

Research Paper

Mobile Phone Addiction and Mental Health: An In-Depth Study

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ABSTRACT

Introduction: Mobile phone addiction has become a pressing concern in the digital age, particularly regarding its potential impact on mental health. This study investigates the correlation between mobile phone addiction and mental health outcomes across different genders, exploring how these relationships may vary. By examining gender differences, this study aims to provide insights into the unique ways in which mobile phone addiction may correlate the mental well-being of individuals of different genders. **Objectives:** The objective of this study is to examine the relationship between mobile phone addiction and mental health and to determine if this relationship varies by gender. Specifically, the study aims to assess how mobile phone addiction correlates mental health outcomes overall, as well as separately among males and females. **Methodology:** Using a purposive sampling technique, data were collected from 150 participants aged 12 to 50 years. Participants completed the Mobile Phone Addiction Scale and a Mental Health Inventory. Correlation coefficients and significance levels (p-values) were calculated to analyze the data with the help SPSS-26V. **Results:** A negative significant correlation was observed ($r = -0.52$, $p < .001$), indicating that higher levels of mobile phone addiction are associated with lower mental health scores. For the second hypothesis, the relationship among males was negatively significant ($r = -0.42$, $p < .01$), while the third hypothesis showed a similar significant correlation among females ($r = -0.58$, $p < .01$). **Conclusion:** The findings indicate a significant negative correlation between mobile phone addiction and mental health, with higher addiction levels linked to lower mental health scores in overall sample, and consistent negative correlations observed among both male and female participants.

Keywords: Mobile Phone Addiction, Mental Health, Relationship, Male, Female

According to the American Psychological Association. (2023), "Addiction is a state of psychological or physical dependence (or both) on the use of alcohol or other drugs. The term is often used as an equivalent term for substance dependence and sometimes applied to behavioral disorders, such as sexual, internet, and gambling addictions".

Types of Addiction

The American Psychiatric Association (2013) recognizes only one official diagnosis of addiction, which is substance use disorder. However, they also recognize other non-

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substance related behavioral addictions as potential conditions for further study and research as cited by Hartney (2022).

1. Substances Addiction
2. Behavioral Addiction

- 1. Substance Addiction** - According to the American Psychiatric Association's (APA., 2013) Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), substance use disorders (SUD) refer to a cluster of symptoms that indicate an individual's continued use of a drug or alcohol despite experiencing significant substance-related problems.
- 2. Behavioral Addiction** - The American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM-5), published in 2013, defines behavioral addiction as a pattern of behavior characterized by significant impairment in personal, social, academic, or occupational functioning that develops as a result of repetitive, rewarding behaviors.

The current research is specially based on the Mobile Phone Addiction of the Behavioral aspect of addiction (Mobile Phone Addiction is not mentioned anywhere in DSM-Vth yet in research works it has been compared to Gambling Addiction which is clearly described in DSM-Vth), so it is necessary to discuss the facts related to the mobile phone addiction in detail, which has been tried to describe as follows:

Definition of Mobile Phone Addiction

According to Goldberg. (1996) and Young. (1998), "Smartphone addiction is considered to be rooted in Internet addiction due to the similarity of the symptoms and negative effects on users. Internet addiction is defined as an impulse control disorder, characterized by pathological Internet use".

Mobile Phone Addiction/Smartphone addiction could be categorized as a behavioral addiction, such as Internet addiction. Behavioral and chemical addictions have seven core symptoms in common, that is, salience, tolerance, mood modification, conflict, withdrawal, problems, and relapse (Grant et al., 2010; Griffiths, 2005).

Mobile phone overuse or addiction, also known as problematic mobile phone use, is a form of dependence syndrome that affects some mobile phone users. This type of behavioral addiction is comparable to other addictions such as internet addiction, TV addiction, shopping addiction, or video game addiction, and can pose a significant threat to an individual's mental and physical health. Different terms have been used to describe this phenomenon, such as "smartphone addiction" (Ahmed, Qazi & Perji, 2011), "mobile phone addiction" (Billieux, Van der & Rochat, 2008), "problematic mobile phone use" (Takao et al., 2009), and "mobile phone dependence" (Perry & Lee, 2007).

