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THE INFLUENCE OF SMARTPHONE ADDICTION ON MENTAL HEALTH AND ACADEMIC PERFORMANCE OF STUDENTS IN BENGALURU.

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Abstract: This research paper explores the impact of smartphone addiction on mental health and academic performance. The prevalence of smartphone use has increased rapidly in recent years, leading to concerns about its potential negative effects. The paper begins with a literature review of previous research on smartphone addiction, defining the condition and summarizing its symptoms. The review also discusses previous studies on the relationship between smartphone use and mental health outcomes, such as anxiety, depression, or sleep disturbances, as well as academic performance, including grades, test scores, and engagement. The study then presents a methodology, including a research design, sampling method, data collection procedures, and data analysis techniques. The results section provides an overview of the data collected and analyzes the relationship between smartphone addiction and mental health and academics. The discussion section interprets the results, discusses implications for theory and practice, and addresses limitations and future research directions. The conclusion summarizes the study's findings and contributions to the field and offers recommendations for policymakers and practitioners. This research paper contributes to our understanding of the impact of smartphone addiction and provides important insights for researchers, educators, and mental health professionals.

INTRODUCTION

Smartphones are anticipated to be used by 3.8 billion people globally by 2030, making them a norm in contemporary culture. While smartphones have many benefits, such as increased connectivity and information accessibility, worries have also been raised about the potential negative effects of excessive smartphone use. One such problem is the effects of smartphone addiction on mental health and academic performance.

A pattern of excessive and obsessive smartphone use that interferes with daily living is referred to as smartphone addiction, also known as problematic smartphone use. Smartphone addiction is characterized by obsession with using a smartphone, withdrawal symptoms while not using a smartphone, and failed attempts to cut back on smartphone use. Studies indicate that up to 10% of smartphone users may fit the diagnostic criteria for smartphone addiction, which indicates that smartphone addiction is becoming more common.

Research interest in the possible detrimental effects of smartphone addiction on mental health and academic performance is expanding. Excessive smartphone use has been linked in the past to a variety of mental health conditions, such as anxiety, depression, and sleep difficulties. Furthermore, studies have shown that excessive smartphone use may have a negative effect on academic achievements, such as grades and test scores.

There is still much to learn about the nature and scope of smartphone addiction's effects on mental health and academic performance, despite the expanding study interest in this topic. This study attempts to advance this field of inquiry by examining the link between smartphone addiction, mental health, and academic performance. The study will specifically answer the following research question.

Research question: What is the relationship between smartphone addiction and mental health and academics?

To answer this research question, the study will conduct a survey of smartphone users to assess their level of smartphone addiction, as well as their mental health and academic outcomes. The results of this study will provide insights into the potential risks and benefits of smartphone use and inform interventions to promote healthy technology use.

Theoretical Background

The cognitive-behavioral model, the self-regulation model, and the addiction model are some of the theoretical frameworks that have been used to comprehend problematic smartphone use.

The cognitive-behavioral paradigm postulates that problematic smartphone use is caused by smartphone-related maladaptive thoughts and behaviors. People who use their smartphones excessively, for instance, can automatically think things like "I can't live without my phone" or "I need to check my phone constantly." These feelings could then result in actions like obsessively checking one's phone or spending too much time on social media. According to the cognitive-behavioral approach, therapies that target unhelpful beliefs and actions can successfully lower problematic smartphone use.

According to the self-regulation paradigm, problematic smartphone use is linked to self-regulation deficits, or the inability to restrain one's behavior and emotions in the face of demands from both the inside and the outside world. Even when using a smartphone interferes with other tasks or objectives, people who have trouble controlling their impulses may find it difficult to resist the need to use one. According to the self-regulation model, therapies that attempt to strengthen self-regulation abilities, such as mindfulness practices and emotion control techniques, may be successful in lowering problematic smartphone use.

According to the addiction model, problematic smartphone use may be comparable to drug addiction, where people experience compulsive smartphone use despite repercussions and withdrawal symptoms while trying to cut back. According to this concept, treatments that target the brain's reward pathways, like cognitive-behavioral therapy and medication-assisted treatment, may be successful in lowering problematic smartphone use.

