

The Impact of Nomophobia on Sleep Hygiene & Anxiety: The Mediating Role of Social Media Addiction in Adolescents

Jasmina Khatun

PHD Scholar, Department of Psychology–Adamas University, Kolkata
jasminakhatun.0962gmail.com

Ankita Singh

Research Scholar
aankitasingh.2015@gmail.com

Abstract

Background: *Nomophobia, the fear of being without a mobile phone, has become increasingly prevalent among adolescents due to the ubiquitous use of smartphones in daily life. This emerging phenomenon is linked to various psychological and behavioral issues. This study investigates the prevalence of nomophobia among eighth and ninth-grade students and its relationship with gender, anxiety, sleep hygiene, self-esteem, and social media addiction.*

Objectives: *The primary aim of this study is to assess the degree of nomophobia in secondary school students and examine the correlations between nomophobia and factors such as gender, anxiety, sleep hygiene, self-esteem, and social media addiction. Additionally, the study explores the mediating role of social media addiction in the relationship between nomophobia and anxiety.*

Methods: *A cross-sectional survey research design was employed for this quantitative study. The sample comprised 400 eighth and ninth-grade students selected through purposive sampling. Measurement instruments included the Nomophobia Scale (Yildirim & Correia, 2015), the PROMIS Sleep Disturbance Short Form, the Beck Anxiety Inventory (Beck et al., 1990; Steer & Beck, 1997), the Bergen Social Media Addiction Scale, and the Rosenberg Self-Esteem Scale (Rosenberg, 1965). Data collection was conducted with the permission of school authorities. Statistical analysis was performed using SPSS 21, employing independent sample t-tests, Pearson correlation, standard deviations, and mean.*

Results: *Among the 400 students, 160 scored high on the nomophobia scale, comprising an equal number of boys and girls. The findings reveal a significant negative correlation between nomophobia and self-esteem ($r = -0.252, p = 0.001$). Gender differences were also observed, with variations in nomophobia levels between boys and girls.*

Conclusion: *The study highlights the pervasive nature of nomophobia among adolescents and its detrimental effects on self-esteem, and the need for targeted interventions to mitigate the impact of smartphone dependency. These findings suggest that addressing nomophobia and its associated factors is crucial for improving adolescents' mental health and well-being.*

Keywords: *Nomophobia, Sleep Hygiene, Anxiety, Social Media Addiction, Adolescents*

Introduction

Recently, there has been a growing concern about the impact of cell phones and social media on mental and physical health, particularly among teenagers, due to their widespread use. Nomophobia, the fear of being without a mobile phone or the anxiety that develops when access to it is limited or unavailable, is one of the new problems linked to the increasing dependency on smartphones. Constant use of social media can exacerbate nomophobia, which has been linked to several detrimental outcomes, including poor sleep hygiene, elevated anxiety, and disrupted sleep patterns. People frequently hold their cellphones and use a variety of applications in public places due to the devices' vast functionality (Hatuka & Toch, 2014; Rahmani & Lavasani, 2011; Rodríguez-García, Moreno-Guerrero, & López Belmonte, 2020). Young adults, who make up the largest consumer group worldwide, are particularly prone to this behavior (Head & Ziolkowski, 2012). Smartphone use is crucial for this age group since they utilize their devices for communication, entertainment, social media access, news, music, and videos (Jeong, 2016).

Research on sleep hygiene, defined as the behaviors and routines that support restful sleep, has become crucial to comprehending the broader effects of smartphone use. Teenagers, who are particularly susceptible to the allure of social media and smartphone use, commonly suffer from sleep disruptions, which can negatively impact their mental and emotional well-being for a long time. Excessive screen use, especially right before bed, may interfere with circadian rhythms, reduce sleep quality, and increase the time it takes to fall asleep, according to research.