The World Health Organization (WHO) Expert Committee in 1964 replaced the terms addiction or habituation with substance abuse and categorized it under ICD-10, including psychoactive drugs, alcohol, and tobacco. Additionally, behavioral addiction, such as mobile phone addiction, is also categorized under this classification, according to Griffiths. While researchers debate whether excessive use of technology can be classified as an addiction, some evidence suggests that problematic mobile phone use may be associated with behavioral problems, psychological problems or mental health issues.

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Mental Health

Mental health is a critical aspect of overall well-being that encompasses an individual's emotional, psychological, and social well-being. It is a fundamental component of human health that is often overlooked or misunderstood, despite its significant impact on an individual's ability to function and live a fulfilling life. Mental health disorders, such as depression, anxiety, bipolar disorder, and schizophrenia, can affect anyone at any time, regardless of age, gender, or background.

Definition of Mental Health

According to J.A. Hadfield (1988) "Mental health is full and harmonious functioning of the whole personality".

According to the World Health Organization. (2022), "Mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community".

Based on the above definitions of mental health provided by the World Health Organization (WHO) and others, it can be summed up that mental health refers to a state of well-being in which an individual can cope with the normal stresses of life, work productively, and make meaningful contributions to society. Mental health is not merely the absence of a mental disorder or illness, but rather encompasses the overall psychological, emotional, and social well-being of an individual. It is a fundamental aspect of human health and is essential for a fulfilling life.

Components of Mental Health –

Over the years, researchers and mental health professionals have identified various components that contribute to positive mental health. All these components are as follows- After conducting a review of various elements related to positive mental health, Singh and Gupta (1989) have identified the following six elements as crucial: 1- Adjustment, 2 - Emotional Stability, 3 - Intelligence, 4 – Autonomy, 5 - Security- Insecurity, 6 - Activity-level.

Apart from this, some other psychologists have told some important components of Mental Health - Normal growth and development, orientation towards future, integrated approach to life, resistance to stress, knowledge of ego identity, knowledge based on healthy self-esteem, feeling of security, openness to experiences, reasonable dependence etc. Understanding these components can help individuals and mental health professionals promote and maintain positive mental health.

Importance of Mental Health

Mental health is a crucial aspect of overall health as it has an immediate impact on physiological processes. It involves not only the absence of physiological disease but also the balanced development of an individual's personality and emotional attitudes, allowing them to live in harmony with others (Patel, 2010). World Mental Health Day is observed annually on October 10 to raise awareness of mental health issues worldwide and to mobilize efforts in support of mental health.

The role of mental health in human life at different ages is of great importance, not only for individuals but also for society. The term "mental health" encompasses all aspects of an individual's adjustment to themselves and others and is an aspect of their total personality. A

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person's mental health is indicated by their happiness, health, and hopefulness, as well as their harmonious personality, physical health, desirable social nature, and moral values. Mental health has a broader scope than physical health, as it aims to promote the development of a wholesome, balanced, and integrated personality.

Mobile Phone Addiction and Mental Health –

As we know that in recent years, mobile phone addiction has become a widespread problem with a significant impact on mental health. With the constant accessibility of social media, gaming, and online communication, many individuals find themselves over-reliant on their devices, leading to problems like anxiety, depression, and reduced emotional well-being (Ithnain et al., 2018). These mental health challenges associated with mobile phone addiction appear to differ across genders, with males and females potentially experiencing distinct psychological impacts and usage patterns. Research indicates that societal expectations, emotional coping mechanisms, and social interactions often vary by gender, which may influence how addiction to mobile phones affects mental health in males and females differently. This study aims to investigate these gender-based variations to deepen the understanding of the relationship between mobile phone addiction and mental health. By examining gender as a demographic variable, this research highlights the need for targeted mental health interventions that address specific challenges faced by each gender in managing technology use effectively.

