

Introduction: In Japan, the effectiveness of health checkups for children aged 5 years has attracted attention as the basis for a support system for early detection and support of children with developmental disabilities. However, these have not yet become statutory health checkups, and their assessment has not been standardized. This study employed the Strength and Difficulties Questionnaire (SDQ) in examining the health of a 5-year-old child. This study aims to demonstrate the scores' distribution and obtain the standard land and cutoff values of the SDQ.

Objectives: From 2010 to 2012, children reaching 5 years of age in Kanie-cho, Aichi Prefecture, Japan, underwent a health checkup. Of the 888 children for whom parental consent was obtained, 884 responses without missing values (453 boys: 51.2%, 430 girls: 48.6%) were included in the analysis.

Methods: SDQ and medical questionnaires for 5-year-old children were sent to the parents with a formal request for approval for the child to participate in the study. Further, the parents were asked to respond to the questionnaire. The Ethics Committee of the Graduate School of Education and Developmental Sciences, Nagoya University approved this study (No.298).

Results: A confirmatory factor analysis using the maximum likelihood method revealed a factor structure almost identical to that of Goodman (JCPP 1997; 38 581-586). Nonetheless, items 3, 10, 11, 13, 14, and 22 showed high loadings on factors different from those in the original version. Similar to the original version, we set our criteria so that Some and High Needs would be approximately 10% each. Furthermore, we calculated the percentage of children who fell into these categories and found that the scores that fell into the Need category differed from those in the previous study (Table 1).

Image:

Table 1.
Normative Banding of Score for Parent-Rated SDQs for Japanese Children Aged 5 Years

	Low Need		Some Need		High Need	
	Score	%	Score	%	Score	%
Prosocial behavior	6-10	70.6	5	18.4	0-4	10.9
Hyperactivity / inattention	0-5	84.3	6	7	7-10	8.6
Emotional symptoms	0-2	78.4	3	9.6	4-10	12.1
Conduct problems	0-3	84.2	4	10.9	5-10	4.9
Peer problems	0-2	85.1	3	8.4	4-10	6.5
Total difficulties score	0-10	75.1	11-13	13.1	14-40	11.9

Conclusions: Although the five-factor structure of the SDQ was generally accepted, as pointed out in previous studies (Matsuishi et al. Brain Dev 2008;30 410-415 ; Iida et al. 2014; 33-41), differences in expression between English and Japanese and cultural differences may have influenced the results. Therefore, it is necessary to be careful in interpreting the results. Additionally, the differences in the Need classification indicated that the difficulty level tends to be slightly lower in the 5-year-old children's health checkups and that boys may be more likely to recognize the "Hyperactivity/inattention" problem. Based on these results, it is necessary to consider more effective ways of using the SDQ in 5-year-old children's health checkups, such as evaluating the SDQ scores in combination with the actual condition of the children at the time of the checkup.

Disclosure of Interest: None Declared

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Use of Methylphenidate to Improve Cognition in Autism Spectrum Disorder (ASD)

S. Ashraf¹, A. Bachu², S. Srinivas³, W. Tankersley⁴ and K. Shah^{5*}

¹Northpointe Psychiatry, Lewisville, TX; ²Psychiatry, UAMS-Baptist Health, North Little Rock, AR, United States; ³A.J.Institute of Medical Sciences and Research Center, Mangaluru, Karnataka, India; ⁴Psychiatry, Children's Recovery Center, ODMHSAS, Norman, OK and ⁵Psychiatry, Wake Forest University, Winston-Salem, NC, United States

*Corresponding author.

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Introduction: Methylphenidate (MPH) is used to treat attention deficit hyperactivity disorder (ADHD) and has shown unique benefits in children and adolescents with autism spectrum disorder (ASD). In addition to improving attention, hyperactivity, and repetitive movement, it also improves cognition in ASD. Our focus is to explore the understudied benefits and safety of methylphenidate use for cognition in ASD children.

Objectives: 1) To study the response and benefit of methylphenidate in autistic kids to improve cognition and life function.

2) To assess the safety profile and risks of using methylphenidate at different doses in children with autism as a guiding tool for prescribing physicians.

Methods: A literature search was conducted using relevant medical subject headings (MeSH) terms in PubMed, Medline, and PubMed Central. We identified all published articles from inception until September 30, 2022. Initial search results found 41 studies, of which 15 were excluded as they did not meet inclusion and exclusion criteria. After a thorough full-text review, we included 5 studies in our final qualitative synthesis review.

Results: Methylphenidate was found to have the unique benefit of increasing cognitive processing speed, thus improving everyday life function in ASD and ADHD children compared with only ADHD, with a clinical significance of $p < 0.001$. Stimulants may improve the processing of social situations and interactions or social functions due to this unique response (Peled, J et al. *Nordic journal of psychiatry* 2020; 74(3), 163-167) A clinically significant performance gain on cognitive tasks was identified with a linear dose-response at three different doses (10 mg, 15 mg, 20 mg) of methylphenidate. ASD children with ADHD made significantly fewer omission errors, [$F(3,69) = 7.21, p < 0.001$], and commission errors [$F(3,69) = 4.64, p = 0.005$] on MPH, compared to placebo. They also showed more response at higher MPH doses, [$F(3,69) = 10.45, p < 0.001$]. Thus, the children were faster, more accurate, and had fewer errors at higher MPH doses (Pearson, D. A. et al. *Journal of child and adolescent psychopharmacology* 2020; 30(7), 414-426). There were no serious side effects or suicidality reported for low dose and a medium dose of MPH in ASD children assessed with Response Impressions and Side Effects Checklist-Kids (RISC-K), A 38-item parent rating scale (Kim, S. J. et al. *Journal of autism and developmental disorders* 2017; 47(8), 2307-2313).

Conclusions: The findings support the positive response of methylphenidate on cognitive function in ASD children. No serious adverse effects or suicidality were noted. Multi-center well-designed studies are recommended to determine further efficacy and safety of MPH in ASD children for cognition.

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