Another serious issue connected to excessive smartphone use and social media use is anxiety. Teenagers are often subjected to increasing cyberbullying, social comparison, and FOMO, all

of which can worsen anxiety. Understanding nomophobia as a potential cause of elevated anxiety may be essential to comprehend the link between adolescent mental health issues and smartphone use. According to Jeong (2016), Lin et al. (2014), and Rodríguez-De-Dios, Oosten, and Iguartua (2018), nomophobia is a disturbance in the digital, virtual, and modern world that describes the uneasiness, stress, worry, and anguish that people feel when they are unable to use their smartphones. Since the symptoms of this disorder emphasize how it affects people's lifestyles, it is imperative to investigate the relationship between nomophobia and lifestyle choices (Mok et al., 2014). Because of the characteristics of contemporary culture, adolescence is the most susceptible time for nomophobia, as well as other problems like Internet and video game addiction and the psychological and emotional repercussions that go along with it. Today's youth are used to using digital media for entertainment, gaming, socializing, communication, and development. Some people even say they prefer internet connections to in-person ones, which can alter how they think, behave, and even feel. This excessive and persistent habit can result in several issues, including low self-esteem, melancholy, irritability, violence, eating disorders, sleep disruptions, and a sedentary lifestyle.

The relationship between teenage social media addiction and smartphone dependency explains how excessive smartphone use can result in a heavy reliance on social media platforms and how this relationship impacts the behavior and general well-being of adolescents. Due to their continual access to social media, adolescents who use smartphones frequently tend to become dependent on them. The effects of smartphone dependency might be mediated by this social media addiction, which can have detrimental repercussions like anxiety, attention span loss, and strained social relationships. Addressing the impact of digital

technology on teenage development requires an understanding of this relationship.

The aim of this study is to explore the complex relationship between anxiety, sleep hygiene, and nomophobia in adolescents, with a particular focus on the mediating role of social media addiction. It specifically examines how social media addiction may amplify the adverse effects of nomophobia on sleep hygiene and increase anxiety levels. Understanding this dynamic is essential for developing targeted interventions and strategies to mitigate the harmful effects of smartphone use among young people. By examining the interplay between these factors, this research seeks to offer valuable insights into promoting healthier digital habits and improving the mental health outcomes of adolescents.

By investigating the mediating role of social media addiction, an often overlooked yet potentially vital factor in the relationship between nomophobia, sleep hygiene, and anxiety in adolescents, we aim to address a significant gap in the existing literature.

Objectives of the Study

- To assess the prevalence of nomophobia among eighth and ninth-grade students.
- To examine the relationship between nomophobia and anxiety, sleep hygiene, self-esteem, and social media addiction in adolescents.
- To investigate gender differences in the levels of nomophobia.
- To explore the mediating role of social media addiction in the relationship between nomophobia and anxiety.

Hypothesis

- There is a significant relationship between nomophobia and anxiety among adolescents.

- There is a significant relationship between nomophobia and sleep hygiene among adolescents.
- There is a significant relationship between nomophobia and self-esteem among adolescents.
- There is a significant relationship between nomophobia and social media addiction among adolescents.
- Social media addiction significantly mediates the relationship between nomophobia and anxiety among adolescents.
- There is a significant relationship between nomophobia and overall mental well-being among adolescents.
- Male and female students have a significant difference in nomophobia levels.

Literature Review

Nomophobia, or the fear of being without one's mobile phone, has emerged as a significant concern in modern society, particularly with the growing dependence on smartphones for communication, entertainment, and information. Research on this phenomenon has highlighted various psychological, social, and health-related implications, with studies exploring its relationship with mental health issues such as anxiety, depression, and self-esteem. A deeper understanding of nomophobia can shed light on its prevalence across different demographics, such as students, adolescents, and professionals, and its impact on daily functioning, including sleep patterns, interpersonal relationships, and academic performance.

