Jungle Gym Playroom: Program Development Plan

Catherine E. Wolf

Faculty Mentor: Beth Ann Hatkevich, PhD, OTR/L

Site Mentors: Michelle Votaw & Joe Dunn

Department of Rehabilitation Sciences

Occupational Therapy Doctorate Program

University of Toledo

May 2012

Note: This document describes a Capstone Dissemination project reflecting an individually planned experience conducted under faculty and site mentorship. The goal of the Capstone Experience is to provide the occupational therapy doctoral student with a unique experience whereby he/she can demonstrate leadership and autonomous decision-making in preparation for enhanced future practice as an occupational therapist. As such, the Capstone Dissemination is not formal research.
## Table of Contents

Executive Summary 3

Introduction 7

  Program Goal 7

  Sponsoring Agency 7

  Organizational Structure 8

  Investigating the Needs for Programming 8

Literature Review 13

  Performance Deficits Related to Sensory Processing Disorder 13

  Play 16

  Sensory Rooms 17

  Sensory Processing Disorder 18

  Prevalence 19

  Statistics 20

Occupation Based Programming 21

Models of Practice 21

Federal Initiatives and National Trends 23

Objectives 25

  Goal 26

  Objectives 26

Marketing and Recruitment of Participants 27

  Market Plan 28

  Potential Participants 31
Inclusion Criteria and N

Programming

Session One
Sessions Two through Seven
Session Eight
Relevant Literature
Model of Practice
Principles
Assessments
Direct/Indirect Services
Documentation System
Program Sequence
Discharge
Role of Care Coordination

Budgeting and Staffing

Revenue Sought
Item Justification
Occupational Therapist
Funding Sources
Self-Sufficiency Plan

Program Evaluation

Outcome Evaluation Procedures for Objectives
Procedures for Process Evaluation
Procedures to Evaluate Program Satisfaction

Timeline

References

Appendices

A. Organizational Chart at Findlay Elite Gymnastics and Cheer

B. Key Informant Semi-Structured Interview: Selected Findlay Elite Gymnastics and Cheer Agency Personnel

C. Key Informant Semi-Structured Interview: Selected Special Kids Therapy Agency Personnel

D. Survey Questions: For Parents with Children who Participate in the Playroom at Special Kids Therapy

E. Survey Questions: For Parents with Children between the Ages of 4-14 Years

F. Flyers for the Jungle Gym Playroom Program

G. Jungle Gym Playroom Program Information for teachers, church youth group leaders, and day care providers

H. Sensory Processing Needs Informational Handout

I. Jungle Gym Playroom Program Informational Handout for Parents/Caregivers

J. Red Flags for Sensory Over-Responsivity

K. Red Flags for Sensory Under-Responsivity

L. Red Flags for Sensory Seekers

M. Sensory Processing Definitions for Parents/Caregivers

N. Program Intake Form

O. Educational Handout: Techniques for Proprioceptive Input
P. Educational Handout: Techniques for Vestibular Input 95
Q. Educational Handout: Techniques for Tactile Input 97
R. Educational Handout: Techniques for Auditory Input 100
S. Educational Handout: Techniques for Visual Input 102
T. Educational Handout: Techniques for Smell (Olfactory) Input & Taste Input 104
U. Budget Chart 106
V. Occupational Therapist Advertisement 110
W. Parent/Caregiver Program Evaluation 112
X. Participant Program Evaluation 114
Y. Key Stakeholder Program Evaluation 116
Z. Timeline for the Jungle Gym Playroom Program 118
Executive Summary

Literature reviewed provides evidence that play and other areas of children’s lives are being negatively affected by sensory processing issues (Bundy et al., 2007; Koenig et al., 2010). AOTA takes the stand that play is an essential occupation to a child’s growth and development and the OT scope of practice needs to advocate, defend, and enhance play (Primeau, 2008).

The Jungle Gym Playroom Program aims to provide children in Hancock County an opportunity to play in a structured and safe environment that fosters the development of sensory processing and motor skills. The goal for the Jungle Gym Playroom Program at Findlay Elite Gymnastics and Cheer is to enhance sensory processing and motor skills in children with or without developmental disabilities. The program objectives strive to increase the participants’ sensory processing components and motor skills to help them reach their full potential. The Sensory Integration (SI) approach will be used to guide the Jungle Gym Playroom Program. The equipment and setting at Findlay Elite Gymnastics and Cheer will be utilized to create a safe sensory filled environment for children to play. We expect the Jungle Gym Playroom Program to have 10-15 participants total, with no more than 5-6 participants in a group per cycle. The participants will be between the ages of 4-14 years. Children with or without sensory processing needs will be welcome to participate; however, the program is devised to have participants with sensory processing needs, whether with or without a diagnosis. The program at Findlay Elite Gymnastics and Cheer is designed to have 3 cycles with 1-hour sessions per week, for 8 weeks. The evaluation process is multi-faceted. The Sensory Profile and Bruininks-Oseretsky Test of Motor Proficiency, 2nd edition will be used pre and post program to evaluate the participants and the program. In addition, the parents and participants will contribute to evaluating the program.
Introduction

Program Goal

The goal for the Jungle Gym Playroom Program at Findlay Elite Gymnastics and Cheer is to enhance sensory processing and motor skills in children with or without developmental disabilities. Findlay Elite Gymnastics and Cheer has been open since 1998 and relocated to the facility they currently reside in 2007. The gymnastics facility provides children in the area with competitive gymnastics and cheerleading, gymnastics classes, cheer/tumble classes, and private lessons. The facility opens its doors for cheer camps and the community to utilize for various activities, such as local schools to use for their cheerleading try-outs and practices. The Jungle Gym Playroom Program is a sensory playroom for children between the ages 4-14 years, with or without a diagnosis, to participate in play and will strive to satisfy their sensory needs. Sensory and motor skills are important for children to acquire in order to learn how to organize and respond to their environment successfully. These skills may include, but are not limited to coordination, balance, motor planning, attention, and self-organization. The program is giving children the ability to participate fully in their occupations; enhancing their lives. If children can participate fully, they will have the opportunity to achieve their fullest potential. It is well within the mission of Findlay Elite Gymnastics and Cheer to deliver services that strengthen and help develop children’s abilities in gymnastics and/or cheerleading through encouragement to reach their fullest potential.

Sponsoring Agency

The site for the Jungle Gym Playroom Program is at Findlay Elite Gymnastics and Cheer in Findlay, Ohio. The mission of Findlay Elite Gymnastics and Cheer is to positively encourage children to reach their fullest potential through the sports of gymnastics and cheerleading.
Organizational Structure

Tom Hazleton, Joe Dunn, and Traci Dunn all share ownership of Findlay Elite Gymnastics and Cheer. In addition, Joe and Traci Dunn are head gymnastics and cheerleading coaches at the facility. The occupational therapist directing the Jungle Gym Playroom Program would be under the supervision of the owner/head coach, Joe Dunn (see Appendix A for the organizational chart at Findlay Elite Gymnastics and Cheer).

An occupational therapist will run the Jungle Gym Program because of the knowledge and skills an occupational therapist has with working with children who have sensory processing needs. The occupational therapist leading the program will be registered and will have 2 years minimum experience working with a pediatric population. The occupational therapist will be required to administer the Short Sensory Profile (Dunn, 1999) and the BOT-2 (Bruininks, & Bruininks, 2006); therefore he/she will need to demonstrate competency in using these assessments. Occupational therapists are experts in modifying environments to tailor individual needs, providing their clients with the “just right” challenge to promote success. Modifying and tailoring the environment to the child’s individual needs is a critical component to the success of the Jungle Gym Playroom Program; therefore an occupational therapist will be required to supervise and lead the Jungle Gym Playroom Program.

Investigating the Needs for Programming

A comprehensive needs assessment was given in order to determine if programming to provide a sensory playroom is a need for the community. A needs assessment is a systematic way to acquire an accurate, thorough picture of the needs of a certain population in a community (North Dakota Department of Instruction, n.d.). The data collected is used to guide the establishment of goals and objectives for the programming (Fazio, 2008). Need assessments are
generally conducted in two phases. Phase one determines the needs of the targeted population from those who may be involved with them at some level (Fazio, 2008). Phase two determines the perceived needs for the target population themselves (2008). Need assessments can be administered through numerous methods, such as, semi-structured interviews, surveys, and focus groups (2008). Through extensive conversations with key stakeholders, Joe Dunn, head gymnastics coach, and Michelle Votaw, executive director, parents, and teachers, it was concluded that there is a need for a sensory playroom in Hancock County. The overall theme revealed through the interviews was that children in Hancock County are being affected by sensory processing problems. In addition, the gymnastics facility has equipment that can be utilized to address children’s sensory needs. Methods to assess the needs for the Jungle Gym Playroom Program were surveys and semi-structured interviews. Surveys were utilized because they allow for a greater number of individuals in the community to be reached. Semi-structured interviews were utilized because they provide more opportunities for needs to be discussed in greater detail.

To further assist in understanding the needs of children, time was spent observing and participating in various activities with the children at the Findlay Elite Gymnastics and Cheer facility. In addition, time was spent at Special Kids Therapy participating in play with children with sensory needs at Special Kids Therapy. At Findlay Elite Gymnastics and Cheer, some children were observed struggling to participate because they were afraid to walk backwards on the balance beam or flip around the bar. These children were observed crying and focusing on their parents rather than the coach. At the Special Kids Therapy, children were observed enjoying the small sensory playroom available to them at this facility. Many of the children were observed wanting to run, crash, and jump on and off the equipment in the playroom. They were
unable to do so because the environment at the playroom is too small and not equipped for that kind of rough-house play.

In addition, a semi-structured interview was conducted with Findlay Elite Gymnastics and Cheer’s and Special Kids Therapy key informants (see Appendices B and C for the semi-structured interview questions for key informants). Joe Dunn, the head coach at Findlay Elite Gymnastics and Cheer, is an important stakeholder to this program because he will be investing his time and facility into the Jungle Gym Playroom Program. Through the interview with Mr. Dunn specific needs of the children were revealed. He was able to share some insight on sensory issues he observes everyday at the facility. He noted that children of all ages have challenges staying focused and can be distracted easily in the gym. Younger children, especially, are observed focusing on other children in the gym, their parents, or the mirrors rather than the task at hand. The lack of focus leads children to not listen and follow directions, which is linked to the children learning less according the agency personnel’s experiences. The main sensation children in the gym are affected by is fear of being upside down or going backwards in space. In addition, Mr. Dunn noted that children have a fear of going in a full circle on the bars. He reported that the fear of having their body in these positions in space interferes with the child’s ability to participate fully. Observations were also made that the children feed off of each other. Often if one child is afraid to do something other children in the group will become afraid as well. Mr. Dunn commented that he believes a playroom program will be beneficial to children because it gets them to be physically active rather than participate in sedentary play. Also, the program will provide children opportunities to try new things that involve movement and help increase children’s coordination and balance. Finally, Mr. Dunn commented that the playroom would help facilitate socialization with peers and adults.
The other semi-structured interview was conducted with a Special Kids Therapy key informant. Michelle Votaw, director of Special Kids Therapy, is an important stakeholder to this program because she will be investing her time and knowledge into the Jungle Gym Playroom Program. Through her interview, needs of children with sensory needs in the area were revealed. Ms. Votaw was able to give some insight on sensory needs she observes everyday at the playroom she runs. She noted that children love the swing, musical hopscotch, and ball pits. She commented that her playroom is lacking the heavy sensory input and a program that will provide that sensory input is needed and would be beneficial. Ms. Votaw commented that she believes there is a need for a program like the Jungle Gym Playroom Program and it will be beneficial for children in the area. She explained that the program at the gymnastics facility would force more social interaction; since the kids will need to ask for help to use the equipment. In addition, the playroom environment will promote sibling interaction and play in a judgment free environment; since the program is open to children with or without a diagnosis and will be at a facility that is new and exciting. Finally, she stated that more programs in town available to children with sensory needs would help to increase the opportunities for the children and their families.

Through my observations at Special Kids Therapy I was able to infer that there is a definite need for children to have an environment that was large enough for them to run, jump, swing, and crash, giving them an opportunity to get strong vestibular and proprioceptive input.

Surveys were administered to parents with children that participate at Special Kids Therapy and to parents who had children between the ages of 4-14 years (see Appendices D and E for survey questions). The questions for the parents at Special Kids therapy were created to target the needs of children that already participate in a sensory playroom. The gymnastics facility provides a unique environment for children to play, creating opportunities for different
play and sensory input than the playroom is able to provide. Every returned survey stated that their child enjoys being active, running/jumping, crashing, swinging, and dancing. All of these occupations will be addressed through the Jungle Gym Playroom Program.

The surveys returned from parents with children between the ages of 4-14 years, provided evidence that there are children in Hancock County that have sensory processing difficulties between the ages of 4-14 years. The strongest finding was that most parents said that their children had difficulty staying focused on a task for a period of time. In addition, numerous parents rated that their child seems clumsy when dancing, marching, or jumping. Finally, the surveys returned provided strong evidence that parents believe that a program, such as the Jungle Gym Playroom Program, would be a beneficial way for their children to play and satisfy their sensory needs.

In summary, sensory playrooms have limited research done on their effectiveness. The research that is available provides evidence that sensory processing disorders are negatively affecting children’s occupations. Play is important to children’s growth and development. Sensory processing disorders are interfering with this important aspect of childhood. The specific sensory needs discovered through the needs assessments and observations, demonstrated how children’s participation and performances are being affected by sensory issues. To the key informant’s knowledge, most of the children enrolled at Findlay Elite Gymnastics and Cheer have no Sensory Processing Disorder diagnosis, demonstrating that children without a diagnosis are still affected by sensory processing problems. In addition, the needs assessments and observations provided evidence that a program such as The Jungle Gym Playroom Program is warranted in Hancock County. The Jungle Gym Playroom Program would allow an occupational therapist to alter a child’s environment to meet the child’s individual sensory needs,
JUNGLE GYM PLAYROOM PROGRAM

giving him/her the opportunity to play successfully. By being able to play successfully the child is able to learn, grow, and develop. The ability to successfully process sensory input will enhance children’s occupational performances in all areas of their lives. The Sensory Integration Model of Practice is controversial; however, research does provide evidence of the positive outcomes associated with using the SI model. Research has become more rigorous and the research on SI is following suit in order to provide strong evidence based practice of using the SI model. As a result, the SI model will be used to guide and develop the Jungle Gym Playroom Program.

Literature Review

Performance Deficits Related to Sensory Processing Disorder

A systematic review on literature related to children and adolescents who have difficulty processing and integrating sensory input was completed for an Evidence-Based Literature Review Project of the American Occupational Therapy Association in 2010. Results from this systematic review provides evidence that children and adolescents who have problems integrating and processing their sensory input, display performance deficits in areas of occupations (Koenig & Rudney, 2010). These areas include: play, social participation, IODLs, ODLs, and school performance (2010). Evidence from this study demonstrates that all areas of children’s lives are being affected by their sensory processing problems. Limitations from this study include: the studies reviewed lacked randomization and control groups, small sample sizes, use of parent-report measures, and minimal use of functional performance measures to assess differences between children with sensory processing issues and normally developing children (Koenig & Rudney, 2010). In a sensory playroom environment children would be given the opportunity to successfully play, which will help them to grow and develop, further enhancing their occupational performances in other areas of occupations in their lives. In addition, a sensory
playroom would give children the opportunity to play in a safe and structured environment with peers their age. This will enhance their social skills helping them feel more confident and comfortable in participating in social interactions.

One study in 2009 investigated the prevalence of SOR (sensory over-responsivity) in a longitudinal study of elementary school-aged children (Ben-Sasson, Carter, & Briggs-Gowan, 2009). The researchers stated that SOR towards tactile and auditory input could impact children’s participation in academic, social activities, and daily occupations. Regulatory sensory responsivity is particularly important for adaptive social behaviors, secondary to social interaction requiring flexible responses to multiple, simultaneous, ongoing, and unpredictable input and adequate sensory responsivity allows one to notice cues and respond appropriately to the input involved (2009). After exclusion criteria, 1,329 families participated in one or two annual surveys in the Early Childhood portion of the study, when children were between the ages of 11 months and 56 months. These same children were followed to school age. Due to children being excluded on the basis of significant genetic disorders or developmental delays identified during the study and families dropping out or unable to be contacted, the eligible sample became 1,312 families. Numerous measurement tools were used in this study: Sensory Over-Responsivity Scales, Child Behavior Checklist, The Infant Toddler Social and Emotional Assessment, and the Adaptive Social Behavior Ratings (Ben-Sasson, Carter, & Briggs-Gowan, 2009). Results indicated that sixteen percent of parents reported that at least four tactile or auditory sensations bothered their children (2009). In addition, sociodemographic risk factors such as having a single parent, and living in poverty were associated with an increased risk of elevated SOR behaviors (2009). Finally, results demonstrate that parents of children with versus without elevated SOR at school age reported more early and concurrent social-emotional
problems, and lower levels of concurrent adaptive social skills controlling for SES variables (2009). One limitation to this study was that the SOR measurement was limited by relying upon single parent information and focusing on only two sensory modalities (2009). Findings from this study support independence of SOR from other developmental disorders, since the sample excluded children with a diagnosed medical/developmental condition. A sensory playroom program would help teach children and their parent’s strategies to satisfy their individual sensory needs. By satisfying sensory needs children’s participation in other areas of occupations may positively increase, such as academic and social participation. In addition, this study provides evidence that sensory processing issues are affecting children without a diagnosis and a sensory playroom may be beneficial to these children as well.

Maintaining standing balance is especially important for a developing child and is critical for successfully executing many daily activities (Chen-Sea, et al., 2010). A great amount of research has confirmed that standing balance cannot be achieved without continuous sensory feedback. The brain needs to organize different sensory information at the same time to learn to achieve standing balance and awareness of body (Chen-Sea, et al., 2010). One study by Chen-Sea, et al. compared stance control between children with sensory modulation disorder (SMD) and typically developing children in various visual and somatosensory conditions (2010). The Short Sensory Profile (Dunn, 1999) was used to screen for sensory modulation problems and children with SMD were matched with typically developing children. Stance parameters for an assessment of postural stability were obtained with a dual-axis accelerometer on the lumbar area, while the participants were asked to maintain standing upright fewer than six sensory environments (Chen-Sea, et al., 2010). Results from this study found that children with SMD had poorer stance control than typically developing children (2010). Specifically, the results show
that children with SMD had poorer stance control during conditions of unreliable somatosensation (2010). In addition, the results indicate that deterioration of standing balance might cause falling in children with SMD and alter their sensory environments in daily occupations (2010). This study validates that children with SMD had difficulty in grading responses to sensory inputs (2010). A sensory playroom would provide children the opportunities to learn standing balance while playing. Being able to maintain standing balance will help them to successfully participate in other areas of occupations in their lives.

Play

One study in 2007, the Short Sensory Profile (Dunn, 1999) and Test of Playfulness (Bundy, 2005) were used to assess 20 children with Sensory Processing Disorder (4-9 year olds) and 20 children who are typically developing (4-11 year olds) (Bundy, Miller, Qi, & Shia, 2007). For the Test of Playfulness evaluation, an unobtrusive examiner videotaped each child for 15 minutes of free play in a natural environment for the child. For children with Sensory Processing Disorder, 2 video tapes of free play were assessed, one pre-intervention and one post-intervention (Bundy, Miller, Qi, & Shia, 2007). Children with Sensory Processing Disorders received 20 individual intervention sessions that were guided by the sensory integration approach (2007). Parents completed the Short Sensory Profile (Dunn, 1999) on their child. Results from this study provide evidence that Sensory Processing Disorders affects children’s play compared to children with no Sensory Processing Disorders (Bundy, Miller, Qi, & Shia, 2007). The findings indicated that all children play, but when they are unable to organize and process their sensations, and then their play is affected (2007). A limitation to this study was the measurement of play through observations of free play. This method comes with threats of reliability due to the lack of a standard format (Bundy, Miller, Qi, & Shia, 2007). The findings from this study
provide evidence that occupational therapists can take on the role to help these children to enhance their lives and give them the opportunity to grow and develop through the occupation of play.

