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"Relationship among mobile addiction nomophobia self-esteem lonliness and anger expression in adolescents"

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Abstract

The study examines the relationship among mobile addiction, nomophobia, self-esteem, loneliness, and anger expression in adolescents aged 13 to 17 years. Utilizing paper-and-pencil tests administered in various schools, the research aimed to investigate how these variables interact and influence adolescent behavior and emotional well-being. Employing correlational statistics for data analysis, significant associations were found among the variables, with all hypotheses being accepted at significant levels, except for the hypothesis that self-esteem would be positively related to anger expression, which was rejected. Results revealed that mobile addiction is strongly correlated with nomophobia, loneliness, and maladaptive anger expression, emphasizing the pervasive role of these factors in adolescent development. While low self-esteem was linked to mobile dependency, it did not show a significant positive relationship with anger expression, indicating complex mechanisms underlying emotional regulation. The findings underscore the importance of addressing these interrelated factors through targeted interventions, such as promoting emotional resilience, fostering social connections, and developing healthier coping strategies to mitigate the adverse effects of mobile addiction. This research highlights the necessity of balanced mobile use to support the mental health and overall well-being of adolescents.

Keywords: Mobile addiction, Nomophobia, Self-esteem, Loneliness, Anger expression, Adolescents, Correlational analysis.

Introduction:

The increasing prevalence of mobile technology has transformed adolescent communication and social interactions while also presenting challenges such as mobile phone addiction and nomophobia. Mobile phone addiction, characterized by compulsive use that disrupts daily life, has been linked to instant gratification and stress relief (Young & Griffiths, 1998). Adolescents, due to their heightened need for social acceptance, are particularly vulnerable, leading to academic issues and social difficulties. Nomophobia, introduced in 2008, refers to anxiety resulting from mobile phone unavailability, driven by fear of losing

connection to social networks (Yildirim, 2014). Excessive phone use influences self-esteem, loneliness, and anger expression, fostering unhealthy comparisons and emotional dysregulation (Twenge, 2017; Deffenbacher & Gentile, 2012). While mobile phones enable constant connectivity, they often exacerbate loneliness by replacing meaningful face-to-face interactions (Cacioppo & Turkle, 2011). Addressing these concerns is crucial for adolescent mental health, with experts advocating balanced digital and real-world activities to promote emotional resilience and social well-being (Rosen, 2012).

Kwon et al. (2013) examined the impact of mobile addiction on daily functioning and emotional stability. Their findings suggest that excessive mobile phone usage negatively affects routine activities, social interactions, and overall psychological well-being. The study highlights that individuals with high mobile addiction levels often experience emotional instability, leading to increased stress and difficulty in managing emotions. Additionally, the authors emphasize the importance of early interventions to mitigate the adverse effects of mobile addiction. They recommend awareness programs and preventive strategies to reduce dependency and promote healthier mobile usage habits. Chóliz (2012) explored the psychological factors contributing to mobile addiction, emphasizing the role of social validation in excessive phone use. The study found that individuals often rely on mobile devices to seek approval and maintain social connections, which can lead to dependency and compulsive usage patterns. This addiction was associated with increased anxiety, particularly when access to mobile phones was restricted. Additionally, prolonged mobile usage was linked to sleep disturbances, negatively affecting overall well-being. The findings highlight the importance of addressing psychological motivators of mobile addiction and implementing strategies to reduce its adverse effects on mental health. Jeong et al. (2016) investigated the psychological effects of excessive mobile phone usage, identifying significant correlations with depression, anxiety, and sleep disturbances. Their findings suggest that individuals who spend excessive time on mobile devices are more likely to experience emotional distress and disrupted sleep patterns, which can negatively impact mental well-being. The study recommended parental guidance as a crucial factor in managing mobile usage among younger individuals to reduce these adverse effects and promote healthier digital habits. Lee et al. (2014) explored the cognitive implications of prolonged mobile phone usage, reporting that excessive screen time adversely affects attention, memory, and cognitive development. The study found that individuals who frequently engage with mobile devices experience difficulties with concentration and information retention, which may hinder academic performance and overall cognitive growth. Based on these findings, the authors emphasized the importance of limiting screen time to maintain cognitive function and mental well-being.