REVIEW OF LITERATURE

1. The study conducted by Amidtaher et al. (2016) titled "The Relationship between Mobile Cell Phone Dependency, Mental Health and Academic Achievement" aimed to investigate the correlation between mobile phone dependency, mental health, and academic achievement in high school students in Kermanshah. The sample size consisted of 340 students (182 females and 158 males) selected through simple random sampling. Results indicated a significant relationship between mobile phone dependency, mental health issues, academic achievement, and components like deprivation tolerance, life dysfunction, and compulsion-persistence. Regression analysis showed that these components predicted changes in academic achievement and mental health in students.
2. A study was conducted by Ithnain et al. (2018) on Relationship between Smartphone Addiction with Anxiety and Depression among Undergraduate Students in Malaysia. The Objective was to identify the relationship between smartphone addiction with anxiety and depression among undergraduate students in a local university in Malaysia. 369 students (299 female and 70 males; mean age=19.3±0.98) were selected as a sample in a local university in Malaysia. Results showed that Smartphone addiction had a statistically significant positive relationship with anxiety and depression.
3. A study was conducted by Clairmont and Bernice (2018) on Cell Phone Addiction and the Link to Depression in Adolescents and Adults. The Objective of the study was to examine the consequences of cell phone addiction on mental health and social behavior. The study included a diverse sample of adolescents and adults across different regions globally. The result of the study revealed a significant correlation between cell phone addiction and mental health issues such as depression and antisocial behavior.
4. A study was Conducted by Susmitha et al. (2024) on "Influence of Smartphone Addiction on Sleep and Mental Wellbeing among Dental Students". This study aimed to

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understand how smartphone addiction affects sleep and mental wellbeing among undergraduate dental students in Hyderabad and Ranga Reddy districts. A total of 427 students participated, and findings revealed that 42% of them were addicted to smartphones. The study showed that smartphone addiction was linked to poor sleep quality and lower mental wellbeing among the students.

5. Ha et al. (2014) conducted a study titled "A Comparative Analysis on Mental Health of College Students with Internet Addiction and Mobile Phone Addiction" aiming to compare the mental health of college students with internet addiction and mobile phone addiction. The objective was to investigate the basic characteristics of these addictions among college students. A total of 1,172 students from a university participated in the study. The results indicated that male science students exhibited higher levels of internet addiction, whereas female art students showed higher levels of mobile phone addiction. Both types of addiction were found to be positively correlated with mental health issues.
6. Ivanova et al. (2020) carried out a study and the results of the study have shown that higher mobile phone addiction and higher phubbing is associated with a higher level of depressive moods, with Phubbing functioning as a mediator of the relationship between mobile phone Addiction and depression.
7. A study by Ratan et al. (2021) on a systematic review of the impact of smartphone addiction on health outcomes was carried out and they found that there are consistent associations between smartphone addiction and physical and mental health, especially mental health.
8. The review study was carried out by the Girela - Serrano. The paper reviews the impact of mobile phone and wireless device use on children and adolescents' mental health. The review found limited evidence suggesting that greater use of mobile phones and wireless devices may be associated with poorer mental health in children and adolescents. And secondary Greater use of mobile phones and wireless devices may be associated with poorer mental health in children and adolescents.
9. In the study by Vera Cruz et al. (2023), a representative US-based population sample was used to assess the use of smartphone apps for mental health and wellbeing (SAMHW) and determine the most important predictors of SAMHW use and associations between predictors and outcome variables. Two-thirds of participants had a high probability of using mental health app. Participants were more likely to use apps for wellbeing than mental health problems. Smartphone addiction, mental health problems, and COVID-19 impact are key predictors of smartphone apps for mental health and wellbeing usage, especially among younger adults and females.
10. The study by Xu et al. (2022) examined the impact of cell phone dependence (CPD) on the mental health of college students in Shanghai during the COVID-19 pandemic. It revealed that high CPD negatively affected students' mental health. Factors such as age, duration of cell phone use, seniority, faculty-student relationship, insomnia, tobacco use, obesity, and life satisfaction influenced mental health. The findings underscore the urgency of interventions to mitigate psychological distress among Chinese college students.