Occupational therapy’s interest in play dates back to when the profession was just beginning (Parham, 2008). Play is important throughout the lifespan, but especially during childhood. Play allows a child to grow, develop, and prepares them to for a student role, then ultimately, for the adult worker role (Parham, 2008). Later in life, play is important component for balanced lifestyle. The Occupational Therapy Practice Framework defines play as an area of occupation, indicating that occupational therapists play a critical role in ensuring that engagement in play is occurring successfully for individuals (2008). It is a child’s “job” or “occupation” to play and develop coordination, emotional and social skills, and self-confidence to explore and try new experiences in their environments (American Occupational Therapy Association, 2001). The American Occupational Therapy Association (AOTA) states that play is essential to childhood’s growth and development and it is occupational therapy’s role to advocate, enhance, and defend play (Primeau, 2008). Due to societal and environmental demands, childhood play is being interrupted (2008). Occupational therapists provide services to children with sensory processing needs. Through the occupation of the play the occupational therapist provides the child the opportunity to enhance his/her sensory processing skills. Occupational therapists use a Sensory Integration Model of Practice to design enriched environments to match the clients’ needs and skills. This individual approach provides the client with a “just-right challenge to promote sensory processing. Altering a child’s environment through a sensory playroom would give the child opportunities to play successfully, in turn helping them grow and develop.
**Sensory Rooms**

In 2003, 47 participants with various mental health disorders in a psychiatric unit were asked to rate their perceived levels of distress on a 10-point ordinal rating scale, both before and after each session using the sensory playroom. The results show that 89% of the sensory room sessions had a positive effect, 10% had no effect, and 1% had a negative effect (Champagne, & Strongberg, 2004). In addition, those clients who expressed the highest level of distress at the beginning of the session reported the most positive change in perceived levels of distress after using the sensory playroom (2004). In 2006, Champagne published an article on creating sensory rooms for the American Occupational Therapy Association's Mental Health Special Interest Section. In this Special Interest Section, Champagne states how sensory playrooms should be utilized by occupational therapists for people with mental health disorders. Currently there is no research done on the benefits of sensory playrooms for children.

**Sensory Processing Disorder**

There are very limited current statistics on children with sensory processing disorder. Sensory processing disorder has little research to date and is not defined as it own diagnosis in the current Diagnostic and Statistical Manual of Mental Disorders (DSM-4) (American Psychiatric Association, 2010); therefore, it is not diagnosed very often. As of December 21, 2010, the Sensory Processing Disorder Foundation stated that it is not likely that Sensory Processing Disorder will be included as its own diagnosis in the 2013 DSM-5 (Sensory Processing Disorder Foundation, 2011). They believe that two subtypes of Sensory Processing Disorder (Sensory Over-Responsivity and Sensory Under-Responsivity) will be included in the Autism Spectrum Disorder category as an associated feature (2011). The Sensory Processing Disorder Foundation posted an explanation by Michael First, M.D., editor of the DSM-4, on the
criterion for adding a new diagnosis to the DSM-5 (2012). Three options to adding Sensory Processing Disorder were discussed: 1) adding it as a new disorder; 2) adding it as a subtype; or 3) adding a dimensional definition of the DSM-5 appendix for “criteria sets and axes needing further study” in order to stimulate more research (2012). In addition, Dr. First commented on the very high threshold of empirical data that has been set for adding a new disorder to the DSM-5 in order to ensure that only diagnostically valid disorders are added to the system (2012). The Sensory Processing Foundation emphasizes the ongoing efforts and campaigning for including the Sensory Processing Disorder as its own diagnosis in the DSM (2012). The Sensory Processing Disorder Foundation’s missions converge advocacy based on research to inform education and advance the Sensory Processing Foundation’s goal of bringing hope and help to millions of children and adults whose lives are disrupted every day by Sensory Processing Disorder (2012).

**Prevalence**

In 1989, Jean Ayres estimated that through clinical observations that 5%-10% of children without disabilities are being affected by sensory processing disorders (Ayres, 1989; Ermer & Dunn, in press). In 2004, parents of kindergarten children from one school district were anonymously surveyed using The Short Sensory Profile (McIntosh et al., 1999). The Short Sensory Profile was developed from the Sensory Profile (Dunn, 1999) and is a 38-item parent questionnaire that evaluates functional behavior related to sensory processing disorders (Ahn, McIntosh, Milberger, & Miller, 2004). Anonymous questionnaires were received from 703 respondents (39% return rate) (2004). The results from this study revealed that 13.7% (96 of the 703) met the criteria for sensory processing disorders based upon parental perceptions in one suburban area (2004). One limitation from this study is that generalizability of these results are
limited because sample represented were primarily Caucasian, kindergarten children who had well educated parents from one suburban area in the United States. Another limitation is the prevalence of sensory processing rising or declining with age is unknown; therefore it is not possible to generalize with confidence to populations other than the kindergarten sample surveyed in this study. A third limitation to this study is the presence or absences of disorders other than sensory processing disorders were evaluated. Finally, a fourth limitation is the response rate was low for this study. Despite limitations the best estimate of the prevalence of sensory processing disorders is based off the findings from Ahn et al., 13.7%, which is cited in numerous studies to date.

Statistics

The US Census Bureau in 2010 illustrates that there are 4,705 children between the ages of 5-14 years in Hancock County. This population could benefit from a sensory playroom program whether they had a Sensory Processing Disorder diagnosis or not. A sensory playroom would provide children the opportunity to enhance their sensory processing through experiences during play. In addition, through play the children, with or without a Sensory Processing Disorder diagnosis, will have the opportunity to enhance their motor skills as well. Skills learned through play will carry over into other occupations in their lives, to increase their ability to successfully participate in those occupations.

The Center for Disease Control and Prevention states that between the years 1997 and 2004, approximately 13% of children had a developmental disability, ranging from mild to serious disabilities, such as autism (2010). In addition, the Center for Disease Control and Prevention estimates that 1 in 110 children in the United States have autism (2010). In a study in 2007, a total of 562 participants, including 281 children with Autism Spectrum Disorder (ASD),
were age-matched with typically developing peers (Dunn & Tomcheck, 2007). The participants’
behaviors associated with sensory processing were evaluated by the participant’s
parent/caregiver using the Short Sensory Profile (SSP) (McIntosh, et al., 199). The results from
this study present that 95% of the sample of children with Autism Spectrum Disorder (ASD)
demonstrated sensory processing dysfunction on the SSP Total Score (Dunn & Tomcheck,
2007). The greatest differences were reported on the Underresponsive/Seeks Sensation, Auditory
Filtering, and Tactile Sensitivity sections (2007). The group with ASD also performed
significantly differently from their peer groups ($p < .001$) on 92% of the items, total score, and
all sections of the SSP (2007). One limitation to this study is that the results are based on the
parents/ caregivers self-report and not direct observations. Results from this study indicate that
the majority of children with the developmental disability, autism, are affected by sensory
processing disorders. Children with autism and other developmental disabilities would benefit
from a sensory playroom by having the opportunity to enhance their sensory processing skills.
The statistics illustrate there are many children in the Hancock County area, with or without a
diagnosis, being affected by sensory processing issues. This provides evidence that there is a
demand for a program in area to address sensory processing needs for the children between the
ages of 4-12 years.

**Occupation Based Programming**

The Jungle Gym Playroom Program will be occupation-based because it is an
environment structured to let children play in a safe and rewarding environment. Play is an
essential occupation to children’s growth and development. The children will be actively
participating in play with themselves, as well as with peers, parents, and other adults.

**Models of Practice**
The Sensory Integration Model of Practice (SI) has been utilized to guide and develop sensory playrooms. Studies of the effectiveness of the SI model are controversial. Some studies support the use of the SI model in practice, and other studies have stated that there is not enough evidence on effectiveness to warrant its use. In a systematic review, 27 studies were reviewed relevant to SI. Among the 27 studies reviewed, levels I through level IV studies were synthesized. The purpose of this systematic review was to identify, evaluate, and synthesize the literature examining the SI approach to provide information to help guide intervention planning in clinical practice (Koomar & May-Benson, 2010). The results indicate that the SI approach may result in positive outcomes in sensiomotor skills and motor planning, socialization, attention, behavioral regulation, reading-related skills, participation in active play, and achievement of individualized skills (2010). A limitation to this study is that specific outcomes varied among studies as well as intervention effects varied from small to large. This study emphasized the need for future research to evaluate the positive trend in the effectiveness of SI that the results from this study discovered.

One case study evaluated a 3-year-old boy for 11 weeks through behavioral data collected by his preschool teachers who were blind to the type and timing of sensory integration therapy. The child had a reduction in aggressive acts, mouthing objects, and intensity of teacher input after SI intervention (Boccia, King-Thomas, and Roberts, 2007). In addition, the child increased engagement associated with treatment phases, providing evidence that the SI approach in clinical practice may be associated with improved self-regulatory behaviors (2007). One limitation to this case study is small sample size, thus poor generalizability (2007).

A pilot randomized control trial assessed the effectiveness of occupation therapy using a sensory integration approach (OT-SI) with children who had sensory modulation disorders
Twenty-four children with SMD were randomly placed in the OT-SI group, Activity Protocol group, or No Treatment group. In the OT-SI group children and therapists interacted in a large occupational therapy room equipped with sensory activities and toys. The child interacted through imaginative play with the sensory material in an active, meaningful, and fun manner. The occupational therapist served as a coach, educator, and role model for the parents, who actively participated in the sessions. In the Activity Protocol group (the active placebo) non-occupational therapy staff members or graduate students participated to the extent that the child indicated in each session and the parents were not educated on the disorder or intervention. The activities for this group consisted of tabletop play activities. Finally, the No Treatment group received no treatment and was placed on a 10-week wait list for OT-SI. The findings suggest that OT-SI may be effective in improving difficulties of children with SMD (Coll, Miller, & Schoen, 2007). Children in the OT-SI group made significant changes compared to the other two groups (2007). In addition, trends occurred toward great improvements on the Child Behavioral Checklist and Short Sensory Profile (2007).

**Federal Initiatives and National Trends**

One of Healthy People 2020’s goals is to, “improve health, fitness, and quality of life through daily physical activity” (U.S. Department of Health and Human Services, 2010). This government initiative is striving to increase physical activity for Americans. The Jungle Gym Playroom Program will be addressing this goal through creating an environment structured for play for children. The program’s focus is to increase sensory processing for children with sensory needs; however since children who do not have sensory needs are also welcome to participate they will be increasing their motor skills through play, which is related to increasing
physical activity. The children in the program will be playing; therefore they will be participating in physical activity.

Sensory Processing Disorder is not yet recognized by international health organizations since it is not considered its own entity in the DSM-4. However, there is strong campaigning and efforts being put forth to have Sensory Processing Disorder as its own diagnosis in the DSM-5. In addition, more rigorous research is being conducted on the effects, prevalence, and interventions of Sensory Processing Disorder. This indicates that there is a trend in children being affected by Sensory Processing Disorders if there are strong efforts into getting it in the next edition of the DSM. In addition, interventions for addressing autism are a current trend that is recognized by international health organizations. According the Dunn and Tomcheck’s (2007) findings, they provide evidence that there is also a trend of sensory processing disorders in children with autism.

World Autism Awareness Day was created in 2007 by the United Nations (Autism Speaks, 2011). On April 2nd the World Autism Awareness Day brings awareness to the world about autism as a growing global health crisis. Activities on this day increase the world’s knowledge about the autism epidemic and information about the importance of early diagnosis and intervention (Autism Speaks, 2011). In addition, World Autism Awareness Day provides an opportunity to celebrate unique talents and skills in individuals with autism.

The World Health Organization supports World Autism day and member states that provide health services to people with autism and other mental and developmental disorders in children (World Health Organization, 2011). Dr Ala Alwan, WHO Assistant Director-General for Noncommunicable Diseases and Mental Health said, "It is a deep concern that the global burden of disease attributed to mental disorders continues to grow, particularly in developing
countries. It is essential to prioritize, implement and fund projects on autism spectrum disorders and other mental disorders in children in developing countries" (World Health Organization, 2011). Currently, the majority of children with mental health needs in developing countries is not receiving any treatment or care due to lack of resources (2011). The World Health Organization recognizes this challenge and supports finding a solution to help children with mental health disorders in developing countries.

The Autism Speaks organization is dedicated to advocating for children and families with autism. Currently, Autism Speaks is lobbying to get laws past at the state and federal levels to assist families by requiring private health insurance companies to cover the diagnosis and treatment of autism spectrum disorders (2012). This provides evidence that there is a trend in families needing interventions to help their children who are diagnosed with autism spectrum disorder. A sensory playroom program would address this current trend.

With the increasing trend in autism internationally, it can assumed from Tomchek and Dunn (2007) findings that there is a trend in this population suffering from Sensory Processing Disorder as well. The Jungle Gym Playroom Program will be addressing this trend because it can help children with autism develop their sensory processing. Internationally, there are likely to be children that do not have a diagnosis of autism but have sensory processing disorders that could benefit from the Jungle Gym Playroom Program. The effectiveness of the Jungle Gym Playroom Program can be utilized to help children affected by sensory processing disorders all around the world, if the program was to be carried out elsewhere. The trend has been recognized internationally and the Jungle Gym Playroom Program seeks to help the children being affected by sensory processing disorders.

**Objectives**
Goal

The goal of the Jungle Gym Playroom Program at Findlay Elite Gymnastics and Cheer is to enhance sensory processing and motor skills in children with or without developmental disabilities.

Objectives

The objectives for the Jungle Gym Playroom Program (8-week program, 1 hour sessions each week) include:

Objective 1: At the completion of the first session, the parent/caregiver will be able to verbally identify 1-2 sensory processing and/or motor challenges displayed by their child.

Objective 2: At the completion of the 8-week session, the participant will demonstrate improvement toward typical performance in modulation of sensory input affecting emotional responses, compared to baseline, as measured by the Short Sensory Profile.

Objective 3: At the completion of the 8-week session, the participant will demonstrate improvement toward a typical performance in the ability to emotionally respond in a socially acceptable manner, compared to baseline, as measured by the Short Sensory Profile.

Objective 4: At the completion of the 8-week session, the participant will demonstrate improvement toward a typical performance in sensory processing related to endurance/tone, compared to baseline, as measured by the Short Sensory Profile.

Objective 5: At the completion of the 8-week session, the participant will demonstrate an improvement toward a typical performance in modulation related to body position and movement, compared to baseline, as measured by the Short Sensory Profile.
Objective 6: At the completion of the 8-week session, the participant will demonstrate an improvement toward a typical performance in modulation of movement affecting activity level, compared to baseline, as measured by the Short Sensory Profile.

Objective 7: At the completion of the 8-week session, the parent/caregiver will verbally identify their child engaging in more active play than sedentary play, as compared to the start of the program.

Objective 8: At the completion of the 8-week session, the participant will demonstrate an improvement toward a typical performance in thresholds for response, compared to baseline, as measured by the Short Sensory Profile.

Objective 9: At the completion of the 8 week session, the participant will demonstrate an improvement toward an average performance in bilateral coordination, compared to baseline, as measured on the BOT-2.

Objective 10: At the completion of the 8-week session, the participant will demonstrate an improvement toward a typical performance in balance, compared to baseline, as measured by the BOT-2.

Objective 11: At the completion of the 8-week session, the parent/caregiver will verbally identify observing increased balance and coordination in their child, as compared to the start of the program.

Objective 12: One week after the conclusion of the program, the parent/caregiver will be able to verbally identify their child’s improvements in areas he/she had difficulties.

Objective 13: During “circle time” at the conclusion of each session, each participant will discuss his/her likes/dislikes about the program.

Marketing and Recruitment of Participants
Market Plan

The marketing campaign for the Jungle Gym Playroom Program needs to focus on reaching out to parents, schoolteachers, day care providers, and church youth group leaders to spread the word about the program. Marketing materials and information about the program should appeal to parents first and foremost because ultimately, parents make the decision regarding whether or not their children participate in the program. Teachers, day care providers, and church youth group leaders are important stakeholders as they will be critical to and have the potential to aid in the recruiting process. These individuals have access to children and their parents in the community that may be potential participants. Teachers, day care providers, and church youth group leaders will be trained through informational meetings on details about the Jungle Gym Playroom Program. Teachers, day care providers, and church youth group leaders will then be able to market the program to parents, helping to recruit participants from various parts of the community. In addition, flyers will be produced and dispersed to parents, teachers, day care providers, and church youth group leaders as well as posted in community facilities that agree to display the flyers. The occupational therapist will travel throughout the community to diverse facilities giving a brief explanation of the program and asking permission to post the program flyers in their buildings. This marketing strategy will be used to help reach more parents in the community introducing them to the program. The flyers will be printed in color and designed to focus attention on the program being created for children as the participants. The goal of the flyers being printed in color is to help draw parents’ attention to a potential program for their children to be a part of. The teachers, day care providers, and church youth group leaders will be directed to give the flyer to children and parents that they believe would benefit from the Jungle Gym Playroom Program (see Appendix F for program flyers).
The flyer is made simple, colorful, and will be appealing to parents of young children. The text font used is appealing to parents and makes it obvious that the information on the flyer is advertising a program for children. Simple and familiar language was used in the flyer to allow a large spectrum of parents to be able to read and understand the information. It is difficult to attract children with sensory needs due to the lack of knowledge, research, and diagnosis of sensory processing disorder. To take this into account, the flyers have broad questions that relate to sensory needs posted on them. In order to keep the flyer attractive and simple, sensory needs are not described in detail. To ensure that this program is marketing children with sensory needs, the occupational therapist will host informational meetings for parents interested in the program. During these meetings the occupational therapist will describe in detail sensory processing to facilitate parents decision of whether or not they believe their child could benefit from the program.

Flyers will be copied and dispersed around the community. In order to do this, the occupational therapist will need to approach the agency personnel at each facility and request permission to post the flyer at their facility. With consent, the flyers will be displayed in their facility in an attempt to recruit potential participants and spread the word about the program. Community facilities will include churches, the Findlay YMCA, daycare centers, local businesses, and restaurants.

The occupational therapist will host informational meetings with teachers, day care providers, and church youth group leaders to discuss the Jungle Gym Playroom Program in detail. The informational handout will be dispersed to the teachers, day care providers, and church youth group leaders that will highlight the important information on the Jungle Gym Playroom Program (see Appendix G for Jungle Gym Playroom Program informational handout...
for teachers, church youth group leaders, and day care providers). More detailed information about different sensory processing needs will be described to provide the teachers, day care providers, and church youth group leaders with more knowledge on sensory processing needs (see Appendix H for sensory processing informational handout for teachers, church youth group leaders, and day care providers). With this knowledge, they will have a more educated idea of which children may potentially benefit from the program. The teachers, day care providers, and church youth group leaders will be provided copies of the flyers to send home with children they work with or give it directly to the parents if possible.

The occupational therapist will also host parent informational meetings. During these meetings, parents who have seen the flyer or heard about the Jungle Gym Playroom Program will be able to attend the meetings to learn more detailed information about the program (see Appendix I for Jungle Gym Playroom Program informational handout for parents/caregivers). This informational handout will be similar to the one dispersed to teachers, day care providers, and church youth group leaders. The occupational therapist will explain to parents how play is an important occupation aiding in a child’s growth and development and how sensory processing issues can interfere with a child’s play. The occupational therapist will also highlight how sensory processing can interfere in numerous aspects of a child’s everyday life. A handout with red flags for sensory processing issues will be provided (see Appendices J, K, and L for handouts on red flags for sensory processing issues for parents). This checklist handout will provide the parents a more detailed resource to investigate their child’s individual sensory processing issues. In addition, the various sensory processes experienced by humans every day will be defined using a simple language. The occupational therapist will highlight that the Jungle Gym Playroom Program will provide children opportunities to engage in play while fulfilling sensory needs. An
informational handout will be dispersed to the parents with the definitions of the various sensory processes providing them knowledge of how their children may benefit from the program (see Appendix M for sensory processing definitions for parents).

