

Impact of Smartphone Addiction on Sleep quality, social anxiety, and Mental Health among University Students

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Abstract- This paper investigates impact of smartphone addiction on sleep quality, social anxiety, and mental health in university students. By analyzing existing literature, it uncovers the complex relationship between smartphone usage and student well-being, outlining common signs, mechanisms, and consequences of addiction. It stresses the need for interventions to promote healthier technology habits among students.

Keywords: Smartphone addiction, University students, Sleep quality, social anxiety, Mental health, Implications, Consequences, Signs and symptoms, Intervention.

INTRODUCTION:

Smartphones, integral to daily life, offer instant access to information and connectivity but pose challenges due to their addictive nature, particularly among university students. Their widespread use raises concerns about smartphone addiction's impact on well-being, highlighting the need for intervention and awareness. (Robinson, 2024).

This paper explores the impact of smartphone addiction on university students' sleep quality, social anxiety, and mental health. It delves into existing research to understand the complex relationship between smartphone use and these crucial aspects of well-being. Smartphone addiction, often driven by internet abuse, is sometimes referred to as "nomophobia." The compulsion is usually fuelled by the multitude of games, apps, and virtual experiences available on smartphones rather than the devices themselves. Understanding these dynamics is essential for developing effective interventions to mitigate negative effects and promote healthier technology usage patterns (Susmitha et al., 2023).

Causes and consequences of internet and smartphone addiction:

Smartphones and tablets, being compact and portable, facilitate indulging in obsessive desires anytime, anywhere. They can affect mood and trigger dopamine release, akin to substance abuse. Tolerance to screen time can rapidly increase, requiring longer time periods for the same satisfaction. (Robinson, 2024).

Common signs of smartphone addiction include excessive usage leading to neglect of responsibilities and strained relationships, anxiety when unable to use the smartphone, and using it to cope with stress or loneliness (Achangwa et al., 2022). Physical symptoms like eyestrain and disrupted sleep patterns also indicate addiction, along with overspending on apps and data plans. (Jung et al., 2022).

Impact of Smartphone addiction on sleep Quality:

Smartphone addiction diminishes sleep quality, particularly in young adults, with 68.7% exhibiting both addiction and poor sleep in a study. Sleep deprivation elevates risks of anxiety, depression, and chronic diseases, notably affecting medical students. Smartphone use disrupts melatonin production and circadian rhythms, worsening sleep quality, especially concerning for teenagers' mental and sleep health, requiring early intervention. Various mechanisms contribute: blue light emission, cognitive stimulation, pre-bedtime use, nighttime usage, heightened anxiety, and physical discomfort.

Impact of Smartphone addiction on social Anxiety

Smartphone addiction exacerbates social anxiety by reducing face-to-face interactions, fostering comparison and self-esteem issues, heightening fear of missing out (FOMO), promoting avoidance coping, and impairing social skills. Decreased face-to-face interaction limits social skill development, comparison on social media worsens self-esteem, and FOMO increases anxiety. Using smartphones to avoid social situations reinforces avoidance behaviours, worsening anxiety, making managing smartphone addiction crucial for alleviating social anxiety.

Impact of Smart Phone Addiction on mental health:

Smartphone addiction escalates anxiety and stress with constant notifications and information overload, while excessive social media use fosters depressive symptoms via FOMO. Pre-bedtime smartphone use disrupts sleep patterns, leading to insomnia, and excessive usage detracts from face-to-face interactions, heightening loneliness. Continuous task-switching reduces attention span, comparing oneself on social media worsens self-image, and using smartphones to evade real-life problems exacerbates issues.

METHODOLOGY

The method of data collection pertains to how information is gathered from the participants. For this study, data was gathered via self-administered questionnaires. These questionnaires online, are completed independently by the participants.