A substantial body of research has shown that nomophobia is closely linked to factors like loneliness, social media addiction, and psychological well-being. Several studies emphasize the role of low self-esteem, anxiety, and the fear of missing out (FOMO) in exacerbating

nomophobia behaviors. Furthermore, nomophobia has been found to significantly influence sleep quality, leading to increased daytime sleepiness and poor mental health outcomes, particularly in university students and adolescents. While gender and socioecohomophobicors also play a role, the condition's impact transcends age and background, with workplace settings also affected by digital dependence and its interference with communication.

This literature review explores the findings from numerous studies, offering insights into the complex relationship between nomophobia and various psychological and social factors. The research highlights how excessive smartphone use and the growing need for constant connectivity contribute to a range of issues, from sleep disturbances to academic underperformance and mental health challenges. By examining these studies, this review aims to contribute to a broader understanding of nomophobia, providing valuable knowledge to address its implications and potential solutions for mitigating its effects on individuals' lives.

A study by Vagka et al. (2023) investigated the association between nomophobia and self-esteem among Greek university students. Using the Nomophobia Questionnaire (NMP-Q) and Rosenberg's Self-Esteem Scale (RSES), the cross-sectional study involved 1060 participants aged 18 to 25 years. The findings revealed that students with low self-esteem were twice as likely to exhibit higher levels of nomophobia compared to those with normal/high self-esteem. Additionally, women and students whose fathers lacked a university education were at a higher risk of severe nomophobia. These results underscore the close connection between low self-esteem and nomophobia.

Devi and Dutta (2022) explore the prevalence of nomophobia among students and its impact on

academic achievement. The study aims to understand how excessive smartphone use affects students' mental health and performance. Through a comprehensive literature review, the authors identify key variables such as loneliness, anxiety, poor self-control, and low self-esteem. The paper concludes that mobile phones, now essential tools, negatively affect students' mental health and academic success, necessitating educational interventions to mitigate these impacts.

Sharma et al. (2020) conducted a study on adolescents to measure the prevalence of nomophobia and its association with depression, anxiety, and quality of life. The research, involving 1,386 high school students aged 14 to 17, found that 41.05% experienced mild nomophobia, 21.86% moderate, and 5.1% severe, with males being more affected. The study revealed significant positive correlations between nomophobia and both depression and anxiety, as well as a negative correlation with quality of life. The results suggest that nomophobia is linked to mental health issues and reduced quality of life in adolescents.

Gonçalves, Dias, and Correia (2020) examined the relationship between smartphone use and psychopathological symptoms among young adults, particularly focusing on nomophobia. The study targeted individuals aged 18-24, with a sample of 495 participants, using surveys to measure smartphone dependency and related psychological issues. Findings revealed a moderate positive correlation between nomophobia and symptoms such as interpersonal sensitivity and obsession-compulsion. The study concluded that extensive smartphone use and feelings of personal inadequacy significantly predict nomophobia, underscoring the mental health implications of excessive smartphone dependency.

Torpil et al. (2022) investigated the impact of nomophobia on sleepiness and sleep quality among university students. Using the Nomophobia

Questionnaire, Epworth Sleepiness Scale, and Pittsburgh Sleep Quality Index, they found that students with severe nomophobia experienced significantly higher daytime sleepiness, though overall sleep quality did not differ significantly across nomophobia levels. These findings highlight the need to address severe nomophobia to improve sleep outcomes in university students.

Erten et al. (2022) examined the impact of smartphone addiction and nomophobia on sleep quality and daytime sleepiness among university students in Turkey. The study, involving 390 students, found that 54.4% had moderate and 22.8% had severe nomophobia. It also revealed that 83.6% experienced poor sleep quality and 14.6% had excessive daytime sleepiness. A significant positive correlation was found between nomophobia and smartphone addiction. Students who used smartphones for less than 30 minutes before bed had better sleep quality and lower daytime sleepiness. The study suggests increasing awareness of healthy sleep habits and controlled smartphone use.