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11. A study conducted by Choksi and Patel (2021). This study investigates the relationship between smartphone addiction and mental health among college students in Surat city. A cross-sectional study with 100 participants utilized self-reported questionnaires. The study found a highly significant positive correlation between smartphone addiction and stress, as well as between smartphone addiction and anxiety. There was also a moderate correlation between smartphone use and sleep quality, as well as between smartphone use and depression. The intensity of mobile phone use could be a factor that influences causal pathways leading to mental health problems.
12. A study conducted by Patel and Puri (2017) titled "A Study of Mobile Phone Addiction and Mental Health among Adolescent Girls Studying in Various Streams". Research investigates the relationship between mobile phone addiction and mental health among adolescent girls enrolled in different academic streams. Using a survey method, the study sampled 150 adolescent girls from Arts, Science, and Commerce streams in Aurangabad city, with 50 participants from each stream chosen through random sampling. Study reveals a positive and significant correlation between mobile phone addiction and mental health, suggesting that higher levels of mobile phone addiction are associated with lower mental health among adolescent girls.
13. Desouky and Abu-Zaid (2020) conducted a cross-sectional study on 1513 Saudi university students from Taif University to investigate gender differences in smartphone use patterns and addiction in relation to depression and trait anxiety. Results showed a female predominance in depression, trait anxiety, smartphone addiction, daily mobile use duration, and number of daily calls. Significant positive correlations were found between PUMP score and depression/anxiety scores, smartphone ownership duration, and daily call duration. Female students exhibited higher prevalence and median PUMP (Problematic Use of Mobile Phone) scores compared to male students, suggesting a stronger association between smartphone addiction and mental health issues among females.
14. The study titled "Examining associations between smartphone use, smartphone addiction, and mental health outcomes: A cross-sectional study of college students" proposed by Kil et al. (2021) investigated relationships among smartphone use, addiction, mental health problems, and life satisfaction in college students. A sample of 601 undergraduate students from a Midwestern university in the United States was examined. The study found a negative association between smartphone use and mental health problems such as depression, anxiety, and stress, but did not differentiate between male and female participants.

Objectives:

The objective of this study is to examine the relationship between mobile phone addiction and mental health and to determine if this relationship varies by gender. Specifically, the study aims to assess how mobile phone addiction impacts mental health outcomes overall, as well as separately among males and females.

Hypotheses:

- H₀₁-There is no significant relationship between mobile phone addiction and mental health.
- H₀₂ -There is no significant relationship between mobile phone addiction and mental health among males.

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- H₀₃ -There is no significant relationship between mobile phone addiction and mental health among females.

METHODOLOGY

Sample: This study utilized a purposive sampling method to select participants from various age groups to ensure a diverse representation. The sample consisted of 150 individuals aged between 12 and 50 years, recruited from educational institutions, workplaces, and community centers of Azamgarh district Uttar Pradesh. The sample was divided into two groups: with each group reflecting a balance (Male-75 and Female-75) in terms of gender representation.