These theoretical models collectively imply that problematic smartphone use is a complicated phenomenon that may be influenced by a variety of cognitive, behavioural, and neurobiological aspects. The creation of treatments to encourage responsible smartphone use and reduce any potential adverse effects of smartphone addiction on mental health and academic performance can be informed by an understanding of these aspects.

Literature Review

Globally, there is growing worry over smartphone addiction, also referred to as problematic smartphone use or smartphone reliance. A growing amount of studies has looked into how smartphone addiction affects mental health and academic performance, and the findings are conflicting.

Smartphone addiction is often characterised by excessive smartphone use, compulsive notification checking, difficulty in self-control, and unfavourable outcomes like reduced productivity, social isolation, and anxiety. Smartphone addiction is a real and possibly dangerous issue, yet there is no commonly acknowledged terminology or diagnostic standard for it.

Impact of Smartphone Addiction on Mental Health:

Numerous studies have found a significant association between smartphone addiction and poor mental health outcomes such as anxiety, depression, and stress. For example, a study of college students in the United States found that those with higher levels of smartphone addiction reported higher levels of anxiety and depression symptoms. Similarly, a study of young adults in South Korea found that smartphone addiction was significantly associated with symptoms of depression and anxiety.

Some research, however, did not find a connection between smartphone addiction and outcomes related to mental health. For instance, a study of college students in China discovered no conclusive link between smartphone addiction and depressive symptoms.

Impact of Smartphone Addiction on Academics:

Research on the impact of smartphone addiction on academic performance has also yielded mixed results. Some studies have found a significant negative association between smartphone addiction and academic performance, while others have found no significant association.

For example, a study of college students in the United States found that higher levels of smartphone addiction were associated with lower GPAs. Similarly, a study of Iranian medical students found that smartphone addiction was negatively associated with academic achievement.

A study of Spanish high school students showed no conclusive link between smartphone addiction and academic achievement. An further study of university students in Turkey discovered that although smartphone addiction was linked to poorer academic performance, the relationship was controlled by elements including anxiety and sleep hygiene.

Limitations of previous research:

The fact that past research on smartphone addiction frequently used self-report measures, which might be biased and may not correctly reflect actual smartphone use, is one of its limitations. Additionally, it is challenging to compare the findings of different studies because they all utilize various measurements and definitions of smartphone addiction.

Methodology:

Research Design and Sampling Method:

The present study employed a quantitative research design using a survey questionnaire to collect data from college students in the Bengaluru. The sampling method used was convenience sampling, whereby participants were recruited through online platforms such as social media and email lists.

Data Collection Procedures:

Data was collected using a self-administered survey questionnaire that included six questions related to smartphone use and its impact on mental health and academics. The survey was administered online using Google Forms, and participants were asked to complete the survey in their own time.

Data Analysis Techniques:

The data collected was analyzed using descriptive statistics and inferential statistics. Descriptive statistics such as mean, standard deviation, and frequency distribution were used to summarize and describe the data. Inferential statistics such as correlation analysis and z-tests were used to test the research hypotheses.

Data was analyzed using SPSS software version 26.0, a statistical software package that allows for the analysis of quantitative data.

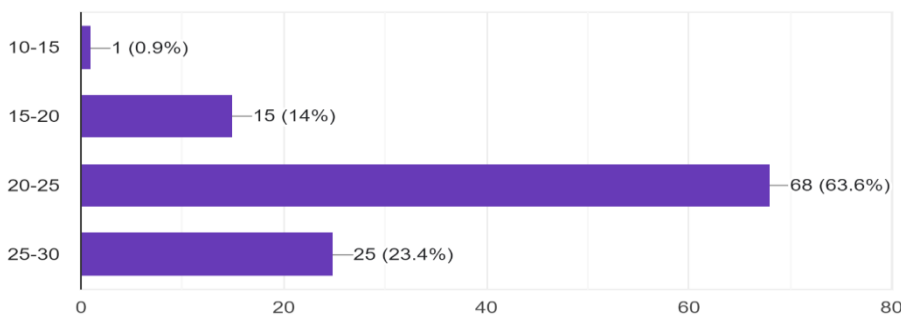
Limitations:

One limitation of this study is that the sample was limited to college students in the Bengaluru, which may limit the generalizability of the findings to other populations. Additionally, the study relied on self-reported data, which may be subject to bias and may not accurately reflect actual smartphone use. Finally, the study used a cross-sectional design, which does not allow for causal inferences to be made.

