase. This phase focused on taking clinicians' feedback to improve the program and evaluating the pre/post-confidence questionnaire results. It also consisted of editing the manualized education program to create a final draft given to the clinic. The following steps were to do a data analysis acquired from the quality improvement questionnaire and the pre-and post-confidence intervals, to identify themes from responses and potential gaps in the program, and to see if the education benefits the clinicians at Ability Innovations. This also included a SWOT analysis, which provided information on the program's perceived strengths, weaknesses, opportunities, and threats. The final step was disseminating the results and transferring the information to the capstone manuscript. The results provided improvements to the manualized educational program. With consultation, collaboration, and insight from the facility's faculty mentor, site mentor, and other occupational therapists, adjustments and adaptations were incorporated into the final version of this manualized educational program.

Ethical and Legal Considerations

For ethical and legal considerations of the project, the anonymity of participants was documented as codes for each individual instead of names, so in the results, all that was seen were codes for what a specific child had for sensory preferences, how much participation in physical activity they have, and the goals that the parent had for education from the clinician. Also, the surveys from parents and therapists were anonymous. Informed consent was gathered so that parents and therapists could participate in the planning phase of the program for the use of their medical information and participation in assessments. Caregivers and therapists were also well-informed about the program procedures and overall goals from the consent form and program descriptions. When interested, they were provided with program results via email. This program development has also received approval from the IRB.

Results

50 participants were recruited for this project. Of those participants, 16 of those caregivers dropped out due to needing to finish the required material or declining to continue. The total number of caregivers who finished the needed material was 34. Of those 34, each child was confirmed to have a diagnosis of ASD via parent and files on the Ability Innovations system. Other demographics, such as the age and gender of the children diagnosed with ASD, were gathered from participants. The study consisted of participants living in Salt Lake and Ogden, Utah. The average age range was eight, ranging from five to fifteen, with 24 males and only 10 females (see Table 1).

Table 1: Demographics of Participants

Caregivers' children		
Variable		Total sample (n=34)
Gender (n, %)	Male	24
	Female	10
Age in Years (n, %)	5	6
	6	6
	7	2
	8	6
	9	4
	10	4
	11	2
	12	1
	13	1
	14	1
	15	1
Clinicians		
Variable		Total sample (n=10
Profession	Occupational Therapist	6
	Occupational Therapist Assistant	1
	Speech Language Pathologist	1
	Physical Therapist	1
	Staff Member	1

To understand how Dunn's Model of Sensory Processing relates to daily occupations, correlations and descriptive statistics of sensory quadrants from the AASP or SP-2 and individual daily activities from the M-CPQ were conducted to find the means of each activity compared to each sensory quadrant. See Figure 1 for activity participation compared to sensory quadrants and Figure 2 for activity pleasure compared to the sensory quadrants.

Figure 1: Activity Participation

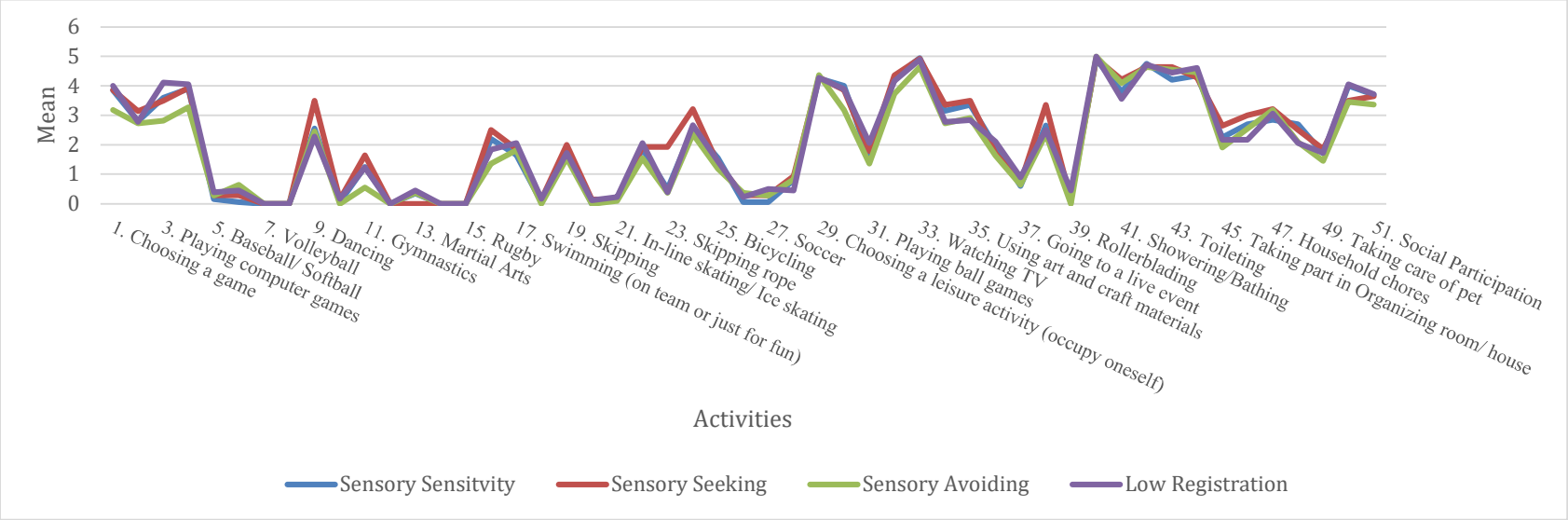
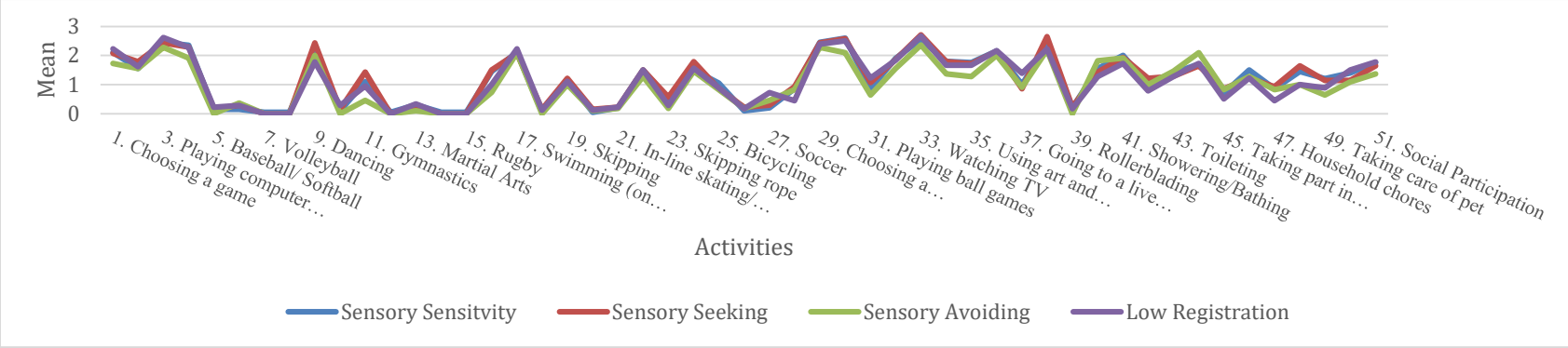


Figure 2: Activity Pleasure



Note. Figures 1 and 2 demonstrate the means gathered from the descriptive statistics of each activity for each sensory quadrant.

