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The Relevance of Sensory-based Intervention in Improving Occupational Performance in Pediatrics

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The Relevance of Sensory-based Intervention in Improving Occupational Performance in Pediatrics

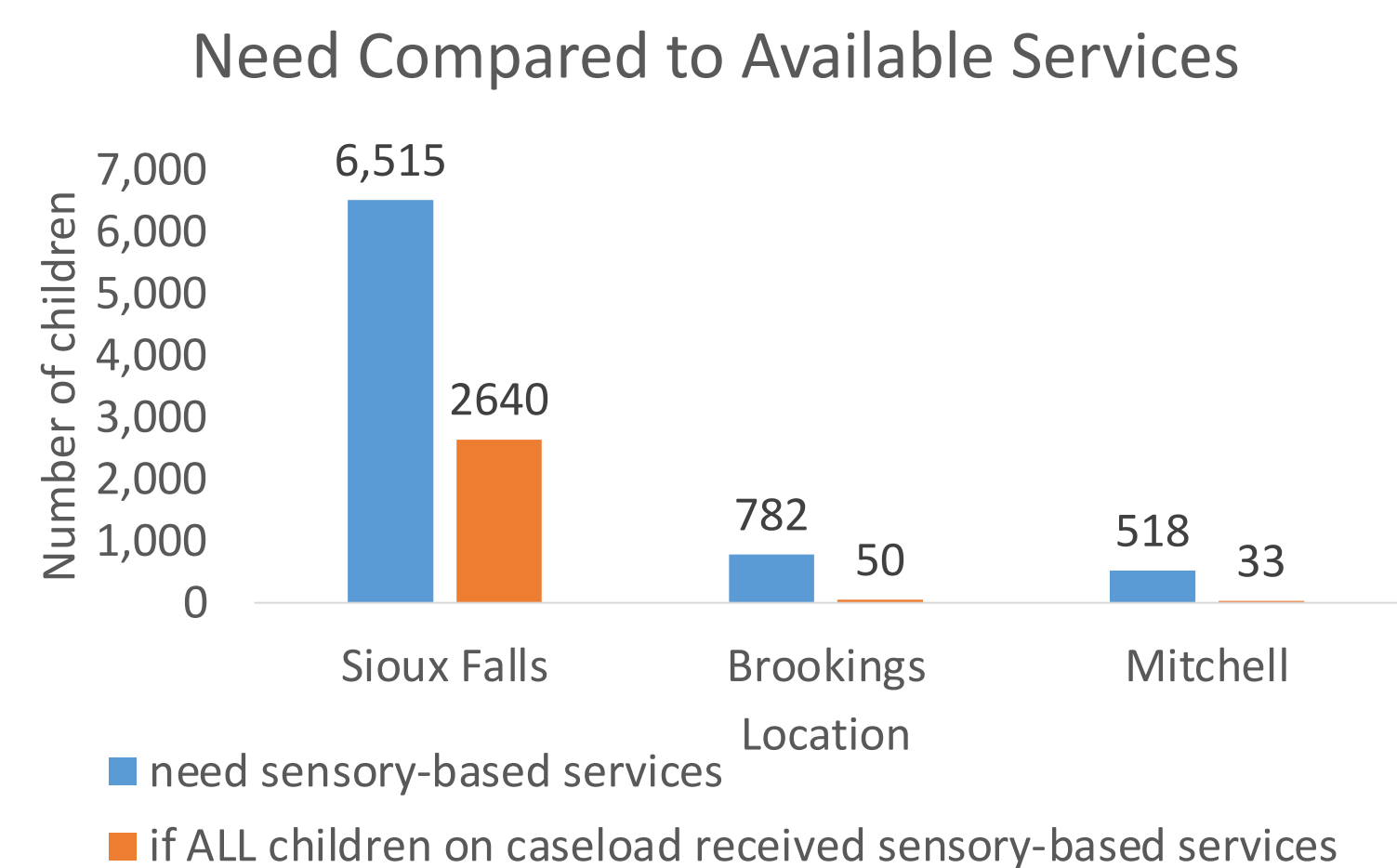
Jasmine Fritzemeier, OTS

Faculty advisor: Jessica McHugh, PhD, OTR/L, BCP, Pn1

Site mentor: Sarah Jenness, M.S., OTR/L

BACKGROUND & PURPOSE

Sensory integration is the process by which information is received from the body and environment, interpreted, and responded to. This process creates a conscious reality and allows for occupational engagement (STAR Institute, 2022). Differences with sensory integration can lead to difficulty with social connections, academic performance, play, activities of daily living, and other everyday occupations (Ashburner, Ziviani, & Rodger, 2008; Ismael, 2016; Lin, 2020; Schoen & Oschenbein, 2021). A needs assessment on current sensory-based services was completed in rural and urban South Dakota, which revealed a negative disparity between the need for services and children who receive services, as demonstrated in the below table. The purpose of this capstone experience was to increase understanding and implementation of sensory-based intervention to address occupational performance deficits in the pediatric population.