Bhardwaj and Ashok (2015) examined the prevalence of nomophobia among adolescents in Mumbai, finding that 68% of them experience moderate to severe levels of the condition. Their study revealed that females were more affected by nomophobia, which significantly impacted their emotional stability and daily functioning. The authors emphasized the necessity of awareness programs to educate young individuals about the psychological effects of excessive mobile phone dependence and promote responsible usage. Juwita, Siregar, and Iswinarti (2024) highlighted loneliness as a major contributing factor to nomophobia, suggesting that individuals who experience social isolation are more likely to develop an excessive reliance on mobile phones. Their study underscored the importance of addressing

both loneliness and nomophobia simultaneously to enhance mental well-being and foster healthier social interactions. The authors recommended targeted interventions to help individuals build meaningful offline relationships and reduce dependency on digital communication.

King et al. (2014) defined nomophobia as a situational phobia characterized by anxiety, irritability, and difficulties in concentration when individuals are separated from their mobile phones. Their research emphasized the psychological distress associated with mobile phone dependence and its impact on emotional regulation. The findings suggest that nomophobia leads to increased stress levels and difficulty focusing on tasks without access to a mobile device, highlighting the need for awareness and intervention strategies. Rodríguez-García et al. (2020) examined the effects of nomophobia on self-esteem, academic performance, and social life, finding that individuals with higher levels of nomophobia often struggle with confidence and interpersonal relationships. Their study underscored the detrimental academic consequences of excessive mobile dependence, as it affects concentration and overall engagement in educational settings. They recommended the Nomophobia Questionnaire (NMP-Q) as an effective tool for early detection and intervention to reduce the negative effects of nomophobia.

Sachdeva and Sharma (2018) explored the cognitive and behavioral impacts of nomophobia, reporting that it contributes to attention deficits, adjustment difficulties, and diminished intellectual abilities. Their findings suggest that students experiencing nomophobia face academic challenges due to impaired focus and difficulty adapting to traditional learning environments. The study called for strategies to manage mobile dependency to improve academic performance and mental well-being. Maghaireh et al. (2025) identified stress and loneliness as significant predictors of nomophobia, revealing that 76.7% of students exhibited high levels of mobile-related anxiety, with females being more affected. Their study demonstrated that social isolation and psychological distress contribute to excessive reliance on mobile phones, exacerbating emotional instability. They emphasized the need for targeted interventions to address both stress and loneliness to mitigate the effects of nomophobia.

Liu et al. (2024) investigated the link between mobile addiction and non-suicidal self-injury, finding that low self-esteem plays a mediating role. Their study highlighted that individuals with mobile addiction and poor self-esteem are more vulnerable to engaging in self-harming behaviors. The findings stress the importance of self-esteem interventions to improve mental health outcomes and reduce harmful behaviors associated with excessive mobile phone use. Xu et al. (2023) examined the role of self-esteem in protecting adolescents from peer pressure and mobile addiction. Their findings indicate that individuals with higher self-esteem are less likely to succumb to excessive mobile usage, as they rely less on digital validation. The study underscores the importance of fostering confidence and emotional resilience to reduce the risks associated with mobile addiction.

Ding et al. (2022) investigated the relationship between mobile addiction and self-esteem among Chinese adolescents, revealing a negative correlation between the two variables. Their study found that excessive mobile use negatively affects emotional well-being and reduces social support, leading to feelings of isolation. The findings suggest that improving self-esteem may help mitigate mobile addiction and enhance overall mental health. Kwon et al. (2013) found that lower self-esteem contributes to increased mobile addiction, as individuals

with poor self-image tend to rely on mobile phones for reassurance and social acceptance. Their study emphasized the need for interventions designed to build self-esteem, which could reduce dependency on digital devices and promote healthier coping mechanisms.

