

NAVIGATING THE TECHNOLOGICAL CONTRADICTION: ADDRESSING THE
INTERSECTION OF SCREEN UTILIZATION, PHYSICAL HEALTH, AND COGNITIVE
WELL-BEING

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ABSTRACT

Smartphone addiction, characterized by compulsive use, has been linked to mental health issues like stress, anxiety, depression, and sleep disorders. Excessive screen time can cause eye strain, improper positioning, and physical conditions like headaches and neck pain. This study aims to understand the prevalence of smartphone addiction among various occupational groups and its impact on their overall well-being, focusing on physical health issues like eye strain and posture-related problems. The study examines smartphone addiction severity across various occupational categories, psychological issues like anxiety and depression, physical wellness effects like posture and eye strain, and gender-specific variations in health outcomes. A survey of 66.62% female and 33.37% male participants from various professions was conducted. The data indicates that daily mobile phone usage has a minimal to moderate impact on both physical and mental health across all usage categories. Interestingly, individuals using their phones for more than 6 hours per day report relatively high average health scores, especially in mental health (14.0), comparable to those using phones for less than 1 hour (12.5 for mental and 11.5 for physical). The lowest physical health score (8.4) is seen in the 1–2hour group, while the 3–4hour group reports the lowest mental health score (10.53), suggesting that moderate usage may coincide with slightly lower perceived health.

KEYWORDS: Anxiety, Stress, Screen utilisation, Technology.

INTRODUCTION

Smartphones have become an essential part of our everyday lives and are used by many people worldwide. However, as smartphones have proliferated, the problem of smartphone addiction has gained more attention. Addiction to smartphones is linked to both environmental and personal psychological factors, according to recent studies.^[21,23] People may use their phones frequently as a means of escaping the real world due to a variety of personal psychological factors, such as stress, loneliness, and anxiety, which can compound over time. At the same time, environmental factors are also important, especially since social media and smartphone applications make it even more difficult for users to put down their phones by offering social and mobile features. Additionally, one of the main causes of smartphone addiction is regular smartphone use.^[9, 24, 26] The emergence of the information age has led to a widespread use of smartphones, with many people displaying behaviours of mobile phone dependency as a result of their obsession with mobile games and virtual social spaces. Teenagers are becoming more and more dependent on their mobile phones. The term "mobile phone dependency" describes a person's prolonged use of

a phone and their incapacity to limit how much time they spend on it.^[2,13,14,17]

People can now read, shop, and communicate from anywhere at any time thanks to smartphones, which have become essential in our daily lives. But as smartphone use rises, a new issue known as problematic smartphone use (PSU) arises, where a lack of control over excessive smartphone use has detrimental effects on day-to-day functioning (social functioning, mental health issues, etc.). PSU has been linked in studies to poor physical health, anxiety, depression, and perceived stress.^[5, 15, 22] A state of well-being known as mental health is characterized by people who fully realize their potential, successfully deal with day-to-day obstacles, work efficiently, and significantly impact the lives of others. Discussions concerning social media's positive and negative effects on mental health are currently ongoing.^[8, 27, 19] It is conceivable that using a smartphone or social media platform can lead to worse mental health outcomes for individuals, unhealthy social comparisons, and a loss of healthy behaviours like exercise, sleep, and face-to-face interactions.^[11, 20]

Mobile phones are a "double-edged" sword that helps us in our modern lives, but they can also lead to a number of concerning issues if they are used excessively or even cause mobile phone addiction (MPA). Previously, MPA was defined as the incapacity to control one's use of a mobile phone, which would ultimately have detrimental effects on day-to-day functioning. There were numerous synonyms for MPA in the literature.^[12,25] Previous research has shown that moderate-to-intense physical activity is associated with lower levels of anxiety and depression. Engagement in regular physical activity has been linked to better mental health.^[3, 16] The benefits of physical activity in reducing insomnia and enhancing the quality of sleep have been clearly shown by numerous studies. For this reason, enhancing sleep quality and avoiding mental illnesses are essential and may be advantageous. Young people, particularly students, are becoming more and more dependent on mobile phones due to their need for social interaction.^[4, 11] To evaluate the signs of psychological and physical discomfort brought on by improper mobile phone use. Screen time may be linked to certain aspects of mental health, according to accumulated evidence. The objective was to present evidence that could advance understanding of how people interact with screens, which could potentially result in an additive increase in exposure time and have an impact on mental health.^[6, 7] There is a theoretical possibility that excessive use of smartphones could have a causal effect on psychological functioning. We may find it difficult to regulate our thoughts and actions when these stimuli are always available to us because humans evolved in a world where social interaction, entertainment, and information were comparatively scarce.^[10,18]

MATERIALS AND METHODS

1. **Survey Design and Objectives:** The survey aimed to investigate the patterns of mobile phone usage and its impact on both mental and physical health. The goal was to explore whether these effects vary across different age groups and professions, and how individuals perceive the relationship between mobile phone usage and their overall health.