Descriptive statistics were also collected from the modified Caregiver Self-Efficacy with Sensory-related Behavior in ASD questionnaire by caregivers to find the mean, median, mode, standard deviation, and sample variance. Along with the open-ended questions within the in-person survey, the data showed an average of 3.5/5 for knowledge of sensory processing, and caregivers expressed a need for sensory-related activities they could do in the home (see Table 2). The standard error was an average of 0.13, the standard deviation was 0.81, and the sample variance was 0.65. Common answers within the needs assessment for caregivers found from the analysis were how to apply sensory strategies in multiple settings such as school, home, and public; strategies to calm their child; triggers, causes, and signs of dysregulation; and what each sensory quadrant entails.

Table 2: The Caregiver Self-Efficacy Questionnaire

Question Content	Descriptive Statistics					
	Mean	Standard Error	Median	Mode	Standard Deviation	Sample Variance
Confidence with sensory	3.67	0.11	4	4	0.68	0.46
Difficulty with sensory	3.14	0.14	3	4	0.83	0.69
Positive effects of sensory	3.81	0.14	4	4	0.82	0.68
Satisfaction with sensory	3.44	0.14	4	4	0.84	0.71
In control of sensory	2.89	0.15	3	3	0.88	0.78
Understand what the therapist says	4.1	0.13	4	4	0.77	0.59

Note. Likert scale. 1 (Not at all…) – 10 (Very…)

10 licensed OTs were recruited, and one Occupational Therapist Assistant (OTA) was to fill out a pre/post-confidence survey using a five-point Likert confidence scale (see Appendix B). A Wilcoxon Signed Rank test, within Excel software, with a Cronbach alpha of 0.05 for the pretest and posttest data, found that the clinician's confidence had a p-value of 0.005, showing statistical significance after educating clinicians on SensABILITY (see Table 3). The confidence assessment also included a section of open-ended questions, which were analyzed for common answers with coding. Most clinicians from these questions described a need for caregivers to follow through with the plan created for them. They also needed more strategies to adjust to multiple contexts, situations, and sensory quadrants. Another common theme from the open-ended questions is that the parents would understand important concepts from sensory processing

and OPC. Material from open-ended questions was added to the manuals to provide solutions for caregivers and clinicians.

Table 3: The Clinician Needs Assessment/ Confidence Survey

Wilcoxon Signed Rank Test

Question Content	Mean		Standard Deviation		P-Value
	Pre	Post	Pre	Post	
Confidence when educating caregivers	3.9	4.5	0.738	0.527	0.005*
Confidence caregivers understand the information provided	3.1	4.2	0.738	0.422	0.005*
Confidence with Dunn's Model	3.2	4.3	1.398	0.483	0.005*

**Signifies statistical significance*
Note. Likert scale. 1 (Not at all…) – 10 (Very…), Cronbach alpha = 0.05. This data was gathered from a pre/post-clinician confidence survey, and a Wilcoxon Signed Rank Test was performed to find statistical significance. A p-value of 0.005 was found for each question, showing statistical significance. The means and standard deviation were also provided for each question to show improvement between the pre-and post-test.

In the last step after the education on SensABILITY, descriptive statistics were completed within Excel for a quality improvement survey to find the mean, standard deviation, and sample variance. The survey also included a SWOT (Strength, Weakness, Opportunities, and Threats) analysis that was given to all clinicians, including six OTs, one occupational therapist

assistant (COTA), one Speech-Language Pathologist (SLP), one Physical Therapist (PT), and one staff member present during the education piece (see Table 4).

10 participants were in the quality improvement survey, and the data showed an average of 4.4 for each question. Overall, the questions had an average standard error of 0.189 and a standard deviation of 0.597. The sample variance resulted in an average of 0.375. Multiple therapists and staff mentioned they felt this program could be very successful. One staff member stated in an interview, "As a parent (even though I do not have any children with ASD), I honestly think other parents would go for a program like this. We know, and they know, that most of the work happens at home. Giving parents the tools and the confidence to implement strategies that benefit their children is the goal all party members strive to achieve." The SWOT analysis found multiple common areas in each factor of the SWOT analysis. These common answers from each factor of the SWOT analysis can be found in Table 5.

Table 4: The Quality Improvement Survey

Question Content	Descriptive Statistics					
	Mean	Standard Error	Median	Mode	Standard Deviation	Sample Variance
Capacity for clinical application	4.7	0.15	5	5	0.48	0.23
Willing to implement	4.3	0.15	4	4	0.48	0.23
Describes sensory processing	4.2	0.2	4	4	0.63	0.4
Understands OPC	4.1	0.27	5	5	0.84	0.71
Builds up confidence to meet needs	4.3	0.15	4	4	0.48	0.23
Builds up confidence in educating caregivers	4.6	0.16	5	5	0.52	0.27

Note. Likert scale. 1 (Not at all…) – 10 (Very…)

Table 5: SWOT Analysis Overarching Themes

Factor	Summarized Content		
Strengths	Multiple resources/ data	Well-rounded program	Empowers caregivers
Weaknesses	It may be challenging to initiate	It may take more time per session	Some parents may not be open to the program
Opportunities	Increased collaboration	Generalizable to multiple settings	Resources for Parents
Threats	Time commitments to learn a new strategy	Seems too simplistic	

Discussion

This program addressed whether a manualized educational program incorporating Dunn's Model of Sensory Processing and Occupational Performance Coaching (OPC) will improve clinicians' confidence in educating parents of children with autism spectrum disorder (ASD) in sensory preferences to enhance participation in meaningful occupations. To answer this question, manuals were created on SensABILITY, and a caregiver workbook was created using data from the needs assessments and research on sensory processing and OPC. As part of the capstone project process, the therapists received a pre/post-clinician confidence survey for ten occupational therapists and a quality improvement survey for ten clinicians, including speech-language pathologists, physical therapists, and occupational therapists.

During the design, planning, and preparation phase, the needs assessment, sensory profile, and a modified child's participation questionnaire were provided to the therapists and the parents of children diagnosed with ASD. The data from the SP was difficult to correlate with the MCPQ, as many of the children at the clinic had multiple sensory quadrants. Each child was put into multiple quadrants based on their results. The results from the literature review had specific activities that were better for each sensory quadrant, and the data found for this program was not significant for any of the activities. Each activity had almost the same ratings across each sensory quadrant with slight variation. This could be due to statistical methods, population sizes, and location differences. However, the results shown in the assessments benefit this program as they show that no one activity is better for a specific sensory quadrant. It is more dependent on the child diagnosed with ASD.

There needs to be a program that can answer the unique needs of each child, as each child diagnosed with ASD has various complications, and each is different from the other. An

interview with one of the clinicians stated, “If you met one child with ASD, you have met one child with ASD.” The meaning of the quote is that each child is different, and generalizing strategies across a population can be complicated. Then, using the manual in SensABILITY can be very beneficial as it uses the expertise of the caregivers to find goals and strategies for their child.

The results from the needs assessments from the caregivers and the therapists also showed that they wanted more programs tailored to each child's specific needs, as SensABILITY has provided. The caregivers scored an average of 3.5/5 for the confidence intervals, showing they feel somewhat knowledgeable about sensory processing. However, due to the higher ranges of standard deviation and standard variance, there was a more comprehensive range of values, with some far from the mean on the high and low ends. The caregivers also had many questions on sensory processing found from the open-ended question portion. Common answers from the caregivers were that they want more activities directed to the home, even though the therapists mentioned in an informal interview that they provide activities consistently. There is a disconnect between caregivers and clinicians, as both parties have different plans for how to do therapy at home. There is a need for more collaboration to find a shared plan, and the principles of SensABILITY do that by using the goals and objectives of OPC.

