

BACKGROUND

Saint Luke's Hospital of Kansas City, The Children's SPOT (Physical, Speech, and Occupational Therapy) was established in 1980. The Children's SPOT provides intensive and early intervention for children with a variety of different diagnoses including autism, down syndrome, cerebral palsy, premature birth, chromosomal disorders, sensory processing disorder, and other developmental delays (Saint Luke's Hospital of Kansas City, 2018).

Saint Luke's the Children's SPOT Sensory Assessment was developed for the three occupational therapists at Saint Luke's the Children's SPOT to be able to use during initial evaluations to assess if a child has a sensory processing disorder or sensory deficit(s). The assessment was designed to allow the three occupational therapists to engage in an interactive assessment with their pediatric clients to improve the collection of objective and subjective data involving sensory deficits and to develop more accurate long-term and short-term goals relating to sensory deficit(s).

Prior to the development of the Children's SPOT Sensory Assessment, the occupational therapists at Saint Luke's the Children's SPOT used the Sensory Profile-2 (Regular, School Companion, and Toddler form) and the Sensory Processing Measure (Home form, Preschool, and Main Classroom form) when evaluating for sensory deficits or assessing for sensory processing disorder. However, the occupational therapists at Saint Luke's the Children's SPOT wanted an assessment that they could use that was not a questionnaire but rather an interactive screen/assessment with the child when assessing for sensory deficits during an evaluation; which is why the Children's SPOT Sensory Assessment was developed.

The Children's SPOT Sensory Assessment includes nine domains relating to sensory processing deficit(s) including: bilateral coordination, balance, vestibular, oral motor, visual processing, auditory, tactile exploration, olfactory, and primitive reflexes.

Identifying if a child has sensory processing disorder can help with intervention and treatment. According to an article from the STAR Institute, it is noted that discovering that a child has sensory processing disorder, especially identifying this early, can increase the chances of successful treatment and intervention and can prevent secondary problems from developing (STAR Institute, 2020).

FOCUSED QUESTION

What client factors, domains, and assessments strategies can be included in an interactive sensory assessment targeting children with sensory processing deficits at Saint Luke's the Children's SPOT outpatient pediatric clinic?

ASSESSMENT DETAILS

The purpose of the Saint Luke's the Children's SPOT Sensory Assessment is for occupational therapist(s) to have an interactive assessment that can be used during initial evaluations to evaluate if a child has sensory processing disorder or sensory deficit(s).

METHODS

Saint Luke's the Children's SPOT Sensory Assessment was created in four phases.

- The first phase involved completing a literature review using search engines such as Google Scholar and the Creighton Health Sciences Library. From this literature review ten articles were found relating to sensory processing disorder, oral motor exercises, and other sensory assessments (i.e. Sensory Profile-2 and Sensory Processing Measure). Information found from the literature review was then further reviewed and the articles that were most relative to development of the assessment were used.
- The second phase involved gathering information (from PowerPoints) from past Creighton Occupational Therapy courses to incorporate into the assessment. These courses included OTD 457 (Physical Rehabilitation in Occupational Therapy III) specifically *Head, Neck, Face, and Jaw Exercises* PowerPoint, OTD 355 (Physical Rehabilitation I: Evaluation) specifically *Vision: Assessment and Evaluation* PowerPoint, OTD 435 (Occupational Therapy Practice for Children and Youth I) specifically *Visual Motor & Visual Perceptual Skills* PowerPoint, and OTD 341 (Neuroanatomy) specifically *The Visual System & Control of Eye Movements* PowerPoint .
- The third phase involved researching other sensory assessments including the Sensory Profile-2 (Regular, School Companion, and Toddler form) and the Sensory Processing Measure (Home form, Preschool, and Main Classroom form). First, each domain was reviewed in each assessment. Once, the domains were reviewed the questionnaire format was reviewed and brainstorming of how to make a sensory assessment interactive was developed. Also discovering which questions from the assessment could be incorporated into real-life interactive practice during pediatric occupational therapy evaluations was considered.
- The fourth phase involved collaboration with the three occupational therapists at Saint Luke's the Children's SPOT. A printed out copy of the rough draft assessment was presented to each occupational therapist and each domain and subcategory was discussed verbally in detail. Only one physical collaboration was needed to make the completed copy of the assessment, followed by four emails relating to the format of the assessment. The reflex section was decided to be added in at the end of the assessment per the three occupational therapist request. It was stated that many children with sensory deficits have primitive reflexes that are also not integrated.
- The assessment has nine domains including: bilateral coordination, balance, vestibular, oral motor, visual processing, auditory, tactile exploration, olfactory, and primitive reflexes.

