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Discriminating children with high functioning autism spectrum disorders and without disabilities using Japanese Sensory Inventory Revised (JSI-R) items

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Introduction: Sensory processing disorders are common problems in children with high functioning autism spectrum disorders (HFASD). Dunn et al. reported that children with Asperger syndrome have clear different patterns compared with children without disabilities on the Sensory Profile. In order to identify sensory processing problems, Japanese OTs use the Japanese Sensory Inventory Revised (JSI-R). JSI-R is a questionnaire containing 147-items that describes responses to daily sensory experiences. However, there are no studies about discrimination between children with HFASD and without disabilities using JSI-R. For screening and the clinical practice of children with HFASD, information from JSI-R score pattern that reflects sensory processing problem in HFASD is necessary. Also, discrimination between children with HFASD and without disabilities using JSI-R items should be analyzed and discussed.

Objective: The objective of this study was to determine which items on the JSI-R, best discriminated between children with high functioning autism spectrum disorders (HFASD) and children without disabilities.

Method: 23 children, age of 6 to 12 years, with HFASD and age , sex matched 23 children without disabilities were participated in this study; Mann-Whitney U test for each item score and a Logistic Regression on two groups were used for data analysis.

Results: The Mann-Whitney U tests revealed that there were significant differences between the two groups on 46 item scores. The Logistic Regression yielded discriminate formula that included 6 items. The contents of these inquiry items were as follow: balance problem, hypersensitivity to vestibular stimuli, hypersensitivity to somatosensory stimuli, seeking behavior to proprioceptive stimuli, and hypersensitivity to auditory stimuli. The formula provided 100% sensitivity, and 100%specificity respectively, for internal data.

Conclusion: The JSI-R is a useful tool for discriminating children with HFASD. This suggested that clarifying sensory processing problems using JSI-R items would provide information to better discriminate children with HFASD.

Contribution to practice: These results enable to help OTs identify and better treat children with HFASD. OTs should aware of the sensory processing problem in screening and treating at risk of children with HFASD.