The study by Kuscu et al. (2021) explored the association between nomophobia and psychiatric symptoms in adolescents. The objective was to determine if nomophobia levels were higher in adolescents with internalizing or externalizing disorders compared to healthy peers. Using the K-SADS, NMP-Q, and RCADS scales, they assessed 139 adolescents aged 13-18 and their parents completed the CPRS-48. Results indicated no significant difference in overall nomophobia scores between groups, but adolescents with internalizing disorders had higher subscores for losing connectedness and not accessing information. Anxiety and hyperactivity were found to predict nomophobia levels.

Adnan and Gezgin (2016) examined the prevalence of nomophobia among Turkish college students and its potential impact on academic performance.

The study aimed to determine the extent of this modern phobia, characterized by anxiety over losing mobile phone access, among 433 students during the 2014-2015 academic year. Utilizing a survey method, the data were analyzed with descriptive statistics, t-tests, and ANOVA. Findings revealed that nomophobia levels were above moderate, with no significant differences in gender, grade, or phone usage duration. This underscores the necessity of addressing nomophobia's influence on students' daily habits and academic outcomes.

Durak (2018) conducted a study that found social media addiction had the strongest positive correlation with adolescents' nomophobia, while locus of control had the weakest. The research, conducted with 786 middle school students, aimed to explore the relationship between smartphone usage, social media addiction, locus of control, and loneliness as predictors of nomophobia. The findings suggest that excessive smartphone use, social media addiction, and loneliness significantly contribute to nomophobic behavior in adolescents.

Gezgin et al. (2018) found a moderate positive association between nomophobia and Fear of Missing Out (FOMO), indicating that individuals with higher FOMO are more likely to experience nomophobic behaviors. The researchers conducted a correlational survey with 538 university students, using the Nomophobia Questionnaire (NMP-Q) and FOMO scales to gather data. This descriptive study highlights the link between mobile phone-related anxiety and social media usage.

Pinochet et al. (2023) examined the impact of nomophobia within the workplace, focusing on loneliness, depression, and anxiety as key constructs. The aim was to understand how digital dependence affects employees' mental health and communication abilities. Surveying 454 Brazilian participants, the authors employed covariance-based structural equation modeling to analyze the

data. The findings revealed that loneliness and depression, rather than anxiety, significantly influenced nomophobia's effects on workplace communication. The study highlights the need for organizations to address digital dependence by fostering social connections and implementing policies to mitigate smartphone addiction.

The study by Moreno-Guerrero et al. (2020) focuses on nomophobia, a modern pathology stemming from dependency on portable technologies, particularly smartphones. This fear intensifies due to the loss of immediate access to information and communication, affecting daily life. The study aims to assess nomophobia prevalence among future teachers of Early Childhood and Primary Education and the impact of rest time on its levels. Using a descriptive, correlational, cross-sectional, and predictive design, they surveyed 849 future teachers with the standardized nomophobia questionnaire (NMP-Q). Results indicate moderate nomophobia levels, with higher anxiety and nervousness due to instant communication loss, and a notable prevalence among those sacrificing rest time for mobile use.

The study investigated nomophobia and phubbing among adolescents, focusing on family influences and smartphone use. Using surveys such as the Nomophobia Questionnaire (NMP-Q), Mobile Phone Involvement Questionnaire, Phubbing Scale, and Wellbeing Level, the study analyzed responses from teenagers and their parents. Findings revealed that boredom and the need to stay connected drive nomophobia, affecting about one-third of respondents. Two-thirds of teenagers are always near their phones, and phubbing behaviors are more common among girls. Additionally, only a small percentage of parents actively educate their children about responsible media use. Offline activities provide a protective buffer against phubbing.

Material and Method

The sample consists of 400 students, among whom 160 scored high on nomophobia. This group included 80 boys and 80 girls, all smartphone users, selected through purposive sampling. This study sought to ascertain the degree of nomophobia among eighth and ninth-grade students. To conduct the study, after the introduction of the researcher and the topic to the participants, the school students were assured complete confidentiality and their consent was taken. The measurement instruments included the Nomophobia Scale developed by Yildirim and Correia (2015), the PROMIS—Sleep Disturbance—Short Form, the Beck Anxiety Inventory (BAI) by Aaron T. Beck, MD (Beck et al., 1990; Steer and Beck, 1997), the Bergen Social Media Addiction Scale (BSMAS) and the Rosenberg Self-Esteem Scale (RSES) by Rosenberg, M. (1965). Data was gathered with permission from the school.