Chóliz (2012) identified low self-esteem as a significant factor driving excessive phone use for validation, leading to dependency and anxiety. Their findings suggest that individuals with lower self-confidence tend to seek reassurance through digital interactions, reinforcing compulsive mobile usage patterns. The study highlights the importance of addressing self-esteem issues to curb mobile addiction. Park et al. (2014) explored the impact of excessive mobile usage on self-esteem, finding that prolonged dependence on digital devices diminishes self-worth, creating a cycle of addiction. Their research stresses the need for balanced mobile usage and interventions aimed at strengthening self-esteem to prevent the harmful effects of excessive screen time. Agüero-Espinoza et al. (2023) reported that 65.4% of Peruvian adolescents are at risk of developing nomophobia, linking low self-esteem to increased mobile dependency. Their study highlights the psychological vulnerability associated with excessive mobile use and calls for responsible digital media usage to protect adolescent well-being.

Bhardwaj and Ashok (2015) examined mobile addiction among Mumbai teens, finding a strong correlation between excessive mobile use and loneliness. Their study suggests that adolescents struggling with loneliness are more likely to rely on mobile phones for social interaction, urging interventions to reduce dependency and foster stronger personal relationships. Zhen et al. (2021) explored the mediating role of loneliness between social isolation and mobile dependence, particularly during the COVID-19 pandemic. Their findings indicate that individuals who experienced isolation were more likely to develop mobile addiction as a coping mechanism. The study emphasizes the need for strategies that address loneliness to reduce excessive digital reliance.

Kabadayi (2024) examined the association between loneliness and mobile addiction in adolescents, revealing that those identified as "addicted" reported significantly higher loneliness levels than their "non-addicted" counterparts. The study emphasized that reducing loneliness could serve as an effective strategy to curb mobile addiction, highlighting the importance of fostering social connections and emotional well-being. Lekra (2021) explored the relationship between nomophobia and loneliness, finding that excessive mobile phone use contributes to social isolation and emotional difficulties. The research indicates that individuals experiencing nomophobia tend to withdraw from face-to-face interactions, exacerbating their feelings of loneliness and emotional distress.

Uyaroğlu, Ünal, and Tosun (2024) investigated the link between mobile addiction and anger-related behaviors, discovering that individuals with higher mobile addiction levels exhibited increased trait anger and "anger-out" expressions. The study stressed the need for educational programs aimed at addressing anger management issues associated with excessive mobile usage. Fekih-Romdhane et al. (2022) found that mobile addiction contributes to heightened anger, hostility, and verbal aggression, mediated by impaired cognitive functioning. Their findings suggest that excessive mobile phone use interferes with emotional regulation, leading to increased frustration and difficulty managing interpersonal relationships.

Kim and Lee (2023) examined the impact of mobile addiction on emotional regulation, reporting that individuals with high mobile dependency struggled with anger control, often experiencing outbursts. Their study highlighted the importance of intervention programs aimed

at improving emotional regulation skills to mitigate the adverse effects of mobile addiction. Zhang and Wang (2021) explored emotional dysregulation as a mediator between mobile addiction and anger, emphasizing that individuals with difficulty regulating emotions are more likely to exhibit anger-related issues. Their findings suggest that focusing on emotional regulation strategies could help reduce anger associated with mobile dependence.

Walsh, White, and Young (2008) studied the emotional dependence created by excessive mobile phone use, revealing that restrictions on mobile access led to heightened frustration and anger. Their study emphasizes the psychological challenges associated with mobile dependency and the need for healthier mobile usage habits. Gezgin et al. (2018) investigated the effects of nomophobia on Turkish adolescents, finding that mobile-related anxiety contributed to interpersonal conflicts and emotional distress. Their study suggests that nomophobia negatively impacts relationships and overall emotional well-being, necessitating intervention strategies.

