

UNIVERSITI TEKNOLOGI MARA

**DEVELOPMENT AND VALIDATION
OF A MALAY-LANGUAGE
SCREENING TOOL FOR SPEECH
AND LANGUAGE DELAY IN
YOUNG CHILDREN AT HEALTH
CLINICS IN KUALA LANGAT AND
KLANG DISTRICTS**

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ABSTRACT

Child health and development are pivotal components of lifelong well-being, particularly during the critical early years from birth to age five. Children diagnosed with speech and language delays have profound and lasting consequences if not identified and addressed promptly. Despite this, screening for primary speech and language delay in young children is not routinely done at primary healthcare in Malaysia due to a lack of standardized and valid screening tools that are culturally relevant to Malaysians. This study objective was to develop, validate, assess the reliability, and to assess the relationship between the domains and items of the newly developed Parent-Rated Screening Tool for Speech and Language Delay in children at the age of 18 to 24 months in the Malay Language (PR-SSLD). The study was conducted at Kuala Langat and Klang districts. The study was divided into three phases: i). The development of the PR-SSLD, ii). The initial validation of the PR-SSLD with content validation, face validation, and exploratory factor analysis (EFA) for structural model exploration and reliability. iii) The Confirmatory Factor analysis and Structural Equation Modelling (SEM). The PR-SSLD was developed with four domains and twenty-five items in the development phase. Six items were deleted at the end of Phase 1 with all 19 items achieved item-content validation index ($I-CVI = 1$) and acceptable scale-content validation index ($S-CVI/Ave = 1$, $S-CVI/UA = 1$). The tool achieved acceptable scale-face validation index ($S-FVI/Ave = 0.98$, $S-FVI/UA = 0.84$). Only four domains with 19 items proceeded to Phase 2. In phase 2, the EFA analysis proposed a structural model with four domains and thirteen items, and six items were removed in the final analysis. Items factor loading was acceptable with ranging from 0.700 to 0.877 and range of reliability from acceptability to excellent (Cronbach's alpha 0.705 to 0.918). In phase 3, CFA was conducted to confirm the structural model in EFA. Only one item was removed, and the final model consisted of four main domains: the preverbal skills domain with two items, the receptive skills domain with two items, the expressive skills domain with four items, and the vocabulary skills domain with four items. This final structural model achieved construct validity ($RMSEA = 0.077$, $CFI = 0.971$, and $\chi^2/df = 2.312$), discriminant validity (inter domains coefficient correlation range from 0.32 to 0.84), and convergence validity (average variance extracted range from 0.562 to 0.832). The tool is also reliable, with a composite reliability of 0.714 to 0.954 (acceptability to excellent). SEM was conducted to assess relationship between the domains. The study suggested that the receptive skills (regression coefficient 0.750, p value = 0.004) and vocabulary (regression coefficient 0.586, p value < 0.001) were significant predictors of expressive skills. In conclusion, the PR-SSLD is valid and reliable for screening speech and language delays in children aged 18 to 24 months. The tool can be introduced to local health clinic settings as a standardized tool to screen children aged 18 to 24 months for speech and language delay and initiate early referral and intervention.

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CHAPTER 1

INTRODUCTION

1.1 Research Background

Child health and development are crucial elements of overall global health, as they shape lifelong trajectories for physical, cognitive, and socio-emotional well-being. The World Health Organization (WHO) defines children as individuals aged from birth to 19 years, highlighting the significant developmental stages that occur in early childhood, particularly among preschool-aged children. This phase, which typically spans from two to five years old, is crucial for cognitive, emotional, and physical growth and development. Nevertheless, developmental disorders, which impact approximately 15–20% of children worldwide, pose significant obstacles to achieving optimal health and well-being during these early years (UNICEF, 2021).

Developmental disorders include a range of conditions that involve delays in areas such as speech and language, motor abilities, cognitive skills, and socio-emotional development. The severity of these disorders can vary, with some presenting mild delays that may improve with intervention, while others result in substantial impairments requiring prolonged support. If these conditions are not identified or treated, they can lead to wide-ranging consequences, hindering children's academic success, social integration, and future economic prospects (Centers for Disease Control and Prevention, 2022). Furthermore, the repercussions extend beyond the individual, affecting families, educational institutions, and healthcare systems, thus making these disorders a significant public health issue.

Tackling developmental disorders in children is crucial for diminishing health disparities and promoting inclusive growth within society. Limited access to early identification and intervention services disproportionately impacts children in low-resource environments, worsening differences in developmental results (Black et al., 2017). Additionally, developmental delays frequently coincide with environmental risk factors such as poverty, malnutrition, and insufficient caregiver education, intensifying their effects. The financial impact of developmental disorders is considerable, encompassing expenses related to specialized education, healthcare, and decreased productivity later in life.