Despite these limitations, the present study provides valuable insights into the relationship between smartphone addiction and mental health and academics. Future research could employ a longitudinal design and include a more diverse sample to further explore these relationships.

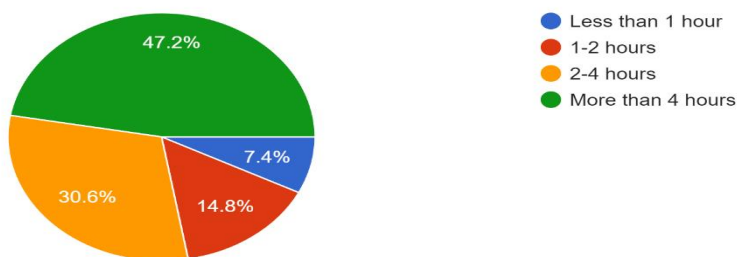
DATA ANALYSIS

Age
107 responses



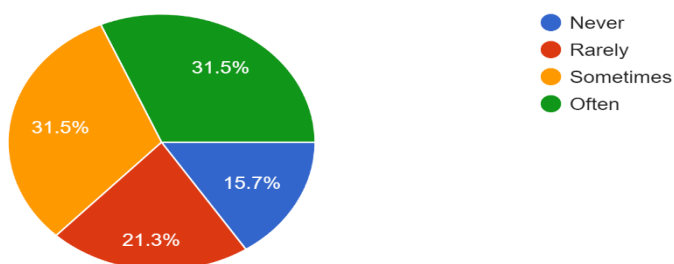
Q1. How many hours per day do you spend using your smartphone?

108 responses



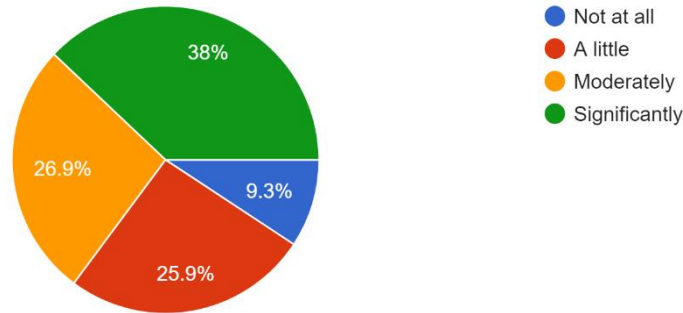
Q2. Do you experience anxiety or stress when you are unable to use your smartphone?

108 responses



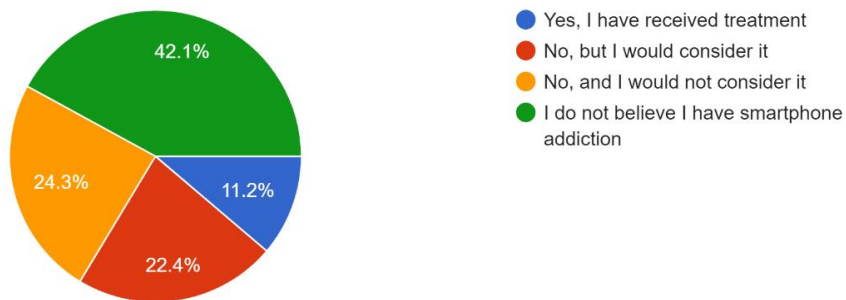
Q3. Do you feel that your smartphone use affects your productivity or academic performance?