The therapists were average on the confidence intervals for their ability to do sensory-based activities, as seen from the results of the pre-confidence survey. This could be because the clinic provides multiple opportunities for additional education on various topics, and the clinicians here use sensory strategies often. However, explaining the process and getting parents to do the sensory strategies on time proved more difficult, as evident in the open-ended portions of the questions and informal interviews within the clinician confidence survey. Research on

OPC has shown that it can expand the confidence of therapists and caregivers as they work in collaboration, especially in sensory processing. As can be seen from the literature review, multiple clinicians have found success in using OPC. As evident from the Wilcoxon Signed Rank test, the results showed a statistically significant increase in confidence, which answers the question for this capstone project. The results from the quality improvement survey also showed an increase in confidence in the information within the SensABILITY manual on Occupational Performance Coaching and Sensory Processing. The mean average for the questions was 4.4, meaning that each clinician felt that the information provided and the use of OPC could benefit the clinic and help the clinicians improve their perceived confidence. The lower scores of the standard of error indicate that the sample means were closely distributed around the population mean, and it is representative of this sample. This can also be seen with a low sample variance, which indicates a narrower range of answers, meaning that each of the therapists was close to agreement with their answers. The only question with a more comprehensive range was understanding the OPC question. This could be due to introducing a new topic, which takes time to understand the principles of OPC fully.

With the SWOT analysis, some areas were identified as strengths and opportunities for this program, but also weaknesses and threats that can only be answered with use and practice within the program. A few therapists mentioned that they are unsure if parents would be willing to share the responsibility instead of the therapist having all the answers as a weakness and threat, which is true as with any program, the caregiver can choose whether or not they want to participate. Also, from the research, the author found that a few personality types may not be interested in being part of OPC. However, the principles are still essential and can be highly beneficial even if only used in part. Continued research is needed to see if the program

SensABILITY continuously improves confidence and relationships between the caregiver and clinician, as this researcher only created the program and did a post-survey and a quality improvement survey within a week after the program's initiation. Typically, using the program to its full extent takes approximately 12 weeks. The program's power decreases with only a few weeks of actual implementation. A follow-up survey would benefit the program by allowing it to see any continued progress.

This program can benefit occupational therapy's progression to becoming an inclusive and holistic profession, moving away from the current medical model. The American Occupational Therapy Association's (AOTA) vision is to create an inclusive profession that maximizes health, well-being, and quality of life for all people, populations, and communities through effective solutions that facilitate participation in everyday life, similar to the objective of SensABILITY. Including material from OPC, this program is designed to create a collaborative approach with caregivers to create goals and plans to help their children participate more in daily occupations. The quality of life is improved for the child, the caregivers, and even the clinicians as a power-neutral relationship is reached, and stress from both parties is decreased due to shared responsibility.

Limitations

A few limitations were identified during this program development process. This includes the use of surveys and assessments that were not tested beforehand. Other professionals, such as my faculty and site mentors, reviewed the surveys. However, doing a small pilot of the assessments would have been more beneficial to see if they had good reliability and validity. The SP, the MCPQ, and the Caregiver Self-Efficacy survey were the only ones tested to be valid and reliable from other research articles. Another limitation of the program was the attrition bias due

to 16 caregivers not completing the required material and dropping out of the needs assessment portion of the program. 34 caregivers were left over within the study, a good portion of the participating population, yet an uneven number of males and females were left. There was also some sampling bias as the sample was only gathered from one clinic, so the results could only be generalized to that population. For the recruited clinicians, though, there was a low number of 10 clinicians, resulting in low overall power of the study. One other limitation was the potential for response bias. The author knew the clinicians at the facility and had a good relationship with each of them from a previous fieldwork opportunity. Due to this situation, the clinicians may have wanted to provide more positive answers to show success with the program.

A few suggestions that would have been beneficial for the program in the future would be to expand the study outside of the clinic and survey clinicians from other sites to increase the sample size, the chances of generalizability, and the power of the study. Another suggestion would be to decrease the number of open-ended questions, as the author was told after the program that a few clinicians do not enjoy these questions. Also, the author could increase the study's length to assess the program's power. Increasing the study time could give caregivers more time to finish the needs assessment portions and clinicians more time to finish their portions to increase the number of samples. Also, further assessment is needed to determine if the program's results could carry over and continue to improve clinicians' confidence over time.

Conclusion

The present program development aimed to address the efficacy of a manualized educational program incorporating components of Dunn's Model of Sensory Processing and Occupational Performance Coaching (OPC) in enhancing clinicians' confidence in educating parents of children with autism spectrum disorder (ASD) regarding sensory preferences to promote participation in meaningful occupations. A comprehensive evaluation was conducted by creating two manuals, SensABILITY and a workbook, informed by data from needs assessments and research on Sensory Processing and OPC, alongside implementing pre/post-clinician confidence surveys and quality improvement surveys.

The results indicated an overall increase in clinicians' confidence following participation in the program, as evidenced by the statistically significant findings from the pre/post-clinician confidence surveys and the quality improvement surveys. This aligns with existing literature on OPC, highlighting its potential to enhance confidence and collaboration between therapists and caregivers, particularly in sensory processing.

As described in the literature review, there is a need within the research for an increase in education on sensory processing and strategies to be adjusted to the unique child diagnosed with ASD to be administered to schools, coaches, therapists, and parents to increase participation in activities of daily living. The mothers of the articles described a lack of programs and facilities that use sensory strategies when focusing on sensory preferences, possibly due to a lack of public awareness (Fondacaro et al., 2022). Occupational therapists can educate and coach parents on this topic to help parents understand and implement sensory-related interventions based on the child's sensory preferences. Gee and Peterson, using an exploratory study, found that there needs

to be more emphasis on caregiver education regarding sensory processing. They also discovered a need for more collaborative opportunities between therapists and caregivers.

As described in the research and program development, each child is different and has varying diagnoses and symptoms. Each child has a distinct desire, preferred activity, and meaningful goal. That being said, there is a need for an intervention that can equally adjust and is just as flexible for each child and caregiver. According to research by Graham et al. (2013; 2014; 2018), OPC can benefit clinicians and caregivers and be used in various situations and populations.

Moving forward, continued research and evaluation will be essential to fully ascertain the impact of SensABILITY on clinician confidence and caregiver engagement. Furthermore, aligning with the vision of the American Occupational Therapy Association (AOTA) to maximize health, well-being, and quality of life through effective solutions that facilitate participation in everyday life, SensABILITY represents a significant step towards achieving these objectives. By fostering collaborative partnerships between caregivers and clinicians and promoting individualized approaches to intervention, the program has the potential to enhance the quality of life for children with ASD, their caregivers, and clinicians alike, ultimately contributing to the advancement of occupational therapy practice. For practice, the program SensABILITY can be beneficial as a method to implement in a clinic. With the manuals and other tools created for this program, therapists can rest assured of the guidance for using OPC during each session. Also, sensory-based strategies are listed within the manual to be provided to caregivers for any gaps of knowledge and possible strategies that could be used within the home found from other additional research and lectures on such topics. There is also a short podcast episode from Therapy Unmasked about the creation and use of SensABILITY.