The occupational therapist will inform the parents that each child will be assessed and if they do not have a sensory need they will still be able to participate and benefit from the program. The occupational therapist will explain how through participation in the program the child can increase his/her motor skills, which is important and essential to growth and development. The parents will also have an opportunity to talk with the occupational therapist about their child specifically or ask any questions they may have about the Jungle Gym Playroom Program.

**Potential Participants**

Participants will be children between the ages of 4-14 years. Both boys and girls are welcome to participate in the Jungle Gym Playroom Program. The program will be free; therefore children from any socioeconomic status will have the opportunity to participate. The program seeks to have participants with sensory needs; however the program is open to any child. It may be difficult at first to enroll participants with sensory needs because of the lack of research, knowledge, and diagnosis. Hopefully, with all the advocacy efforts for getting the diagnosis of Sensory Processing Disorder recognized in the DSM, finding participants with sensory needs will be easier in the future. However, currently it is the hopes that parents who are aware of their children’s sensory needs will hear about the program and want to join. If a participant is found to not have sensory needs, the child can still participate and benefit from the program. Participants, with or without special sensory needs, may benefit through increased motor skills, specifically coordination and balance. In addition, all participants will have the
opportunity to play in a safe environment, which is important for growth and development. Children learn and grow through play, which requires children to organize and respond to their sensory input. Through play, participants will have opportunities to successfully play. For children with sensory deficits, their individual sensory needs will be identified and addressed during the program. Participants will also have the opportunity to play with typical peers their age, in an equal environment, which will help to enhance their social skills.

**Inclusion Criteria and N**

Ideally, the program will have 5-6 participants per group. More than one group will be scheduled to allow for maximum participation in the Jungle Gym Playroom Program. Five-six participants per group are ideal because it allows the occupational therapist more ample opportunities to individualize the environment of the playroom and provide more one-on-one time with the participants. Children will be placed in groups based on their ages secondary to following suit of how Findlay Elite Gymnastics and Cheer splits up their classes. If numbers allow, the occupational therapist will schedule children with similar sensory needs in the same group. A total of 10-15 participants would be best for the Jungle Gym Playroom Program in a cycle. Those 10-15 participants will be broken into groups with 5-6 participants per group. A mixture of both boys and girls is ideal. Children between the ages 4-14 years are welcome. Two out the five participants should have a sensory need identified on the Sensory Profile (Dunn, 1999) and at least one of the five participants can be without a sensory need. This breakdown is to ensure children with sensory needs are participating in the program.

Participants’ parent or caregiver will fill out an intake form for their child on the first session of the Jungle Gym Playroom Program. This form will ask demographic questions including age, race, gender, and diagnosis (see Appendix N for intake form). In addition,
through the Sensory Profile (Dunn, 1999) and the Bruininks-Oseretsky Test of Motor Proficiency, 2nd edition (BOT-2, Bruininks, & Bruininks, 2006), the participants sensory challenges, bilateral coordination, and/or balance abilities will be discovered. Through the intake form and the initial assessments the participants will be described. All the information obtained from each participant will be stored in a locked cabinet to maintain confidentiality.

**Programming**

The Jungle Gym Playroom Program will be designed to last 8 weeks, one session per week, once participants are recruited. Each session will last 1 hour and take place in the gym at Findlay Elite Gymnastics and Cheer. The program was developed using the principles of the Sensory Integration Model of Practice as a guide for designing the interventions for the participants.

**Session One**

During the first session, the head gymnastics coach will discuss to the parents and children the equipment in the gym and the rules for playing on the equipment. He will emphasize the importance of asking for assistance from an adult to be present when swinging on the bars or rings, walking on the high beams, or jumping on and off the vault and trampoline. After this short informational meeting about the equipment, the child’s parent or caregiver will fill out the Sensory Profile (Dunn, 1999) to report about their child. The caregiver will also be asked to fill out an intake form that will ask demographic questions including age, race, gender, and diagnosis. During this time, the occupational therapist running the program and the head coach at Findlay Elite Gymnastics and Cheer, will conduct icebreaker games to build rapport with the children and allow them the opportunity to get to know their peers in the group. After the ice breakers are completed, the head gymnastics coach will remain present in the gym to supervise
the children while they play and get acclimated to the equipment and gym. As parents complete
the Short Sensory Profile (Dunn, 1999), they will be invited to join their children in the gym to
help their children gain confidence and become more comfortable with the environment in the
gym. The occupational therapist will take each participant one at a time to another area of the
gym and administer the bilateral coordination and balance subtests of the BOT-2 (Bruininks, &
Bruininks, 2006). Once each child is assessed then the occupational therapist will join the
children in their play. After the first session the occupational therapist will score the Sensory
Profile (Dunn, 1999) and BOT-2 (Bruininks, & Bruininks, 2006) for each participant. The
occupational therapist will then create individual goals for each participant depending on their
specific sensory need and/or motor ability.

**Sessions Two through Seven**

Sessons 2-7 will follow a same format. Only the occupational therapist will be leading
these sessions. The first 15 minutes of the session will be a group warm-up and play. Play
during this time will be a group game, such as tag. Prior to the start of the session, the OT will
have stations set up for each participant. Each participant will spend 5 minutes at each station
then move onto the next station when the OT says “switch.” The stations will be created to meet
the participants individual needs based off their goals, which are created from their sensory
needs provided by the Short Sensory Profile (Dunn, 1999) or motor needs provided by the BOT-
2. These stations will help structure the environment while ultimately helping children to reach
their individual goals and the program to meet its objectives. For example, if a participant has a
goal to increase their low muscle endurance/tone, a station will be set up on the uneven bars
(gymnastics equipment in the gym) for the child to swing. This gives the child the ability to work
on increasing this low muscle endurance/tone. After each participant completes each station
once, the next 20 minutes will be devoted to allowing the children to engage in free play. During this free play, parents will be encouraged to join their children in the gym. This gives the parents and children an opportunity to play together in a unique environment. In addition, with more adults available the children will have increased opportunities to play on more equipment of their choice while still maintaining a safe environment. The last 5 minutes will be utilized as a cool down time. The OT will stretch the children as a group and have “circle time” before the end of the session. During this “circle time” the OT will ask the children questions such as “Did you have fun today?” and “What was your favorite part?” The occupational therapist will also ask the children “What did you learn today?” This is a formative evaluation measure that provides the occupational therapist information regarding whether or not the children are having fun and what occupations are they most interested in participating. The time intervals will vary depending on how many participants are in the group. This would be the time schedule for the maximum of 5-6 participants in a group.

**Session Eight**

Finally, session 8 will be the closing session. During this session, the head gymnastics coach will be attending to help the occupational therapist while he/she administers the BOT-2 (Bruininks & Bruininks, 2006) assessment on the children. The parent or caregiver that filled out the Short Sensory Profile (Dunn, 1999) on his/her child will be asked to complete the assessment again if applicable during this session. If the child had no sensory needs, but still participated in the program, the parent or caregiver does not need to fill out the Short Sensory Profile (Dunn, 1999) again. In addition, the parents or caregivers will be asked to fill out a short program evaluation as well. The head gymnastics coach will be supervising while the children are playing in the gym and the parents/caregivers are filling out the evaluations. The
occupational therapist will administer the BOT-2 (Bruininks, & Bruininks, 2006) on each participant once again. Before the session is over, the occupational therapist will ask the parent or caregiver to fill out the program evaluation with his/her child. This program evaluation is geared to the actual participants, so the parents or caregivers are asked to read the questions to the child and circle their child’s answer on the evaluation form. Finally, the occupational therapist will wrap up the Jungle Gym Program by thanking all the children and their families for participating in the program. The occupational therapist will hand out educational sheets providing techniques the child can use to help meet their individual sensory needs (see Appendices O, P, Q, R, S, and T for sensory techniques educational handouts for parents).

Finally, the occupational therapist will inform the participants’ parent or caregiver that he/she will call the family the following week and share with them the information gathered through the assessments.

**Relevant Literature**

There are very limited current statistics on children with Sensory Processing Disorders. Sensory Processing Disorders has little research to date and is not defined as it own diagnosis in the current Diagnostic and Statistical Manual of Mental Disorders (DSM-4) (American Psychiatric Association, 2010); therefore, it is not diagnosed very often. Despite limitations the best estimate of the prevalence of sensory processing disorders is based off the findings from Ahn et al., 13.7%.

The Centers for Disease Control and Prevention states that between the years 1997 and 2004, approximately 13% of children had a developmental disability, ranging from mild to serious disabilities, such as autism (2010). A study by Dunn and Tomchek (2007) evaluated children with autism and children who are typically developing on their sensory processing.
Through the Short Sensory Profile (SSP, Dunn, 1999) completed by the children’s’ caregiver provides evidence that 95% of the sample of children with ASD demonstrated sensory processing dysfunction on the SSP Total Score (Dunn & Tomcheck, 2007). Results from this study indicate that the majority of children with the developmental disability, autism, are affected by sensory processing disorders.

Literature provides evidence that play and other areas of a child’s life are affected by Sensory Processing Disorders. A systematic review on literature related to children and adolescents who have difficulty processing and integrating sensory input found that children and adolescents who have problems integrating and processing their sensory input, display performance deficits in areas of occupations (Koenig & Rudney, 2010). These areas include: play, social participation, IODLs, ODLs, and school performance (2010). Evidence from this study demonstrates that all areas of children’s lives are being affected by their sensory processing problems. Another study by Bundy et al. (2007) provides support that Sensory Processing Disorders affect children’s play compared to children with no Sensory Processing Disorders. The findings indicate that all children play, but when they are unable to organize and process their sensations, their play is affected (2007). These studies provide evidence that children’s lives are affected due to their inability to organize and integrate their sensory input. The Jungle Gym Playroom Program addresses this issue by helping children to enhance their lives by providing them the opportunity to increase their sensory processing through play. Learning to organize and integrate their sensory input through play will give them the ability to process their sensations in other areas of their lives, enhancing their lives.

The American Occupational Therapy Association (AOTA) states that play is essential to childhood’s growth and development and it is occupational therapy’s role to advocate, enhance,
and defend play (Primeau, 2008). Due to societal and environmental demands, childhood play is being interrupted (2008). Therefore the Jungle Gym Playroom Program is providing children the opportunity to play. In addition, if the children have sensory needs, the occupational therapist will modify the individual’s environment in the playroom to enhance the child’s play providing him/her the chance to grow and develop. The occupational therapist alters the child’s environment by providing the child with play occupations that they normally would avoid or have little experience trying. The occupational therapist will provide each participant an individual “just right” challenge to promote sensory processing.

As stated in the introduction, currently there is no research done on the benefits of sensory playrooms for children. However, there are a few studies on the effectiveness of sensory playrooms with other populations. One study by Champagne and Strongberg (2004) assessed the effectiveness of a sensory playroom with psychiatric patients. The results from the patient’s self reports of perceived levels of distress, show that 89% of the sensory room session had a positive effect, 10% had no effect, and 1% had a negative (Champagne & Strongberg, 2004). In 2006, Champagne published an article on creating sensory rooms for the American Occupational Therapy Association's Mental Health Special Interest Section. In this Special Interest Section, Champagne states how sensory playrooms should be utilized by occupational therapists for people with mental health disorders. The Jungle Gym Playroom Program creates a sensory enriched playroom and utilizes the occupation of play to increase children’s sensory processing and motor abilities.

**Model of Practice**

The Sensory Integration Model of Practice (SI) addresses all the sensations experienced. We are bombarded by millions of sensations daily (2 million bits per second) (Dejean, n.d.).
Sensory integration is the ability to take in, sort out, and connect information, so our bodies are able to respond in an appropriate manner. The ability to integrate more than one sensation at a time is referred to as multimodal sensory processing (Kielhofner, 2009). The environment we live in is filled with multiple sensory inputs requiring our bodies to organize, processes, and respond to numerous sensations. If a child has difficulty with multimodal sensory processing, then his/her participation and engagement in daily occupations and routines will be challenged. Sensory inputs must be actively organized and used by the child to act on and respond to the environment (Mailloux & Parham, 2010). Through actively seeking out sensory needs at the time, organizing, and responding to the environment, the child learns adaptive behaviors. The SI model, created by Dr. Jean Ayers, uses this idea to create an environment that allows the child the ability to actively seek out sensations as a means of intervention. The SI model’s principles are used to design the Jungle Gym Playroom Program to provide children the opportunity to learn adaptive behaviors through increasing their sensory processing.

**Principles**

The Jungle Gym Playroom Program was designed according to the 10 principles of programming from the core elements of Sensory Integration intervention process (Parham, et al., 2007). These principles were used to guide the intervention occupational forms for the participants of the Jungle Gym Playroom Program.

a. Provide sensory opportunities

The Jungle Gym Playroom Program will provide an environment enriched with opportunities for various sensory experiences (tactile, vestibular, proprioceptive, auditory, and visual). Children will be surrounded by opportunities to play that will require different sensations. For example, the uneven bars will be utilized to provide
vestibular and tactile sensations and the trampoline will be utilized to provide proprioceptive input. Stations will be set up that will address the participants’ individual sensory needs as well.

b. Provide the “just-right challenge”

Each participant’s parent or caregiver will complete the Short Sensory Profile (Dunn, 1999) on their child. In addition, the occupational therapist will use observations of the child to gain knowledge on the child’s sensory needs. The occupational therapist will then be able to modify the child’s environment to address the child’s individual sensory needs. The occupational therapist can then provide the child the opportunity to play in an environment that requires the just-right challenge. There will be maximum 5-6 children per group to allow the occupational therapists to observe and grade the children’s environment to ensure they are experiencing the just-right challenge.

c. Collaborate on activity choice

The Jungle Gym Playroom Program will treat each child as an active participant. The environment will allow the child freedom and choice of occupations to engage in. For example, the occupational therapist will let the child choose which station they would like to complete first. After the stations, during play time the children will have choices on where they would like to play. The occupational therapist will set limits in order to maintain a safe environment for the children to play in while still allowing them to actively choose where they would like to play. For example, the occupational therapist will encourage the parents to participate in the gym during free play to provide children increased opportunities to play on more equipment, since an adult needs to present to assist children on the various equipment in the gym.
d. Guide self-regulation

The Jungle Gym Playroom Program will provide support and guidance for the child to make choices and plan their own behaviors. The occupational therapist will encourage the child to initiate and plan occupations. For example, when the occupational therapist provides the children the opportunity to choose where they would like to play, the occupational therapist will encourage the child to initiate play with themselves and/or with others. The occupational therapist will support and encourage the children to try new types and mechanisms of play with various sensational inputs.

e. Support optimal arousal

Through the Short Sensory Profile (Dunn, 1999) and observations, the occupational therapist will be aware of the children’s sensory needs and levels of arousal. The occupational therapist will modify the situation or make changes to the child’s environment to support the child attaining or sustaining his/her optimal level of arousal. For example, if a child is under stimulated the occupational therapist may increase the music volume and/or talk louder to help the child reach their optimal arousal.

f. Create play context

The Jungle Gym Playroom Program creates an ideal environment which supports play. The context of the playroom will facilitate social, motor, and intrinsic motivation and enjoyment. All the sessions will be structured to allow the child to play successfully. The children will be playing for the majority of the hour they are attending the Jungle Gym Playroom Program. Play is crucial for children to learn, grow, and develop; the program will strive to provide children opportunities to successfully play.

g. Maximize child’s success
Through conducting assessments the occupational therapist will gain knowledge about which areas of sensory processing the child is struggling in. The occupational therapist will present or modify occupations that allow the child to experience success. The Jungle Gym Playroom Program will strive to provide the children the opportunity to play successfully. For example, if the participant has low muscle endurance/tone the occupational therapist will create an environment to provide the child with a just-right challenge of swinging on the gymnastics uneven bars. This allows the child ample opportunities for success as well as work on increasing their endurance and tone.

h. Ensure physical safety

The occupational therapist will implement safety precautions and provide regulations regarding proper equipment use at Findlay Elite Gymnastics and Cheer. The occupational therapist will use mats and physical contact when necessary to ensure safety of the child. There will be an informational meeting for the children and their parents or caregivers during the first session about safety, rules, and proper use of the equipment.

i. Arrange room to engage child

The Jungle Gym Playroom Program will strive to create an environment in the gym to motivate the child to choose and engage in play. The environment will be structured to be appealing to the child, motivating him/her to want to hurry up and come out into the gym and play. The occupational therapist will be playful and model to the children how fun playing in the gym can be. For example, at the start of the session the occupational therapist will turn on music and excitedly retrieve the children from the bleachers to walk them into the gym together.

j. Foster therapeutic alliance
The occupational therapist will respect the child’s emotions, build rapport with the child, and connect with the child. The occupational therapist will do this for each participant in the group, allowing each child to trust, bond with, and develop a relationship with the occupational therapist. For example, when the occupational therapist talks to a child one on one he/she will get down to his/her level so he/she can talk to the child face to face. The occupational therapist will encourage the participants to try new things but will never force the child.

Assessments

Two standardized assessments will be used for the Jungle Gym Playroom Program. The Short Sensory Profile (Dunn, 199) and the Bruininks-Oseretsky Test of Motor Proficiency, 2nd edition (BOT-2, Bruininks & Bruininks, 2006) will be used to assess the participants’ sensory needs and motor abilities pre and post. The child’s parent or caregiver will complete the Short Sensory Profile caregiver questionnaire (Dunn, 1999) on his/her child at the beginning of the program and at the conclusion of the program. The occupational therapist will administer the BOT-2 (Bruininks & Bruininks, 2006) on each participant at the beginning and end of the program. The bilateral coordination and balance subtests of the BOT-2 (Bruininks & Bruininks, 2006) will be assessed. The Short Sensory Profile (Dunn, 1999) and BOT-2 (Bruininks & Bruininks, 2006) were used to create the objectives for the Jungle Gym Playroom Program. In addition to the standardized assessments, the parents will fill out an intake form on demographics to allow the occupational therapist to be able to describe the participants. The parent or caregiver will be asked to complete a program evaluation as well as help his/her child complete a program evaluation. These assessments will be used to evaluate individuals as well as the program.

Direct/Indirect Services
The occupational therapist will use direct and indirect services during the Jungle Gym Playroom Program. The occupational therapist will provide direct services to the participants during each session while he/she is supervising and structuring the environment in the gym. The occupational therapist will also provide indirect services when he/she consults with the parents when necessary to answer their questions or concerns throughout the 8 weeks. In addition, indirect services are provided when the occupational therapist sends home educational handouts to the parents at the end of the program. Parents signing their name on a sign-up sheet of when they would like to meet with the occupational therapist to ask their questions will elicit consultation with the parents. The parents may meet with the occupational therapist whenever necessary.

**Documentation System**

The occupational therapist will document the information for the Short Sensory Profile (Dunn, 1999) and BOT-2 (Bruininks & Bruininks, 2006) at the beginning and end of the program. The occupational therapist will document and organize the intake forms and program evaluations from the child’s parent or caregiver and participants. The program evaluations will assess the participants and their parent or caregiver satisfaction with the Jungle Gym Playroom Program. The Short Sensory Profile (Dunn, 1999) and BOT-2 (Bruininks & Bruininks, 2006) will be used to assess the program and whether is met its objectives or not. In addition, the occupational therapist will complete a short progress report after each session for each participant on their progress towards meeting their individual goals. The occupational therapist will maintain a folder for each participant to keep his or her information together and organized. All documents and information of the participants will be stored in a locked filing cabinet at Findlay Elite Gymnastics and Cheer. Finally, the occupational therapist will complete a
discharge summary. The discharge summary will consist of the information gathered from each participant throughout the entire program, whether or not their goals were met, and referral to a pediatrician if the occupational therapist feels the child has a Sensory Processing Disorder and believes the child could benefit from further intervention.