Demographic details: Gender - Male and Female

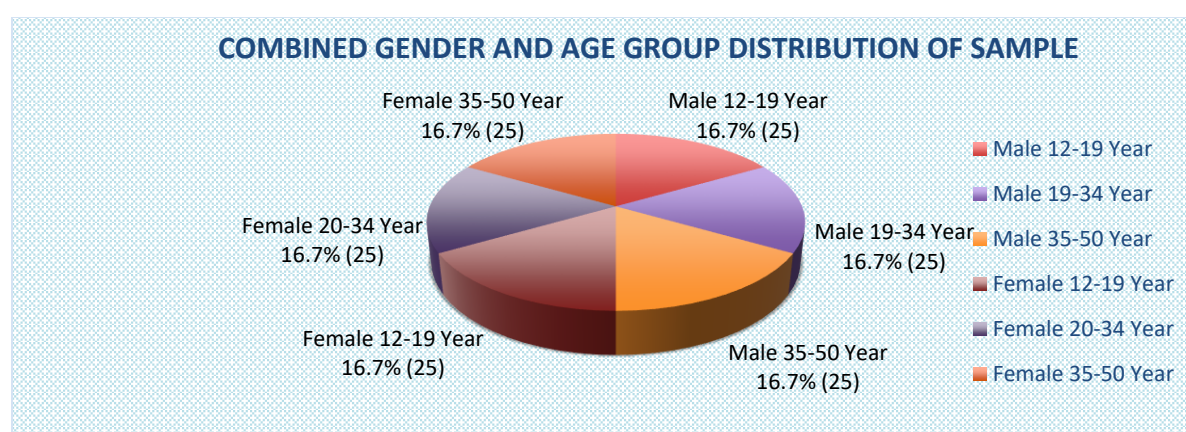


Figure 1

Tools:

- 1. Mobile Phone Addiction Scale** - The Mobile Phone Addiction Scale (MPAS), developed by Dr. A. Velayudhan and Dr. S. Srividya in 2012, was used to measure participants' levels of mobile phone addiction. For the current study, a pilot test was conducted on the sample (N=100) to assess reliability and validity. The reliability of the scale was found to be high, with a Cronbach's alpha of .88, indicating strong internal consistency. Face validity of the MPAS was also good, suggesting the scale effectively measures the construct it aims to assess.
- 2. Mental Health Inventory** - The Mental Health Inventory (MHI), created by Dr. Jagdish and Dr. A. K. Srivastava in 1983, was employed to evaluate the mental health status of participants. This inventory comprises 56 items that assess various aspects of mental health. The scale's reliability, determined through a pilot study (N=100) on the current sample, yielded a Cronbach's alpha of .80, indicating acceptable internal consistency. The validity of the MHI was measured at .54, suggesting moderate validity for assessing mental health in this context.

These two tools provided reliable and valid measures, enabling an in-depth examination of the relationship between mobile phone addiction and mental health.

Statistical Analysis: For the data analysis in this study, initially used SPSS software (version 26) to conduct descriptive statistical and correlational analyses, which provided an overview of the distribution, central tendencies, and relationships between mobile phone addiction and mental health.

RESULT

Table 1 Descriptive Statistics and Correlations for Mobile Phone Addiction and Mental Health Variables

Variable	N	M	SD	r - Value
Mobile Phone Addiction	150	77.47	20.62	
Mental Health	150	150.66	15.96	-.52**

