Reliability and validity of DS-ADHD: a decision support system on attention deficit hyperactivity disorders

Kuo-Chung Chuemail, Yu-Shu Huang, Chien-Fu Tseng, Hsin-Jou Huang, Chih-Huan Wang, Hsin-Yi Tai

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Abstract

Background and Objectives
The purpose of this study is to examine the reliability of the clinical use of the self-built decision support system, diagnosis-supported attention deficit hyperactivity disorder (DS-ADHD), in an effort to develop the DS-ADHD system, by probing into the development of indicating patterns of past screening support systems for ADHD.

Methods
The study collected data based on 107 subjects, who were divided into two groups, non-ADHD and ADHD, based on the doctor's determination, using the DSM-IV diagnostic standards. The two groups then underwent Test of Variables of Attention (TOVA) and DS-ADHD testing. The survey and testing results underwent one-way ANOVA and split-half method statistical analysis, in order to further understand whether there were any differences between the DS-ADHD and the identification tools used in today's clinical trials.

Results
The results of the study are as follows: 1) The ROC area between the TOVA and the clinical identification rate is 0.787 (95% confidence interval: 0.701∼0.872); 2) The ROC area between the DS-ADHD and the clinical identification rate is 0.867 (95% confidence interval: 0.801∼0.933).

Conclusions
The study results show that DS-ADHD has the characteristics of screening for ADHD, based on its reliability and validity. It does not display any statistical differences when compared with TOVA systems that are currently on the market. However, the system is more effective and the accuracy rate is better than TOVA. It is a good tool to screen ADHD not only in Chinese children, but also in western country.