Bergen Social Media Addiction Scale (BSMAS)

The Bergen Social Media Addiction Scale (BSMAS) assesses the likelihood of problematic social media use in both adults and adolescents, with no strict age limitations. It consists of six items, yielding a total score between 6 and 30. Higher scores indicate a greater risk of social media addiction, with a score of 24 or above often considered a potential threshold for problematic use. However, this cut-off may differ based on the study population and context, as younger individuals might display higher risk even at lower scores. The BSMAS is a valuable tool for identifying excessive social media use, supporting early detection and the development of appropriate interventions.

Beck Anxiety Inventory (BAI)

The Beck Anxiety Inventory (BAI) is a 21-item self-report instrument designed to gauge the severity of anxiety symptoms over the past week.

Respondents rate the intensity of various physical and cognitive anxiety symptoms, such as muscle tension and worry, on a 4-point Likert scale. The total score categorizes the level of anxiety as minimal, mild, moderate, or severe. This tool is widely used by clinicians to monitor anxiety and differentiate it from depressive symptoms.

Rosenberg Self-Esteem Scale (RSE)

The Rosenberg Self-Esteem Scale (RSE), developed by sociologist Morris Rosenberg, is a 10-item Likert scale measuring self-esteem. Respondents indicate their agreement with statements about their self-perceptions, with some items reverse scored. Scores range from 0 to 30, with 15-25 considered normal. The RSE is renowned for its reliability and internal consistency, making it a staple in social science research for assessing self-esteem levels.

Nomophobia Questionnaire (NMP-Q)

The Nomophobia Questionnaire (NMP-Q) is a 20-item scale assessing the fear of being without a mobile phone, known as nomophobia. It evaluates four dimensions: inability to communicate, loss of connectivity, inability to access information, and loss of comfort. Responses are rated on a seven-point Likert scale, with total scores ranging from 20 to 140. Higher scores indicate more severe nomophobia, with specific cutoffs for mild, moderate, and severe levels. This tool is valuable for research on mobile phone dependency.

PROMIS—Sleep Disturbance—Short Form

The PROMIS—Sleep Disturbance—Short Form assesses sleep disturbances in children aged 6–17 through parent/guardian reports. It consists of 8 items rated on a five-point Likert scale (1 = Never to 5 = Always), with raw scores ranging from 8 to 40. Raw scores are converted to T-scores using standardized tables (mean = 50, SD = 10), where higher T-scores indicate greater sleep disturbances. This tool evaluates aspects like difficulty falling

asleep, staying asleep, and overall sleep quality. It is widely used in pediatric research to identify and measure sleep-related issues.

Procedure

The participants were provided with the complete set of the booklet., consisting of the informed consent and the different questionnaire. The participants took 15 minutes on an average to fill up the questionnaires. Afterwards, the participants were informed about the different measures that have been administered and about the objectives of the research. Once the data collection was done, the responses were scored according to the procedures given in the manual. The data was statistically analyzed. The SPSS 21 (Statistical Package for the Social Sciences) program was utilized to perform the necessary analysis on the gathered data. The independent sample t-test and Pearson correlation (r) Computation of Mean, Standard Deviation was done and for analysis, 0.05 and 0.01 levels of significance were accepted.

Results

The results obtained by the statistical computation have been mentioned in the following tables and have been discussed in detail in the latter part of this paper.