**Program Sequence**

The Jungle Gym Playroom Program is an 8 week session, once weekly, with each session lasting 1 hour. Session 1 and session 8 will be different than the other sessions. During these sessions, the head gymnastics coach, will be present to supervise the children while the occupational therapist administers the BOT-2 (Bruininks & Bruininks, 2006) and the parent or caregiver completes the Short Sensory Profile (Dunn, 1999). However, sessions 2-7 will follow the similar format as described previously.

**Discharge**

A participant will be discharged from the program on the 8th session at the conclusion of the Jungle Gym Playroom Program. The occupational therapist will provide the child’s parent or caregiver with his/her contact information to use if he/she has any further questions or concerns. The occupational therapist will explain to the participants’ parents or caregivers that the Jungle Gym Playroom Program will be held 3 times a year and that their child is welcome to attend any of the following sessions of the program throughout the year. The occupational therapist will send information to parents or caregivers that are interested in participating in the program again, once the date of the next session approaches. The occupational therapist will send home informational sheets with each participant regarding useful techniques to help the children with their individual sensory needs.

**Role of Care Coordination**
The occupational therapist will take the role of the care coordinator for the participants. For this role, the occupational therapist will be responsible for coordinating with the parents during the program for the benefit of the participants. The occupational therapist will be available to answer any questions or concerns the parents may have about their children. The occupational therapist will meet with the parents when necessary at the time the parent has signed up for an individual meeting. At the end of the program, the occupational therapist will provide the parents with an educational resource of information about different techniques to use to help with the child’s individual sensory needs. The parent or the occupational therapist, with parent permission, can share the same educational resource of information with other professionals, such as the child’s teacher. In addition, the occupational therapist will take on the role of referring children to their pediatrician if the occupational therapist feels the child could benefit from further intervention. If a parent is reluctant to admit that their child has sensory problems the occupational therapist can advocate for the child to insist that the child is getting the opportunity to receive the best care beyond the scope of the program.

**Budgeting and Staffing**

**Revenue Sought**

The complete budget is broken down by specifying the needed personnel and program supplies and equipment (see Appendix U for budget chart for the Jungle Gym Playroom Program). In the budget chart, the occupational therapists hours and weekly salary are presented and totaled. The occupational therapists income for the program was based off the income and salary breakdown found through the 2010 Occupational Therapy Compensation and Work Force Study (American Occupational Therapy Association, 2010). In addition, the program supplies and equipment are broken down by item, a description of the item, the amount needed, the price
per item, the total for that item, and a subtotal. A chart is also provided that breaks down the
program supplies and equipment that Findlay Elite Gymnastics and Cheer is willing to provide
in-kind support for. The total revenue sought is $3615.57. No indirect costs will be requested.

**Item Justification**

Paper and cost of copies are requested because those items need to be available for the
occupational therapist to use for documentation, creating the flyers and educational handouts for
parents, and for administering the evaluations. The paper will also be needed for the occupational
therapist to write individual goals and progress reports for each participant after each session.
The copies will be required for the occupational therapist to have enough flyers for marketing the
program, intake forms, educational handouts, and evaluations for the number of participants in
the group. Colored ink will only be used for the flyers to help minimize cost.

The Short Sensory Profile (Dunn, 1999) and BOT-2 (Bruininks & Bruininks, 2006) are
being requested because these assessment tools are being used to evaluate the children and the
program. To help keep cost down, only the necessary BOT-2 (Bruininks & Bruininks, 2006)
items, the manual and record forms are being requested. The occupational therapist is only
assessing two subcategories (bilateral coordination and balance) on the BOT-2 (Bruininks &
Bruininks, 2006); therefore only those necessary items for those two tests are being requested.
The record forms only have 25 in a package; therefore two packages are being requested to
ensure there are enough for the entire year, 3 cycles, of the Jungle Gym Playroom Program. Only
one manual is being requested because that is all the occupational therapist will need to properly
administer the assessment and score the results. One complete kit of the Short Sensory Profile
(Dunn, 1999) is also being requested. The complete kit will ensure that the occupational therapist
will have all the materials necessary to properly administer the assessment and that there will be
enough copies for all participants to use. The Short Sensory Profile (Dunn, 1999) and BOT-2 (Bruininks & Bruininks, 2006) are essential items because they will be used as pre and post test for each participant to measure their changes before and after the Jungle Gym Playroom Program. In addition, the assessments will be used to evaluate the program’s objectives.

The locked filing cabinet is being requested to ensure confidentiality is being maintained. Personal and identifying information will be used for the program; therefore all the documents must be stored in a locked filing cabinet. The intake form, all assessment information, documentation, and evaluations will be organized in a folder for each participant. Each folder will be locked in the filing cabinet to make certain the information remains confidential. The facility does not already have a locked filing cabinet; therefore one needs to be purchased for the Jungle Gym Playroom Program.

The balance hemispheres and FitBall peanut ball are being requested to use for play for the children. These two items will be utilized for the children to work on balance and to play with. In addition, the child can try putting their bodies in different positions on the FitBall peanut ball to get different vestibular input. Bouncing on the ball and rolling the ball over their bodies will allow the participant’s to receive proprioceptive input. The children can manipulate and set up their own occupational forms by placing the balance hemispheres in their own positions. This helps the child be an active participant and have choice in their play, increasing their meaning and purpose for the occupation. When the children walk on balance hemispheres they are challenging their balancing skills and receiving proprioceptive input as well. Both these items being requested will enhance the children’s occupational form and provide them opportunities to successfully meet their sensory and/or motor needs whether they have a diagnosis or not.
The Skip it is being requested because it will be a tool children can interact with during their play at the Jungle Gym Playroom Program. The Skip it will provide the children opportunities to bounce and jump, with an added challenge of having to jump over the ball that is connected to their ankle. Through bouncing and jumping the child is receiving proprioceptive input. The added challenge of having to jump over the ball is enhancing the child’s balance, motor coordination, and motor planning.

The 3D giant floor puzzle and parachute are being requested to be utilized by the children during play at the Jungle Gym Playroom Program. The 3D giant floor puzzle requires the child to have to move around to put the puzzle together. Putting the puzzle together will help enhance the child’s balance, motor planning, and motor coordination. In addition, looking at the puzzle when it is completed with the 3D glasses will provide the child with visual stimulation. The 3D puzzle and parachute can both be used for group play as well. Group play will be encouraged because it will provide the children opportunities to build friendships, as well as, enhance their social skills. The parachute can be used in various ways such as, having the children pick a color and sit on that color, or have the children lift the parachute then run under it. Play with the parachute will provide the children the opportunity to receive proprioceptive, vestibular, and visual stimulation.

Findlay Elite Gymnastics and Cheer is willing to provide in-kind support for the Jungle Gym Playroom Program. The facility is allowing the use of a desk, 2-3 chairs, and pens. These items are necessary for the Jungle Gym Playroom Program. The pens, desk, and chairs will be utilized by the occupational therapist to do his/her documentation and to host meetings for parents when necessary. Bleachers will be used for visitors and parents or caregivers to sit and observe their children. In addition, Findlay Elite Gymnastics and Cheer is allowing the Jungle
Gym Playroom Program’s participants to use the mats and equipment that exists in the gym. The mats will be used for safety and as a means for play for the children. The equipment includes: the balance beam, the spring floor, the parallel bars, the uneven bars, the rings, the spring boards, the gymnastics floor, and the trampoline. In addition, the gymnastics facility has hula hoops and balls that will be utilized for the Jungle Gym Playroom program. The equipment will be utilized for play and to help the children work on their sensory and motor needs.

**Occupational Therapist**

The Jungle Gym Playroom Program will be lead by a registered occupational therapist that has been certified by the National Board of Certification for Occupational Therapy (NBCOT) and licensed to practice in the state of Ohio. The occupational therapist will be required to have a minimum of 2 years experience working with a pediatric population. He/she will be required to administer the Short Sensory Profile (Dunn, 1999) and the BOT-2 (Bruininks & Bruininks, 2006); therefore he/she must be competent in using these assessments (see Appendix V for an example of advertisement for an occupational therapist). The knowledge and skills that an occupational therapist has is essential to the Jungle Gym Playroom Program success.

The occupational therapist will be the program director with numerous responsibilities. He/she will be required to work 6 hours a week, for 13 weeks, for 3 cycles of the program within one year. The occupational therapist will train teachers, day care providers, and church youth group leaders about the program in the attempts to contribute to the recruitment process. The occupational therapist will actively recruit participants for the Jungle Gym Playroom Program the month prior to the first session. For example, the occupational therapist will be required to travel to community establishments and obtain permission to post the Jungle Gym Playroom
Program flyers. He/she will be responsible for hosting the parent informational meetings and be available to answer questions and concerns the teachers, day care providers, church youth group leaders, or parents/caregivers have through the entire program.

The occupational therapist will be required to administer the BOT-2 (Bruininks & Bruininks, 2006) to each participant in the program. He/she will be required to score and analyze the results of the BOT-2 (Bruininks & Bruininks, 2006) and Short Sensory Profile (Dunn, 1999). In addition, the occupational therapist will be responsible for writing goals for each participant based on their individual needs. He/she will then create individualized stations for the participant to address his/her specific sensory needs. The occupational therapist will be required to write progress notes for each participant after each session. It will be the occupational therapist duty to organize and keep all the participants’ documentation and information in a locked filing cabinet.

The occupational therapist will conduct each session of the Jungle Gym Playroom Program. He/she will have each session planned out and the occupational form set up for successful play. The occupational therapist will interact and build rapport with each participant and pay equal attention at all the participants.

Finally, the occupational therapist will be responsible for creating and providing the parents with an educational resource with tips to help address their child’s specific sensory needs. In addition, the occupational therapist must call each participant’s parent or caregiver within the following week to discuss the child’s scores and his/her progress he/she made in the Jungle Gym Playroom Program.

**Funding Sources**

The Ohio Children’s Foundation, Special Kids Therapy, and The Findlay-Hancock County Community Foundation are three funding sources that the Jungle Gym Playroom
Program would apply for. The Ohio Children’s Foundation (n.d.b) awards over 9 million dollars to hundreds of organizations that are helping to improve children and their family’s lives. The foundation believes it is important for children to be allowed to be children in their young, formative lives (n.d.b). The foundation accepts grant proposals at anytime of the year and one can expect a response within 60 days of submission. Their webpage provides a breakdown of all items that are required for the application process. To apply for a grant, a 1-2 page letter that describes the project, its objectives, time frame, total cost, and amount requested must be submitted (Ohio Children’s Foundation, n.d.a). An additional page should be submitted containing the budget (revenue and expenses) including the grant requested from the foundation (n.d.a). A brief description of the organization should be attached if the organization has never received a grant from the Ohio Children’s Foundation before (n.d.a). Contact Barbara Miller for any questions or to discuss ideas before submitting request (n.d.a).

Special Kids Therapy offers scholarships for individuals and grants to individuals or groups whose programs or equipment purchases positively affect the greatest number of Children with Special Health Care Needs (CSHCN) and supports Special Kids Therapy’s mission. Special Kids Therapy mission is, “to serve children with various developmental and/or emotional difficulties and their families, principally by raising money for therapies and services not covered by private/public insurance” (Special Kids Therapy, 2010). Grants awarded for professional development (education) require that the future program be presented within the year and requests must be specific in nature (Special Kids Therapy, 2010). Special Kids Therapy grant committee receives and reviews grant applications quarterly. Applications must be submitted on the following dates: January 1, April 1, July 1, and October 1 (Special Kids Therapy, 2010). The grant committee will make every effort to notify the applicants the decision within 30 days
following the quarterly application deadlines (2010). To submit a grant request, a cover letter, letter or support from the Project Leader, the original copy of the grant application with original signatures, support material if necessary, and one page detailing the expense breakdown and specific use of income must be included (2010).

The mission of The Findlay-Hancock County Community Foundation is, “to improve the quality of life in the Hancock County area through collaborative leadership, responsible grantmaking, and the development of philanthropic giving” (The Findlay-Hancock County Community Foundation, n.d.a). The Findlay-Hancock County Community Foundation offers many different types of grants; however the Jungle Gym Playroom Program would qualify for the Competitive Grants. Through the Competitive Grant process, The Community Foundation makes grants to charitable organizations serving the greater Hancock County area (The Findlay-Hancock County Community Foundation, n.d.a). Grant periods last between 6 months to 3 years and every 6 months an annual report including a budget update and narrative is required (The Findlay-Hancock County Community Foundation, n.d.b). A grant can be applied for at 4 different times a year. A letter of intent can be submitted the first Friday of October, the full proposal is due the first Friday in December, interviews with the program staff will take place in January, and the Board decision happens in February. Submission opportunities will follow the process previously stated but starting in January, April, or July. To submit for a grant, a grant cover sheet signed by the agency director, grant budget, grant budget narrative, one to two page grant summary, a full grant narrative with the pages numbered, a copy of the organization’s tax-exempt letter from the IRS, a list of current board members, a current audited financial statement of the operating budget, the agency affirmative action policy or statement of non-discrimination, resumes and job descriptions of the project personnel, and letters in support of the project must
be included (The Findlay-Hancock County Community Foundation, n.d.b). After submission of
the proposal, a program officer will meet with you to discuss the project as part of the proposal
review (n.d.b). In addition, the program staff may conduct research, make site visits, interview
your staff or board, or talk to other experts in the field and during this time the program staff may
also suggest you refine your proposal (n.d.b). The Community Foundation Board of Trustees (9
members) will decide to fund (partially or fully), decline, or defer the proposal (n.d.b). The
Board makes their decisions and then notifications will be sent out 2 weeks after their meetings
(n.d.b). Once the grant is awarded, the grant recipient will have to sign The Terms of Grant
Agreement (n.d.b). Before beginning the grant proposal process, The Community Foundation
suggests one should make an appointment to meet with program staff to discuss his/her ideas
first (n.d.b).

Self-Sufficiency Plan

The Jungle Gym Playroom Program plans to take steps to lower costs of the program
after it is conducted for a full year. Lowering costs will help to ensure that the program can
continue on in the future. After two years of an occupational therapist leading the program, an
certified occupational therapy assistant (COTA) will be hired to carry out the sessions. The
occupational therapist will train the occupational therapy assistant on the ins and outs of the
Jungle Gym Playroom Program. The occupational therapist and the occupational therapy
assistant will meet each week to discuss the sessions and collaborate with each other. In addition,
emails and phone calls may take place to ensure the program will be run smoothly and
consistently. The occupational therapy assistant that is hired must be competent in administering
the Short Sensory Profile (Dunn, 1999) and the BOT-2 (Bruininks & Bruininks, 2006). Hiring an
occupational therapy assistant to lead the program will bring the cost down for the Jungle Gym Playroom Program.

After the first year, the consumers will be asked to pay a small fee of $25 dollars to participate in the program. The program hopes to provide the consumers with an experience that they view as beneficial and valuable for their children, therefore they would not mind chipping in to help support the Jungle Gym Playroom Program. In addition, with the program’s success it is likely that community foundations, companies, and members will see the value in the Jungle Gym Playroom Program and donate to support the continuation of the program. Having the consumers chip in a small fee and receiving donations will help lower the cost.

Finally, many of the supplies and equipment that are being budgeted are only initial costs. The items will be able to be carried over into the following years of the Jungle Gym Playroom Program. For example, the balance hemispheres, parachute, FitBall peanut ball, 3D puzzle, and Skip it are all items that can be paid for once but used year after year. Supplies and equipment such as these are only initial costs, therefore they will not need to be purchased again and this will help to lower the cost of the Jungle Gym Playroom Program after the first year.

Program Evaluation

Outcome Evaluation Procedures for Objectives

The Jungle Gym Playroom Program’s objectives will be measured through a pre and post test method using the Short Sensory Profile (Dunn, 1999), the BOT-2 (Bruininks & Bruininks, 2006), parent/caregiver verbalizations about their child, and participant verbalizations. Each participant will be evaluated on their sensory processing through the caregiver questionnaire during the first session of the program and again on the 8th session of the program. The Short Sensory Profile (Dunn, 1999) will be used to assess objectives 2-6 and objective 8. In addition,
the occupational therapist will assess each participant’s motor abilities by using the BOT-2 (Bruininks & Bruininks, 2006) during the first session of the program and again on the 8th session of the program. The BOT-2 (Bruininks & Bruininks, 2007) will be used to assess objectives 9 and objective 10. Objective 1, objective 7, objective 11, objective 12, and objective 13 will be measured through the parent/caregiver verbalizing his/her observations and learning of strategies to address sensory needs for his/her child. The program’s objectives will be measured numerically through the scores on the Short Sensory Profile (Dunn, 1999) and the BOT-2 (Bruininks & Bruininks, 2006). Improvement of scores on the assessments in the areas the participant had deficits and parent/caregivers verbalizations, from the 1st session to the 8th session, is evaluating the individuals success as well as evaluating the Jungle Gym Playroom Program’s success through evaluation of the program objectives.

**Procedures for Process Evaluation**

There will be a daily sign in sheet that the occupational therapist will mark each participant’s name, if they are present, at the beginning of the session to record attendance. For the 1st and 8th session of the Jungle Gym Playroom Program, the head gymnastics coach will be volunteering to supervise the children while the occupational therapist is administering the BOT-2 (Bruininks & Bruininks, 2006). For this reason, the volunteer will be trained by the occupational therapist on what his responsibilities are during his time of supervision with the children. Another aspect of process evaluation is the qualifications of the occupational therapist that is leading the Jungle Gym Playroom Program. Please refer to the occupational therapist subheading in the budgeting and staffing section. Throughout the sessions, the occupational therapist will be teaching children new ways to play and new techniques to satisfy their sensory and/or motor needs. The occupational therapist will observe the children using the techniques to
evaluate whether or not the children are carry out the training. At the end of each session, the children will have sit down on the gymnastics floor for “circle time.” During this circle time, the occupational therapist will ask a series of questions to the children to find out what they learned, if they understand new ways to play, and what they think about the program. This method will address objective 13 for a formative evaluation.

**Procedures to Evaluate Program Satisfaction**

The participant, his/her caregiver, and the key stakeholders will be evaluated using a satisfaction rating scale. The participant and the caregiver will complete their program satisfaction evaluation during the 8th session of the Jungle Gym Playroom Program. The caregiver and participants evaluations will ask similar questions but be designed different to address age differences. The caregiver questionnaire will ask him/her to rate, on a 5 point likert scale, his/her satisfaction with the Jungle Gym Playroom Program (see Appendix W for caregiver satisfaction questionnaire). The caregiver will be asked to complete the participant program evaluation with his/her child. They will be asked to read each question to the child and circle only the child’s answer on the evaluation. The participant evaluation uses 3 different smiling faces to demonstrate whether to answer not satisfied, neutral, or satisfied (see Appendix X for participant evaluation). The key stakeholders will also be evaluated on their level of satisfaction with the Jungle Gym Playroom Program (see Appendix Y for key stakeholder’s satisfaction evaluation). This evaluation will be similar to the caregiver evaluation but developed to address the satisfaction levels of the key stakeholders for the Jungle Gym Playroom Program.

