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Prevalence and Factors Associated with Smartphone Addiction Among Adolescents-A Nationwide Study in Malaysia

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ABSTRACT

Smartphone ownership among adolescents is getting common in this decade especially in Malaysia; Adolescent are strongly devoted to their smartphone and this may lead to smartphone addiction. Studies have reported that smartphone addiction has become an emerging social and health problem especially among the youth in many countries however there is lack of study among adolescents in Malaysia. This study aimed to examine the prevalence and factors associated with smartphone addiction among adolescents in Malaysia. This was a cross-sectional study involving adolescents from 15 primary care clinics throughout the country. Respondents were assessed on their smartphone activities using the Malaysian short version of the Smartphone addiction scale (SAS-M-SV). Multiple logistic regression was used to determine the predictors of smartphone addiction among adolescents. The study was conducted among 921 adolescents with 49.6% male ($n = 457$). The mean age of adolescents was 16.4 ± 2.4 years. The ethnicity distribution were 74.6% Malay, 7.3% Chinese, 4.7% Indian and 13.4% other ethnicities. The prevalence of smartphone addiction was 37.1% (342/921); 37.4% in male and 36.9% in



female. Based on multiple logistic regression analysis, longer duration of smartphone use per week was associated with higher odds of smartphone addiction among adolescent (odd ratio = 1.005%, 95% confidence interval = 1.000–1.009, p -value = 0.039). Smartphone addiction is present in nearly four in ten adolescents in Malaysia. Adolescents who spend longer duration in smartphone usage per week were associated with higher odds of having smartphone addiction. Parents should be more alert and vigilant about this finding. Hence, parents should limit their children from spending too much of time with smartphone in order to prevent their children from getting smartphone addiction.

KEYWORDS

Addiction; smartphone; adolescents; malaysia; internet

Abbreviations

SAS-M-SV	Smartphone addiction scale Malay-short-version
OR	Odd ratio
CI	Confidence interval

1 Introduction

In Malaysia, smartphone owners account for 74% of the population with adolescents making up around 10% [1]. According to the survey, adoption rate of smartphone owners were highest in adolescents which was 86.9%. Multiple studies reported increase usage of smartphone leads to smartphone addiction [2,3]. Studies showed that the prevalence of smartphone addiction among adolescents vary from country to country. Prevalence of smartphone addiction among adolescents were 10% in United Kingdom [4], 16.9% in Switzerland [3], 33.3% in India [5] and 35.6% in South Korea [6].

What is smartphone addiction? It could be referred to excessive, problematic or maladaptive smartphone use however their consequences do not meet the severity levels of those caused by substance addiction yet persistent smartphone addiction could finally lead to severe effects on physical and psychological health [7]. Such physical consequences include giddiness, myopia, kerato conjunctivitis sicca and musculoskeletal disorders especially on the wrist and neck [8,9]. In terms of psychological health, adolescents may suffer from depression, anxiety, insomnia and psychological distress [10]. This is worrisome as addiction to smartphones can ultimately lead to disturbances in their daily lives [9]. This include strained social and interpersonal relationship due to negligence of friends and family, difficulties in school such as poor performance academically and indifference towards homework; isolation and mental or physical restlessness [11]. However, when the individual ceases his or her smartphone addiction behaviour, excessive fatigue, deprivation and changes in sleep patterns, impatience, sexual deviations, violence, eating disorder and withdrawal symptoms ensue [11].

Studies reported that factors associated with smartphone addiction were female gender, students in higher school grade, students with poor academic performance, longer duration of smartphone, use shorter time period until first smartphone use in the morning, indicating social networking as the most personally relevant smartphone function, influence of parental attachment, students with reported lower physical activity, and those reporting higher stress [3,6]. Among all age groups, adolescents are specifically at higher risk in developing smartphone addiction [12]. This is evident by a survey which revealed adolescents in a smartphone addiction risk group were about 2.9 times higher compared to adults [13].