BAR-ILAN UNIVERSITY

Effects of Mothers' Interactional Behaviour on Toddlers' Motor Planning with or without Sensory Processing Disorder

Adi David

Submitted in partial fulfillment of the requirements for the Master's Degree in the School of Education, Bar-Ilan University

Ramat Gan, Israel 2017

This work was carried out under the supervision of Prof. Esther Adi-Japha and Dr. Nurit Jaegerman School of Education, Bar-Ilan University.

Abstract

The main purpose of the current study is to investigate the ability of motor planning in **toddlers with sensory processing disorder (SPD)**. The study examines the correlation between mother's interactional behavior and toddlers' motor planning abilities, compared to typically developed toddles.

Sensory processing is the process of absorbing, integrating, and organizing sensory information, and producing adaptive behavioral responses according to the interpretation given to the stimulus. It is a dynamic and incessant process which enables one to efficiently function in an environment. A sensory processing disorder means difficulty in absorbing and processing the specific stimulus, as well as producing an adaptive response to the stimulation. Developmental dyspraxia is impairment in motor planning that is caused by an impairment in sensory processing, which has a significant impact on development and daily functioning. A quality mother-child interaction positively affects play and allows the toddler to participate in challenging play that promotes development. Despite the many implications of developmental dyspraxia on the functioning and participation of children in everyday life and on the emotional and social development of toddlers, the research in this area is poor. It lacks a clinical description of what this impairment looks like at a very young age and how it is affected by the quality of the toddler's interaction with his mother during playing.

Purpose

Examine and compare motor planning skills of toddlers aged 12-18 months with and without sensory processing disorder and how these skills are affected by the mother's behavior during interaction.

Method

Participants included 66 infants (aged 12-18 months) and their mothers. 37 of the infants were typically developing while 29 had primary signs of sensory processing disorder. Toddlers in the study group received an abnormal grade in at least two of the following tools:

1. Infant / Toddler Symptoms Checklist

2. TSFI-Test of Sensory Function in Infants

3. Infant / Toddler Sensory Profile.

Toddlers in the control group were those who received score within the normal range in the three instruments. In this study, we examined indicators relating to two main areas: assessment of

behaviors that represent motor planning capabilities (by means of observational tools developed for this study) and evaluation of the quality of mother-toddler interaction (done through the analysis of a 10-minute free-play interaction, analyzed by the OMI method).

Results

The findings reveal significant differences between the two groups in the ability of the toddler's motor planning during interaction with the mother, as well as corresponding differences in the quality of interaction with the mother. Toddlers with impaired sensory processing exhibited fewer behaviors indicative of efficient motor planning: imitating the mother, initiating purposeful activity, object manipulation, creative use of objects, and following verbal instructions. Moreover, their play was shorter and they struggled with coping with difficulty and performing motor activity at an appropriate pace, according to the right sequence, and understanding the purpose of the game or object. They showed less improvement in performance post-experience, and their game was characterized by less inquiry and curiosity. Differences were more significant among boys in both groups. Mothers of toddlers with sensory processing disorder provided less mediation (specifically Competence and Affecting) during interaction, although clear differences in many motor planning variables still remained beyond the influence of the mother's behavior and gender.

Conclusions

The findings of this study contribute to the understanding of the characteristics of developmental dyspraxia as they are expressed in the toddler population. The uniqueness of this study is that it is the first to examine infant motor planning capabilities while addressing the characteristics of mother-infant play interaction. This study strongly supports the relationship between the quality of maternal mediation, the quality of the toddler's play with regard to the elements of motor planning and the impact of these on the course of development. The present study offers a platform for evaluating motor planning skills during play interaction and illustrates the importance of early detection and treatment. Another innovation in this study is the reference to the importance of mother-infant interaction in relation to motor planning capabilities in early childhood.