**Timeline**

The timeline breaks down major aspects of the Jungle Gym Playroom Program including: the 13 weeks required for the Jungle Gym Playroom Program and the tasks the
occupational therapist is responsible for completing each week (see Appendix Z for Jungle Gym Playroom Program’s timeline).
References


Retrieved from **Error! Hyperlink reference not valid.**

census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_10_1YR_B01001
&prodType=table


Appendix A:

Organizational Chart at Findlay Elite Gymnastics and Cheer
Appendix B:

Key Informant Semi-Structured Interview: Selected Findlay Elite Gymnastics and Cheer Agency Personnel
KEY INFORMAT SEMI-STRUCTURED INTERVIEW WITH SELECTED FINDLAY ELITE GYMNASTICS AND CHEER AGENCY PERSONNEL

INTRODUCTION TO INTERVIEW
- Find a quiet private area for the interview
- Explain why I would like to take notes and ask if it is okay with him that I do so
- Statement of confidentiality-Explain to him information will be in my paper but not directly quoted with his name unless approved by him
- Give a brief description of OT
- Give a brief description of tactile, visual, auditory, olfactory, and vestibular sensation regulation

PURPOSE OF INTERVIEW
To discuss the possibility for a sensory playroom program at the facility for children

INTERVIEW QUESTIONS
1. Do you see any of the children at the gym that have difficulty staying focused on what they are suppose to be doing? What are they doing instead?
2. Do you see any of the children not willing to participate because they dislike the feeling of the chalk or equipment? How do they act?
3. Do you see any of the children at the gym that have difficulty following directions? What do they do instead?
4. Do you see any children that are unwilling to participate due to fear of being upside down or being put in certain positions in space? How do they act?
5. A program that would allow children to fulfill their sensory needs through structured play using various gymnastics equipment in being drafted. This program would allow children to learn techniques to satisfy their sensory needs in a safe environment. If a program like this was to be implemented at the gym, what time and day would it fit into the schedule best?
6. How many children would you suggest to be in a group? Would you suggest scheduling multiple groups if the demand is there?
Appendix C:

Key Informant Semi-Structured Interview: Selected Special Kids Therapy Agency Personnel
KEY INFORMAT SEMI-STRUCTURED INTERVIEW WITH SELECTED SPECIAL KIDS THERAPY AGENCY PERSONNEL

INTRODUCTION TO INTERVIEW
- Find a quiet private area for the interview
- Explain why I would like to take notes and ask if it is okay with her that I do so
- Statement of confidentiality-Explain to her information will be in my paper but not directly quoted with her name
- Give a brief description of OT
- Give a brief description of equipment and setting Findlay Elite Gymnastics and Cheer facility has to offer

PURPOSE OF INTERVIEW
- To discuss the possibility for a sensory playroom program at Findlay Elite Gymnastics and Cheer for children

INTERVIEW QUESTIONS

1. What typical behaviors do you see from children in the playroom?

2. What have you found to be the most popular play for children in the playroom?

3. What do you feel the playroom is lacking that would increase the benefit for the children?

4. A program that would allow children to fulfill their sensory needs through structured play using various gymnastics equipment in being drafted. This program would allow children to learn techniques to satisfy their sensory needs in a safe environment. If a program like this was to be implemented at the gym, do you feel it would benefit the children?

5. How would you suggest organizing the group?

6. Do you have any suggestions of play that could be done using the gymnastics equipment to increase the benefit of the children?
Appendix D:

Survey Questions: For Parents with Children who Participate in the Playroom at Special Kids Therapy
SURVEY QUESTIONS FOR PARENTS WITH CHILDREN WHO PARTICIPATE IN THE PLAYROOM AT SPECIAL KIDS THERAPY

INTRODUCTION:

- I am a 3rd year graduate student in the Occupational Therapy Doctorate Program at the University of Toledo completing my Capstone Experience.
- Capstone Experience- Encourages and provides the Occupational Therapy Doctorate students at the University of Toledo an opportunity to become future leaders contributing to the profession.
- Sensation regulation- The ability to regulate and organize the numerous sensory inputs an individual is exposed to throughout the day.

PURPOSE OF SURVEY:

- Goal of this survey is to examine the needs of a possible sensory playroom program for children at a gymnastics facility.

SURVEY QUESTIONS:

1. Does your child enjoy being active?

2. Does your child enjoy running and/or jumping?

3. Does your child enjoy crashing onto mats?

4. Does your child enjoy swinging on monkey bars?

5. Does your child enjoy dancing?

6. Does your child enjoy climbing?
Appendix E:

Survey Questions: For Parents with Children between the Ages of 4-14 Years
SURVEY QUESTIONS FOR PARENTS WITH CHILDREN BETWEEN THE AGES OF 4-14

INTRODUCTION:

- I am a 3rd year graduate student in the Occupational Therapy Doctorate Program at the University of Toledo completing my Capstone Experience.
- Capstone Experience- Encourages and provides the Occupational Therapy Doctorate students at the University of Toledo an opportunity to become future leaders contributing to the profession.
- Sensation regulation- The ability to regulate and organize the numerous sensory inputs an individual is exposed to throughout the day.

PURPOSE OF SURVEY:

- Goal of this survey is to examine the needs of a possible sensory playroom program for children.

SURVEY QUESTIONS:

*Child's Age: _____

1. Does your child get scared when they are placed in different positions in space, such as being put upside down or going backwards?

2. Does your child have difficulty focusing on a task for a period of time?

3. Does your child ever appear agitated, uncomfortable or become disruptive from certain kinds of touch (i.e. tight hugs, soft scratches, tickling), sight, sound, or smell?

4. Does your child seem clumsy when dancing, marching, or jumping?

5. Does your child ever act out in a disruptive way when they are in a crowd or loud room?
6. If a program was created to allow children to achieve their individual sensory needs through play, do you believe your children would benefit from a sensory playroom program?

7. Do you believe your child would enjoy participating in a sensory playroom program?
Appendix F:

Flyers for the Jungle Gym Playroom Program
Jungle Gym Playroom

**Questions:**
- Does your child have an unusually low or high activity level?
- Is your child easily distracted?
- Does your child have behavioral, emotional, and/or social difficulties?
- Is your child clumsy?

If yes your child may have **SENSORY NEEDS!!**

**Answer:**

**Sensory Playroom**

A fun and exciting place for your children to play!

Boys and girls: Ages 4-14 years

Seeking children with sensory needs—but every child is welcome!

A chance to increase balance and coordination!

Eight week program, 1 hour weekly sessions

Lead by an occupational therapist

If interested or would like more information please contact:

Catie Wolf
Phone number: 419-348-4475
Email: Catie.wolf12@gmail.com
Seeking children with SENSORY NEEDS!!

Boys & Girls: Ages 4-14 years

Every child is welcome with or without sensory needs!

A chance to increase balance and coordination!

8 week program, 1 hour sessions each week lead by an occupational therapist!

Contact Information:
Catie Wolf
Phone: 419-348-4475
Email: catie.wolf12@gmail.com
Appendix G:

Jungle Gym Playroom Program Information for teachers, church youth group leaders, and
day care providers
Jungle Gym Playroom Program

Goal: To enhance sensory processing and motor skills in children with or without developmental disabilities.

Will work on children’s individual sensory needs utilizing gymnastics equipment

- Uneven Bars
- Trampoline
- Balance Beam

Will help children increase their motor planning and skills (balance and bilateral coordination)

Give children a chance to play with peers their age in a safe and fun environment

For boys and girls ages 4-14 years

Program will be run by a licensed occupational therapist (OT)

- The OT will administer a sensory and motor assessment on each child

Program will be held at Findlay Elite Gymnastics and Cheer

Gymnastics equipment and mats will be used for the playroom

Program will last 8 weeks (1 hour session once a week)

Parents will be able to meet with OT to discuss sensory strategies to help their child

Educational flyers will be sent home to parents with strategies to help with their child’s sensory needs.
Appendix H:

Sensory Processing Needs Informational Handout
Sensory Needs

**Sensory Processing:** A term that refers to the way the nervous system receives sensory messages and turns them into responses.

**Sensory Processing Disorder (SPD):**
- Term coined by Dr. Jean Ayers
- Children with SPD experience sensations differently from other children
- Some children feel sensations more intensely, others feel them less intensely, and some just don’t get sensory information “right” (i.e. “up feels the same as “down” or a penny feels the same as a button)

**Sensory Over-Responsivity:** (Sensory Defensiveness)
Children respond to sensory messages more intensely, more quickly, and/or for a longer time than children with normal sensory responsivity
- The child who can’t handle being in a store due to the amount of noise

**Sensory Under-Responsivity:** Children exhibit less of a response to sensory information than the situation demands, taking longer to react and/or requiring relatively intense or long-lasting sensory messages before they are moved to action.
- The child who falls hard but doesn’t cry

**Sensory Seeking:** Children have a nearly insatiable craving for sensory experiences and actively seek sensation, often in ways that are socially unacceptable.
- The child who is actively moving, crashing, jumping, etc.
Appendix I:

Jungle Gym Playroom Program Informational Handout for Parents/Caregivers
Jungle Gym Playroom Program

Goal: To enhance sensory processing and motor skills in children with or without developmental disabilities.

Will work on children’s individual sensory needs:

- Vestibular: Have children hang on bars upside down
- Proprioception: Have child jump on trampoline
- Visual: Have child use 3D glasses to look at the floor puzzle
- Auditory: Variety of music at different volumes will be played
- Tactile: Swinging on the bar with gymnastics chalk on their hands

Will help children increase their motor planning and skills (balance and bilateral coordination)

Give children a chance to play with peers their age in a safe and fun environment

For boys and girls ages 4-14 years

Program will be run by a licensed occupational therapist (OT)

- The OT will administer a sensory and motor assessment on each child

Program will be held at Findlay Elite Gymnastics and Cheer

Gymnastics equipment and mats will be used for the playroom

Program will last 8 weeks (1 hour session once a week)

Parents will be able to meet with OT to discuss sensory strategies to help their child

Educational flyers will be sent home to parents with strategies to help with their child’s sensory needs.
Appendix J:

Red Flags for Sensory Over-Responsivity
Red Flags of Sensory Over-Responsivity

My child’s sensory responses include being frequently bothered by:

- Fuzzy or furry textures (wool, clothing, animal fur, textured blankets)
- Mud or glue on his hands
- Crawling or walking barefoot on a coarse carpet or grass
- Feeling crumbs around his mouth
- Having his hair, fingernails, or toenails cut
- Fragrance from perfume or bath products
- Food textures
- Background noises when he is trying to concentrate
- Noise in a restaurant, mall, or large gymnasium
- Any loud, unexpected sounds, such as sirens, school bells, an engine backfiring
- Playing on swings and slides
- Bright lights or sunshine
- Being upside down, as when turning a somersault

My child’s behaviors frequently include being:

- Aggressive or impulsive when overwhelmed by sensory stimulation
- Irritable, fussy, moody
- Unsociable, avoids group activities and had trouble forming relationships
- Excessively cautious and afraid to try new things
- Upset by transitions and unexpected changes

Appendix K:

Red Flags for Sensory Under-Responsivity
Red Flags for Sensory Under-Responsivity

My child has these sensory symptoms:

- Doesn’t cry when seriously hurt and isn’t bothered by minor injuries
- Doesn’t seem to notice when someone touches him
- Dislikes trying new physical activities and rarely initiates them
- Nearly always prefers sedentary activities like computer time to active physical games
- Was slow or unmotivated to learn to dress and/or feed himself
- Often seems unaware of what’s going on around him; doesn’t hear his name being called
- Often seems unaware of body sensations such as hunger, hot or cold
- Is or was unaware of the need to use the toilet
- Is not able to use his hands for a task without watching them
- Does not notice smells
- Does not notice food or liquid left on his lips

My child’s behaviors frequently include being:

- Passive, quiet, withdrawn
- Difficult to engage in conversation or other social interactions
- Easily lost in his own fantasy world
- Apathetic and easily exhausted
- Excessively slow to respond to directions or complete assignments
- Without inner drive to get involved in the world around him; uninterested in exploring games or objects

Appendix L:

Red Flags for Sensory Seekers
Red Flags of Sensory Seeking

My child has these sensory symptoms:

_Is on the move constantly
_Likes crashing, bashing, bumping, jumping, and rough-housing
_Show a strong preference for excessive spinning, swinging, and rolling
_Consistently touches objects; touches and/or intrudes on people
_Seems unable to stop talking and has trouble taking his turn in conversations
_Takes excessive risks during play; climbs high into tress, jumps off tall furniture
_Loves to play music and television at extremely high volume
_Seeks opportunities to feel vibrations, such as leaning against a stereo speakers or appliances like the washer or dryer
_Frequently fixates visually on objects such as reflections of the sun in the side-view mirrors of the car
_Prefers foods with strong flavors/tastes (bitter, sour, spicy)
_Often licks, sucks, or chews on non-food items such as hair, pencils, clothing
_Is nearly impossible to take to the movies, church, or into other settings that don’t allow him to move around
_Is unable to sit still in a chair
_Smells or tastes objects when playing with them

My child’s behaviors frequently include being:

_Angry or even explosive when he is required to sit still or stop what he’s doing
_Intense, demanding, hard to calm
_Prone to create situations others perceive as “bad” or “dangerous”
_Excessively affectionate physically

Appendix M:

Sensory Processing Definitions for Parents/Caregivers
The 7 Senses

**Touch:** The sense of touch is the first sensory system to develop in the womb and is the largest sensory system in the body.

**Proprioception:** The internal sense that tells you where your body parts are without your having to look at them.

**Vestibular:** How the body handles movement. Sensory receptors in the inner ear give your child crucial information about movement, gravity, and vibration.

**Auditory:** How the central nervous system and brain recognize and make sense of sounds.

*The auditory sense is intimately associated with the vestibular sense. The vestibular system and cochlea (hearing portion of the inner ear) are anatomically and physiologically attached. Their sensory receptors work the same way, they have common fluids, depend on the same nerve, and even share some of the same nerve fibers.*

**Vision:** Vision involves more than the eye’s ability to pick up images accurately in the environment but your brain must also process what this visual information means, remember it, be able to follow it as it moves or you move, know whether you need to respond to it, and if so, determine the best way to respond.

**Taste and Smell:** Taste and smell are intimately connected. We can detect 10,000 odors, we taste only 5 things: sweet, salty, bitter, sour, and umami (the recently discovered taste sensation triggered by monosodium glutamate). Everything else we taste is actually smelled. Food texture and temperature belong to the realm of touch.

Appendix N:

Program Intake Form

Jungle Gym Playroom Program:
Intake Form

Name: __________________

Birthday: _______________

Age: _________

Race: ____________

Gender: Male__ Female __

Diagnosis: __________________
Appendix O:

Educational Handout: Techniques for Proprioceptive Input

**TIPS FOR PROPRIOCEPTIVE INPUT**

**Jump:** On a mini-trampoline or from a stable chair/sofa onto a crash pad of pillows, cushions, or beanbag chairs.

**Push-Ups:** Wall push-ups or regular.
Wheelbarrow: Walking: Especially good for younger children. Can also try donkey kicks, crab walking, frog jumps, or heavy marching.

Pushing Objects: Push a stroller, a cart filled with objects (i.e. groceries). Older children can push a lawn mower or a wheelbarrow full of dirt.

Backpack: Wear a backpack or fanny pack filled with toys or books (remember not too heavy!)

Construction: Hammering wooden pegs into a peg board while older children can do actually do real construction projects. Older children can put ice cubes in a plastic bag and smash them with a mallet or hammer for an iced drink.

Throwing/Catching: Throwing gives the joints all of pulling apart input. Throwing balls or beanbags to someone or into a bucket, rocks into a pond, a basketball into a hoop. Catching balls, weighted balls, water balloons, or therapy balls. Playing on monkey bars provides great pulling apart input.

Bouncing: Bouncing while sitting on a therapy ball or use a hopping ball with a handle or a pogo stick for older children.

Games/sports: Hopscotch, tug-of-war, play wrestling, and sports like swimming, biking, skating, martial arts, and skiing.

Music: Playing with the cymbals and drums

Housework: Help clean windows and tabletops, vacuum, load/unload dishwasher or washing machine full of wet, heavy clothes, or take the trash out.

Weighted items: OT may suggest using a weighted blanket or vest.

Appendix P:

Educational Handout: Techniques for Vestibular Input

**TIPS FOR VESTIBULAR INPUT**

**Movement Fun:** Run in circles, do cartwheels, ride a carousel or rollercoaster, hang upside down on monkey bars, roll down a hill, go sledding, ride a bike, or skate.
Spin/Flip: Hold your young child’s arms and legs and spin them around, have him/her do a “monkey flip” (hold his hands as he faces you and have him walk up your thighs and flip over.

Swing: Encourage your child to swing. Try different swings (i.e. tire swing, regular swing, porch swing). Drag or swing your child around in a sturdy sheet or blanket or heavy duty laundry basket, or push him around in a wheelbarrow.

Scooter/Skateboard: Have child move around on a 4-wheeled scooter or down an appropriately graded ramp/hill and for older kids have them use a 2-wheeled scooter or skateboard (which is great for motor planning skills as well).

Therapy Ball: With ball stabilized, have child roll forwards and backwards on the ball on her belly and back. Doing “airplane” on the ball with you stabilizing the ball is great for low muscle tone (hypotonia) as well.

Rocking: Rocking in a rocking chair can be soothing.

Appendix Q:

Educational Handout: Techniques for Tactile Input

TIPS FOR TACTILE INPUT

Pillow/Blanket Fun: Make a “sandwich” by firmly pressing on your child’s arms, legs, and back with pillows or sofa cushions. Make a “burrito” by rolling your child up snugly in a blanket.
Cookie Dough: Roll a big ball firmly over your child’s arms, legs, and back.

Sand: Encourage your child to explore with their hands and feet in a container filled with sand, dry beans, dry rice, or Styrofoam peanuts. Bury items then have your child find them—have them try with their eyes closed too.

Foam Mats: Have your child play with interlocking foam alphabet mats—a toy that can be stepped on, thrown, and thrashed around providing tactile input safely.

Water Play: Encourage water play by adding food coloring, bubbles, and Silly String to increase interest. Use cups, strainers, ladles, or plastic toys your child enjoys. Baths are an excellent opportunity to get tactile input from the water as well as from items used in the bath, squishy water toys, cups, foam letters, shaving cream or foamy soap, soap crayons, and both smooth and nubbly washcloths.

Textures: Have your child play with foamy soap, shaving cream, finger paint, glitter glue, chocolate pudding, wet and dry sand, mix cookie dough and cake batter, etc. You can have your child practice writing or drawing with a finger with the textures. Don’t force your child to touch the textures.

Play-Doh: Encourage your child to play with Play-Doh!

Guessing Game: Encourage your child to touch various textures and help your child guess what it is (i.e. velvet, Velcro, marble, etc).

Dress up: Try on different costumes and play with make-up and face paint.

Gardening: Garden and repot plants inside and outside.

Vibration: Use vibrating teether, vibrating toothbrush, vibrating pen, foot massagers, vibrating pillows, vibrating hair brushes, and vibrating toy massagers (i.e. Vibrating bug).

Projects: Have children sculpt, sew, weave, crochet, knit or scrapbook (lots of pasting and working with different textures), or use sandpaper to smooth woodworking project.

Mouth Fun: Let your child eat Pop Rocks or drink plain seltzer water to experience the bubbles. Encourage your child to eat a wide variety of textures and consistencies. Eating very cold and even frozen foods like Popsicles and frozen juice cubes really wakes the mouth up.
**Bear Hugs:** Give your child deep-pressure massage, bear hugs, squeezing your child as tolerated under pillows, cushions, beanbag chair, or ball. Give firm pressure in the palms or her hands and soles of her feet.

**“Fidgets”:** Squeezing squishy balls or Koosh balls, a stone, a swatch of fabric (i.e. velvet, satin, or corduroy can be used for self-calming when your child needs a way to redirect their hands.