RESULTS

A nine domain, interactive Sensory Assessment was created for Saint Luke's the Children's SPOT to be used by occupational therapists to discover sensory deficit(s). The nine domains include bilateral coordination, balance, vestibular, oral motor, visual processing, auditory, tactile exploration, olfactory, and primitive reflexes.

Each domain has several items within it. The items within each domain are shown in the chart below.

Domain	Items Within Domain
Bilateral Coordination	1) Catch a playground ball 2) Throw a tennis ball to therapist
Balance	1) Stand on one foot 2) Stand on one foot with eyes closed 3) Jumping Jacks 4) Scissors Jump 5) Bear Walk 6) Crab Walk 7) Walk across a balance beam 8) Perform a one-minute seated task while seated on an unsteady surface
Vestibular	1) Therapy ball 2) Spin Disc 3) Swing 4) Jump on trampoline 5) Slide down slide 6) Somersault
Oral Motor	1) Lip Pursing 2) Sucking 3) Face Exercises 4) Lip Exercises 5) Tongue Control
Visual Processing	1) Visual Tracking 2) Saccades 3) Convergence 4) Finger to Nose
Auditory	1) Toilet Flush 2) Dog Bark 3) Police Siren 4) Tugboat Horn 5) Retro Phone 6) Sneeze 7) Chainsaw 8) Other
Tactile Exploration	1) Finger Paint 2) Foam 3) Kinetic Sand 4) Chalk 5) Shaving Cream 6) Cotton Balls 7) Glue 8) Different Fabrics 9) Cover the eyes and provide light and deep touches to the arms/hands and legs/feet.
Olfactory (Smells)	1) Cinnamon 2) Peppermint 3) Lemon 4) Orange 5) Cherry 6) Vanilla 7) Rose 8) Cumin 9) Ground Coffee
Reflexes	1) Moro 2) Palmar Grasp 3) ATNR 4) STNR 5) Tonic Labyrinthine a. Prone Extension b. Supine Flexion

Target audience for this assessment includes a child (aged 3 years to 18 years old) who exhibits sensory deficits and is referred to outpatient pediatric occupational therapy.

Inclusion criteria for this assessment includes pediatric-aged children (3 years old to 18 years old), children referred for occupational therapy services, and children who exhibit sensory related deficits.

