Abstract

AGREEMENT OF THE DEVELOPMENTAL ASSESSMENT FOR INTERVENTION MANUAL (DAIM) WITH BAYLEY SCALES OF INFANT AND TODDLER DEVELOPMENT, THIRD EDITION (BAYLEY-III) IN HIGH RISK INFANTS AT 12-MONTH CORRECTED AGE

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Background: Through modern medical advance, preterm infants (32-week gestational age or less) and very low birth weights (1,500-gram or less) have been given more chance to live. Nevertheless, delayed development is becoming a considerable issue in these high-risk infants. Early detection leads to prompt diagnosis and proper developmental intervention. Developmental Assessment for Intervention Manual (DAIM) is a promising tool to screen for developmental delay but has never been studied for its correlation with the gold standard developmental test, such as Bayley Scale of Infant and Toddler Development, Third edition (Bayley-III). This study will provide not only the answer about the correlation, but also suggestion for further improvement of future Thai developmental screening tools.

Objectives: To find the agreement of DAIM and Bayley-III in high-risk 12-month-old (corrected age) infants.

Materials and Methods: A total of 49 12-month-old (corrected age) preterm or very low birth weight infants who had visited the high-risk pediatric development clinic between May 1, 2017 and August 1, 2018 were consecutively enrolled. After demographic data was collected, all subjects underwent both DAIM and Bayley-III tests. The developmental assessment comprised of 4 domains, i.e. gross motor, fine motor, receptive language and expressive language. Cohen's Kappa coefficient was used to calculate the agreement between the two tests.

Results: Fine motor was rated as substantial agreement (κ=0.64) between DAIM and Bayley-III while expressive language showed moderate agreement (κ=0.56). Unfortunately, gross motor and receptive language got rated as fair (κ=0.29) and slight (κ=0.12) agreement, respectively. The probable explanation for this unsatisfied agreement could be from an insufficient number of questions in these domains.

Conclusions: Of the 4 domains, only fine motor and expressive language reached favorable agreement between DAIM and Beyley-III in 12-month-old (corrected age) preterm infants and very low birth weights. Adding more questions in gross motor and receptive language domains of DAIM is needed to improve agreement of the two tests. Future researches for the correlations in other age intervals are enthusiastically recommended.

Key word: high-risk infant, Agreement, DAIM, Beyley-III