THEORETICAL FOUNDATION

The primary framework used to guide intervention was sensory integration (SI) theory. The three principles of this theory include 1. processing and integration of sensation is necessary for occupational engagement, 2. decreased processing and integration lead to difficulty responding to environment appropriately, and 3. learning and behavior are enhanced when sensations are generated and integrated appropriately. Evaluation is then based on adaptive interaction of the individual, and intervention is centered around feedback and sensory input (Bundy & Lane, 2020). Additionally, principles related to Ayres Sensory Integration® were utilized to promote a bottom-up approach that allows a child to improve participation in everyday activities through adaptations, compensation, processing, and environmental modifications (Ayres, 1972).

RESULTS

Knowledge acquisition: Continuing education and synthesis of current research into an annotated bibliography were utilized to expand knowledge and skillset to inform interventions and progress measures. The continuing education course completed was focused on types of sensory processing and corresponding treatment approaches (Yoder, 2023). Insight gained from review of current literature to complete annotated bibliography includes need for evidence on sensory processing in typically-developing children. Results also point toward need for caregiver education to promote carryover of skills and adaptations.

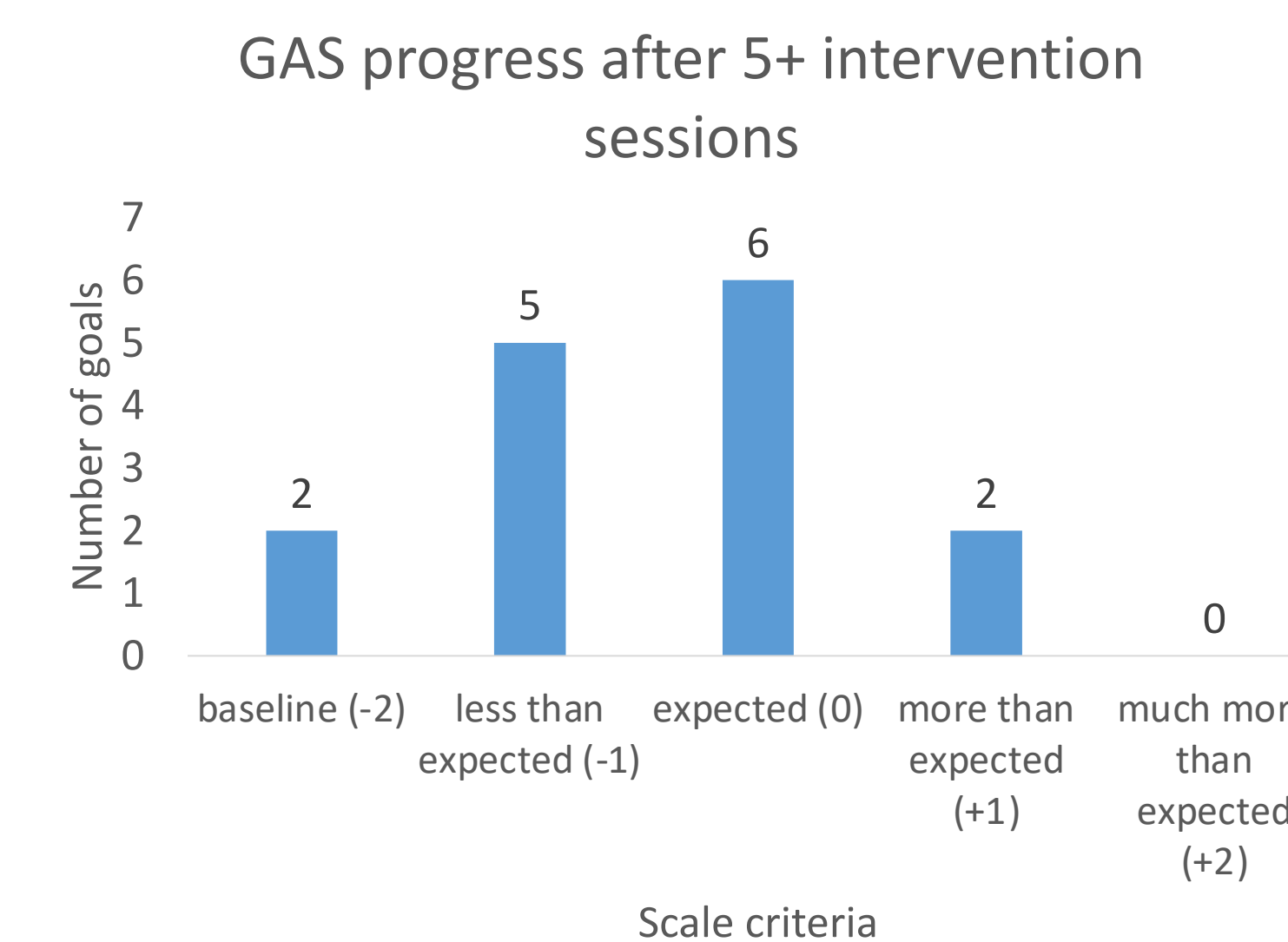
METHODS

Clinical application: The clinical component of this capstone experience included 4-5 days per week with Theratime, Inc. in Sioux Falls, SD under the supervision of Sarah Jenness, OTR/L. Services were provided in the outpatient setting, home/daycare, and school setting. I completed observation, evaluations, interventions, and meetings with interdisciplinary team members and parents. I gained experience with several children with varying levels of sensory processing differences. I completed 75% of my site mentor's caseload throughout each week. Five children on this caseload were included in my assessment, goal attainment scaling (GAS), and regular interventions. I also compiled handouts for caregivers and teacher to advocate for the role of OT in various settings. These were distributed through brief presentations and social media.

Goal Attainment Scaling (GAS) and Education:

The GAS system was used as an alternative to traditional goal writing to measure progress. Five clients with sensory processing differences, per assessment, caregiver report, and skilled observation, were included in the GAS component. GAS is set up based on a numeric system from -2 to +2, representing a range from "baseline" to "much more than expected" outcomes. An example of the format is shown in the results section. Education was provided to all caregivers, teachers, and interdisciplinary team members at capstone site to address sensory processing across various settings and to promote OT in the school setting.

GAS: In this progress period measuring GAS, 15 goals were included in the results. Five clients, with three goals each were included. 40% of the outlined goals reached an "expected" outcome on the scale criteria. Goals ranking a "less than expected" outcome included 33% of all goals. Goals remaining at baseline included 13% of goals. The final 13% of goals ranked in the "more than expected" category. The below table highlights the distribution of goals met in each category of GAS.