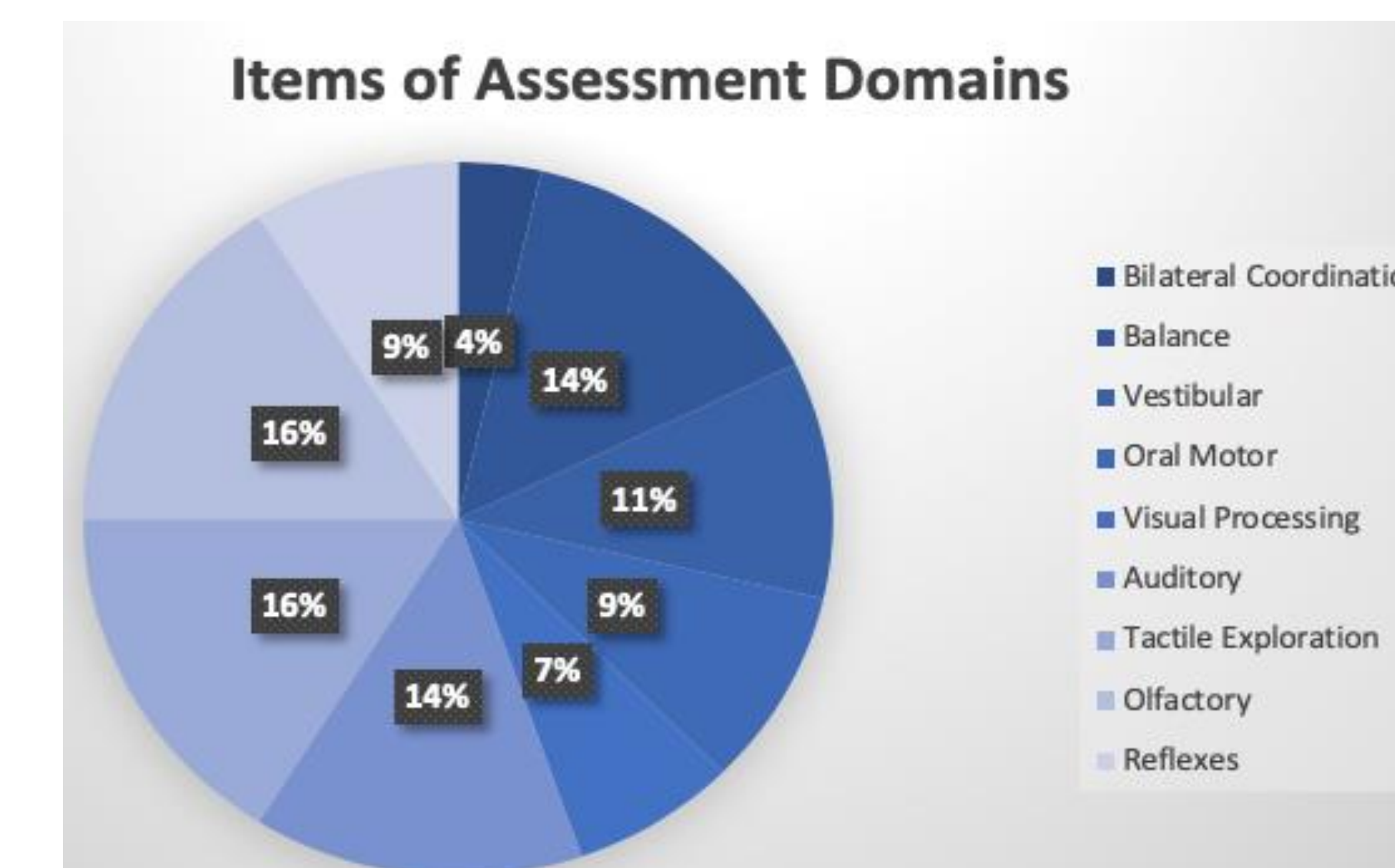
Exclusion criteria for this assessment includes children younger than 3 years old or older than 18 years old and children who exhibit no sensory related deficits.

BOTTOM LINE FOR OT

The bottom line for occupational therapists is that the Saint Luke's the Children's SPOT Sensory Assessment can help identify sensory deficit(s) during an evaluation. The assessment was created for the occupational therapists at Saint Luke's the Children's SPOT to be able to use during initial evaluations. Prior to this assessment, occupational therapists at Saint Luke's the Children's SPOT were using assessments that were in questionnaire formats such as the Sensory Profile-2 (regular, school companion, and toddler form) and the Sensory Processing Measure (home form, preschool, and main classroom form) to gather information about the client's sensory deficit(s). Occupational therapists at Saint Luke's the Children's SPOT found that the Sensory Profile-2 and the Sensory Processing Measure often elicited inconsistent data regarding the pediatric client and their sensory needs/deficit(s).

Benefits of the Saint Luke's the Children's SPOT Sensory Assessment:

- It has nine domains that observe the different senses.
- The assessment requires little training to administer.
- The assessment is universal. It can be used in an outpatient pediatric clinic, via telehealth, or in a school.
- The assessment requires a limited amount of supplies to administer and has well balanced items in each domain.
- The assessment is performance-based and interactive for the child and occupational therapist.
- The assessment features an Oral Motor domain that other Sensory Assessments do not feature.
- The assessment features a Reflex domain that typically other Sensory Assessments do not feature.
- The assessment can be used as a scaled item (pre and post test).



Percentages were calculated based on the number of items within each domain. There are nine domains total.

REFERENCES

Cohn, E. S., Kramer, J., Schub, J. A., & May-Benson, T. (2014). Parents' Explanatory Models and Hopes for Outcomes of Occupational Therapy Using a Sensory Integration Approach. *American Journal of Occupational Therapy*, 68(4), 454. doi: 10.5014/ajot.2014.010843

Importance of Early Identification of SPD. (2020). Retrieved from <https://www.spdstar.org/basic/importance-of-early-identification-of-sp>

Saint Luke's Hospital of Kansas City The Children's SPOT. (2018, December 26). Retrieved from <https://www.saintlukeskc.org/locations/saint-lukes-hospital-kansas-city-childrens-spot>

Additional references can be found on the last page of the assessment.