Appendix A

Informed Consent Form

UNLV | SCHOOL OF INTEGRATED HEALTH SCIENCES

Department of Brain Health

Informed consent

Department of Occupational Therapy

Title of Program: Manualized Sensory Processing Education Program

Investigator(s): Kelby Christian

For questions or concerns about the program, you may contact

Kelby Christian at chrisk9@unlv.nevada.edu

Aarone Cefalo at aarone@abilityinnovations.com

Jonathan Legarte at jonathan.legarte@unlv.edu

For questions regarding the rights of program participants or any complaints or comments regarding the manner in which the study is being conducted, contact the UNLV Office of Research Integrity – Human Subjects at 702-895-0020 or via email at IRB@unlv.edu.

It is unknown as to the level of risk of transmission of COVID-19 if you decide to participate in this program. The program activities will utilize accepted guidance standards for mitigating the risks of COVID-19 transmission: however, the chance of transmission cannot be eliminated.

Purpose of the Program Development

You are invited to participate in a program on Sensory Processing. The purpose of this program is to guide clinicians in educating parents of children with ASD on Dunn's Model of Sensory Processing to improve participation in meaningful occupations.

Participants

You are being asked to participate in the program development because you fit one of the following criteria:

- Clinicians within the facility of Ability Innovations
- Parents of children with a diagnosis of Autism Spectrum Disorder (ASD).

Procedures

Suppose you volunteer to participate in the development of this program. In that case, you will be asked to do the following: clinicians will be asked to complete a needs assessment survey and participate in an education/presentation and quality improvement survey; parents will be asked to complete a needs assessment survey, Sensory Profile-2, and Physical Activity Questionnaire.

Benefits of Participation

As a participant in this program, you may receive direct benefits. However, we aim to improve communication between parents and clinicians, focusing on the effects of sensory processing on daily occupations like physical activity and strategies to improve participation.

Risks of Participation

There are risks involved in all program development. This program includes only minimal risks.

- You may become uncomfortable when answering some questions

Confidentiality

All information gathered in this program will be kept as confidential as possible. No reference will be made in written or oral materials that could link you to this program. All records will be stored in a locked facility at Ability Innovations for four months after the completion of the program development. After the storage time, I will discard the gathered information for the project.

Voluntary Participation

Your participation in this program is voluntary. You may refuse to participate in this study or any part of this study. You may withdraw at any time without prejudice to your relations with UNLV. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Participant Consent:

I have read the above information and agree to participate in this program. I have been able to ask questions about the program. I am at least 18 years of age. A copy of this form has been given to me.

`Signature of Participant Date

`Participant Name (Please Print)

Appendix B

Confidence/ Needs Assessment Survey for Clinicians

Rate questions 1-4 using the Likert scale. Questions 5-8 are short answer

1= Not at all… (0%) 2= Slightly… (25%) 3= Somewhat… (50%) 4= Fairly… (75%) 5=Very… (100%)

1. **How confident do you feel when educating parents on sensory processing?**

1 = *Not at all Confident*, 2 = *Slightly Confident*, 3 = *Somewhat Confident*, 4 = *Fairly Confident*, 5 = *Very Confident*

2. **How confident do you feel that the parents understand the information you provide?**

1 = *Not at all Confident*, 2 = *Slightly Confident*, 3 = *Somewhat Confident*, 4 = *Fairly Confident*, 5 = *Very Confident*

3. **How confident do you understand Dunn's Model of Sensory Processing (differences in the separate sensory preferences)?**

1 = *Not at all Confident*, 2 = *Slightly Confident*, 3 = *Somewhat Confident*, 4 = *Fairly Confident*, 5 = *Very Confident*

4. **How often do you refer to the sensory profile results to determine intervention for the child?**

1 = *Not at all*, 2 = *Rarely*, 3 = *Sometimes*, 4 = *Very Often*, 5 = *Always*

5. **What questions do you find most challenging to answer from a parent?**

6. **How much time do you spend educating a parent on sensory processing strategies?**

7. **What concerns are there when implementing sensory-based strategies?**

8. **This capstone experience aims to develop a manualized education program on Dunn's Model of Sensory Processing that clinicians (such as yourself) will use to educate caregivers when discussing sensory processing. Please name 2–3 ideas/ suggestions you would like to get out of this program.**

Confidence/Needs Assessment Survey for Parents

Rate questions 1-6 using the Likert scale. Question 7 is a short answer

A modified version of The Caregiver Self-Efficacy with Sensory-related Behavior in ASD questionnaire (Gee & Peterson, 2015; Hastings, 2009)

1= Not at all… (0%) 2= Slightly… (25%) 3= Somewhat… (50%) 4= Fairly… (75%) 5=Very… (100%)

1. **How confident are you in dealing with the challenging sensory-related behaviors of the child/children with autism you care for?**

1 = *Not at all Confident*, 2 = *Slightly Confident*, 3 = *Somewhat Confident*, 4 = *Fairly Confident*, 5 = *Very Confident*

2. **How difficult do you personally find it to deal with challenging sensory-related behaviors of the child/children with autism you care for?**

1 = *Not at all difficult*, 2 = *Slightly difficult*, 3 = *Somewhat difficult*, 4 = *Fairly difficult*, 5 = *Very difficult*

3. **To what extent do you feel that the way you deal with the challenging sensory-related behaviors of the child/children with autism you care for has a positive effect?**

1 = *No positive effect*, 2 = *Slight positive effect*, 3 = *Some positive effect*, 4 = *Fairly positive effect*, and 5 = *Very positive effect*

4. **How satisfied are you with how you deal with the challenging sensory-related behaviors of the child/children with autism you care for?**

1 = *Not at all satisfied*, 2 = *Slightly satisfied*, 3 = *Somewhat satisfied*, 4 = *Fairly satisfied*, 5 = *Very satisfied*

5. **To what extent do you feel in control of the challenging sensory-related behaviors of the child/children with autism you care for?**

1 = *Not at all in control*, 2 = *Slightly in control*, 3 = *Somewhat in control*, 4 = *Fairly in control*, 5 = *Very much in control*

6. **How much do you understand when a therapist explains the sensory profile and sensory processing?**

1 = *Not at all*, 2 = *Slightly*, 3 = *Somewhat*, 4 = *Fairly*, and 5 = *Very Much*

7. **What do you wish to understand when discussing sensory strategies with a therapist?**

Modified Child Participation Questionnaire (Rosenberg et al., 2010)

Activity	Frequency of Participation							Child's Pleasure in Participating					Parental satisfaction from child's participation				
	0- never, 1- once in 3 months, 2- 1,2 a month,							0- Takes no pleasure in the task					0- Not at all satisfied				
Play:	3- once a week, 4- twice a week, 5- everyday							3- Takes much pleasure in the task					3- Very Satisfied				
1. Choosing a game	0	1	2	3	4	5		0	1	2	3		0	1	2	3	
2. Playing with construction toys (building blocks, puzzles)	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
3. Playing computer games	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
4. Taking part in pretend or make-believe play	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
Other activity:	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
Recreational activities:																	
5. Baseball/ Softball	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
6. Basketball	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
7. Volleyball	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
8. Cricket	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
9. Dancing	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
10. Football	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
11. Gymnastics	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
12. Hockey (field or ice)	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
13. Martial Arts	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
14. Netball	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
15. Rugby	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
16. Running or jogging	0	1	2	3	4	5		1	2	3	4		1	2	3	4	
17. Swimming (on a team or just for fun)	0	1	2	3	4	5		1	2	3	4		1	2	3	4	

