

Comparing PEDS and PEDS:DM with Bayley-III in an multi-ethnic Asian birth cohort at 18 and 24 months

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Abstract

Purpose: To evaluate how screening tools Parents' Evaluation of Developmental Status (PEDS) and Parents' Evaluation of Developmental Status: Developmental Milestone (PEDS: DM) compare with diagnostic tool Bayley Scales of Infant and Toddler Development, 3rd Edition (BSID).

Method: Children from the Growing up in Singapore towards Health Outcomes cohort who completed 18 and 24 month (m) PEDS, PEDS: DM and 24m BSID in English were included. Preterm births were excluded. Delay in developmental domain is defined as parental concern for PEDS; failing domain specific question for PEDS: DM; domain score of ≤ 1 standard deviation (SD) for BSID. Predictive validity of 18m PEDS and PEDS: DM with 24m BSID and concurrent validity and accuracy of 24m PEDS and PEDS: DM with 24m BSID were compared using Cohen's Kappa (κ) and κ p-value.

Result: 276 children were included. 18m PEDS receptive language (RL) had fair agreement with 24m BSID receptive communication (RC) ($\kappa=0.27$ $p<0.001$). 18m PEDS: DM RL had moderate agreement with 24m BSID RC ($\kappa=0.41$ $p<0.001$). 18m PEDS:DM social emotional had fair agreement with 24m BSID social composite ($\kappa=0.21$ $p<0.001$). 24m PEDS expressive language (EL) had fair agreement with 24m BSID expressive communication (EC) [$\kappa=0.27$ $p<0.001$ positive predictive value (PPV) 41% negative predictive value (NPV) 83% sensitivity (SN) 49% specificity (SP) 77%]. 24m PEDS: DM EL had fair agreement with 24m BSID EC [$\kappa=0.36$ $p<0.001$ PPV 42% NPV 93% SN 84% SP 64%]. 24m PEDS: DM RL had moderate agreement with 24m BSID RC [$\kappa=0.44$ $p<0.001$ PPV 73% NPV 84% SN 42% SP 95%]. Direct comparison of other domains had low predictive and concurrent validity.

Conclusion: PEDS and PEDS: DM have fair to moderate predictive validity, concurrent validity and high NPV in language domain. Alternative screening tools should be considered for non-language domains in our population.

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Biography

Rui Kwan is a pediatrics medicine senior resident in KK Women's and Children's Hospital, Singapore. He graduated from National University of Singapore and completed membership examination with the Royal College of

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