HYPOTHESIS:

H₁: There is a significance difference in smartphone addiction between males and females

H₂: There is a significance difference in context of social anxiety between males and females

H₃: There is a significance difference in context of Sleep quality between male and female students

H₄: There is a significance difference in context of Sleep quality between students belonging to nuclear and joint family

H₅: There is a significance difference in context of mean mental health scores between male and female students

RESULTS

Smart phone addiction:

Table: 4.1 distinction between male and female students regarding smartphone addiction (using the t-test and Levene's Test for Equality of Variances)

Group	N	Mean	Std. deviation	t	Sig.
Male	105	30.52	1.36	.042	.994
Female	106	30.44	1.36	.042	.994

There is no notable variance in smartphone dependency among genders (average for males: 30.52, average for females: 30.44, standard deviation for both: 1.36). The t-value of .042 indicates a 99.4% likelihood given the null hypothesis. Having a significance level of .994, this led to rejection of H₁ hypothesis, indicating no substantial discrepancy in smartphone addiction among males and females.

Impact of smart phone addiction on Social Anxiety:

Table: 4.2 variation in social anxiety between male and female students (using the t-test and Levene's Test for Equality of Variances)

Group	N	Mean	Std. deviation	t	Sig.
Male	105	29.84	17.65	-.499	.542
Female	106	31.02	16.72	-.499	.542

Females have slightly higher average social anxiety scores compared to males, but the disparity is not significant. The t-value obtained indicates a slight discrepancy, however, with a significance level of .05, there is no substantial variation in social anxiety scores between males and females within the population, rejecting the H₂ hypothesis.

Impact of smart phone addiction on sleep:

Table:4.3 Gender differences in sleep quality between male and female students (t-test and Levene's Test for Equality of Variances)

Group	N	Mean	Std. deviation	t	Sig.
Male	105	54.63	10.11	-.914	.362
Female	106	55.90	10.04	-.914	.362

a) Gender

Average sleep quality scores are 54.63 for males and 55.90 for females, indicating higher sleep quality for females. The t-value of -0.914 suggests that males have poorer sleep quality, yet the non-significant Sig. value of 0.362 shows that the difference is not meaningful. Levene's test also indicates that there is no significant variance difference among the groups. Therefore, the difference in sleep quality between male and female students is not statistically significant, leading to the rejection of H₃.

Table:4.4 variance between male and female students about sleep (using the t-test and Levene's Test for Equality of Variances) (family type)

Group	N	Mean	Std. deviation	t	Sig.
Type1 (nuclear family)	154	56.75	10.24	3.603	.008
Type2 (joint family)	57	51.20	8.44	3.603	.008

People from nuclear families (mean: 56.75) exhibit better sleep quality than those from joint families (mean: 51.20). The t-value (3.603) indicates a significant difference, with a Sig. of 0.008, supporting the hypothesis H₄. Nuclear family members generally sleep better than those from joint families, suggesting a potential influence of family type on sleep quality.

Impact of Smart phone addiction on Mental health:

Table:4.5 variance in mental health between male and female students (t-test and Levene's Test for Equality of Variances)

Group	N	Mean	Std. deviation	t	Sig.
Male	105	29.84	17.65	1.374	.640
Female	106	31.02	16.72	1.374	.640

Even though females have higher smartphone addiction scores (31.00) compared to males (29.84), with a Sig. of 0.640, there is no notable distinction between the two genders, leading to the rejection of H₅. Therefore, there is no significant difference in how smartphone addiction impacts the mental health of male and female.

CONCLUSIONS

The research investigated the issue of smartphone addiction in university and college students and concluded that gender did not play a major role in determining addiction levels. Nevertheless, it was noted that students from nuclear families had higher sleep scores. There were no notable gender variations in mental health scores. The research showcased anxiety and sleep as key factors in predicting smartphone addiction, underscoring their significance in comprehending addictive behaviours. In general, it highlights the intricate connection between smartphone addiction and psychological elements, proposing tailored measures to enhance student health.

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