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

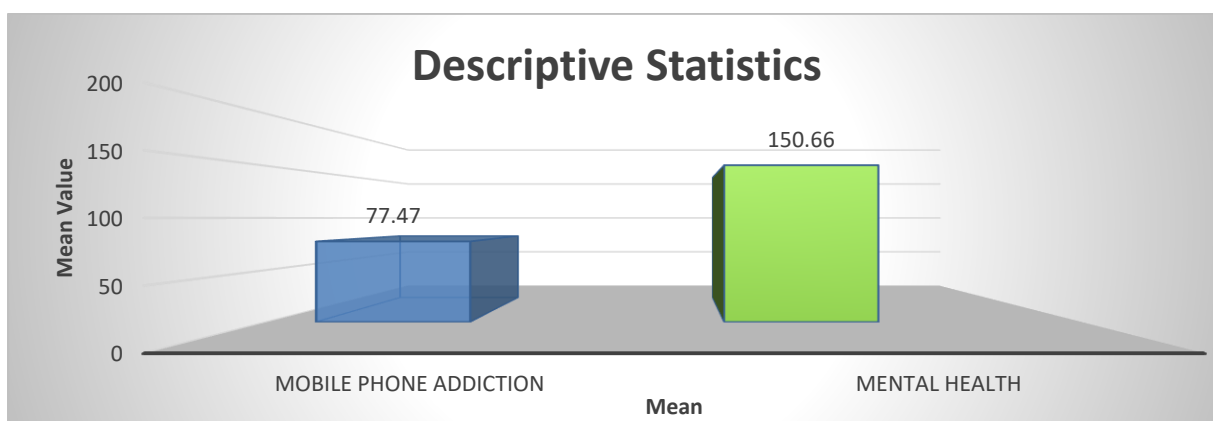


Figure 2

Interpretation –

The results indicate a significant negative moderate correlation between mobile phone addiction (MPA) and mental health, with a Pearson correlation coefficient of $r = -.52$, $p < .001$. This suggests that higher levels of mobile phone addiction are associated with poorer mental health outcomes among participants. The mean score for mobile phone addiction is 77.47 (SD = 20.62), while the mean score for mental health is 150.66 (SD = 15.96). The negative correlation implies that as individuals become more addicted to mobile phones, their mental health tends to decline, potentially due to factors such as increased stress, anxiety, or disrupted sleep patterns associated with excessive phone use. Hence H_{01} is rejected.

Discussion: The findings of this study align with previous empirical research, which consistently indicates a negative relationship between mobile phone addiction and mental health outcomes, including issues such as anxiety, depression, decreased well-being, and other psychological disorders (Amidtaher et al., 2016; Babadi-Akashe et al., 2014; Clairmont & Bernice, 2018; Desouky & Abu-Zaid, 2020; Ivanova et al., 2020; Jun, 2016; Ophir et al., 2020; Perilli et al., 2021; Ratan et al., 2021; Sümen & Evgin, 2021; Susmitha et al., 2024; Yang et al., 2023). This study contributes to the body of empirical evidence highlighting how mobile phone addiction can exacerbate mental health problems (Cheng & Meng, 2021).

Table 2 Descriptive Statistics and Correlations for Mobile Phone Addiction and Mental Health Variables in Males

Variable	N	M	SD	r - Value
Mobile Phone Addiction (Male)	75	75.57	18.20	
Mental Health (Male)	75	152.85	14.79	-.42**

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

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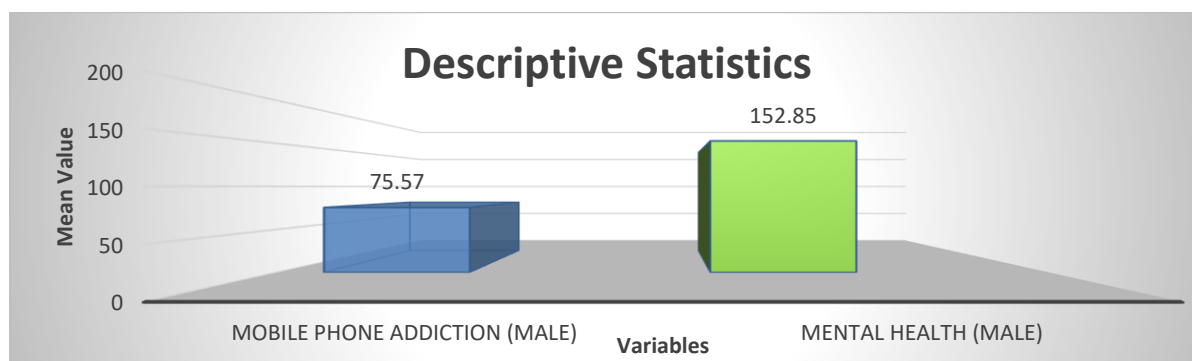


Figure 3

Interpretation - The results in Table 2 show a significant negative low correlation between mobile phone addiction (MPA) and mental health (MH) among male participants, with a Pearson correlation coefficient of $r = -.425$, $p < .001$. This indicates that, for males, higher levels of mobile phone addiction are associated with poorer mental health outcomes.

