Effectiveness of Sensory-Based Intervention in a Classroom Setting

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Case
A 9 year old male student is having difficulty staying focused during class. He is easily distracted and interacts with his peers at inappropriate times, such as when a teacher is providing instruction to the class. The student’s teacher voices her concerns about the student’s attention during academic tasks to an OT where the use of sensory integration is then explained to help with classroom behaviors.

1. Ask: Research Question
What is the effectiveness of sensory integration on school performance for elementary aged children?

2a. Acquire: Search
Patient/Client Group: School Aged Children
Intervention: Sensory Integration, Sensory Based Intervention
Comparison: No treatment in the classroom
Outcome(s): functioning, attention, concentration, academic performance, regulation, behavior.

2b. Acquire: Selected Articles
Buckle, Franzsen, & Bester (2011): A randomized controlled trial design that examined the efficacy of stability ball and dynamic seating in a classroom on attention to task and academic performance of students.
Fedewa, Davis, & Ahn (2015): A randomized controlled trial design that examined the efficacy of stability ball and dynamic seating in a classroom on attention to task and academic performance of students.
Worthen (2010): A systematic review design that reviewed 13 articles to discover whether sensory-based intervention strategies result in improved attention and academic performance when implemented in a classroom (music on task performance, yoga in classrooms, fine motor activity with tactile stimulation).

3a. Appraise: Study Quality
Buckle, Franzsen, & Bester (2011): Level I, (n=30) Strengths: longitudinal, strong generalizability to ADHD populations, simple random sampling was used, included a control group. Limitations: Confounded by other factors during lengthy observation period, lack of differentiation between subtypes.

3b. Appraise: Study Results
Buckle, Franzsen, & Bester (2011): Weighted vests showed significance in improving in-seat behavior and attention-to-task in students (p<0.01). However, no significant results were observed in task completion for students in task completion speed.
Fedewa, Davis, & Ahn (2015): No significant difference was observed between treatment and control classrooms related to mathematics, literacy, and on-task behavior as a result of dynamic seating.
Worthen (2010): Proprioceptive exercise, dynamic seating, and oral sensorimotor were not effective. Weighted vests, auditory stimulation, yoga, and fine motor activities for tactile stimulation proved to be significant for on-task performance.

4. Apply: Conclusions for Practice
Weighted vests appear to help children with ADHD attend to academic tasks. Sensory Integration in the classroom may be helpful to utilize for school based OT’s but future research is needed to examine the effectiveness of sensory integration in a generalized education classroom. Future research is needed to help clarify the long-term effects of sensory integration on a wider range of school performance skills. Additionally, more studies are needed to utilize larger sample sizes and a more diverse populace as to best represent the entire population. There is significant evidence to support that weighted vests, auditory stimulation through music, yoga, and fine motor activities are effective sensory based interventions to improve on-task performance.

References

Research supports the use of weighted vests, auditory stimulation through music, yoga, and fine motor activity to improve on-task performance particularly for children with pre-existing diagnoses.