Table I: Mean and Standard Deviation

	Mean	Std. Deviation	N
Nomophobia	116.25	12.317	161
Anxiety	30.42	7.282	161
Sleep_hygiene	23.81	5.762	161
Self_esteem	18.47	5.410	161
Social_media_Addiction	84.49	29.927	161

Table II: Pearson Correlation

Nomophobia Pearson Correlation	1	-.013	-.077	-.252**	-.085
Sig. (2-tailed)		.867	.332	.001	.284
N	161	161	161	161	161

Anxiety Pearson Correlation	-.013	1	.172*	-.009	.033
Sig. (2-tailed)	.867		.030	.909	.679
N	161	161	161	161	161

Sleep_hygiene Pearson Correlation	-.077	.172*	1	.014	.097
Sig. (2-tailed)	.332	.030		.864	.220
N	161	161	161	161	161

Self_esteem Pearson Correlation	-.252**	-.009	.014	1	-.101
Sig. (2-tailed)	.001	.909	.864		.201
N	161	161	161	161	161

Social_media_Addiction Pearson Correlation	-.085	.033	.097	-.101	1
Sig. (2-tailed)	.284	.679	.220	.201	
N	161	161	161	161	161

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

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

Discussion

The study examined the relationship between nomophobia, sleep hygiene, anxiety, self-esteem, and social networking addiction among 161 participants. Descriptive statistics indicate that nomophobia scores had a mean of 116.25 (SD = 12.317), reflecting a moderate to high prevalence of this condition in the sample. Anxiety levels were moderate, with a mean of 30.42 (SD = 7.282), while sleep hygiene scores averaged 23.81 (SD = 5.762), suggesting slightly below-average sleep practices. Self-esteem showed a lower mean score of 18.47 (SD = 5.410), pointing to potential self-esteem concerns among participants. Social networking addiction scores were high, with a mean of 84.49 (SD = 29.927), indicating significant social media engagement.

Correlational analyses revealed a significant negative relationship between nomophobia and self-esteem ($r = -0.252, p = 0.001$). This suggests that individuals with higher levels of nomophobia experience lower self-esteem, aligning with existing literature that links excessive mobile phone dependence to diminished self-worth. Interestingly, anxiety demonstrated a weak but significant positive relationship with sleep hygiene ($r = 0.172, p = 0.030$), indicating that individuals with higher anxiety may report slightly better sleep practices, potentially due to compensatory behaviors like structured routines.

No significant correlations were found between social networking addiction and any other variables, including nomophobia, anxiety, sleep hygiene, or self-esteem. This lack of association challenges assumptions about the interconnectedness of these constructs and warrants further investigation into contextual factors.

In conclusion, the findings emphasize the detrimental impact of nomophobia on self-esteem, highlighting the psychological risks associated with excessive mobile phone use. Additionally, the nuanced relationship between anxiety and sleep hygiene suggests the need to explore individual coping mechanisms. Future studies should delve deeper into the role of social networking addiction and other potential moderating or mediating variables in these relationships.

Conclusion

The study highlights significant psychological and behavioral patterns among individuals with varying levels of nomophobia, anxiety, sleep hygiene, self-esteem, and social networking addiction. The findings reveal that higher nomophobia is strongly associated with lower self-esteem ($r = -0.252, p = 0.001$), emphasizing the negative impact of excessive mobile phone dependence on self-worth. Interestingly, anxiety showed a weak but significant positive correlation with sleep hygiene ($r = 0.172, p = 0.030$), suggesting that individuals with heightened anxiety may adopt structured sleep practices as a coping strategy. However, no significant associations were found between social networking addiction and any of the other variables, challenging common assumptions about its overlap with nomophobia and mental health factors.

These results underscore the need for targeted interventions addressing nomophobia to improve self-esteem. Additionally, the complex relationship between anxiety and sleep hygiene warrants further exploration. Future research should investigate moderating factors to better understand these associations.