2. **Population and Sample Selection:** The survey was conducted with a diverse sample that included participants from all age groups and professions to ensure a broad representation of mobile phone users. The sample was stratified based on:

Age groups: Teenagers, Young adults, middle-aged adults, and Senior adults.

Professions: Students, working professionals, homemakers, business owners, and retired individuals. The survey aimed for a balanced representation of individuals with varied usage habits, ensuring that results were not biased by any single demographic or profession. The final sample size was 151 number of respondents.

3. **Survey Instrument:** A structured questionnaire was developed to capture data on both the patterns of mobile phone usage and its perceived impact on mental and physical health. The questionnaire was divided into several sections:

Demographic Information: Age, gender, and profession.

Mobile Usage Patterns: Average screen time per day.

Mental Health Impact: Questions on perceived levels of stress, anxiety, sleep disturbances, feelings of isolation, or dependency on the mobile phone.

Physical Health Impact: Questions on symptoms like eye strain, headaches, neck or back pain, and the effects of prolonged screen time on physical health.

The survey was designed to allow both quantitative and qualitative responses, where participants could rate their experiences on Likert scales and provide open-ended responses to explore their personal perspectives on mobile phone usage.

4. **Data Collection Procedure:** The survey was administered online formats to ensure accessibility. The online survey was shared via email and social media platforms. Participants were fully informed of the purpose of the study, assured of their anonymity, and reminded that participation was voluntary. All participants provided informed consent before taking part in the survey, and the data collected was kept confidential.

Mental Health Analysis: Responses related to stress, anxiety, and sleep disturbances were analysed to determine whether high levels of mobile phone usage were associated with negative mental health outcomes.

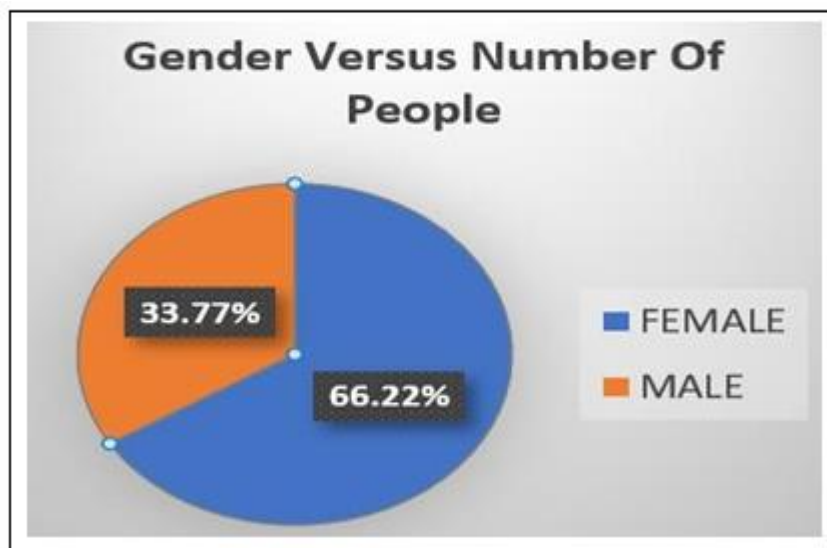
Physical Health Analysis: Data on physical symptoms like eye strain, neck pain were assessed, with statistical tests to identify whether increased screen time was linked to more frequent reports of physical discomfort.

