

The Verification of the Reliability and Validity of Special Needs Education Assessment Tool (SNEAT) in Miyagi, Japan

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ABSTRACT

The Special Needs Education Assessment Tool (SNEAT) were verified of reliability and validity. However, the reliability and validity has been verified is only Okinawa Prefecture, the national data has not been analyzed. Therefore, this study aimed to verify the reliability and construct validity of SNEAT in Miyagi Prefecture as part of the national survey. SNEAT using 55 children collected from the classes on independent activities of daily living for children with disabilities in Miyagi Prefecture between November and December 2015. Survey data were collected in a longitudinal prospective cohort study. The reliability of SNEAT was verified via the internal consistency method; the coefficient of Cronbach's α were over 0.7. The validity of SNEAT was also verified via the latent growth curve model. SNEAT is valid based on its goodness-of-fit values obtained using the latent growth curve model, where the values of comparative fit index (0.997) , tucker-lewis index (0.996) and root mean square error of approximation (0.025) were within the goodness-of-fit range. These results indicate that SNEAT has high reliability and construct validity.

Keywords : Special Needs Education Assessment Tool (SNEAT), reliability, validity, latent growth curve model

I . Introduction

The SNEAT (Special Needs Education Assessment Tool) is a tool to evaluate the performance of special needs education. The SNEAT was developed by Han, Kohara & Kohzuki (2015) and its reliability and validity were verified by Kohara, Han, Kwon, Kohzuki (2015). The SNEAT that combined HRQOL with Jiritsu-Katusdo (independent activity) that is the part of the special needs education has attracted the attention as the new tool that enables to evaluate the performance of special needs education. However, the reliability and validity of the SNEAT have been verified with the data from Okinawa Prefecture, which have the necessity to collect and analyze the nationwide data for the standardization of the SNEAT brought up. Therefore, this study aimed to report the results of the research that was conducted for Miyagi Prefecture as the part of the standardization of SNEAT.

II . Methods

The SNEAT questionnaire sets were distributed to the 60 classes on independent activities of daily living

for children with disabilities in the 2 special needs schools in Miyagi Prefecture. The SNEAT questionnaire has a total of 11 items in three domains (bodily pain, mental health, and social functioning) and enables the teachers to evaluate the educational outcome of their students (Han et al, 2015). Reliability of SNEAT was estimated using the internal consistency method. The internal consistency of SNEAT was assessed with Cronbach's α . For this study, the latent growth curve model, and structural equation modeling (SEM), among the methods of construct validity, were utilized, and longitudinal data were employed to verify the validity of SNEAT. The model fitness was assessed with the following fit indices: comparative fit index (CFI) and root mean square error of approximation (RMSEA).

III . Results

The internal consistency reliability (Cronbach's α coefficient) ranged from 0.72 to 0.77 (Physical function = 0.72, Mental health = 0.77, Social function = 0.75) for all the domains, and the internal consistency reliability of all the items was 0.81. As for the analysis via the latent growth curve model, SNEAT

showed a high level of fitness: $\chi^2 = 13.422$; $DF = 13$; $P = 0.416$; $CFI = 0.997$; $TLI = 0.996$; and $RMSEA = 0.025$.

IV. Discussion

In this study, the data from the research on Miyagi Prefecture were analyzed as the part of the nationwide research for the standardization of the SNEAT. This study was the first attempt to conduct the SNEAT in the Miyagi Prefecture and its reliability and validity were also verified. In the study in Miyagi Prefecture, the goodness of fit of the model was not so good, when the four explanatory variables are included. Since the results of this study were derived without considering the differences from the regions, the differences from the regions need to be studied more. For the standardization of the SNEAT, the collection and analysis of data need to be conducted via the nationwide research.

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