

The Mobile Paradox: Examining Smartphone Addiction's Influence on Adolescent Health and Aggression

Smartphone
Addiction's
Influence on
Adolescent
Health

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ABSTRACT

Objective: The objective of this study was to determine the relationship between Smartphone Addiction on Adolescent Health and Aggression

Study Design: Cross-sectional study

Place and Duration of Study: This study was conducted at the Institute of Professional Psychology including Bahria University, Karachi from August 2022 to January 2023.

Materials and Methods: This study was conducted using a purposive sampling method on 254 participants (127 women and 127 men) aged 10 to 21. The data collection tool includes a demographic questionnaire, a screening questionnaire, a smartphone dependence questionnaire, an aggression questionnaire (AQ) and a physical health questionnaire (PHQ-9). Data were analyzed by SPSS with the Pearson correlation for relationship between variables.

Results: The correlation between the dependence of smartphones (SD) and aggression (AQ) was significant, with a correlation coefficient of 0.518 ($p < 0.001$). In addition, there was a significant negative correlation between smartphone dependency (SD) and physical health (PHQ), with a correlation coefficient of -0.171 ($p = 0.006$). On the other hand, the correlation between aggression (AQ) and physical health (PHQ) was weak and statistically non-significant, with a correlation coefficient of -0.121 ($p = 0.055$). Although the relationship was not significant, the negative correlation coefficient indicates that higher levels of aggression may be associated with a slight decline in physical health.

Conclusion: In conclusion, overall these findings highlight the potential impact of smartphone dependence on aggression and physical health. However, further research is needed to better understand the complex relationship between these variables and explore potential underlying factors.

Key Words: Smartphone Dependency, Aggression, Physical Health, Adolescence.

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INTRODUCTION

Smartphones have become an integral part of our everyday lives and have increased in use dramatically in recent years.

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Although the prevalence of problem smartphone use (PSU) in children and adolescents varies considerably between 5% and approximately 50%, the overall number of smartphone owners worldwide has increased continuously. In addition, it is assumed that the vulnerability of children and adolescents to PSU is higher than that of adults.¹ Smartphone usage time was also the highest among adolescence. Smartphone dependency is suggestively higher than other lifestyles due to excessive smartphone use (salience), the inability to personally control smartphone use (self-control failure), and physical, psychological, and social negative consequences (serious consequences) due to smartphone use. Nevertheless, smartphone dependency refers to the continuous use of smartphones. While smartphones have various functions and additional applications (apps) that can be used, participants reported that the more gaming entertainment they participated in, the more pictures they took, the more frequent their social media usage and texts, and the more frequently they watched videos, the higher their dependency on smartphones became.²⁻⁴

Adolescents are one of the most frequent users of smartphones and their dependence on these devices is

becoming a growing concern. The relationship between smartphone dependence and physical health and adolescent aggression has been a topic of interest to researchers in recent years.^{5,6} Smartphone addiction has been associated with various physical health problems, such as sleep disorders, muscle and skeletal problems and visual problems. Furthermore, smartphone addiction is also related to aggression among adolescents. Aggression is a personal factor associated with smartphone addiction in adolescents. Aggressive behavior is the behavior in which an individual intends to harm another person or an object.⁷⁻⁹

The relationship between smartphone dependence and physical health has been extensively studied. A study conducted in Korea found that smartphone addiction affects physical and psychological health.¹⁰ Another study conducted in Pakistan revealed that the use of mobile phones is an important predictor of depression among emerging adults.¹¹ A study conducted in Turkey found that there was a positive and significant relationship between smartphone addiction and aggression behavior in Turkish university students.¹² Another study conducted in Lebanon revealed that smartphone addiction was associated with aggressive behavior in Lebanese adolescents.¹³

Furthermore, the role of loneliness and aggression in the addiction of university students to smartphones has also been studied. A study conducted in Iran found that the problem of smartphone use is one of the important factors affecting the aggressive behavior of university students.¹⁴ Another study conducted in Turkey found that loneliness had a significant impact on smartphone addiction and aggression behavior.⁸

Previous research in this area has primarily focused on the biological, social, and emotional characteristics of smartphone-addicted users. However, findings have provided insufficient information about how to prevent smartphone dependency that leads to social problems such as aggression. The objective of this study was to determine the relationship between Smartphone Addiction on Adolescent Health and Aggression.

MATERIALS AND METHODS

The data was collected from different parts of Karachi through snowball and convenient sampling from August 2022 to January 2023.

A quantitative study design was used to examine the relationship between the variables dependency on Smartphone, Aggression and overall Physical Health. Total 254 smartphone user participants were included in the study. The sample was collected from different areas of Pakistan through purposive sampling strategy. The data was collected by online method (Google form) and by face to face. The participants were between the ages ranges of 10 to 21 who live in Pakistan and use mobile phone were invited to participate in this study. In addition to self-report measures, were asked to complete a demographic form and questionnaire and all variable were checked by participants. The sample size

was calculated by Open epi version 3 assuming 95% confidence level, 5% margin of error and 84.2 % frequency of smartphone user reported by Bajwa et al. The required sample size after adjusting the non-response was 254.