RESULTS

According to the study, using a mobile phone every day significantly affects both mental and physical health outcomes. With the lowest average score (8.31), users who used less frequently reported only minor effects on their physical health. Longer usage, however, was associated with more physical health problems; users who used more than six hours a day had the greatest impact (10.67). Users in the 3–4-hour group had the highest mental health scores (11.51), indicating a more nuanced trend in mental health outcomes. However, the 5–6-hour group and those who used their phones for more than 6 hours a day saw a significant decline in scores (13.69), suggesting a link between prolonged phone use and mental health issues like stress, anxiety, and difficulty

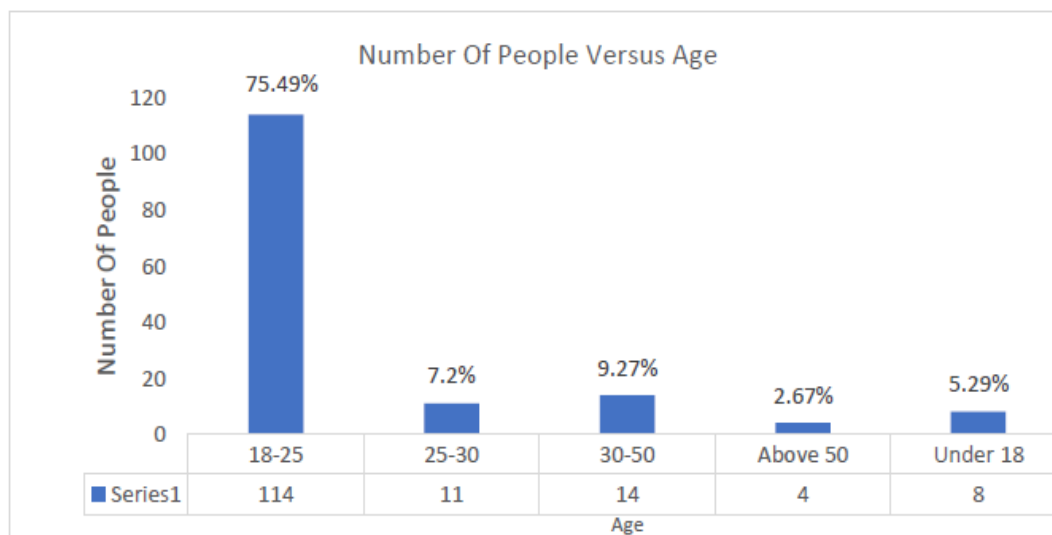
focusing. Poor mental health scores (13.33) were also observed among users who used less than an hour per day, indicating that low engagement may be a contributing factor to mental strain. All things considered, there is a definite link between rising mobile phone use and

declining mental health, particularly after five hours. One to four hours of daily mobile phone use may be the ideal range for the least amount of negative health effects, striking a balance between connectivity and overexposure.



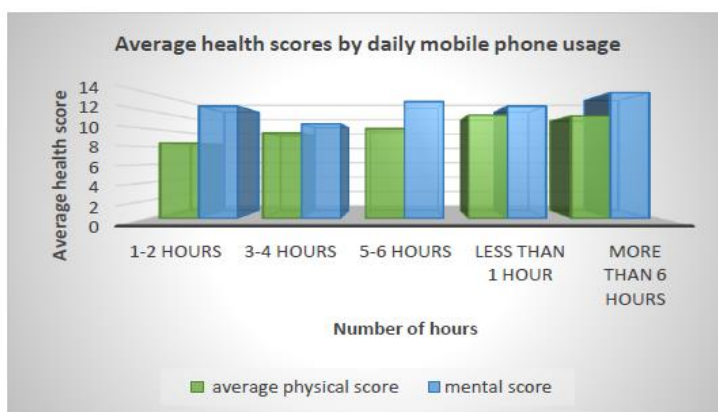
The pie chart titled "Gender Versus Number of People" illustrates the distribution of individuals by gender. It reveals that 66.22% of the surveyed population is male, represented in blue, while 33.77% is female, indicated in

orange. This visual representation highlights a significant gender disparity, with males outnumbering females in the sample.



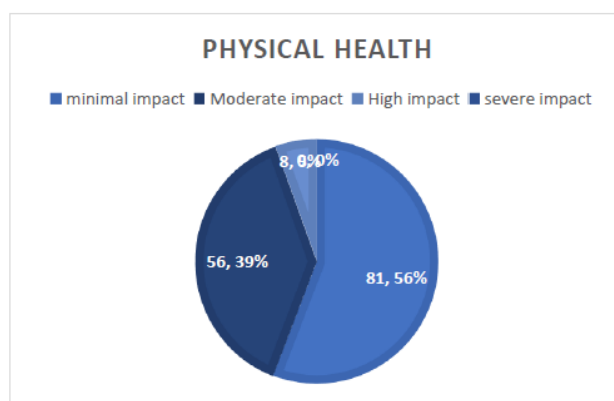
The chart titled "Number of People Versus Age" illustrates the distribution of individuals across different age groups. The most significant representation is from the 18-25 age category, with 114 individuals constituting 75.49% of the total. In contrast, the other age groups show notably lower participation: 25-30 (11

individuals, 7.2%), 30-50 (14 individuals, 9.27%), above 50 (4 individuals, 2.67%), and under 18 (8 individuals, 5.29%). This data indicates a strong preference or concentration of respondents within the younger demographic.



