VALIDITY AND STANDARDS FOR INTERPRETATION OF THE DEVELOPMENTAL MILESTONES QUESTIONNAIRE OF SURVEY OF WELL-BEING OF YOUNG CHILDREN FOR BRAZILIAN CHILDREN

The present abstract is part of a doctoral thesis presented at the Medicine School of the Federal University of Minas Gerais (Health Sciences Program – Child and Adolescent Health) on 07/30/2020, by Marina Aguiar Pires Guimarães, who was mentored by Professor Cláudia Regina Lindgren Alves and Professor Lívia de Castro Magalhães.

ABSTRACT

Introduction: The Developmental Milestones Questionnaire of the Survey of Wellbeing of Young Children – Brazil version (DM-SWYC-BR) is a screening tool to identify global development delays in children aged 1 to 65 months. Based on the caregivers' report, it is free of charge, brief, and easy to respond, holding a promise to be used in children's health care in Brazil.

Objectives: To investigate the DM-SWYC-BR's reliability, construct and concurrent validity, and to establish the preliminary standards for the interpretation of the results for Brazilian children.

Methods: Methodological study with two investigative axes. Samples were recruited in primary health care centers and public children daycares. The normative study involved 1535 children aged less than 65 months from three different Brazilian states (Santa Catarina, Minas Gerais, and Ceará). Parents answered a characterization questionnaire and the DM-SWYC-BR. DM-SWYC-BR's internal consistency and exploratory factor analysis were calculated. The cutoff points were defined as the value corresponding to 85% of the average score for each age (approximately the 15th percentile). The prevalence of suspected delay was calculated using both Brazilian and original standards. The

concurrent validity study was conducted with 465 children aged 23 to 58 months from Minas Gerais and the Santa Catarina states. All caregivers answered the DM-SWYC-BR and the Ages and Stages Questionnaire-Brazilian version (ASQ-BR), and 167 children were also assessed using the *Bayley Scales of Infant and Toddler Development III* (Bayley III). Spearman's correlation coefficient and accuracy measures were calculated, comparing children's scores on the DM-SWYC-BR versus ASQ-BR and DM-SWYC-BR versus Bayley III.

Results: The DM-SWYC-BR questionnaire was considered consistent (Cronbach's Alpha = 0.97) and unidimensional, with items' factorial loads above 0.78. Small differences were found between the Brazilian and original cutoff points for children of most ages. At 18, 23, and 29 months, the cutoff points were higher for the Brazilian sample. The cutoff points were higher for the North American sample between 44 to 46 months and 54 to 58 months. The general prevalence of suspected developmental delay was 27.5% using Brazilian standards and 28.2% with the original ones, although considerable differences were observed in specific ages. The correlation between the DM-SWYC-BR and ASQ-BR was moderate (rho = 0.50) and was weak with the Bayley III (rho=0.32), although both were statistically significant ($p<0.001$). The accuracy of DM-SWYC-BR using ASQ-BR or the Bayley III as a reference test was similar. The negative predictive values (NPV) and specificity were above 70%. The positive predictive values (PPV) and sensitivity ranged from 53 to 81%. The Area Under the ROC Curve (AUC) was 0.73 compared to the ASQ-BR and 0.69 compared to the Bayley III.

Conclusion: The DM-SWYC-BR questionnaire showed satisfactory psychometric properties, supporting its use for developmental delays screening in Brazilian children. When screening Brazilian children, we recommend the standards reported in the present study for interpretation of the DM-SWYC-BR results.

Keywords: Child Development; Screening; Psychometrics; SWYC.