

5.5 Development and validation of a tool to assess neuro-developmental outcome of 5-9 year old children in Sri Lanka.

V. Abeysuriya, A.R. Wickremasinghe, K.P.J. Perera, A. Kasturiratne, I. Poddalgoda
Plantation Human Development Trust, No. 427/14, Robert Gunawardana Mawatha, Battaramulla
Faculty of Medicine, University of Kelaniya
Department of Pediatrics, Faculty of Medicine, University of Kelaniya
Department of Public Health, Faculty of Medicine, University of Kelaniya
Castle Street Hospital for Women, Colombo- 10

ABSTRACT

Objective: To determine the validity and reliability of a tool which has been developed based on Griffiths Mental Development scale (GMDS) to assess the neuro-developmental outcome of 5-9 year old children in Sri Lanka.

Design: Descriptive cross sectional study

Setting: Randomly selected five primary schools of the Medical Officer of Health (MOH) area in Ragama, Pediatrics Out patient clinic at Colombo North Teaching Hospital in Ragama and the Department of Pediatrics at the Faculty of Medicine, University of Kelaniya.

Method: The study population consisted of two groups. Group A had 60 children. This sample consisted of 20 children who have been clinically diagnosed as having poor neuro-development and 40 children with normal neuro development. They were assessed using the developed neuro-development assessment tool at Colombo North Teaching Hospital, Ragama to determine the cutoff value for poor and normal neuro- developmental outcome. The ROC curve analysis was used to determine the statistical significant of the cutoff GQ value which identify the poor and normal neuro developmental outcome of children by the tool. Group B had 100 primary school children (n=100) who were selected from Ragama MOH area. It consisted of 50 children with the high educational performance and 50 with the poor performance based on teacher's assessment based on student performance reports. The group B has been used to re-asses the validity of the developed tool with the identified cut off GQ value. History of birth and development, family history, teachers' records, school performance, clinical examination and aptitude test were used to determine neuro-developmental outcome of children by the pediatrician.

Result: A cut-off value of GQ 100 ($P < 0.05$) was identified to differentiate children with poor and normal neuro-developmental outcome (sensitivity 100% and specificity 100%). Reliability of identified cutoff value was tested by administrating the tool to the selected primary school children. Out of 50 poor educational performance children who were identified by the teachers' only 36 were below GQ 100. There were 31 children who were clinically diagnosed as having poor neuro-development by the pediatrician and all of them had GQ of below 100 (Sensitivity 100%).

Conclusion: The developed neuro-developmental outcome assessment tool is a valid and reliable instrument to screen neuro developmental outcome of Sri Lankan children aged between 5-9 years.