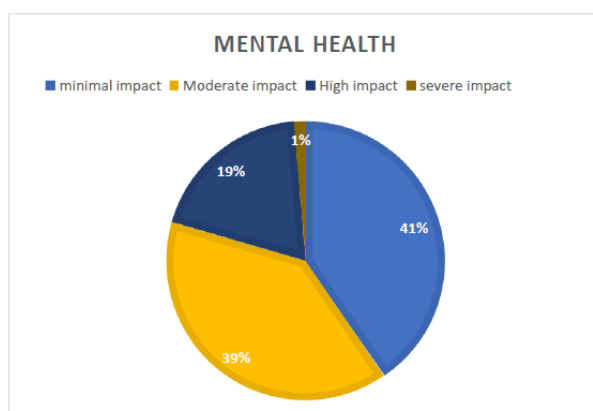
The bar chart shows that daily mobile phone usage impacts physical and mental health. Users with 1-2 hours experience the least impact, while those 3-4 hours

experience the best mental health. Moderate usage is the healthiest range.



The pie chart illustrates the impact of mobile phone usage on physical health, categorized into four levels: minimal, moderate, high, and severe. 56% of respondents, or 81 people, said that using a mobile phone had little effect on their physical health. 39% of the participants (56 people) had a moderate impact after this.

Just 5% (8 people) of the respondents said the impact was high, and 0% said the impact was severe. According to the data, major or severe health effects are still comparatively rare, even though many users only have minor to moderate physical effects.



The pie chart presents the impact of mobile phone usage on mental health, segmented into four categories: minimal, moderate, high, and severe. The data showed that 39% of respondents said their mental health was moderately impacted, and 41% said it was minimally impacted. Just 1% reported a severe impact, while a

noteworthy 19% reported a high impact. This implies that a sizable minority is significantly impacted to a greater extent by mobile phone use, whereas the majority only experience minor or moderate effects on their mental health.

LEVELS OF HEALTH IMPACT ON DAILY MOBILE USAGE

Daily Mobile Phone Usage	Average Physical Health Score	Impact Level (Physical)	Average Mental Health Score	Impact Level (Mental)
Less than 1 Hour	11.5	Minimal to moderate	12.5	Minimal to moderate
1–2 Hours	8.4	Minimal	12.5	Minimal to moderate
3–4 Hours	9.51	Minimal	10.53	Minimal to moderate
5–6 Hours	10.0	Minimal to moderate	13.0	Minimal to moderate
More than 6 Hours	11.4	Minimal to moderate	14.0	Minimal to moderate

The "Levels of Health Impact on Daily Mobile Usage" table shows information about the correlation between daily mobile phone use and mental and physical health scores. From less than an hour to more than six hours per day, it divides usage into five groups. All groups fall under the category of "Minimal to moderate" physical impact, with the exception of the 1–2 hour range, which is labeled as "Minimal." Average physical health scores range from a low of 8.4 (for usage lasting 1–2 hours) to a high of 11.5 (for usage lasting less than 1 hour). With increased use, mental health scores show a slight upward trend, peaking at 14.0 for users who use for more than six hours per day. All categories are consistently classified as having a "Minimal."

CONCLUSION

Users who engage with their mobile phones for 1–2 hours daily experience the least physical health impact, with an average score of 8.31, indicating minimal negative effects. A slight rise in physical issues is observed in the 3–4-hour group, increasing more noticeably in the 5–6 hours range (10.29), and peaking among users exceeding 6 hours daily (10.67), suggesting a moderate correlation between prolonged phone use and physical strain. Mental health trends show a more significant shift, with the best outcomes seen in the 3–4-hour group (11.51), slightly outperforming even lower usage categories. However, mental health scores worsen sharply for users in the 5–6 hour (13.15) and more than 6-hour groups (13.69), indicating increased stress, anxiety, and reduced focus linked to heavy phone use. Notably, even users with less than 1 hour of use report high mental health scores (13.33), which may reflect issues like digital over-restriction or social isolation. Overall, the data suggests a clear connection between excessive phone use and declining mental and physical well-being, while moderate usage between 1 to 4 hours daily appears to offer the most balanced health outcomes.

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