Smartphones and cognitive function among older adults – A proposed cross-sectional study in Malaysia

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ABSTRACT

Introduction: Malaysia is experiencing a rapid increase in its ageing population, leading to growing public health concerns surrounding age-related cognitive decline, particularly mild cognitive impairment (MCI). Smartphones are increasingly used by older adults and may offer cognitive stimulation and social connectivity. However, excessive or passive use may contribute to cognitive overload. Despite their widespread adoption, there is lack of local evidence examining how smartphone usage patterns influence cognitive function among older Malaysians. We are proposing a study among Malaysian older adults aged 60 years and above to examine the association between smartphone usage patterns and their cognitive function. **Materials and Methods:** A cross-sectional study will be conducted involving 216 older adults, selected through random sampling at Klinik Kesihatan Nilai, Negeri Sembilan. Participants will complete structured questionnaires capturing sociodemographic background, clinical history, and detailed patterns of smartphone use, including weekly screen time and types of applications used. Cognitive function will be assessed using the Montreal Cognitive Assessment (MoCA). Data will be analysed using SPSS, applying descriptive and inferential statistics (t-tests and logistic regression) to determine significant associations. **Results:** The proposed study is expected to identify predominant smartphone usage patterns among older adults and assess their relationship with cognitive performance. It will explore whether specific usage behaviours — such as prolonged screen time or app type — are associated with lower MoCA scores. Findings will also help identify sociodemographic or clinical predictors of cognitive decline. **Conclusion:** The results of this study are expected to provide preliminary evidence to inform public health strategies and support the development of digital health interventions aimed at preserving cognitive function among older adults in Malaysia.

Keywords: Smartphone usage, Cognitive function, Older adults, Mild cognitive impairment (MCI), Montreal Cognitive Assessment (MoCA)