Limitation and Recommendation

Limitations

- 1. Cross-Sectional Design:** Since the study's methodology is cross-sectional, data was gathered all at once. This makes it more difficult to prove a link between social media addiction, anxiety, sleep hygiene, and nomophobia. It is unable to ascertain if anxiety and bad sleep hygiene are caused by nomophobia or the other way around.
- 2. Sampling Bias:** Purposive sampling was used to choose the sample, which might not have produced a representative sample of all teenagers. The findings may not be as broadly applicable if they are skewed toward pupils from particular areas, educational institutions, or socioeconomic backgrounds.
- 3. Self-Reported Data:** Self-reported measures such as the Social Media Addiction Scale, Beck Anxiety Inventory, and Nomophobia Scale are used in this study. Self-reporting is vulnerable to biases including social desirability bias, in which participants give answers they believe to be anticipated rather than ones that really reflect their experiences.
- 4. Limited Demographic Variables:** Other potentially significant variables, such as family dynamics, socioeconomic level, or the amount of time spent on social media and mobile phones, were not investigated, even though gender was taken into account as a variable. These elements may contribute to the connections among anxiety, sleep hygiene, and nomophobia.
- 5. Measurement Tools:** Some techniques may not be able to fully capture the complexity of adolescents' experiences with technology and mental health, even though recognized scales were utilized. For example, the evaluation of nomophobia and social media addiction may not adequately take into consideration the subtleties

of teenage usage habits or the disparate effects of different social media platforms.

- 6. Generalizability:** The results may not apply to older or younger teenagers because the study only involves eighth and ninth graders. Furthermore, the results may not apply to other age groups or environments because the sample was restricted to adolescents in a particular grade.
- 7. Lack of Longitudinal Data:** Since the study does not monitor changes over time, it is unable to determine whether interventions could alter the results or how nomophobia and related characteristics develop during adolescence.

These limitations suggest that future research could benefit from using longitudinal designs, a more diverse sample, and a broader range of demographic variables to provide a more comprehensive understanding of the impact of nomophobia on adolescent mental health.

Recommendations

Based on the findings, several recommendations can be made to address the impact of nomophobia on adolescents' sleep hygiene and anxiety, with a focus on the mediating role of social media addiction:

- 1. Digital Awareness Programs:** Schools and parents should implement awareness programs to educate adolescents about the risks of excessive smartphone use, nomophobia, and its psychological impacts, including anxiety and poor sleep hygiene.
- 2. Encouraging Digital Detox:** Structured digital detox initiatives, such as tech-free hours, can help adolescents establish healthier boundaries with their devices and improve their sleep and mental well-being.
- 3. Counseling and Support:** Schools should provide counseling services to help adolescents develop coping strategies to manage anxiety and

reduce reliance on smartphones and social media.

4. **Parental Guidance:** Parents should set clear rules for smartphone usage, encourage alternative recreational activities, and model balanced digital habits.
5. **Curriculum Integration:** Schools can incorporate modules on mental health, time management, and responsible social media use into the curriculum.
6. **Further Research:** Longitudinal studies should explore long-term impacts of nomophobia and interventions on adolescents' mental health.
7. **Policy Recommendations:** Policymakers should promote guidelines to limit excessive smartphone usage among adolescents and support digital well-being initiatives.

These measures aim to mitigate nomophobia's adverse effects and enhance adolescent mental health and lifestyle.