18. Tennis/ Badminton/ Squash/ other racquet sports	0	1	2	3	4	5	1	2	3	4	1	2	3	4
19. Skipping	0	1	2	3	4	5	1	2	3	4	1	2	3	4
20. Rowing/ canoeing	0	1	2	3	4	5	1	2	3	4	1	2	3	4
21. In-line skating/ Ice skating	0	1	2	3	4	5	1	2	3	4	1	2	3	4
22. Tag	0	1	2	3	4	5	1	2	3	4	1	2	3	4
23. Skipping rope	0	1	2	3	4	5	1	2	3	4	1	2	3	4
24. Walking/ Hiking	0	1	2	3	4	5	1	2	3	4	1	2	3	4
25. Bicycling	0	1	2	3	4	5	1	2	3	4	1	2	3	4
26. Skateboarding	0	1	2	3	4	5	1	2	3	4	1	2	3	4
27. Soccer	0	1	2	3	4	5	1	2	3	4	1	2	3	4
28. Skiing/ Snowboarding/sledding/ snow activities	0	1	2	3	4	5	1	2	3	4	1	2	3	4
Other activity	0	1	2	3	4	5	1	2	3	4	1	2	3	4
Leisure:														
29. Choosing a leisure activity (occupy oneself)	0	1	2	3	4	5	1	2	3	4	1	2	3	4
30. Playing on playground equipment	0	1	2	3	4	5	1	2	3	4	1	2	3	4
	0	1	2	3	4	5	1	2	3	4	1	2	3	4
31. Playing ball games	0	1	2	3	4	5	1	2	3	4	1	2	3	4
32. Listening to a story	0	1	2	3	4	5	1	2	3	4	1	2	3	4
33. Watching TV	0	1	2	3	4	5	1	2	3	4	1	2	3	4
34. Doing arts and crafts at home	0	1	2	3	4	5	1	2	3	4	1	2	3	4
35. Using art and craft materials	0	1	2	3	4	5	1	2	3	4	1	2	3	4
36. Going for a day trip, picnic, camping	0	1	2	3	4	5	1	2	3	4	1	2	3	4
37. Going to a live event	0	1	2	3	4	5	1	2	3	4	1	2	3	4
38. Bounce on the trampoline	0	1	2	3	4	5	1	2	3	4	1	2	3	4
	0	1	2	3	4	5	1	2	3	4	1	2	3	4

39. Rollerblading	0	1	2	3	4	5	1	2	3	4	1	2	3	4
Other activity	0	1	2	3	4	5	1	2	3	4	1	2	3	4
Activities of Daily Living:														
40. Dressing	0	1	2	3	4	5	1	2	3	4	1	2	3	4
41. Showering/Bathing	0	1	2	3	4	5	1	2	3	4	1	2	3	4
42. Brushing Teeth	0	1	2	3	4	5	1	2	3	4	1	2	3	4
43. Toileting	0	1	2	3	4	5	1	2	3	4	1	2	3	4
44. Eating with cutlery	0	1	2	3	4	5	1	2	3	4	1	2	3	4
Other activity:	0	1	2	3	4	5	1	2	3	4	1	2	3	4
Instrumental Activities of Daily Living:														
45. Taking part in Organizing room/ house	0	1	2	3	4	5	1	2	3	4	1	2	3	4
46. Taking part in Meal preparation/ setting the table	0	1	2	3	4	5	1	2	3	4	1	2	3	4
47. Household chores	0	1	2	3	4	5	1	2	3	4	1	2	3	4
48. Shopping in the grocery store	0	1	2	3	4	5	1	2	3	4	1	2	3	4
49. Taking care of pet	0	1	2	3	4	5	1	2	3	4	1	2	3	4
50. School tasks	0	1	2	3	4	5	1	2	3	4	1	2	3	4
51. Social Participation	0	1	2	3	4	5	1	2	3	4	1	2	3	4
Other activity:	0	1	2	3	4	5	1	2	3	4	1	2	3	4

Quality Improvement Questionnaire

Rate questions 1-6 using the Likert scale. Questions 7-11 are short answer

1. **Please include your profession (OT, PT, SLP, student, etc.)**

2. **This program has the capacity for clinical application.**

   1 = *strongly agree*, 2 = *agree*, 3 = *neutral*, 4 = *disagree*, and 5 = *strongly disagree*

3. **I would want to implement this program into practice.**

   1 = *strongly agree*, 2 = *agree*, 3 = *neutral*, 4 = *disagree*, and 5 = *strongly disagree*

4. **This program effectively described sensory processing and how it affects participation in daily occupations.**

   1 = *strongly agree*, 2 = *agree*, 3 = *neutral*, 4 = *disagree*, and 5 = *strongly disagree*

5. **I understand Occupational Performance Coaching and its benefits for educating parents.**

   1 = *strongly agree*, 2 = *agree*, 3 = *neutral*, 4 = *disagree*, and 5 = *strongly disagree*

6. **The process of sharing knowledge and letting go of control would help reduce the stress of the job.**

   1 = *strongly agree*, 2 = *agree*, 3 = *neutral*, 4 = *disagree*, and 5 = *strongly disagree*

7. **This program will build on my confidence to meet the needs of my clients and their caregivers.**

   1 = *strongly agree*, 2 = *agree*, 3 = *neutral*, 4 = *disagree*, and 5 = *strongly disagree*

8. **This program will build on my confidence in educating caregivers on implementing sensory-based strategies.**

   1 = *strongly agree*, 2 = *agree*, 3 = *neutral*, 4 = *disagree*, and 5 = *strongly disagree*

9. **In a few words, what are the perceived strengths of this program?**

10. **In a few words, what are the perceived weaknesses?**

11. **In a few words, what opportunities are there for this program?**

12. In a few words, what threats might challenge this program?

13. What other feedback do you have related to this program?

Appendix C

Occupational Therapy Doctorate Capstone Project and Experience Proposal Individualized MOU

This form is to be completed by the student with assistance from the faculty mentor and site mentor prior to the Capstone Experience.

Student Name: Kelby Christian
Capstone Experience Dates: January 16th - April 17th, 2023
Capstone Experience Site Mentor: Dr. Aarone Cefalo, OTD, OTR/L
Site Mentor's expertise related to Capstone Experience: Director of Ability Innovations clinic
Site Mentor's Email: aarone@abilityinnovations.com
Faculty Advisor for Capstone: Dr. Jonathan Legarte, OTD, OTR/L
Faculty Advisor Email: jonathan.legarte@unlv.edu

Description of Capstone Project and Experience – (Written by student)
PICO/PIO Will a manualized educational program incorporating Dunn's Model of Sensory Processing and Occupational Performance Coaching improve clinicians' confidence in educating parents of children with Autism Spectrum Disorder (ASD) in sensory preferences to enhance participation in meaningful occupations?

Needs Assessment: How will your capstone project and experience contribute to knowledge in the profession, and what gap are you hoping to fill? A brief 2-3 paragraph essay with references
This capstone project focuses on creating a manualized education program to benefit the therapists working at Ability Innovations, an outpatient pediatric clinic. The program will also be focused on program design to improve clinicians' confidence in educating parents of children with Autism Spectrum Disorder (ASD) on Dunn's Model of Sensory Processing to enhance participation in meaningful occupations. The research suggests that there currently needs to be more emphasis on caregiver education regarding sensory processing (Fondacaro et al., 2022; Gee & Peterson, 2016). Practitioners should consider implementing structured caregiver education to improve caregiver and therapist collaboration through a shared understanding of sensory processing. This collaboration would lead to a more significant therapeutic process for their clients with sensory processing disorders. One article by Miller-Kuhaneck and Watling (2018) suggested

that parents have reported dissatisfaction because of difficulties obtaining desired information and displeasure with discussions about their child's development that lack description and detail from clinicians. Parents have also reported wanting to understand their children better and learn supportive strategies to help them engage more in activities.