The mean score for mobile phone addiction among males is 75.57 (SD = 18.20), and the mean score for mental health is 152.85 (SD = 14.79). The negative correlation aligns with findings that suggest excessive mobile phone use can lead to negative mental health outcomes, possibly due to increased stress, distraction, and potential disruptions in daily routines. Thus, H_{02} is rejected

Discussion - The results indicate a significant negative correlation between mobile phone addiction and mental health among male participants. This finding underscores the importance of addressing mobile phone addiction in men, as it may contribute to mental health challenges. Similar results have been reported in prior studies (Dissing et al., 2021; & Bajwa et al., 2022;) supporting the relationship observed in this study.

Table 3 Descriptive Statistics and Correlations for Mobile Phone Addiction and Mental Health Variables in Females

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	<i>r</i> - Value
Mobile Phone Addiction (Female)	75	79.37	22.75	
Mental Health (Female)	75	148.47	16.86	-.58**

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

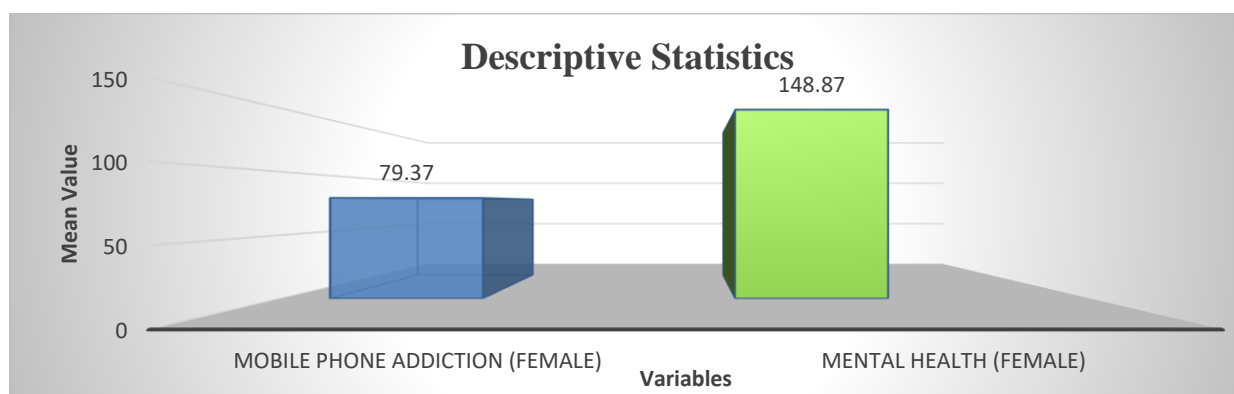


Figure 4

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Interpretation - The results in Table 3 reveal a significant negative moderate correlation between mobile phone addiction (MPA) and mental health (MH) among female participants, with a Pearson correlation coefficient of $r = -.581$, $p < .001$. This finding suggests that higher levels of mobile phone addiction are associated with poorer mental health outcomes for females, even more strongly than observed in male participants. The mean score for mobile phone addiction among females is 79.37 (SD = 22.75), and the mean score for mental health is 148.47 (SD = 16.86). The stronger negative correlation in females could indicate that they may experience more adverse mental health effects related to mobile phone overuse than males. Thus, H_{03} is rejected.

Discussion - These findings highlight the need for targeted interventions to address mobile phone addiction, particularly among female participants, as a means to improve mental health outcomes. Similar findings have been reported in prior research (Tao et al., 2017; Mahmoodi et al., 2018; Zhang et al., 2020; and Cruz et al., 2023.), reinforcing the relevance of this issue.

CONCLUSION

From the result of the present study, it is evident that mobile phone addiction leads to poor mental health. Excessive mobile phone use has negative repercussion on the wellbeing (Mental Health) of an individual belonging to different age groups & genders. Various researches have highlighted the negative impact of mobile phone on mental health. Therefore, it is the collective responsibility of the government, parents, educators, and mental health professionals to raise awareness about the negative repercussions of excessive mobile phone use. Implementing strategies such as setting healthy boundaries for mobile phone use, promoting offline activities can be effective strategies for enhancing mental wellbeing.

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Conflict of Interest

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