

## 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  $\leq 1$  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 ( $\kappa$ ) and  $\kappa$  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 PED: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.

### Biography:

Rui Kwan is a paediatric 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 Paediatrics and Child health. He has an interest in helping children with neurodevelopmental conditions and advocating for the well being of disadvantaged children.

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