The purpose of this program is to meet these gaps and provide education to clinicians so that they can meet these needs. A technique called coaching uses a theoretical framework to guide the education pieces. These guiding frameworks include the four-quadrant model of facilitating learning (4QM) with occupational performance coaching (OPC) and Dunn's Model of Sensory Processing. The research has shown that using 4QM to OPC may increase the learning needs of the caregivers, which leads to desired outcomes. Educating the clinicians on this technique to educate the caregivers will provide more effective passing of information on sensory processing (Ghaffari et al., 2022). Another article discusses how OPC could be a beneficial intervention for occupational therapy practitioners and could also help caregivers of children with ASD to improve occupational performance (Graham et al., 2013).

References:

Gee, B. M., & Peterson, T. W. (2016). Changes in caregiver knowledge and perceived competency following group education about Sensory Processing Disturbances: An exploratory study. *Occupational Therapy International*, *23*(4), 338–345. https://doi.org/10.1002/oti.1435

Ghaffari, A., Azad, A., Zarei, M. A., Rassafiani, M., & Sharif Nia, H. (2022). Efficacy of occupational performance coaching with and without four quadrant model of facilitated learning for mothers of children with specific learning disorder: Study protocol for a randomized controlled trial. *Contemporary Clinical Trials Communications*, *30*, 101009. https://doi.org/10.1016/j.conctc.2022.101009

Graham, F., Rodger, S., & Ziviani, J. (2013). Effectiveness of occupational performance coaching in improving children's and Mothers' performance and mothers' self-competence. *American Journal of Occupational Therapy*, *67*(1), 10–18. https://doi.org/10.5014/ajot.2013.004648

Miller-Kuhaneck, H., & Watling, R. (2017). Parental or teacher education and coaching to support function and participation of children and youth with sensory processing and Sensory Integration Challenges: A systematic review. *The American Journal of Occupational Therapy*, *72*(1). https://doi.org/10.5014/ajot.2018.029017

Vella Fondacaro, D., Vella Fondacaro, F., & Camilleri, N. (2022). A qualitative exploration of

parental views when comparing individual to group sports in children with autism spectrum disorder—a pilot study. *International Journal of Environmental Research and Public Health*, *19*(11), 6906. https://doi.org/10.3390/ijerph19116906

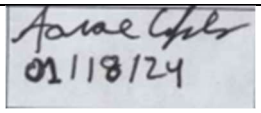
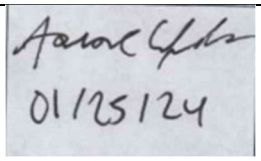
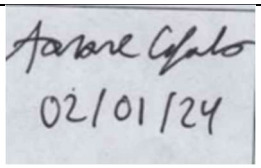
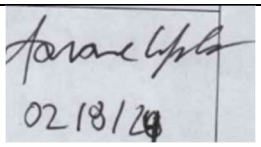
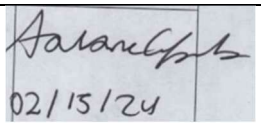
Write three measurable objectives (goals) for your learning experience during your Capstone Experience and potential activities to meet those objectives. The student, faculty mentor, and site mentor should discuss and agree.
1. Students will determine therapists' confidence in teaching parents sensory processing patterns as measured by a pre- / post-confidence Likert scale.
2. Students will obtain knowledge and skills in Sensory Processing and strategies for Autism Spectrum Disorder via continued education and certifications
3. The student will develop a manualized educational sensory processing program using research and needs assessment by the end of week 8
4. The student will use feedback from clinicians to create the new finalized program by week 14

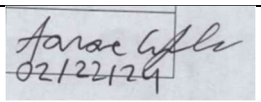
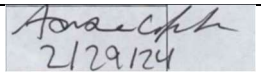
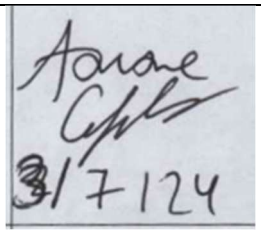
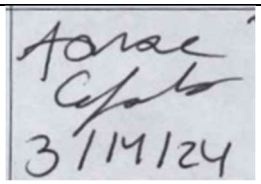
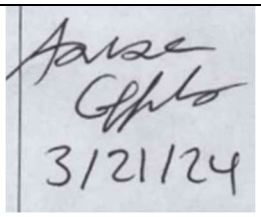
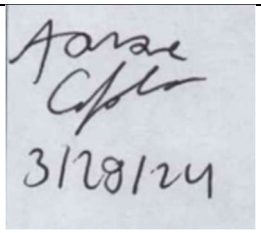
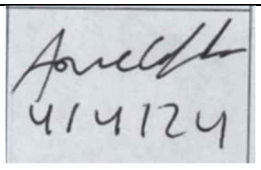
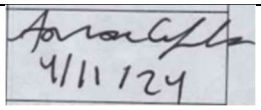
Appendix D

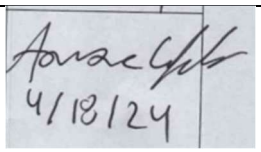
Occupational Therapy Doctorate Capstone Experience Hours and Supervision Log (Through EXXAT)

The Weekly Activities and Related Learning Objectives are to be documented by the student, Faculty Mentor, and Site Mentor prior to the start date of the Capstone Experience. The Site Mentor will document the hours and student progress toward those activities and objectives each week, including signatures and completion dates.

Mentoring Agreement:
Student and Site Mentor will meet 2 times per week for 30 minutes.

Dates	Weekly Activity Description	Related Learning Objective	# Hours	Mentor Signature and Date
Week 1 [Jan 16th-19th]	1. Collect sample 2. Commence needs assessment	1	40	
Week 2 [Jan 22nd - 26th]	1. Continue needs assessment 2. Commence Sensory Profile and Physical Activity Questionnaire	1	40	
Week 3 [Jan 29th - Feb 2nd]	1. Continue Sensory Profile and Physical Activity Questionnaire 2. Evaluate results of assessments and needs assessments	1	40	
Week 4 [Feb 5th - 9th]	1. Commence the creation of a manualized education program 2. Participate in continued education for sensory processing	2, 3	40	
Week 5 [Feb 12th - 16th]	1. Continue the manualized education program 2. Possible certificates for sensory processing	2, 3	40	

Week 6 [Feb 19th - 23rd]	1. Continue the manualized education program 2. Email clinicians for a reminder of the presentation coming up	2	40	
Week 7 [Feb 26nd - March 1st]	1. Continue the manualized education program	2	40	
Week 8 [March 4th - 8th]	1. Present a manualized education program through presentation 2. Administer Quality improvement survey and Goal Attainment Scaling (GAS)	2	40	
Week 9 [March 11th - 15th]	1. Analyze feedback from clinicians 2. Begin making appropriate changes to the program	2, 4	40	
Week 10 [March 18th - 22nd]	1. Analyze feedback from clinicians 2. Begin making appropriate changes to the program	4	40	
Week 11 [March 25th - 29th]	1. Continue making changes as needed from the feedback 2. Participate in workshops from AOTA	3, 4	40	
Week 12 [April 1st - 5th]	1. Provide corrections of the program to clinicians 2. Readminister quality improvement survey	4	40	
Week 13 [April 8th - 12th]	1. Correct and review the program with the mentor	4	40	