Yildirim and Correia (2015) characterized nomophobia as a situational phobia that triggers anger when individuals experience disconnection from their mobile phones. Their findings highlight the importance of coping mechanisms and emotional regulation strategies to mitigate the psychological effects of mobile dependence. Kaur (2021) examined the consequences of restricted phone use in adolescents, revealing that such limitations often led to heightened anger and strained relationships. Their study underscores the need for strategies promoting healthier mobile habits to reduce frustration and interpersonal conflicts.

The increasing influence of mobile phones on adolescent development has raised concerns about mobile addiction, nomophobia, self-esteem, loneliness, and anger expression. Mobile addiction, driven by nomophobia and the need for social validation, can disrupt emotional well-being, academic performance, and interpersonal relationships (Yildirim, 2014). Loneliness further reinforces dependence on mobile phones as a coping mechanism for social isolation, while low self-esteem contributes to excessive online engagement for validation (Twenge, 2017). Additionally, difficulties in anger management may lead to using phones as a distraction, exacerbating addiction (Deffenbacher & Gentile, 2012). Addressing these factors through interventions aimed at enhancing self-esteem, fostering social connections, and promoting healthier emotional regulation can help mitigate mobile addiction and improve adolescent mental health (Rosen, 2012).

Method

Participants

This study examines the relationships among mobile addiction, nomophobia, self-esteem, loneliness, and anger expression in adolescents aged 13–17. Using established questionnaires.

Measure

The Test of Mobile Phone Dependence (TMD) was developed by Mariano Chóliz in 2012. It consists of 22 items rated on a Likert scale with five scoring options: Never, Rarely, Sometimes, Often, and Frequently. This tool assesses mobile phone dependence, focusing on tolerance, withdrawal symptoms, and interference with daily life.

The Nomophobia Questionnaire (NMP-Q) developed by Yildirim and Correia (2015), is a 20-item self-report tool to measure fear of being without a mobile phone. It evaluates four dimensions: communication inability, loss of connectedness, lack of information access, and loss of convenience. Responses are rated on a 7-point Likert scale (1 = strongly

disagree to 7 = strongly agree), with total scores ranging from 20 to 140, where higher scores indicate greater nomophobia. **The Rosenberg Self-Esteem Scale (RSE)** developed by Dr. Morris Rosenberg in 1965, is a 10-item self-report tool measuring global self-esteem. Responses are rated on a 4-point Likert scale (strongly agree to strongly disagree), with higher scores indicating greater self-esteem. It includes positively and negatively worded items and takes about 5 minutes to complete. **The UCLA Loneliness Scale**, developed in 1978 by Daniel Russell, Letitia Peplau, and Carolyn Cutrona, measures subjective loneliness and social isolation. The widely used Version 3 consists of 20 self-report items where respondents indicate how often they feel certain ways about social experiences. It is self-administered and takes approximately 5–10 minutes to complete. **The Anger Expression Scale (AEX**) developed by Dr. Charles D. Spielberger, is a self-report tool measuring the intensity and frequency of anger and how it is expressed or controlled. It differentiates between State Anger, Trait Anger, Anger-Out, Anger-In, and Anger Control. The scale includes multiple subscales rated on a 4-point Likert scale, with higher scores indicating stronger tendencies for anger expression or regulation. It is self-administered and takes approximately 10–15 minutes to complete.

Procedure

The study investigated mobile addiction, nomophobia, self-esteem, loneliness, and anger expression in adolescents aged 13–17. Ethical approval and consents were obtained. Adolescents completed questionnaires in supervised 30–40 minute sessions, with data securely stored for analysis. Data was collected and stored securely for analysis. In study used correlation and descriptive statistics (mean, median, standard deviation) to analyze connections between mobile addiction, nomophobia, self-esteem, loneliness, and anger expression.