Initially, the participants were provide with the consent form and demographic form following with questioner to participants who falls in the range of 10 to 21years. Three questioners were used for data collection such as smartphone dependency, aggression questionnaire (AQ), and a physical health questionnaire (PHQ-9). The data was analyzed using SPSS version 23. Data normality was assessed by the Shapiro-Wilks test. In quantitative data, mean and standard deviations were calculated, in qualitative data, frequencies and percentages were calculated. Pearson's correlation coefficient was applied to determine the relationship between quantitative variables. A informed consent was taken from all participants. Participants' personal information was kept confidential and that their identities were not revealed.

RESULTS

The study involved 127(50%) participants identified as females similarly, 127(50%) participants were identified as males. Table 1 indicate that of the total sample, 67 (26.4%) had completed their education to the university level. The largest group consisted of 141 participants (55.5%) who completed their education to the intermediate level. In addition, 46 participants (18.1%) had a graduate education. The study included 254 participants. 10 participants (3.9%) were between 10 and 12 years old. The largest age group was 148 people (16.3%) aged 16-18. In addition, there were 43 participants (16.9%) between 13 and 15years old and 53 participants (20.9%) between 19 and 21years old.

In this study, participants' scores on three variables were examined: smartphone dependence (SD), aggression (AQ) and physical health (PHQ). The average smartphone dependency score was $15.54 + 3.45$, average score of the aggression variable was $14.64 + 3.29$ and average score of the physical health variable was $12.76 + 4.49$.

The SD variable has an average of $15.02 + 3.55$ female and $16.07 + 3.67$ male. The t-test revealed a statistically significant difference between the gender ($t = -2.175$, $p = 0.031$), indicating that male dependence on smartphones was significantly higher than female dependence. As for the AQ variables, the average female score was $14.27 + 3.35$ and the average male score was $15.02 + 3.312$). The independent t test did not show statistically significant differences between the genders ($t = -1.617$, $p = 0.107$). In terms of PHQ variables, women averaged $12.95 + 766$ and men $12.56 + 4.214$). The independent t test did not reveal statistically significant differences in female and male health ($t = 0.615$, $p = 0.539$).

The relationship between the variables Smartphone Dependency (SD), Aggression (AQ), and Physical

Health (PHQ) was investigated using a correlation analysis. With a Pearson correlation value of 0.518 ($p < 0.01$), the findings show a moderate positive association between SD and AQ. Furthermore, a Pearson correlation coefficient of - 0.171 ($p < 0.01$) indicates a weak negative association between SD and PHQ. The association between AQ and PHQ is, however, weak and non-significant, with a Pearson correlation coefficient of - 0.121 ($p > 0.05$) Table 2.

Table No.1: Demographic Characteristics of Study Participants (n = 254)

	Frequency	Percent
Gender		
Female	127	50
Male	127	50
Education Level		
Matric	67	26.4
Intermediate	141	55.5
Undergraduate	46	18.1
Age Groups (Years)		
10 to 12	10	3.9
13 to 15	43	16.9
16 to 18	148	58.3
19 to 21	53	20.9

Table No.2: Correlation between SD (Smartphone Dependency) Scale, AQ (Aggression questionnaire), PHQ (Physical Health Questionnaire) (n = 254)

	Smartphone Dependency	Aggression r (p value)	Physical Health r (p value)
Smartphone Dependency	----	0.518 (<0.001)	-0.171 (<0.01)
Aggression	-----	----	-0.121 (0.05)

DISCUSSION

Aggression has drawn research attention as one of the detrimental effects of problematic smartphone use. The study found a moderate positive association between smartphone dependence and aggression, and a weak negative association between smartphone dependence and physical health. These findings are consistent with some previous studies that have also reported associations between smartphone use and mental and physical health outcomes. Teenagers with higher aggressive tendencies are also more likely to become addicted to smartphones. In another study, depression emerged as a significant independent positive predictor of smartphone addiction.¹⁶ The strong correlation between aggressive behaviors and problematic smartphone use was also discovered by Yen et al.¹⁷ Additionally, studies by Mehroof and Griffiths¹⁸ and Polman et al¹⁹ and others demonstrated a significant correlation between aggressive behavior and

problematic smartphone use. These findings in the literature demonstrate that our current research findings on the connection between aggression and smartphone addiction are consistent with the literature.

The study found a statistically significant difference between male and female smartphone dependence scores, with males having higher scores. This result is consistent with some previous studies that have found gender differences in smartphone use patterns.^{20,21} However, other studies have reported no significant gender differences.^{22,23} According to the Naseer et al study, the difference between male and married mobile phone users and female and unmarried cell phone users in terms of aggression is statistically significant.²⁴ Males are typically more aggressive than females, according to earlier studies on aggression. Additionally, evidence suggests that males are more prone than females to exhibit their aggression and that they get aggressive faster than females.

According to our research, smartphone addiction is associated with physical health. Ratan et al., conducted a systematic review and found that among two research identified cervical issues, one study showed nerve thickness, and one study revealed psoriatic arthritis.²⁵ Cervical disc degeneration was more likely to be linked to SA, according to a study done on 2438 young individuals with chronic neck discomfort.²⁶

CONCLUSION

Overall, the present study provides evidence of gender differences in smartphone dependence and associations between smartphone use and mental and physical health outcomes. These findings have implications for public health interventions aimed at reducing problematic smartphone use and promoting healthy behaviors. Further research is needed to better understand the complex relationships between smartphone use and health outcomes, and to develop effective interventions to promote healthy smartphone use.

Author's Contribution:

Concept & Design of Study: Binish Nawaz
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Conflict of Interest: The study has no conflict of interest to declare by any author.

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