Week 14 [April 15th - 19th]	1. Continue any necessary corrections 2. Review the finalized program with faculty and site mentor, along with other clinicians who volunteer	4	40	

I agree with the above-stated objectives and activities to be completed within a 14-week timeframe. The site mentor and/or student can add objectives at any time as the experience dictates with the faculty mentor's approval. Any removal of objectives will need to be approved by the faculty mentor and Capstone Coordinator.

x Kelby Christian 11/20/2023

Student Signature Date

x_Aarone Cefalo, OTD, OTR/L_ 11/17/2023

Faculty Mentor Signature Date

x 11/17/2023

Site Mentor Signature Date

References

American Occupational Therapy Association. (2020). Occupational therapy practice framework: Domain and process (4th ed.). American Journal of Occupational Therapy, 74(Suppl. 2), 7412410010. https://doi.org/10.5014/ajot.2020.74S2001

Bandini, L. G., Gleason, J., Curtin, C., Lividini, K., Anderson, S. E., Cermak, S. A., Maslin, M., & Must, A. (2012). Comparison of physical activity between children with autism spectrum disorders and typically developing children. *Autism*, *17*(1), 44–54. https://doi.org/10.1177/1362361312437416

Delahunt, J. Z., & Mische Lawson, L. A. (2017). Relationships between adolescent body mass index, physical activity, and sensory-processing patterns. *Canadian Journal of Occupational Therapy*, *84*(3), 189–198. https://doi.org/10.1177/0008417417711459

Foster, L., Dunn, W., & Lawson, L. M. (2013). Coaching mothers of children with autism: A qualitative study for occupational therapy practice. *Physical & Occupational Therapy In Pediatrics*, *33*(2), 253–263. https://doi.org/10.3109/01942638.2012.747581

Gee, B. M., & Peterson, T. W. (2016). Changes in caregiver knowledge and perceived competency following group education about Sensory Processing Disturbances: An exploratory study. *Occupational Therapy International*, *23*(4), 338–345. https://doi.org/10.1002/oti.1435

Ghaffari, A., Azad, A., Zarei, M. A., Rassafiani, M., & Sharif Nia, H. (2022). Effect of occupation performance coaching with four-quadrant model of facilitated learning on

children with specific learning disorder. *Occupational Therapy International*, *2022*, 1–13. https://doi.org/10.1155/2022/4654204

Gordon, A. B., McMulkin, M. L., & Baird, G. O. (2011). Modified goal attainment scale outcomes for ambulatory children: With and without orthopedic surgery. *Gait & Posture*, *33*(1), 77–82. https://doi.org/10.1016/j.gaitpost.2010.09.028

Graham, F., Boland, P., Ziviani, J., & Rodger, S. (2018). Occupational therapists' and physiotherapists' perceptions of implementing occupational performance coaching. *Disability and Rehabilitation*, *40*(12), 1386–1392. https://doi.org/10.1080/09638288.2017.1295474

Graham, F., Rodger, S., & Ziviani, J. (2013). Effectiveness of occupational performance coaching in improving children's and Mothers' performance and mothers' self-competence. *American Journal of Occupational Therapy*, *67*(1), 10–18. https://doi.org/10.5014/ajot.2013.004648

Graham, F., Rodger, S., & Ziviani, J. (2014). Mothers' experiences of engaging in occupational performance coaching. *British Journal of Occupational Therapy*, *77*(4), 189–197. https://doi.org/10.4276/030802214x13968769798791

Greber, C., Ziviani, J., & Rodger, S. (2011). Clinical utility of the four-quadrant model of facilitated learning: Perspectives of experienced occupational therapists. *Australian Occupational Therapy Journal*, *58*(3), 187–194. https://doi.org/10.1111/j.1440-1630.2010.00901.x

Hertzog, D., Cermak, S., & Bar-Shalita, T. (2019). Sensory modulation, physical activity and participation in daily occupations in young children. *Canadian Journal of Occupational Therapy*, *86*(2), 106–113. https://doi.org/10.1177/0008417419831403

Hilton, C. L., Ratcliff, K., & Hong, I. (2023). Predictors of participation difficulties in autistic children. American Journal of Occupational Therapy, p. 77, 7702205010. https://doi.org/10.5014/ajot.2023.050068

Ismael, N., Lawson, L. M., & Hartwell, J. (2018). Relationship between sensory processing and participation in daily occupations for children with autism spectrum disorder: A systematic review of studies that used Dunn's Sensory Processing Framework. *The American Journal of Occupational Therapy*, *72*(3). https://doi.org/10.5014/ajot.2018.024075

Jones, R. A., Downing, K., Rinehart, N. J., Barnett, L. M., May, T., McGillivray, J. A., Papadopoulos, N. V., Skouteris, H., Timperio, A., & Hinkley, T. (2017). Physical activity, sedentary behavior and their correlates in children with autism spectrum disorder: A systematic review. *PLOS ONE*, *12*(2). https://doi.org/10.1371/journal.pone.0172482

Kahjoogh, M. A., Kessler, D., Hosseini, S. A., Rassafiani, M., Akbarfahimi, N., Khankeh, H. R., & Biglarian, A. (2018). Randomized controlled trial of occupational performance coaching for mothers of children with cerebral palsy. *British Journal of Occupational Therapy*, *82*(4), 213–219. https://doi.org/10.1177/0308022618799944

Kozlowski, K. F., Lopata, C., Donnelly, J. P., Thomeer, M. L., Rodgers, J. D., & Seymour, C. (2020). Feasibility and associated physical performance outcomes of a high-intensity exercise program for children with autism. *Research Quarterly for Exercise and Sport*, *92*(3), 289–300. https://doi.org/10.1080/02701367.2020.1726272

Lawson, L. M., & Foster, L. (2016). Sensory patterns, obesity, and physical activity participation of children with autism spectrum disorder. *The American Journal of Occupational Therapy*, *70*(5). https://doi.org/10.5014/ajot.2016.021535

Lin, L.-Y. (2020). Activity participation and sensory processing patterns of preschool-age children with autism spectrum disorder. *The American Journal of Occupational Therapy*, *74*(6). https://doi.org/10.5014/ajot.2020.039297

Little, L. M., Ausderau, K., Sideris, J., & Baranek, G. T. (2015). Activity participation and sensory features among children with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, *45*(9), 2981–2990. https://doi.org/10.1007/s10803-015-2460-3

Miller-Kuhaneck, H., & Watling, R. (2018). Parental or teacher education and coaching to support function and participation of children and youth with sensory processing and Sensory Integration Challenges: A systematic review. *The American Journal of Occupational Therapy*, *72*(1). https://doi.org/10.5014/ajot.2018.029017

Must, A., Phillips, S., Curtin, C., & Bandini, L. G. (2015). Barriers to physical activity in children with autism spectrum disorders: Relationship to physical activity and Screen Time. *Journal of Physical Activity and Health*, *12*(4), 529–534. https://doi.org/10.1123/jpah.2013-0271