108 responses



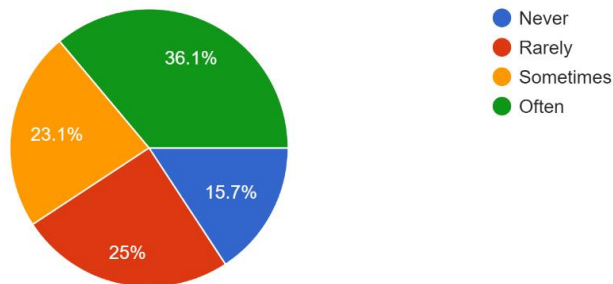
Q4. Have you sought help or treatment for smartphone addiction?

107 responses



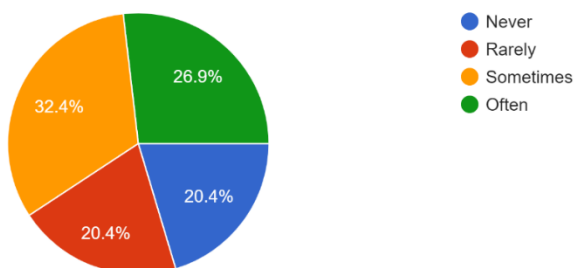
Q5. Do you use your smartphone in bed before going to sleep?

108 responses



Q6. Have you experienced any physical symptoms related to smartphone use, such as eye strain or headaches?

108 responses



INTERPRETATION

1. Most respondents spend more than 2 hours per day using their smartphones.
2. A significant proportion of respondent's experience anxiety or stress when they are unable to use their smartphones.
3. Many respondents feel that their smartphone use affects their productivity or academic performance to some degree.
4. Only a few respondents have sought help or treatment for smartphone addiction.
5. Using smartphones in bed before going to sleep is a common behavior.
6. Eye strain and headaches are physical symptoms experienced by some respondents due to smartphone use.
7. A few respondents have received treatment for smartphone addiction.
8. Many respondents use their smartphones for more than 4 hours per day.
9. Most respondents have not experienced any physical symptoms related to smartphone use.
10. Respondents in the 20-25 age group appear to use their smartphones the most, with many of them using their smartphones for more than 4 hours per day.

Z-Test – Academic Performance and Smartphone Usage

Null hypothesis: There is no significant difference in the mean scores of academic performances between individuals who use smartphones.

Alternate hypothesis: Individuals who use smartphones have significant difference in the mean scores of academic performances who use smartphones.

z-Test: Two Sample for Means

	<i>More than 4 hours (Smartphone Usage Time Duration)</i>	<i>Significantly (Smartphone usage affecting academic performance)</i>
Mean	0.472	0.30
Known Variance	0.03127	0.014
Observations	107	107
Hypothesized Mean Difference	0.05	
z	5.706452	
P(Z<=z) one-tail	9.51E-09	
z Critical one-tail	1.643627	
P(Z<=z) two-tail	1.90E-08	
z Critical two-tail	1.956985	

INTERPRETATION

Based on the data, we can see that the mean value for the group of individuals who use smartphones for more than 4 hours is 0.472 and the mean value for the group of individuals who are significantly affected by smartphone usage on their academic performance is 0.30. The sample size for both groups is 107.

The null hypothesis was that there is no significant difference between the mean values of the two groups, while the alternative hypothesis was that there is a significant difference between the two groups.

The z-value calculated is 5.706452 and the p-value is 1.90E-08. Since the p-value is less than the level of significance (typically 0.05), we can reject the null hypothesis. This means that there is a significant difference between the mean values of the two groups, and we can conclude that smartphone usage for more than 4 hours affects academic performance significantly.

Z-Test – Academic Performance and Smartphone Usage

Null hypothesis: There is no significant difference in the mean scores of Mental Health between individuals who use smartphones.