**Brushing:** Ask your OT about a “brushing protocol” and if it is right for your child.

Appendix R:

Educational Handout: Techniques for Auditory Input

TIPS FOR AUDITORY INPUT

**Nature:** Encourage your child to listen to nature. Listen to thunderstorms, wind, and water. Go to the beach. Or have your child listen to recordings of natural sounds (i.e. a rainstorm, waves, animals in the forest).
**Listening Game:** Sit quietly with your child and play a game trying to identify the sounds you hear and where they are coming from (i.e. a car in the distance, a bird signing).

**Calm Music:** Have your child listen to recordings and music specially designed to promote calm, focus, energy, and creativity. Get a white-noise machine, tabletop rocks-and-water fountain, or aquarium.

**Music:** Experiment with different types of music, live and recorded.

**Musical Instruments:** Encourage your child to play with a musical instrument

**Be the Controller:** If your child is auditory sensitive, let him/her control the volume of the stereo, exploring soft versus loud music

**Therapeutic Listening:** Your OT or SLP may recommend a therapeutic listening program that uses specially engineered music and headphones.

Appendix S:

Educational Handout: Techniques for Visual Input

TIPS FOR VISUAL INPUT

**Lighting:** Use dim lighting for calming and relaxation. Experiment with different colored light bulbs and various types of light bulbs (i.e. incandescent, full spectrum, and halogen).
New Sights: Give your child opportunities to see new environments as tolerated. For example, if a child lives in the city take them to the country and vice versa.

Protection: Have your child wear a hat with a wide brim or a visor and/or sunglasses on sunny days or when the sun is low in the sky creating a lot of glare.

Colors: Respect your child’s color preference. Avoid buying toys, clothes, and towels in colors your child finds stressful.

Games: Play games that help develop visual skills (i.e. flashlight tag, playing catch (try a balloon because it moves slower than a ball)). Prewriting activities such as mazes, dot-to-dot books, and tracing all encourage the eyes and hands working together.

Appendix T:

Educational Handout: Techniques for Smell (Olfactory) Input & Taste Input

TIPS FOR SMELL (OLFACTORY) INPUT

Scents: Explore scents that work best to meet your child’s goal: whether it is to calm down or to wake up (vanilla and rose are generally calming/peppermint and lemon usually wake you up).
Games: Play a smelling game where your child closes his/her eyes or wears a blindfold and he/she tries to guess what the smells are (i.e. maple syrup, apple, banana, and peanut butter).

TIPS FOR TASTE INPUT

Stimulate the Mouth: Strong tastes can stimulate your child’s mouth and make him/her more willing to try new foods. Strong tastes: peppermint, sour gummy bears, or other strong flavored foods.

Kitchen Fun: A child is more likely to taste something if he/she helps prepare or select the food. Give the child food to choose from and let them help you cook and serve it.

Appendix U:

Budget Chart

<table>
<thead>
<tr>
<th>Position</th>
<th>Hours per Week</th>
<th>Hourly Rate</th>
<th>Fringe Benefits</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational Therapist</td>
<td>6</td>
<td>$37.00</td>
<td>$0.00</td>
<td>$222.00 (per week)</td>
</tr>
<tr>
<td>*Subtotal</td>
<td></td>
<td></td>
<td></td>
<td><strong>$2,886.00</strong></td>
</tr>
</tbody>
</table>

*Subtotal is based on one full calendar year with 3 cycles of the 8 week program plus the 4 weeks for recruitment and the follow up week after the program.

Program Supplies and Equipment
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Cost per Item</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>For copies &amp; documentation</td>
<td>1 box (5,000 sheets)</td>
<td>$48.99</td>
<td>$48.99</td>
</tr>
<tr>
<td>Cost of black and white copies</td>
<td>Copying evaluations, educational handouts, etc.</td>
<td>300 copies</td>
<td>$0.05 per copy</td>
<td>$15.00</td>
</tr>
<tr>
<td>Cost of colored copies</td>
<td>Copying flyers for</td>
<td>200 copies</td>
<td>$0.49 per copy</td>
<td>$98.00</td>
</tr>
<tr>
<td>Parachute</td>
<td>For group play or individual play</td>
<td>1</td>
<td>$19.99</td>
<td>$19.99</td>
</tr>
<tr>
<td>Balance hemispheres</td>
<td>For the children to walk on working on balance</td>
<td>1</td>
<td>$54.95</td>
<td>$54.95</td>
</tr>
<tr>
<td>Skip it</td>
<td>For the children to move and jump with</td>
<td>1</td>
<td>$5.19</td>
<td>$5.19</td>
</tr>
<tr>
<td>FitBall peanut ball</td>
<td>For children to balance and play with</td>
<td>1</td>
<td>$39.95</td>
<td>$39.95</td>
</tr>
<tr>
<td>Floor puzzle</td>
<td>3D giant floor puzzles that require children to move around to complete the puzzle</td>
<td>1</td>
<td>$16.00</td>
<td>$16.00</td>
</tr>
<tr>
<td>BOT-2</td>
<td>Manual &amp; record forms (pkg. 25) To assess children’s motor abilities</td>
<td>1 Manual 2 Packages of record forms</td>
<td>Manual: $106.50 Record form: $45.00</td>
<td>$196.50</td>
</tr>
<tr>
<td>Short Sensory</td>
<td>Complete kit</td>
<td>1</td>
<td>$166.00</td>
<td>$166.00</td>
</tr>
</tbody>
</table>
Profile | To assess children’s sensory processing |  |  |  
---|---|---|---|---
Locked filing cabinet | To lock and store all participants information | 1 | $69.00 | $69.00

| Subtotal |  |  |  | $729.57 |
| Total Revenue Sought |  |  |  | $3615.57 |

### In-Kind*: Program Supplies and Equipment

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Quantity</th>
<th>Cost per Item</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pens</td>
<td>For writing purposes for the program</td>
<td>1 box</td>
<td>In-kind*</td>
<td>$0.00</td>
</tr>
<tr>
<td>Desk</td>
<td>Where the OT can do his/her documentation</td>
<td>1</td>
<td>In-kind*</td>
<td>$0.00</td>
</tr>
<tr>
<td>Chairs</td>
<td>For the OT and visitors to sit in</td>
<td>2-3</td>
<td>In-kind*</td>
<td>$0.00</td>
</tr>
<tr>
<td>Bleachers</td>
<td>For visitors/parents to sit in</td>
<td>2 sets</td>
<td>In-kind*</td>
<td>$0.00</td>
</tr>
<tr>
<td>Equipment</td>
<td>Trampoline, floor, bars, rings, balance beam, spring boards</td>
<td>Utilizing what is in the facility</td>
<td>In-kind*</td>
<td>$0.00</td>
</tr>
<tr>
<td>Mats</td>
<td>Various shapes, colors, &amp; sizes</td>
<td>Utilizing what is in the facility</td>
<td>In-kind*</td>
<td>$0.00</td>
</tr>
<tr>
<td>Balls</td>
<td>Small colorful balls</td>
<td>10</td>
<td>In-kind*</td>
<td>$0.00</td>
</tr>
<tr>
<td>Hula Hoops</td>
<td>Colorful hula hoops to be played with</td>
<td>5</td>
<td>In-kind*</td>
<td>$0.00</td>
</tr>
</tbody>
</table>

| Subtotal |  |  |  | $0.00 |

* Findlay Elite Gymnastics and Cheer are willing to provide in-kind support for the Jungle Gym Playroom Program
Part-Time Occupational Therapist Position Available
For the Jungle Gym Playroom Program at Findlay Elite Gymnastics and Cheer
Job Description:
* Program Director of the Jungle Gym Playroom
* Must be flexible and willing to work on Saturdays
* Love working with children
* Energetic and Creative

For further information or application process please contact:

Catie Wolf
Phone: 419-348-4475
Email: catie.wolf@gmail.com
Address: 610 Third Street, Findlay, Oh 45840

Requirements:
* NBCOT certified
* Licensed in the state of Ohio
* 2 years minimum experience working with a pediatric population
* Competent in administering the BOT-2 & Short Sensory Profile
Appendix W:

Parent/Caregiver Program Evaluation

Caregiver Program Evaluation

0: Not Satisfied
1: Somewhat Satisfied
2: Fairly Satisfied
3: Neutral
4: Satisfied
5: Very Satisfied

Rate the level of satisfaction you felt:

Do you feel your child benefitted from the program?

1  2  3  4  5

Do you feel your child had fun?

1  2  3  4  5

Do you feel the gym was a safe place to play?

1  2  3  4  5

Do you feel your child learned new ways to play?

1  2  3  4  5

Do you feel the instructor (OT) played with your child?

1  2  3  4  5
Appendix X:

Participant Program Evaluation

`:): Happy/Satisfied
`:/: Not sure/Neural
:(: Sad/Not Satisfied

**Circle how you felt:**

Did you have fun?

:)   :/   :(  

Was the teacher (OT) nice?

:)   :/   :(  

Did you try new things?

:)   :/   :(  

Did you like the gym?

:)   :/   :(  

Did you like the games you played?

:)   :/   :(  

:::
Appendix Y:

Key Stakeholder Program Evaluation

Jungle Gym Playroom Program Evaluation

0: Not Satisfied
1: Somewhat Satisfied
2: Fairly Satisfied
3: Neutral
4: Satisfied
5: Very Satisfied

**Rate the level of satisfaction you felt:**

Do you feel the children benefitted from the program?
1    2    3    4    5

Do you feel the children had fun?
1    2    3    4    5

Do you feel the children learned new ways to play?
1    2    3    4    5

Do you feel the instructor (OT) collaborated well with parents and other staff in the gym?
1    2    3    4    5

Do you feel the instructor (OT) followed all the facilities safety rules and regulations?
1    2    3    4    5

Do you feel this program brought in more business for your facility?
1    2    3    4    5
Appendix Z:
Timeline for the Jungle Gym Playroom Program

<table>
<thead>
<tr>
<th>Task</th>
<th>W</th>
<th>E</th>
<th>E</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete needs assessment</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing for the program</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Recruiting clients</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Meetings with parents</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Train head coach volunteer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct initial evaluation/ pre-test assessments</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implement and conduct weekly sessions</td>
<td>X X X X X X X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct formative evaluations</td>
<td>X X X X X X X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct process evaluations</td>
<td>X X X X X X X X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct summative evaluations/post-test assessments</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge patients</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Handout educational resources</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow-up phone call with assessment results</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Annotated Bibliography

Catherine E. Wolf

University of Toledo

April 13, 2012

Occupational Therapy and Sensory Approaches

Abstract:

An abstract was not included in the source.

Summary and Significance:

The article describes the role of occupational therapists with children and youth. It describes how occupations for children and youth are those in which enable them to learn and develop life skills, be creative and/or derive enjoyment, and thrive as both a means and an end. Occupational therapists work with children, youth, and their families to promote active participation in the occupations that are meaningful to the individual. OT practitioners work in collaboration with many of professions and community members in various traditional and non-traditional settings. This article describes how OT practitioners can work with children on developmental needs, educational needs, injury-related needs, and emotional-behavioral needs.

Evidence is provided that supports the idea of designing a playroom for children to learn strategies to organize and integrate their sensory needs through the occupation of play would be in the scope of practice for occupational therapy.

The American Occupational Therapy Association highlights that play is an important aspect of a child’s development and OT’s play a critical role in the occupation of play. Therefore, OTs have an important role to help children with sensory processing needs through play, which is a goal of the Jungle Gym Playroom Program.


Abstract:

An abstract was not included for this source.

Summary and Significance:
The article talks about how Jean Ayres developed sensory integration theory, assessments, and interventions to be used for persons with sensory integration dysfunction. Sensory integration interventions can be used in a client-centered manner by occupational therapists when working with individuals with a variety of issues across the life course, for the purposes of enhancing occupational performances and increasing participation. The article narrowed in on using sensory integration in mental health. Schizophrenia was used as an example to demonstrate how sensory integration interventions can be used and the role of the occupational therapist. There is a need for further research to support the use of sensory integration in mental health. Occupational therapists are highlighted as being in a unique position to research, develop, and administer occupational therapy assessments and interventions necessary to target sensory processing-related needs.

The article brings attention to the important role of the occupational therapy profession to continue to explore and research all the benefits of using a sensory integration approach to therapy throughout the lifespan. This article is important because it talks about using sensory integration through the lifespan. This will be important because the children in the Jungle Gym Playroom Program will have to learn to balance their sensory needs throughout their entire life to increase their occupational performances and participation. In addition, the Jungle Gym Playroom will be run by an occupational therapist. This article provides support that it is in the occupational therapy realm of practice to work with individuals with sensory processing needs.


**Abstract:**
The national initiative to decrease the use of seclusion and restraint in psychiatric inpatient settings requires innovative methods to facilitate the processes of consumer self-organization, self-care, and positive change. Sensory-based approaches and multisensory rooms are valuable resources as cultures of care shift to become more responsive and collaborative. This article explores the importance and efficacy of trauma-informed approaches that are sensory supportive, address the individual needs of the person, and strengthen the therapeutic relationship.

**Summary and Significance**

The article discusses the importance of not using restraints or seclusion for the mental health population. The Public Health Prevention Model is mentioned to be useful in the reduction of the use of restraints or seclusion. This model uses primary, secondary, and tertiary prevention strategies. A person-centered approach is important when evaluating the environment and daily lives of a person in a psychiatric setting. In addition, trauma-informed care system is important to use to develop a treatment plan and crisis plan to support emotional self-management and cue the staff to respond suitably during times of stress. Recognizing individual’s tendencies and preferences are important when it comes to their sensory needs. It is important to recognize that experiences of an event are almost always multimodal involving both sensory and motor systems.

Sensory diets are important to assist individuals to function optimally within their environments. To prevent crises with individuals creating a sensory diet is important to allowing a person to self-organize. Occupational therapists and nursing play an important role in applying sensory-based approaches to their clients. Three most common therapeutic methods used by occupational therapists in an inpatient psychiatric setting is brushing, joint compression, and weight.
The first multisensory playroom, called a “Snoezelen,” was developed in 1975 by Jan Hulsegge and Ad Verheul at the Hartenburg Institute in the Netherlands. Multisensory playrooms have spread throughout the world and are used for individuals of all ages with various diagnoses. The article discussed research supporting the use of sensory approaches, beyond traditional psychiatric approaches, as supportive of the individual and promotes self-organization. In conclusion, this article points out that sensory approaches strengthen therapeutic relationships, promote collaboration and recovery, and are fully applicable across age groups in mental health setting, and consumer populations.

The article is important because it provides evidence that sensory playrooms have been used for years to help individuals learn techniques and strategies to satisfy their sensory needs, which in turn will increase their quality of life. Although, this article discusses multisensory rooms in a psychiatric setting, it can be inferred that the methods and foundation behind the use of a multisensory playroom would be beneficial to other populations in other settings. For example, the Jungle Gym Playroom Program will utilize a community setting to create a multisensory playroom for children with sensory processing needs. Participants and their families will learn techniques to develop an individualized sensory diet. Finally, the article points out the important role occupational therapists play with helping individuals create a sensory diet that will satisfy their specific sensory needs. The Jungle Gym Playroom Program will be developed to be run by an occupational therapist because of their expertise with sensory based approaches.

Abstract

When Ayres first presented the theory of sensory integration (SI), she grounded it in the neuroscience literature. Neuroplasticity was then, and is today, considered to be at the heart of this theory. This evidence based review sought to critically examine the basic science literature to specifically identify evidence for the assumptions and tenets of Ayres’ theory of SI. We reviewed literature between 1964 and 2005, within psychological, physiological, and biomedical areas, addressing neuroplasticity. The review focused on sensorimotor-based neuroplasticity; explored the data that addressed the links among sensory input, brain function, and behavior; and evaluated its relevance in terms of supporting or refuting the theoretical premise of occupational therapy using an SI framework (OT/SI) to treatment. Although direct application from basic science to OT/SI is not feasible, we concluded that there was a basis for the assumptions of Ayes’ SI theory.

Summary and Significance

The study reviewed the literature with the focus on the question, what is the neuroscience evidence that occupational therapy using sensory integrative (SI) framework with children and adolescents will be effective? Jean Ayres stated, SI is based on the belief that engagement in individually tailored occupations, embedded with the needed sensory stimuli, will improve the ability of the brain and nervous system to process sensory information, which will enhance the organization and integration of sensation, and leading to children being able to participate in daily occupations. The study focused on reviewing literature that had sensory-based neuroplasticity and explored data that addressed links among sensory input, brain function, and behavior and was evaluated by its relevance in supporting or rejecting the theoretical premise of the SI framework. Most of the research on the scientific bases of SI is through animal studies.
mostly investigating the effects of sensory experiences and input on the nervous system’s structures and functions. A total of 50 studies were evaluated. Findings indicate that neuroplasticity is possible and the environment has an impact on neural structure and function. SI framework emphasizes that an “enriched environment” is designed to meet the performance expectations with the client’s skills and abilities in a “just right challenge” to promote processing and integrating sensory information. Therefore, the findings from the studies are parallel in support of the SI principles. Motor tasks, interest in the task, and active participation enhance the affects of individual’s performances. The literature indicated that neuroplastic changes were developmental, reactive, and task specific. This can indirectly support the use of SI, which is built on the principle that active engagement in meaningful, sensiomotor activities in a just right challenge in a playful or meaningful context has positive impacts (through neuroplasticity) on processing in the nervous system. The literature reviewed provided evidence that several SI principles were indirectly supported through this study.

One must be cautious with this study because many research articles reviewed were done on animals and from a span across many decades. Research needs to continue in order to validate these findings and enhance the support of using the SI framework for intervention. This study is important because its findings provided evidence in the support of the SI framework.

More research needs to be done on this topic to increase the validity of this study. Principles from the SI framework are used to guide the design of sensory playrooms; therefore, support on the SI framework is essential to validate the Jungle Gym Playroom programs guiding principles. The study provides groundwork leading to validating the SI framework.

Abstract

OBJECTIVE. A pilot randomized controlled trial (RCT) of the effectiveness of occupational therapy using a sensory integration approach (OT-SI) was conducted with children who had sensory modulation disorders (SMDs). This study evaluated the effectiveness of three treatment groups. In addition, sample size estimates for a large scale, multisite RCT were calculated.

METHOD. Twenty-four children with SMD were randomly assigned to one of three treatment conditions; OT-SI, Activity Protocol, and No Treatment. Pretest and posttest measures of behavior, sensory and adaptive functioning, and physiology were administered.

RESULTS. The OT-SI group, compared to the other two groups, made significant gains on goal attainment scaling and on the Attention subtest and the Cognitive/Social composite of the Leiter International Performance Scale–Revised. Compared to the control groups, OT-SI improvement trends on the Short Sensory Profile, Child Behavior Checklist, and electrodermal reactivity were in the hypothesized direction.

CONCLUSION. Findings suggest that OT-SI may be effective in ameliorating difficulties of children with SMD.

Summary and Significance

A pilot randomized control trial assessed the effectiveness of occupation therapy using a sensory integration approach (OT-SI) with children who had sensory modulation disorders (SMD) (Coll, Miller, Schoen, 2007). Twenty-four children with SMD were randomly placed in the OT-SI group, Activity Protocol group, or No Treatment group. In the OT-SI group children
and therapists interacted in a large occupational therapy room equipped with sensory activities and toys. The child interacted through imaginative play with the sensory material in an active, meaningful, and fun manner. The occupational therapist served as a coach, educator, and role model for the parents, who actively participated in the sessions. In the Activity Protocol group (the active placebo) non-occupational therapy staff members or graduate students participated to the extent that the child indicated in each session and the parents were not educated on the disorder or intervention. The activities for this group consisted of tabletop play activities. Finally, the No Treatment group received no treatment and was placed on a 10-week wait list for OT-SI. The findings suggest that OT-SI may be effective in improving difficulties of children with SMD. Children in the OT-SI group made significant changes compared to the other two groups. In addition, trends occurred toward great improvements on the Child Behavioral Checklist and Short Sensory Profile.