Najafabadi, M. G., Sheikh, M., Hemayattalab, R., Memari, A.-H., Aderyani, M. R., & Hafizi, S. (2018). The effect of spark on social and motor skills of children with autism. *Pediatrics & Neonatology*, *59*(5), 481–487. https://doi.org/10.1016/j.pedneo.2017.12.005

Rosenberg, L., Jarus, T., & Bart, O. (2010). Development and initial validation of the Children Participation Questionnaire (CPQ). *Disability and Rehabilitation*, *32*(20), 1633–1644. https://doi.org/10.3109/09638281003611086

Schaaf, R. C., Benevides, T., Mailloux, Z., Faller, P., Hunt, J., van Hooydonk, E., Freeman, R., Leiby, B., Sendecki, J., & Kelly, D. (2013). An intervention for sensory difficulties in children with autism: A randomized trial. *Journal of Autism and Developmental Disorders*. https://doi.org/10.1007/s10803-013-1983-8

Vella Fondacaro, D., Vella Fondacaro, F., & Camilleri, N. (2022). A qualitative exploration of parental views when comparing individual to group sports in children with autism spectrum disorder—a pilot study. *International Journal of Environmental Research and Public Health*, *19*(11), 6906. https://doi.org/10.3390/ijerph19116906

Curriculum Vitae

Kelby Christian
familychristian.klc@gmail.com | University of Nevada, Las Vegas
linkedin.com/kelby-christian-253514187

Education

Doctorate, Occupational Therapy **August/2021–May/2024**
University of Nevada, Las Vegas

Capstone: Manualized Education Program for Clinicians
Faculty Mentor: Dr. Jonathan Legarte, OTD, OTR/L
Capstone Site Mentor: Dr. Aarone Cefalo, OTD, OTR/L

- Focus on using Occupational Performance Coaching to educate parents on Dunn's Model of Sensory Processing and its relevance to play for children with ASD

Technical Degree, Certified Nursing Assistant **August/2016–August/2016**
Bridgerland Applied Technology Center

Bachelors, Kinesiology; Minor, Portuguese **August/2015–May/2020**
Utah State University

Internship Experience

Fieldwork 1, Nevada Community Enrichment Program **October/2022–October/2022**
Las Vegas, Nevada

- Develop and implement interventions for adults with various neurological diagnoses
- Implemented activities of daily living (ADL) training and remediation strategies
- Used multiple assessment tools, standardized and non-standardized, to assess reach, balance, visual skills, verbal skills, endurance, fine motor skills, and gross motor skills

Fieldwork 2, Ability Innovations **May/2023–August/2023**
Layton, Utah

- Developed and implemented interventions for children ages 3-18 with various mental health disorders
- Used play-based, DIR floortime for interventions and had co-interventions with PTs, SLPs, and other OTs
- Used multiple assessments such as Sensory profile-2, Bruininks-Oseretsky Test of Motor Proficiency (BOT-2), Peabody Developmental Motor Scales (PDMS-2), and Pediatric Evaluation of Disability Inventory (PEDI)

Fieldwork 1, Let's Talk Therapy Center **February/2023–February/2023**
Las Vegas, Nevada

- Observed children diagnosed with autism spectrum disorder and various treatments
- Observed use of sensory skills during feeding therapy
- Observed licensed Occupational Therapists use various sensory techniques to help patients to self-regulate

Fieldwork 2, Nevada Community Enrichment Program **May/2022–August/2022**
Las Vegas, Nevada

- Develop and implement interventions for adults with various neurological diagnoses
- Implemented activities of daily living (ADL) training and remediation strategies
- Used multiple assessment tools, standardized and non-standardized, to assess reach, balance, visual skills, verbal skills, endurance, fine motor skills, and gross motor skills

Fieldwork 1, Nevada Community Enrichment Program **October/2022–November/2022**
Las Vegas, Nevada

- Develop and implement interventions for adults with various neurological diagnoses
- Implemented activities of daily living (ADL) training and remediation strategies
- Used multiple assessment tools, standardized and non-standardized, to assess reach, balance, visual skills, verbal skills, endurance, fine motor skills, and gross motor skills

Work Experiences

Certified Nursing Assistant, Sidney Regional Medical Center
February/2020-February/2021
Sydney, Nebraska

- Experience in in-patient hospital, extended care unit
- Daily use an oximeter, temporal thermometer, and sphygmomanometer to test vitals for abnormal readings.

Direct Support Staff, Chrysalis **May/2019–February/2020**
Logan, Utah

- Experience with intellectual and developmental disabilities within a group home
- Provided help with activities of daily living, including medication administration, bathing, hygiene, basic first aid, shopping, meal preparation, transportation, budgeting, housekeeping, and home maintenance.

Occupational Therapist Aide, Developmental Behavioral Health
October/2019–February/2020
Logan, Utah

- Unpaid Part-time Internship with a licensed Occupational Therapist

- Provided mental health treatment and prevention services for children, youth, the aging, and those with severe and persistent mental illness, with a focus on function and independence.

Certified Nursing Assistant, Community Nursing Services **August/2017–April/2019**
Logan, Utah

- Experience in home health services
- Cleaned and organized patient room; maximized comfort, cleanliness, and safety. Prepared detailed reports to support communication with attending physicians, nurses, and other CNAs on changes to care or new behaviors.

Certified Nursing Assistant, Sunshine Terrace Foundation **August/2016–May/2017**
Logan, Utah

- Experience in long-term care/hospice and rehabilitation care
- Monitored call lights throughout the facility and communicated effectively with other staff to ensure lights were answered promptly.

Leadership/ Community Service Experiences

Missionary, Church of Jesus Christ of Latter Day Saints **August/2013–August/2015**
Bahia, Brazil (Salvador Sul Mission)

- Lead services project building homes, cleaning public areas, digging trenches, teaching English
- Organized out-reach with assistance from an organization called Helping Hands, providing medical aid and life guidance
- Lead training for other missionaries and attended leadership training
- Developed rapport with the people by utilizing interpersonal skills and developed interventions to help these individuals find peace in their lives

Achievements/ Certifications

Cardiopulmonary Resuscitation (CPR) certified, American Heart Association
September/2023
Las Vegas, Nevada

KORU Mindfulness, Certificate of Completion, UNLV **September/2020–May/2021**
Las Vegas, Nevada

Customer Service Certificate, Bridgerland Applied Technology Center **August/2020**
Logan, Utah

- Training on ways of doing effective customer service and leadership skills
- Practiced effective communication skills

Eagle Scout Award **June/2013**
Sidney, Nebraska

- Lead service project with 20 people cleaning a field and creating soccer fields by painting lines and drilling holes for goal posts and flags
- Built a shed for soccer supplies
- Created signs, drilled holes into the ground, and cemented them into the holes

Skills

Fluent in Portuguese

- Learned how to read, write, and speak in Portuguese during the time in Brazil within one year
- Continued education in Portuguese by getting a minor in Portuguese at Utah State, taking classes such as Advanced Portuguese Grammar, Translation studies, and Brazilian Culture

Skills in Patient care for multiple settings and populations

- Pediatrics, Geriatrics, Home Health, Inpatient care, Outpatient care, Long-term care/ Hospice, Hospitals
- ASD, ADHD, Down syndrome, Conduct disorders, Cerebral Palsy, Amputations, Strokes, Aphasia, Costello syndrome, Myositis Ossificans, Dementia, Alzheimer's, Arthritis

Professional Associations

American Occupational Therapy Association, Member since 2021
Nevada Occupational Therapy Association, Member since 2021
UNLV Student Occupational Therapy Association, Member since 2021