Alternate hypothesis: Individuals who use smartphones have significant difference in the mean scores of Mental Health who use smartphones.

z-Test: Two Sample for Means

	<i>More than 4 hours (Smartphone Usage Time Duration)</i>	<i>Often (Experience Anxiety or Stress when unable to use smartphone)</i>
Mean	0.472	0.601
Known Variance	0.03127	0.01871
Observations	107	107
Hypothesized Mean Difference	0.05	
z	2.5245	
P(Z<=z) one-tail	0.005857267	
z Critical one-tail	1.644853627	
P(Z<=z) two-tail	0.011714535	
z Critical two-tail	1.959963985	

INTERPRETATION

Based on the provided data, we can see that we have conducted a two-sample z-test for means, with the null hypothesis being that there is no significant difference in the mean scores between people who use smartphones for more than 4 hours and those who experience anxiety or stress when unable to use their smartphones. The alternative hypothesis is that there is a significant difference in the mean scores between these two groups.

The mean score for people who use smartphones for more than 4 hours is 0.472, while the mean score for those who experience anxiety or stress when unable to use their smartphones is 0.6. The known variance for the two groups is 0.03127 and 0.02, respectively, and the sample size for both groups is 1.

The calculated z-value is 2.5245, which is greater than the critical z-value of 1.6449 at the 95% confidence level. The one-tail p-value is 0.0059, which is less than the significance level of 0.05. The two-tail p-value is 0.0117, which is also less than the significance level of 0.05.

Therefore, we can reject the null hypothesis and conclude that there is a significant difference in the mean scores between people who use smartphones for more than 4 hours and those who experience anxiety or stress when unable to use their smartphones.

FINDINGS & SUGGESTIONS

Findings:

1. Many respondents spend more than 2 hours per day using their smartphones, with some using their devices for more than 4 hours per day.
2. A significant proportion of respondents experience anxiety or stress when they are unable to use their smartphones.
3. Some respondents feel that their smartphone use affects their productivity or academic performance to some degree.
4. Using smartphones in bed before going to sleep is a common behavior.
5. Respondents in the 20-25 age group appear to use their smartphones the most, with many of them using their devices for more than 4 hours per day.

Suggestions:

1. Set a time limit for smartphone use. Encourage users to limit their smartphone use to 2 hours or less per day.
2. Provide resources for coping with smartphone addiction and anxiety related to smartphone use. This can include counseling services, support groups, and educational resources.
3. Encourage users to turn off their smartphones before going to bed or at least an hour before sleeping to improve sleep quality.
4. Provide educational resources for users on how to manage smartphone use to minimize the impact on productivity and academic performance.
5. Target awareness campaigns towards young adults in the 20-25 age group to raise awareness about the risks associated with excessive smartphone use and promote healthy smartphone habits.

RESULT

Based on the findings, *“it is evident that smartphone usage has a significant impact on individuals' daily lives, particularly on their academic performance and mental health.”* The study suggests the need for interventions such as digital detox programs, promoting responsible smartphone use, and creating awareness about the potential negative effects of excessive smartphone use. These interventions can improve the overall well-being of individuals and ensure a healthy relationship with technology.

CONCLUSION

Smartphone usage for an extended period of time can have negative effects on both academic performance and mental health. Most respondents spend more than 2 hours per day using their smartphones, and a significant proportion of them experience anxiety or stress when they are unable to use their smartphones. Additionally, many respondents feel that their smartphone use affects their productivity or academic performance to some degree. These findings are concerning, given that smartphones have become an integral part of our daily lives, and excessive use can lead to addiction and negative consequences.

The results of the z-tests conducted in this study show that smartphone usage for more than 4 hours significantly affects both academic performance and mental health. Individuals who use smartphones for more than 4 hours have significantly lower academic performance, while those who experience anxiety or stress when unable to use their smartphones have significantly lower mental health scores. These findings highlight the need for individuals to be mindful of their smartphone use and take measures to limit their usage to prevent addiction and negative consequences.

This study demonstrates the potential negative effects of excessive smartphone use on academic performance and mental health. Individuals should be aware of the amount of time they spend on their smartphones and take steps to reduce usage if necessary. This can include setting time limits, engaging in other activities that do not involve smartphones, and seeking professional help if addiction or negative consequences arise. By being proactive about smartphone usage, individuals can improve their overall well-being and prevent potential negative consequences.

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