Results

Pearson Product Moment Correlations for all variables

	Mobile Dependence	NOMO Phobia	Self-Esteem	Loneliness	Anger Expression
Mobile Dependence	1				
NOMO Phobia	.570**	1			
Self-Esteem	.169*	.176*	1		
Loneliness	.252**	.267**	.427**	1	
Anger Expression	.282**	.219**	0.091	.145*	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The results of the study revealed significant relationships between variables as hypothesized. Hypothesis 1 stated that mobile addiction would be positively related to nomophobia. The analysis revealed a significant positive correlation, $r = .570$, $p < .01$, thus supporting the hypothesis. Hypothesis 2 stated that mobile addiction would be positively related to self-esteem. A significant positive correlation was observed, $r = .169$, $p < .05$,

confirming the hypothesis. Hypothesis 3 stated that mobile addiction would be positively related to loneliness. The results indicated a significant positive correlation, $r = .252$, $p < .01$, supporting the hypothesis. Hypothesis 4 stated that mobile addiction would be positively related to anger expression. A significant positive correlation was found, $r = .282$, $p < .01$, confirming the hypothesis. Hypothesis 5 stated that nomophobia would be positively related to self-esteem. The analysis showed a significant positive correlation, $r = .176$, $p < .05$, supporting the hypothesis. Hypothesis 6 stated that nomophobia would be positively related to loneliness. A significant positive correlation was identified, $r= .267$, $p < .01$, confirming the hypothesis. Hypothesis 7 stated that nomophobia would be positively related to anger expression. The analysis revealed a significant positive correlation, $r = .219$, $p < .01$, supporting the hypothesis. Hypothesis 8 stated that self-esteem would be positively related to loneliness. A significant positive correlation was observed, $r = .427$, $p< .01$, thus supporting the hypothesis. Hypothesis 9 stated that self-esteem would be positively related to anger expression. The correlation, $r= .091$, was found to be non-significant; hence, this hypothesis was not supported. Hypothesis 10 stated that loneliness would be positively related to anger expression. A significant positive correlation was found, $r = .145$, $p < .05$, supporting the hypothesis.

Discussion

The findings of this study provide valuable insights into the relationships between mobile addiction, nomophobia, self-esteem, loneliness, and anger expression. The significant positive correlation between mobile addiction and nomophobia suggests that individuals who experience higher levels of mobile addiction are more likely to suffer from nomophobia, reinforcing the idea that excessive mobile phone usage can lead to anxiety related to its unavailability. Furthermore, the positive association between mobile addiction and self-esteem indicates that those with higher levels of mobile addiction also tend to exhibit higher self-esteem, which may be explained by the social validation received through mobile device interactions. The significant correlation between mobile addiction and loneliness suggests that excessive mobile usage might contribute to increased feelings of loneliness, potentially due to reduced face-to-face interactions. Similarly, the relationship between mobile addiction and anger expression implies that frequent mobile use may be associated with difficulty in regulating emotions.

The findings also emphasize the role of nomophobia in psychological well-being. The positive correlation between nomophobia and self-esteem suggests that individuals who experience high levels of nomophobia may also have higher self-esteem, potentially due to their reliance on social connectivity via mobile devices. Additionally, the significant relationship between nomophobia and loneliness indicates that fear of being without a mobile phone is associated with feelings of social isolation. Nomophobia also showed a significant positive correlation with anger expression, suggesting that individuals who experience nomophobia may have difficulty managing frustration or anger when unable to access their mobile devices.

In terms of self-esteem, the significant positive correlation with loneliness indicates that individuals with higher self-esteem tend to experience increased loneliness, which could be attributed to various psychological factors influencing interpersonal relationships. However, the non-significant relationship between self-esteem and anger expression suggests that self-esteem may not be directly linked to anger regulation. Lastly, the positive relationship between

loneliness and anger expression underscores the impact of social isolation on emotional regulation, highlighting how loneliness may contribute to increased frustration or difficulty in managing anger.

Overall, the results of this study provide a comprehensive understanding of the interconnections between mobile addiction, nomophobia, self-esteem, loneliness, and anger expression. These findings underscore the psychological implications of excessive mobile usage and reinforce the need for further exploration into strategies that mitigate its negative effects on emotional and social well-being. Future research could investigate potential interventions aimed at reducing mobile addiction, addressing nomophobia, and promoting healthier self-esteem and emotional regulation.

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