The functional component of each goal was emphasized, and the markers of progress were delineated to then be assessed after intervention, as shown in the below example. The three goals shown were the three goals used to guide intervention for one client included in this capstone experience. The category in red reflects final progress tracked.

Functional Goal: to improve coordination, proximal stability, and gravitational security for success in gross motor tasks and everyday occupations.				
-2: 6+ LOB during gross motor tasks	-1: 4-5 LOB during gross motor tasks	0: 2-3 LOB during gross motor tasks	+1: 1 LOB during gross motor tasks	+2: no LOB during gross motor tasks

Functional Goal: to improve self-regulation and calming for success in everyday occupations				
-2: unable to identify calming strategy	-1: max to identify calming strategy	0: mod to identify calming strategy	+1: min to identify calming strategy	+2: identifies calming strategy with no assistance

Functional Goal: to improve self-regulation and participation in daily occupations				
-2: participate in novel sensory input for less than 5 seconds before wiping hands	-1: participate in novel sensory input for 5-10 seconds before wiping hands	0: participate in novel sensory input for 11-30 seconds before wiping hands	+1: participate in novel sensory input for 31-60 seconds before wiping hands	+2: participate in novel sensory input for more than 60 seconds before wiping hands

Education: Handouts were compiled based on results of continuing education, annotated bibliography, and insights gained from clinical practice. These handouts and presentations focused on sensory processing supports and the role of OT in the school setting, where I completed a portion of my capstone experience.

IMPLICATIONS

Clinical component: The progress tracked through GAS goals included increased functional participation and performance in self-regulation, gross motor movements, acceptance of novel sensory input, and awareness of environment for success in home, school, and community settings. Goals including sensory components of clothing textures and food textures for expanded diet demonstrated the least amount of progress, indicating increased amount of time necessary to make direct progress in these areas. Activities were completed to prepare for participation in these areas, but progress measured on GAS indicated remaining at baseline. Implications of continuing education and annotated bibliography indicate a need for organized sensory-based approaches and understanding of each child's response to input to address differences in sensory processing.

Future practice: Upon entry to the occupational therapy profession as a pediatric practitioner after graduation, I will implement strategies including regulation activities, exposure to novel sensory input, and interaction from distal to proximal manner to increase comfort level and acceptance. When addressing sensory needs of a child, it is important to include caregivers and additional team members to ensure carryover into various settings. An additional component included handouts to increase understanding, which facilitated active conversation with teachers, caregivers, and interdisciplinary team members.

ACKNOWLEDGEMENTS

I would like to extend a special thank you to my site mentor, Sarah, the Theratime, Inc. team, the teachers within the O'Gorman school district, and all the children and families who helped me learn and grow throughout the last 14 weeks. Thank you to Dr. Jessica McHugh for her insight and guidance to ensure the success of this capstone project.

REFERENCES

Please scan with your phone's camera to view the reference list.