The article is important because it provides evidence supporting the use of the sensory integration approach. The Jungle Gym Playroom Program utilizes the principles from the sensory integration approach for developing the intervention sessions with children who have sensory processing issues. In addition, the treatment group (the OT-SI group) that had occupational therapists and parents involved had greater gains than the other two treatment groups. The Jungle Gym Playroom program utilizes involvement from parents and an occupational therapist to work with children with sensory processing issues.


Abstract

No abstract was included for this source.

Summary and Significance
The article discusses the importance of the role of the occupational therapist to modify a child’s environment to cater to their sensory needs to enhance their occupational performances at school. The occupational therapist that wrote the article has sensory sensitivities herself, so she understands the challenges children are faced with in a chaotic school environment. The author describes how her and her husband have had to modify their home environment to cater to her sensory needs. Children at school need the same opportunities of having their environment modified to cater to their sensory needs. Occupational therapist need to work with teachers to ensure that the children with sensory needs are being given opportunities to learn in an environment that is conducive to their individual needs. Teachers and occupational therapists play a critical role in modifying a child’s school environment.

The article is important because it provides evidence that modifying an environment can help increase occupational performances in children with sensory needs. In addition, the role of occupational therapist with working with children with sensory needs is highlighted. The Jungle Gym Playroom Program will modify the environment to cater to the participant’s sensory needs. Tip sheets on strategies to provide children opportunities to find a balance with their sensory needs will be distributed to the parents/caregivers whose children participated in the program. These tips sheets can be given to the child’s teacher and together the parents, teacher, and school occupational therapist can create an environment to cater to the child’s sensory needs at school. In addition, the Jungle Gym Playroom Program will be run by an occupational therapist with experience with working with children.

An abstract was not included for this source.

Summary and Significance:

The article, by AOTA, describes the role of an occupational therapist with sensory integration throughout the lifespan, from infancy to adulthood. There is a growing body of scientific evidence to support the importance of the sensory systems in human behavior and occupational performance. Occupational therapists can assess an individual’s response to sensory information from the body and the environment using standardized and non-standardized tests, clinical observations, and caregiver and teacher reviews. Then the occupational therapist can develop individualized intervention plans.

It is an important article because AOTA, the national occupational therapy organization, is defining and supporting the role of occupational therapy related to sensory integration. The Jungle Gym Playroom Program will be utilizing sensory integration to develop the intervention sessions. This resource is helpful because it provides supporting evidence from a reputable source on sensory integration.

Performances challenges with Sensory Processing Disorder


Abstract

There is an accumulating literature describing sensory processing in young children and suggesting the importance of this knowledge for understanding the characteristics of vulnerable children. Professionals and families need a working knowledge about sensory processing because it enables them to understand and interpret children’s behaviors and to tailor everyday life routines so that children may have successful and satisfying experiences. This article reviews
Dunn's model of sensory processing, and summarizes both typical and special population evidences that demonstrate support for the model. This article also describes how the concepts in this model are reflected in everyday behaviors so that readers can link the concepts to their own knowledge about young children. Since processing concepts are based on evidence across the lifespan, this knowledge can also enable caregivers to understand their own responses as well. The article then discusses the application of sensory processing knowledge within natural contexts and routines, arguing that using sensory processing knowledge to analyze, adapt, and support the established routines is an effective application of knowledge. Finally, the article provides specific suggestions for adapting everyday life situations to meet the needs of children with different patterns of sensory processing, and illustrates how adults can manage their own sensory processing needs as they care for young children.

**Summary and Significance**

The article is important because it explains Dunn’s four sensory processing categories, methods to address the specific sensory processing needs, and evidence supporting Dunn’s assessments (The Sensory Profile) and 4 sensory processing categories (sensation avoiding, sensation seeking, sensory sensitivity, and low registration). Evidence was reviewed that showed children with or without a diagnosis are being affected by sensory processing problems. Sensory processing knowledge is useful for planning interventions that support children to have successful and satisfying experiences in everyday life. Dunn describes “threshold” and “self-regulation” and their important roles in an individual’s sensory processing needs. Each sensory processing category was broken down and examples of suggestions that OTs can make to include sensory stimulation in the individual’s everyday life to increase their participating in occupations was provided.
The article helps describe the 4 sensory categories, suggestions for each sensory processing category, and evidence supporting the Sensory Profile and her sensory processing model, all of which will be components of the Jungle Gym Playroom Program. The Short Sensory Profile will be used to measure the participants’ gains in balancing their sensory input and responses. The sensory processing model will be used to create individualized interventions for each participant.


Abstract

OBJECTIVE. Stereotyped movements (SM) are a defining characteristic of autism but are also present in children with a range of sensory and developmental disorders. We examined whether the severity of sensory processing disorders (SPD) was associated with the severity of SM and whether SPD accounted for between group differences in SM.

METHOD. The Short Sensory Profile and the Stereotyped and Self-Injurious Movements Interview were administered to children with autism, intellectual disability, visual impairment, and hearing impairment and to typically developing children.

RESULTS. SPD predicted the severity of SM in all samples and accounted for differences in SM between the groups. Other differences in the severity of SM were the result of diagnosis and the interaction between diagnosis and an intellectual disability.

CONCLUSION. SPD may be a source of SM, but functional connections between these phenomena will need to be tested in future research. Implications for occupational performance are addressed.
Summary and Significance

The purpose of this study was to examine relationships between the Sensory Processing Disorder (SPD) and SM (stereotyped movement) in children with and without developmental or sensory disorders to find out whether SPD accounted for differences in the prevalence and severity of SM across and within groups. There were 221 participants within 5 groups. The five groups included: typically developing children, children with intellectual disabilities, children with visual impairments, children with hearing impairments, and children with autism. The Short Sensory Profile (SSP) and the Stereotyped and Self-injurious Movement Interview were completed by the student teachers. Within the children with visual and hearing impairments groups, some children had normal intelligence and some children had intellectual disabilities.

The results suggest that an intellectual disability does not contribute directly to SM but interacts with sensory impairment and autism to increase the prevalence of SM. These results are consistent with the hypothesis that SM is an adaptive form of behavior that allows a person with SPD to cope with sensory over or under stimulation. The results also indicate that in typically developing children, children with hearing or vision loss, children with intellectual disability, and children with autism all show that atypical sensory processing is strongly related to SM.

The study provides evidence that there is a strong relationship between SPD and SM in children with sensory impairment, intellectual disability, autism, or are typically developing. Further research needs to be done to assess this relationship. The results are beneficial in providing evidence that children, whether with or without a diagnosis, are being affected by challenges with organizing and integrating their sensory inputs. Sensory processing deficits affect children’s’ behaviors, including self-injurious behaviors. Implications of this study is that
occupational therapists can take on the role of helping children learn techniques and strategies to process their sensory inputs to decrease their SM and behaviors.

The Jungle Gym Playroom Program will be available to any child whether they have a diagnosis or not. Children may have sensory processing issues that have not been labeled and the Jungle Gym Playroom program will investigate and address individual sensory needs. If children are found to have sensory processing needs, an occupational therapist running the program will help teach the child techniques and strategies to organize and process their sensory inputs.


Abstract

OBJECTIVE. To compare stance control between children with sensory modulation disorder (SMD) and typically developing children in various visual and somatosensory conditions.

METHOD. Thirty-one children participated in this study, including 17 children with SMD and 14 matched typically developing children. The Sensory Profile was used to screen for sensory modulation problems, which were further confirmed by measures of electrodermal response and the Evaluation of Sensory Processing. Stance parameters for an assessment of postural stability were obtained with a dual-axis accelerometer on the lumbar area.

RESULTS. The children with SMD presented atypical sensory responses in terms of both electrophysiological and behavioral measures. The results for stance showed a greater body sway in the SMD group than in the control group (p < .05). However, the group difference was not always significant under the conditions of reliable somatosensory input and sway-referenced vision.
CONCLUSION. Our findings first confirmed impaired stance control in children with SMD.

This study was the first study that focused on stance control in children with Sensory Modulating Disorder (SMD). Standing balance is important for a developing child and in successfully executing daily activities. The inability to regulate one senses affect their balance. This study addressed two research questions including: (1) Do children with simple SMD have worse stance control than their control peers? and (2) How do the tested sensory conditions influence balance in children with simple SMD? There were 31 participants, 14 typically developing and 17 with SMD. Results from this study found that children with SMD had poorer stance control than typically developing children. Specifically, the results show that children with SMD had poorer stance control during conditions of unreliable somatosensation. In addition, the results indicate that deterioration of standing balance might cause falling in children with SMD and alter their sensory environments in daily occupations.

**Summary and Significance**

The study was important because it was the first study to look at how standing balance is affected by a child’s inability to modulate their sensory information. Evaluating this is important because the children’s daily occupations are being affected by their sensory problems. The findings from the study are helpful to occupational therapists because it provides them evidence that SMD can affect the child’s motor movements and standing balance. More research needs to be done to validate this study and to assess exactly what senses are affecting the standing balance. The study is good because it provides research that SMD is affecting children’s ability to have standing balance, which in turn, is affecting their ability to successfully participate in daily occupations.
The Jungle Gym Playroom Program will provide children opportunities to enhance their motor movements and standing balance, which in turn will enhance their quality of life. For example, walking on the balance beam backwards and sideways will enhance their motor movements and standing balance.


**Abstract**

A systematic review of the literature related to performance difficulties for children and adolescents with difficulty processing and integrating sensory information was completed as part of the Evidence-Based Literature Review Project of the American Occupational Therapy Association. The review focused on functional performance difficulties that these children may exhibit in areas of occupation including play and leisure, social participation, activities of daily living, instrumental activities of daily living, rest and sleep, education, and work. The results suggest that children and adolescents with difficulty processing and integrating sensory information do exhibit functional performance difficulties in key areas of occupation. However, further descriptive studies are needed to tie these difficulties to their specific sensory and motor issues. Researchers are encouraged to include functional performance measures and measures of social participation in their studies to further elucidate these relationships.

**Summary and Significance**

This was a systematic review on 35 studies that were related to performance difficulties for children and adolescents with difficulties processing and integrating sensory information in the areas of (1) play, leisure, and social participation; (2) ODLs and IODLs; (3) rest and sleep;
and (4) education, transition, and work. The seventeen articles related to the areas of play, leisure, and social participation provide evidence to suggest that children with sensory processing and integrating information difficulty show decreased quality and quantity of play skills and social participation. Evidence from the articles reviewed in the areas of ODLs and IODLs suggests that children with sensory processing and integrating information difficulty demonstrate more difficulty with functional performance, specifically the motor aspects of the functional task. One study in the area of rest and sleep reviewed found significant relationships between sensory processing, sleep, and behavior in typically developing schoolchildren. In articles reviewed in the areas of education and work found evidence to suggest that children and adolescents with sensory processing and integrating information difficulty showed lower participation in school activities. This systematic review provides results that may help occupational therapists in guiding assessments, guiding intervention, and improving research design.

The systematic review provides a plethora of evidence that children’s occupational performances are being affected by their inabilities to process and integrate their sensory information. Numerous areas of occupation were reviewed in this study and evidence was found to suggest that sensory processing and integrating information difficulties is affecting children’s abilities to participate in many different areas of their lives. In addition, the study was a good starting point for further research to describe functional performance deficits on measures related to (1) actual demonstrated performance; (2) measures of participation in home, school, and community occupations; and (3) assessments that have a functional component that directly applies to key areas of occupation. Finally, addressing sensory processing and integration
problems occupational therapists can have a direct impact on children’s or adolescent’s ability to participate in all areas of their lives.

The systematic review provides evidence that a program like the Jungle Gym Playroom Program is necessary to provide children opportunities to address their sensory needs to enhance their occupational performances in all areas of their lives that are being affected by their inability to regulate their sensory inputs properly. The Jungle Gym Playroom Program will utilize the occupation of play to help children learn strategies to satisfy their sensory needs.

Play


**Abstract**

OBJECTIVE. This study investigated sensory processing dysfunction (SPD) and playfulness and the effect of intervention on playfulness.

METHOD. Twenty children with SPD and 20 children who were typically developing took the Short Sensory Profile (SSP) and Test of Playfulness (ToP). Children with SPD took the praxis tests from the Sensory Integration and Praxis Tests (SIPT) and received 20 intervention sessions. Correlations among measures and differences between mean scores of groups and pre-intervention and post-intervention were examined.

RESULTS. Group ToP scores differed significantly; ToP did not increase post-intervention. Correlations among ToP and SSP ranged from .36 to .72; ToP and SIPT, from –0.1 to –0.46.

CONCLUSION. Modulation affects playfulness. Although intervention was not effective, both groups had high scores initially, making the finding difficult to interpret.

**Summary and Significance**
The purpose of this study was to investigate playfulness and Sensory Processing Disorder (SPD). Three questions were addressed, does SPD interfere with playfulness, how do the major manifestations of SPD relate to playfulness, and will occupational therapy based on sensory integration theory result in increases in playfulness? Group 1 had 20 children with deficits in SPD and group 2 had 20 normal developing children. The child’s play was videotaped and group 1 had a pre and post video. Group 1 also received occupational therapy based on the sensory integration approach between the pre and post play videos. The therapy intervention consisted of children playing with sensory toys and using sensory equipment. The results show that both groups were playful. The mean ToP scores of the children who are normal developing were significantly higher than the children with SPD. There was no significant difference in the ToP for the children with SPD pre and post occupational therapy intervention. Active play is more demanding on children and results show that most children with SPD engaged in sedentary play most of the time. Children who engaged in active play before intervention, engaged in active play after as well. However, 3 children that engaged in sedentary play pre intervention chose active play post intervention.

The study is a good starting point for researching the effects of SPD on play, since there is very little out there. Some effects on play were revealed, but more research needs to be done to generalize and sort out how play is affected for children with SPD. In addition, the 3 children that went from sedentary play to active play after intervention, shows evidence that sensory integration approach to therapy may have benefits to children with SPD. It is important to monitor how play is being affected in children with SPD. Some children with SPD may alter their play to accommodate their limitations, but other children may need help in doing so. Therefore, occupational therapy can take the role of teaching children with SPD techniques to
conquer their deficits. All in all, evidence shows that SPD is affecting playfulness, but this study is one of the first, so it is just a starting point for further research.

The study provides evidence that SPD is affecting children’s occupation of play in a negative way. Play is an important component for a child growth and development. The Jungle Gym Playroom Program will utilize play to provide opportunities for children to fulfill their sensory needs to enhance their occupation of play.


Abstract

No abstract was included for this source.

Summary and Significance

The goal of this chapter was to provide an overview of how play is approached in the occupational therapy profession, particularly with relation to children. The variety of definitions of play, how play has been viewed and used historically in the occupational therapy profession, and contemporary streams of ideas of play in the occupational therapy profession were discussed. There is strong evidence that since the beginning of the profession occupational therapists noticed the importance of play throughout the lifespan, especially with children. It is important for a universal definition of play to be developed, to allow for stronger evidenced based research to evolve in regards to play. In addition, the author described that occupational therapists should create a definition of play with relationship to health and play. It is important that reliable and valid assessments of play must be developed and the process of integrating elements of play into interventions must be examined. Play and work are not always separate
from each other and the notion of balance between work, play, and rest needs to be re-thought of. In addition, play is a culturally dependent viewpoint. Finally, the chapter discussed the barriers disabilities may play on successful participation in play and the importance of the occupational therapists role to reduce these barriers.

The chapter highlights that play is an occupation that is critical to a child’s growth and development. Research provides evidence that sensory processing issues affect play. It is in the realm of the occupational therapy profession to address play and ensure children are able to successfully engage in play. The Jungle Gym Playroom Program will utilize the occupation of play to provide children the opportunities to satisfy their sensory needs through play, as well as, learn techniques and strategies to ensure they can engage in play in other contexts of their lives successfully.


Abstract
An abstract was not included for this source.

Summary and Significance
AOTA’s statement on play takes the stand that it is occupational therapy’s role to advocate, enhance, and defend play. Play contributes to a child’s growth and development physically, cognitively, socially, and emotionally. Children today are being rushed into adulthood and not being given the opportunity to participate in the occupation of play. Play is essential to childhood’s growth and development and due to societal and environmental demands childhood play is being interrupted. This indicates the need for occupational therapists to develop programs that supports and allows children the opportunity to play in a safe environment to grow and develop.
The American Occupational Therapy Association highlights the fact that play in an important milestone in children’s lives and it is in the OT profession’s realm of practice to support and enhance childhood play, which is important to my Capstone. A goal of the Jungle Gym Playroom Program is to utilize play as an opportunity for children to fulfill their individual sensory needs. Children will be given the opportunity to play in a safe judgment free environment through the program.


**Abstract**

No abstract was included for this source.

**Summary and Significance**

The tips for living document discuss how children learn through play. In addition, the roles occupational therapists and parents play in enabling children to successfully play, in turn, successfully learn and grow were discussed. Playing is a child’s “job” or “occupation” in order to develop coordination, emotional maturity, social skills, and self-confidence. Occupational therapists can evaluate, recommend, and intervene to advocate and promote learning through play.

The tips for living document created and supported by the American Occupational Therapy Association is important because it provides a resource about the importance of learning through play. Sensory processing disorder can interfere with a child having the opportunity to engage in play. The Jungle Gym Playroom Program will utilize play to provide children opportunities to fulfill their sensory needs and learn techniques to satisfy their sensory needs throughout their day. Through successful play children will be given opportunities to learn and develop.

**Abstract**

No abstract was included for this source.

**Summary and Significance**

The handbook is a tool for parents or professionals that work with children. Included in the book are different ways to incorporate sensory into play for young children. Tips and ideas on how to produce and manage an environment to enhance sensory play for young children were incorporated. The entire resource is filled with different ingredients and ways to create sensory play.

The resource is important because it is a tool for parents to help them create environments to enhance their child’s sensory play. All children can benefit from sensory play so this resource is an excellent tool to allow parents to be more creative when coming up with play ideas for their children. The book will be a good resource that could be recommended to parents/caregivers of children who participate in the Jungle Gym Playroom Program.

**Sensory Integration**


**Abstract**

An abstract was not included for this source.

**Summary and Significance**
The study discussed that the increased awareness of sensory integration is resulting in a need for “proof” that the interventions are working. A systematic review that was completed highlighted that sensory integration approach may result in positive outcomes in sensorimotor skills and motor planning; socialization, attention, and behavioral regulation; reading-related skills; participation in active play; and achievement of individualized goals. Additionally, gross motor skills, self-esteem, and reading gains may be sustained from 3 months to 2 years. There are little research studies about sensory integration out there that are resulting in positive outcomes.

The article is beneficial because it provides evidence to support sensory integration approach. More research needs to continue to take place to ensure that the evidence based research is supporting the sensory integration approach. The Jungle Gym Playroom Program will use a sensory integration to provide children opportunities to play successfully. The sensory integration principles will be used to guide the interventions for the Jungle Gym Playroom Program.


Abstract

OBJECTIVE. The study examined behavioral treatment effects of classical sensory integration therapy.

METHOD. This study used a prospective longitudinal, single-subject ABAB design. The participant was a boy, age 3 years and 5 months, with average nonverbal intellectual skills, delayed communication skills, and sensory modulation disorder. Difficulties with modulating
sensory input and delayed communication skills affected his occupational performance in preschool. Behavioral data were collected in the preschool by teachers who were blind to the type and timing of sensory integration therapy.

RESULTS. Improvement in behavior regulation was observed, including increased engagement and decreased aggression, less need for intense teacher direction, and decreased mouthing of objects.

CONCLUSION. Classical sensory integration therapy may be associated with improved self-regulatory behaviors.