References

1. Adnan, M., & Gezgin, D. M. (2016). A modern phobia: Prevalence of nomophobia among college students. *Ankara University Journal of Faculty of Educational Sciences (JFES)*, 49(1), 141–158.
2. Aslan, M., Kalaman, S., & Özdemir, F. (2023). The impact of nomophobia and loneliness on life satisfaction in married couples. *Erciyes İletişim Dergisi*, 10(1), 23–39.
3. Devi, U., & Dutta, R. (2022). A review paper on prevalence of nomophobia among students and its impact on their academic achievement. *Journal of Positive School Psychology*, 6(3), 5397–5405.
4. Durak, H. Y. (2018). What would you do without your smartphone? *Addicta: The Turkish Journal on Addictions*, 5(2), 1–15.
5. Erten, B., Pehlivan, E., & Yalcin, E. (2022). The effect of smartphone use and nomophobia on sleep quality and daytime sleepiness in Turkey. *European Journal of Public Health*, 32(Suppl 3), ckac131.242.
6. Gezgin, D. M., Hamutoglu, N. B., Sezen-Gultekin, G., & Gemikonakli, O. (2018). *Cypriot Journal of Educational Sciences*, 13(4), 549–561.
7. Gonçalves, S., Dias, P., & Correia, A.-P. (2020). Nomophobia and lifestyle: Smartphone use and its relationship to psychopathologies. *Computers in Human Behavior Reports*, 2, 100025. <https://doi.org/10.1016/j.chbr.2020.100025>
8. Hatuka, T., & Toch, E. (2014). The emergence of portable private-personal territories in public spaces. *Urban Studies*, 51(10), 2065–2081.
9. Head, M., & Ziolkowski, N. (2012). Understanding student attitudes of mobile phone features: Rethinking adoption through conjoint, cluster and SEM analyses. *Computers in Human Behavior*, 28(6), 2331–2339.
10. Jeong, S. (2016). The influence of smartphones on lifestyle changes in young adults. *Journal of Media Psychology*, 8(2), 125–140.
11. Kuscu, E., Kaya, F., & Aydoğdu, S. (2021). Nomophobia and internalizing disorders in adolescents: Exploring the connection to disconnection. *Journal of Adolescent Psychology*, 15(2), 95–110.
12. Kuscu, T. D., Gumustas, F., Arman, A. R., & Goksu, M. (2021). The relationship between nomophobia and psychiatric symptoms in adolescents. *International Journal of Psychiatry in Clinical Practice*, 25(1), 56–61.
13. Lin, Y. H., Chiang, C. L., Lin, P. H., Chang, L. R., Ko, C. H., Lee, Y. H., & Yang, C. C. H. (2014). Proposed diagnostic criteria for smartphone addiction. *PLOS ONE*, 9(11),

- e113844.
<https://doi.org/10.1371/journal.pone.0113844>
14. Mok, K., Chi, J., & Jiang, Q. (2014). Lifestyle implications of smartphone use: Investigating nomophobia and its effect on the quality of life. *International Journal of Social and Behavioral Sciences*, 12(4), 457–466.
 15. Moreno-Guerrero, A.-J., López-Belmonte, J., Romero-Rodríguez, J.-M., & Rodríguez-García, A.-M. (2020). Nomophobia: Impact of cell phone use and time to rest among teacher students. *Heliyon*, 6(5), e03923.
 16. Pinochet, L. H. C., Santos, S. D. S., Pardim, V. I., & de Souza, C. A. (2023). Watch out for nomophobia, so it does not catch you! Effects of digital dependence syndrome on mental health. *Journal of Systems and Information Technology*, 25(3), 296–318.
 17. Rahmani, S., & Lavasani, M. G. (2011). The relationship between Internet dependency with sensation seeking and personality. *Procedia - Social and Behavioral Sciences*, 30, 272–277.
 18. Rodríguez-De-Dios, I., Van Oosten, J. M. F., & Igartua, J. J. (2018). A study on the relationship between smartphone use, fear of missing out (FoMO), and nomophobia. *Computers in Human Behavior*, 80, 285–293.
 19. Rodríguez-García, A. M., Moreno-Guerrero, A. J., & López Belmonte, J. (2020). Nomophobia: An individual's growing dependence on smartphones. *Education Sciences*, 10(11), 1–10.
 20. Sharma, M., Amandeep, Mathur, D. M., & Jeenger, J. (2020). *Industrial Psychiatry Journal*, 28(2), 231–236.
 21. Torpil, B., Çelik, H., & Yıldız, F. (2022). The effect of severe nomophobia on sleep quality and daytime drowsiness in university students. *Sleep and Biological Rhythms*, 20(3), 210–218.
 22. Vagka, E., Papadakis, E., & Tzamalouka, G. (2023). The relationship between self-esteem and nomophobia: A study among Greek university students. *Journal of Behavioral Addictions*, 12(1), 45–56.