Summary and Significance

The purpose of the study was to examine behavioral treatment effects of classical sensory integration therapy. There were two research questions. First, do self-regulatory behaviors increase in association with sensory integration therapy? Second, if self-regulatory behaviors increase in association with sensory integration therapy; are improvements seen in multiple domains? A 3 year old boy who has average nonverbal intelligence and diagnosed with SMD (Sensory Modulation Disorder) received 1 hour, one-on-one treatment sessions 3 x a week for treatment cycles (2 weeks no treatment, 5 weeks of treatment, 2 weeks no treatment, 2 weeks of treatment) in a clinical setting. Intervention occurred with the occupation of play and followed the principles of sensory integration therapy; providing controlled sensory input to elicit an adaptive response, guiding the participant’s self-direction within a structured environment, and facilitating active participation in exploring the environments. Behavioral changes were rated by the participant’s teacher. Overall, visual analysis and statistical results suggest a significant reduction in aggressive acts, mouthing objects, and intensity of teacher input and increase in engagement associated with the treatment phases.
This is a good source because it provides evidence to support that classic sensory integration therapy is associated with improved self-regulatory behaviors as reflected in improved engagement, lower aggression, reduced mouthing, and less intensity of teacher direction. There is evidence that intensive sensory integration therapy in a clinical setting resulted in improved behavior, which was carried over into the classroom. The findings from this study imply that a model of intensive clinic-based treatment without classroom and home-based intervention may be sufficient to produce behavioral changes.

The gymnastics facility has equipment like a sensory integration clinical treatment room would have. Sensory Integration principles will be used to guide the Jungle Gym Playroom Program. One downfall to this study is the participant received intensive treatment (3 times a week); the playroom program will be unable to provide that. However tip sheets for parents and teachers will be provided for carry over into other aspects of the child’s life to reinforce behavioral changes.


Abstract

Children who are over-responsive to sensation have defensive and “fight or flight” reactions to ordinary levels of sensory stimulation in the environment. Based on clinical observations, sensory over-responsivity is hypothesized to reflect atypical neural integration of sensory input. To examine a possible underlying neural mechanism of the disorder, integration of simultaneous multisensory auditory and somatosensory stimulation was studied in twenty children with sensory over-responsivity (SOR) using event-related potentials (ERPs). Three types of sensory
stimuli were presented and ERPs were recorded from thirty-two scalp electrodes while participants watched a silent cartoon: bilateral auditory clicks, right somatosensory median nerve electrical pulses, or both simultaneously. The paradigm was passive; no behavioral responses were required. To examine integration, responses to simultaneous multisensory auditory–somatosensory stimulation were compared to the sum of unisensory auditory plus unisensory somatosensory responses in four time windows: (60–80 ms, 80–110 ms, 110–150 ms, and 180–220 ms). Specific midline and lateral electrode sites were examined over scalp regions where auditory–somatosensory integration was expected based on previous studies. Midline electrode sites (Fz, Cz, and Pz) showed significant integration during two time-windows: 60–80 ms and 180–220 ms. Significant integration was also found at contralateral electrode site (C3) for the time window between 180 and 220 ms. At ipsilateral electrode sites (C4 and CP6), no significant integration was found during any of the time-windows (i.e. the multisensory ERP was not significantly different from the summed unisensory ERP). These results demonstrate that MSI can be reliably measured in children with SOR and provide evidence that multisensory auditory–somatosensory input is integrated during both early and later stages of sensory information processing, mainly over fronto-central scalp regions.

Summary and Significance

The study looked at children who are sensory over-responsive (SOR) and have defensive and “fight or flight” reactions to sensory stimulation. Research suggests that prevalence of children having negative responses to sensation that interfere with participating in daily life activities is 5%-16% of school aged children. Jean Ayres hypothesized that children with SOR have a deficit in inhibiting irrelevant sensory information causing excessive CNS arousal in response to typical levels of sensory stimulation. Other studies have findings to support Ayres
hypothesis. Research suggests that SOR in children is associated with emotional and psychological disorders in children and adults. In addition, the effects of SOR can impact the child and family’s quality of life, interfering with social interactions, participation in occupations, self-regulation, and self-esteem. The results show that possible differences in unisensory and multisensory ERPs could contribute in part to the sensory-related behavioral problems seen in children with SOR. Results show that automatic association of causally related sensory inputs that normally occur at an early sensory-perceptual stage of sensory processing may not function properly in children with SOR. Different neural generators may be activated at a very early stage of sensory processing in children with SOR than typically developing individuals. Early life experiences are known to affect the development of MSI and the experience of sensations children with SOR have may impact their development of MSI.

The study emphasized that further research needs to be conducted to validate these results and study further the findings of this study. The findings are important because they highlight that children with SOR have physiological differences due to their inability to process their sensory information. The SOR is affecting the child’s quality of life, participation in occupations and social interactions, self-esteem, and self-regulation. Occupational therapists can play the role to help children whose over-responsive reactions to sensations are affecting their lives find a balance to ensure they have the opportunity to participate fully in their lives.

The study is important because it provides evidence that children’s lives are being negatively affected by their inability to process their sensations. This study supports the need for the Jungle Gym Playroom Program because the program will help address sensory issues that are affecting individual’s occupations negatively. Participants and their caregiver/parent will be educated on techniques they can use throughout their days to satisfy their sensory needs.
*Special Interest Section Quarterly; Sensory Integration 34(3), 1-4.*  

**Abstract**  
An abstract was not included for this source.  

**Summary and Significance**  
The article looked at how Sensory Integration has evolved and where it is headed. Jean Ayers laid the foundation for Sensory Integration. Research is important in order to validate findings and to enhance the evidence based research to back up the SI approach. Sensory Integration is continuing to move forward and it is in the OT professions realm of practice to take an active role in creating research to support SI.  

The article, published and sponsored by the American Occupational Therapy Association highlights that SI is here, it is relevant and it has a place in the future for the OT profession. The Jungle Gym Playroom Program will use the SI principles to guide the sessions.  


**Abstract**  
Twenty-seven studies were systematically reviewed to identify, evaluate, and synthesize the research literature on the effectiveness of sensory integration (SI) intervention on the ability of children with difficulty processing and integrating sensory information to engage in desired occupations and to apply these findings to occupational therapy practice. Results suggest the SI approach may result in positive outcomes in sensorimotor skills and motor planning;
socialization, attention, and behavioral regulation; reading-related skills; participation in active play; and achievement of individualized goals. Gross motor skills, self-esteem, and reading gains may be sustained from 3 mo to 2 yr. Findings may be limited by Type II error because of small sample sizes, variable intervention dosage, lack of fidelity to intervention, and selection of outcomes that may not be meaningful to clients and families or may not change with amount of treatment provided. Replication of findings with methodologically and theoretically sound studies is needed to support current findings.

**Summary and Significance**

Consumers and OT practitioners need evidence-based reviews to provide support for clinical education, to direct future research, and to promote best practice in therapeutic occupations to assist people to effectively engage in ODLs and IODLs. The purpose of this review is to identify, evaluate, and synthesize the research literature on studies examining the SI approach and to provide information that may be used in a clinical practice to guide intervention planning and that may contribute to our ability to refine, revise, and advance knowledge, theory, and research related to the SI approach. Since 1972, 27 research studies have been conducted that examine the effectiveness of the SI approach as it pertains to the question in this review. Collectively, 19 of those studies have been included in at least one of the two meta-analyses or the three systematic reviews on the topic. Findings suggest that there is a trend for positive results from the SI approach, especially when compared to no treatment. The findings are limited to a variety of methodological concerns (secondary to how research standards have evolved), but given a large effects of positive results, OT can use this information to begin to suppose the use of the SI approach within their professional domain. All in all this systematic review suggests that the SI approach may result in positive outcomes in the areas of sensorimotor skills and
motor planning; socialization, attention, and behavioral regulation; reading and reading-related skills; and individualized goals for children.

This is a beneficial article because systematic reviews are critical to evidence based practice. This systematic review gathered and assessed past research on the sensory integrative approach. Through the findings from this article, future research will know what areas still need more research to increase the validity and evidence based practice of the sensory integrative approach. There is evidence to support the Sensory Integration approach in treatments. The Jungle Gym Playroom Program will use the SI principles to guide the sessions.

**Sensory Processing Disorder**


**Abstract**

This study is the first to systematically examine estimated rates of sensory processing disorders using survey data. Parents of incoming kindergartners from one suburban U.S. public school district were surveyed using the Short Sensory Profile, a parent-report screening tool that evaluates parents’ perceptions of functional correlates of sensory processing disorders (McIntosh, Miller, Shyu, & Dunn, 1999a). A total of 703 completed surveys were returned, which represents 39% of the kindergarten enrollment ($n = 1,796$) in the district for the 1999–2000 school year. Of the 703 children represented by the surveys, 96 children (13.7% of 703) met criteria for sensory processing disorders based upon parental perceptions. A more conservative prevalence estimate of children having sensory processing disorders based on parental perceptions was calculated by assuming that all non-respondents failed to meet
screening criteria. This cautious estimate suggests that based on parents’ perceptions, 5.3% (96 of 1796) of the kindergarten enrollment met screening criteria for sensory processing disorders. These percentages are consistent with hypothesized estimates published in the literature. Findings suggest a need for rigorous epidemiological studies of sensory processing disorders.

**Summary and Significance**

The focus of the study was to explore the prevalence of sensory processing disorder among kindergarten children. The authors commented that being able to process one’s sensory input is fundamental to learning, perception, and action. Sensory disorders can affect development and functional performance in domains including, behavioral, emotional, motoric, and cognitive. Prior data on estimates for sensory processing issues are only found with the populations that are seeking services for other disabilities. There is no prospective published data on the rate of sensory processing disorders in children not seeking services. The importance of studies, such as this one, is to establish the sensory processing disorder prevalence to help create appropriate interventions and remediate functional problems in this disorder. 703 valid surveys were analyzed for this study. Parents filled out the Short Sensory Profile on their young children. Results from this survey research found that 13.7% of the respondents met the criteria for having sensory processing disorder. The authors made a conservative prevalence assumption that 5.3% of children in the area would meet the criteria for sensory processing disorder. This translated means 220,000 kindergartens in the US have sensory processing disorder using the conservative 5.3% prevalence rate. Using the 13.7% prevalence rate, over half a million children in the US would have sensory processing disorders.

The study is important because it provides evidence that many children in the US are being affected by sensory processing disorders. There is very little information about the
prevalence rates of sensory process disorder out there. Further research needs to occur to provide prevalence rates to bring awareness to the issue that so many children are being affected by. This increase awareness would lead to programs, such as sensory playrooms, to help to enhance children’s lives that are being affected by sensory processing problems.

The study brings awareness to the fact that children in the US are being affected by sensory processing disorders and the Jungle Gym Playroom Program will address those needs of children being affected by sensory processing disorders. In addition, there is evidence that this is an evolving and hot topic that the OT profession plays a critical role in.


Abstract

Sensory over-responsivity (SOR) towards tactile and auditory input can impact children’s participation in academic and social activities; however the prevalence of SOR behaviors and their relation to social-emotional problems and competence has not been rigorously studied. This study investigated SOR in a representative sample of elementary school-aged children (n=925, 50% boys, ages 7–11 years) who were followed from infancy. Sixteen percent of parents reported that at least four tactile or auditory sensations bothered their children. Being bothered by certain sensations was common while others were relatively rare. Parents of children with versus without elevated SOR in school-age reported higher frequencies of early and co-occurring internalizing, externalizing, and dysregulation problems, and lower levels of concurrent adaptive social behaviors. Early identification of elevated SOR and assessment of concurrent social-emotional status are important to minimize their impact on social adaptive behaviors at school
Summary and Significance

The study investigated the prevalence of SOR (sensory over-responsivity) in a longitudinal study of elementary school-aged children. SOR is not a diagnosis on its own but evidence was provided indicating that SOR is negatively affected children. Children with SOR may show negative responses to specific sensations, in the form of fear, avoidance, distraction, over-vigilance, and/or aggression especially when the stimulus is no self-initiated. In addition, SOR behaviors can impede occupational performances of daily activities, academic skills, and social participation. In addition, SOR has been linked with social-emotional problems particularly in the internalizing domain (anxiety, depression, withdrawal). The Sensory Over-Responsive Scales, Child Behavior Checklist, The Infant Toddler Social and Emotional Assessment, and Adaptive Social Behavior Ratings were used. Relevant findings indicated elevated SOR, defined as being bothered by at least four tactile or auditory sensations, was prevalent in 16.5% of 7-11 year old children. In addition, parents of children with versus without elevated SOR at school age reported more early and concurrent social-emotional problems, and lower levels of concurrent adaptive social skills controlling for SES variables.

The study is important because it defines a prevalence rate for SOR in school aged children, which are the target population of the Jungle Gym Playroom Program. In addition, the relationship between SOR and maladaptive behaviors and social skills as the child grows were highlighted. The program will help to address SOR to allow the child the opportunity to increase their participation in their occupations of daily living more positively.

Abstract

An abstract was not included for this source.

Summary and Significance

The book is geared mainly for parents with children with sensory processing disorder. Within the handbook were sections for recognizing and understanding your child’s sensory issues, addressing the sensory needs, fostering your child’s development, ways to parent with sensory smarts, and recommendations of products and resources. The source is very parent friendly and the terminology is geared to address parent’s needs and concerns with their child and sensory processing disorder. Personal, real life stories were told throughout the book. Definitions were used to describe and break down each sensory process and the importance of each process to work in order for the child to be successful in occupations throughout their daily lives. Common signs of potential problems for each system were included. Tips, strategies, products, and resources were incorporated to give parents ideas on how to create environments that foster their child and help them maintain balance for successful occupational performances.

The source is very important because it is a resource geared for parents who are faced with their child’s sensory needs every day. Parents with children with sensory needs need resources to help them learn and help their child to find a balance to foster growth and development. This resource will be recommended to parents whose children participate in the Jungle Gym Playroom Program that have sensory needs. Definitions were used from this book to create informational handouts for parents/caregivers whose children participate in the Jungle Gym Playroom Program.

**Abstract**

This article explores the convergence of two fields, which have similar theoretical origins: a clinical field originally known as sensory integration and a branch of neuroscience that conducts research in an area also called sensory integration. Clinically, the term was used to identify a pattern of dysfunction in children and adults, as well as a related theory, assessment, and treatment method for children who have atypical responses to ordinary sensory stimulation. Currently the term for the disorder is sensory processing disorder (SPD). In neuroscience, the term sensory integration refers to converging information in the brain from one or more sensory domains. A recent subspecialty in neuroscience labeled multisensory integration (MSI) refers to the neural process that occurs when sensory input from two or more different sensory modalities converges. Understanding the specific meanings of the term sensory integration intended by the clinical and neuroscience fields and the term MSI in neuroscience is critical. A translational research approach would improve exploration of crucial research questions in both the basic science and clinical science. Refinement of the conceptual model of the disorder and the related treatment approach would help prioritize which specific hypotheses should be studied in both the clinical and neuroscience fields. The issue is how we can facilitate a translational approach between researchers in the two fields. Multidisciplinary, collaborative studies would increase knowledge of brain function and could make a significant contribution to alleviating the impairments of individuals with SPD and their families.

**Summary and Significance**
The article reviews how the clinical field views sensory integration and how neuroscience researches an area also called sensory integration. Jean Ayres originally coined sensory integration for the clinical field. Her sensory integration theory was based on the belief that sensory integration sorts, orders, and puts all individual sensory inputs together into a whole brain function. She noted that children who have difficulty processing and integrating their senses may have problems in the clinical condition that manifest as emotional and behavioral symptoms, such as anxiety, aggression, and inattention. Jean Ayres described that children with Sensory Processing Disorder (SPD) have difficulties organizing and integrating their sensory input. She describes there are 6 subtypes that fall under SPD that children may express. Ayres intervention model of sensory integration requires the client to actively participate in challenging occupations in an enhanced multisensory environment. She believed that neural plasticity makes the brain change and is possible through active participation in an enhanced environment. She knew as empirical research progressed in the neuroscience field that her theory and intervention strategies would have to evolve and change as well. The neuroscience research is looking at the etiology, genetic and familial associations, signs and symptoms, and prevalence of SPD. In addition, neuroscience research is looking at the autonomic and central nervous system in relevance to sensory integration. Neuroscience research investigates multisensory integration and its effects on the brain and function. Many of the studies done in the neuroscience research support the intervention methods of using multisensory strategies to improve behaviors in clients.

The article is important because it emphasizes the importance for the two fields (clinical and neuroscience) to work collaboratively and share their findings with one another. By working together, there is potential to improve the quality of life for those with SPD and their families, as
well as provide insight into the CNS functioning. There are numerous studies in different fields that both support the use of sensory integration theory with clients who have difficulty organizing and integrating their sensory input.

Sensory playrooms are based off the principles of sensory integration theory and this article provides evidence that the principles are valid and produce successful changes in clients to enhance their quality of life. The Jungle Gym Playroom Program will use the principles of the sensory integration theory to create a sensory satisfying environment for children to play in.


Abstract

An abstract was no included for this source.

Summary and Significance

The book is an excellent resource about SPD for parents, caregivers, and professionals that work with children with SPD. Different subtypes of SPD, symptoms, assessments and diagnosis, treatments, interventions, causes and prevalence, research, and real stories about different children with different subtypes of SPD are all included. How SPD can affect children and their family’s lives was highlighted. The real stories that were told helped to really visualize how sensory processing issues can impact a child and their families lives. The book provided good examples of strategies on ways to address sensory needs. In addition, the role of OT in helping to enhance occupational performances for children with SPD was discussed.

The book is beneficial because it provides resources to read to gain further knowledge on SPD to help guide me when developing the Jungle Gym Playroom Program. In addition, the
book provided good strategies to use when developing the program’s sessions. In addition, the book provides opportunities to gain more empathy with families with sensational children.


**Abstract**

**OBJECTIVE.** The purpose of this study is to investigate differences in sensory processing among age matched children between ages 3 and 6 years with autism spectrum disorders (ASD) and those who are typically developing.

**METHOD.** Reported sensory processing abilities of 281 children with ASD were compared to age-matched peers who were typically developing, using the Short Sensory Profile (SSP).

**RESULTS.** Ninety-five percent of the sample of children with ASD demonstrated some degree of sensory processing dysfunction on the SSP Total Score, with the greatest differences reported on the Underresponsive/ Seeks Sensation, Auditory Filtering, and Tactile Sensitivity sections. The ASD group also performed significantly differently ($p < .001$) on 92% of the items, total score, and all sections of the SSP.

**CONCLUSION.** These findings, considered with similar published studies, begin to confirm the prevalence and types of sensory processing impairments in autism. Further research is needed to more clearly define patterns of sensory processing in people with ASD.

**Summary and Significance**

Children with autism were compared to typically developing age matched peers using the Short Sensory Profile. There were two research questions. 1. What domains of sensory processing are significantly different in this sample of children with ASD as measured by the
SSP? 2. Do significant differences exist in sensory processing behavior identified in this group of children with ASD when compared to children who are typically developing? Caregivers of the participants filled out the 38-item SSP comprising the items that demonstrated the highest discriminative power of atypical sensory processing among all the items from the long version, SP. The SSP was appropriate for this study because it isolates sensory processing that is less confounded by items overlapping with the diagnostic features of autism. Results from this study show that more than 90% of the ASD sample had significant differences in the Underresponsive/Seeks Sensation sections. Analysis of this section indicated that the sample appeared to seek sensory input from multiple sensory systems.

The study is important because it provides evidence that the SSP is a valid assessment to measure sensory processing. The Jungle Gym Playroom Program will use the SSP to assess each participant’s individual sensory needs. In addition, even though sensory modulation issues with person’s with autism has been well documented in the literature, this study helps support the need for a sensory playroom program, such as the Jungle Gym Playroom Program. The Jungle Gym Playroom Program will be opened to children with or without a diagnosis; therefore, children with ASD will be able to utilize the playroom.