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# Smartphone Addiction, Personality Factors, Emotional Regulation and Mental Health: Gender Based Studies

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**Abstract**

Introduction: The present study intends to measure gender differences in smartphone addiction, emotional regulation, mental health and personality variables. Earlier studies have focused on gender differences in variables under study.

Aim: It was an attempt to revalidate the findings for fulfillment of the research objectives.

Sample: The sample was drawn following some predetermined inclusion and exclusion, a sample of 100 individuals ageing between 13 to 19 years were selected. Half of them were male and half of them were females.

Method: Sample was administered with 1) Smartphone addiction test by Kwon et al (2013), 2) Mental Health Inventory Veit and Ware (1983), 3) Emotional Regulation Questionnaire by James J. Gross and Oliver P (2003), 4) Big Five Inventory (Personality) by Goldberg, (1993). Along with the above measures General Health Questionnaire was also administered for screening purpose. For GHQ a cut off 4 was selected below which individuals were allowed for participation in investigation.

Result: Results indicated gender differences in variables under study. Females have been found to have higher level of addiction than male. Male were found to have more distress and low in psychological well-being. Male also found to have greater emotional reappraisal and lesser emotional suppression.

Conclusion: In case of personality variables males were found to be more open, conscientious and agreeable while females were found to be more prone to neuroticism.

**Keywords:** smartphone, emotional regulations, gender, addiction, mental health, etc

## 1. Introduction

Mobile phone addiction significantly impacts adolescent lives, as most use them for conflict avoidance. Young identifies technology addiction as a compulsive urge to use technology rather than solving problems. Excessive mobile phone use strengthens technical skills but weakens practical ones, causing adolescents to restrain outdoor activities and live in their fantasy world. Adolescents' anxiety and depression increase when they play video games, leading to violence and altering their personalities. Social media addiction and mobile phones significantly impact adolescent social, cognitive, and personality development. Video game violence and social media sites have profound effects on adolescent growth. Adolescent personality changes indicate early mobile phone addiction, according to the five-factor model, a dominant trait psychology framework. It identifies five to eight elements in personality traits, and is widely used by children, adolescents, and adults for various purposes.

### *1.1 Adolescents and Cell Phone Addition*

Adolescence is the developmental stage from 10 to 19 years old, when a child becomes functionally independent and reaches maturity. It is a critical and difficult period in a child's life, involving physical and mental growth, high energy levels, and a critical transition from childhood to adulthood. Adolescence is a transitional stage between childhood and adulthood, characterized by physical, emotional, and social changes. Adolescents use social media, IM, and online platforms like Facebook and Whats App to communicate, document their lives, and seek support. Addictions to internet, mobile phones, video games, and TV are now being considered for inclusion in DSMV.

*1.2 Adolescents' Personality and Cell Phone*

Adolescents are psychologically addicted to social media platforms, leading to poor vocabulary, grammar, and spelling. Overuse can result in unhealthy lifestyles, poor time management, and increased risk of depression, anxiety, and other psychological disorders. Adolescents who excessively use the internet, phones, video games, and television may experience loneliness due to reduced social interactions. Mobile phones are used for communication, study, and entertainment, leading to addiction. Adolescents with mobile phone addiction disorder may struggle to stop engaging in these behaviors, with cell phones, the internet, and video games being the most common.

*1.3 Concept of Mental Health*

Mental health, as defined by the World Health Organization, refers to an individual's wellbeing, enabling them to realize their abilities, cope with life's stresses, work productively, and contribute to their community. Mental health problems can impact thinking, mood, and behavior, with biological factors like genes and brain chemistry, life experiences like trauma or abuse, and a family history of mental health issues contributing to their development.

*1.4 Emotional Regulations*

Emotional regulation involves individuals determining their emotions and expressing them, and can be automatic, controlled, conscious, or unconscious, impacting various points in the emotion-producing process (Gross,1998).

Emotional regulation involves recognizing and managing positive and negative emotions, enhancing their effectiveness and control.

Emotional regulation involves three components:

(1) Initiating actions triggered by emotions.

(2) Inhibiting actions triggered by emotions.

(3) Modulating responses triggered by emotions.

## 2. Literature Review

Males (41.54%) are addicted to two gadgets, while 6.154% are addicted to three or more. Personality dimensions like extra-version, openness, agreeableness, and conscientiousness negatively correlate with mobile phone addiction (Vaishali and Indira 2022).

Adolescents' behavior is influenced by human-computer interaction, domain, creative measures, study design, intervention period, and randomization. Human-computer interaction has larger effects, while mathematical inventiveness has stronger effects (Liu, Pang, Guo et al 2022).

Facebook significantly impacts students' personalities as their degree programs progress, with institutes playing a similar role in personality development across all four universities (Hafiz and Mahmood et al 2021).

Adolescent social identity is negatively impacted by social media, affecting achievement, postponement, closure, and distribution. Family, school, and institutions must take measures to protect adolescent identity and intellectual principles (Walaa 2021).

Digital technology use significantly impacts short-term hedonic well-being (negative affect) and long-term eudemonic well-being (life satisfaction). Adolescents are more vulnerable, but effects are comparable for adults. Low and excessive use lead to decreased well-being, while moderate use increases it (Dienlin and Johannes 2020).

A study in Shanghai found that new media use positively influences personality qualities like extra-version, openness, and agreeableness through a sense of belonging, while negatively affects emotional stability and conscientiousness through self-monitoring. The study also found that gender moderates the association between new media use and a sense of belonging, with females valuing relationships more than males. The study recommends new media management measures and recommendations (Xue, Yang, & Yu 2018).

## 3. Methodology

*3.1 Objectives*

(1) To analyses gender differences in smartphone addiction, mental health, emotional regulation and personality.

(2) To plan future detailed investigation on the basis of outcomes obtained from present investigation.

*3.2 Sample*

The study conducted on a small sample. The sample consisted of two groups.

Group 1: It contained 50 male students ageing between 13 to 19 years.
Group 1: It contained 50 female students ageing between 13 to 19 years.

3.2.1 Inclusion Criteria of Sample

(1) Ageing between 13 to 19 years of age.
(2) Students are freshers.
(3) Students are physically as well as psychologically healthy.
(4) Students from general academic stream were included.

3.2.2 Exclusion Criteria of Sample

(1) Dropouts or students having detention history were carefully excluded.
(2) Students under medication for physical or mental health issues.
(3) Students from broken homes or divorced parents.
(4) Students from vocational streams.

*3.3 Tools of Data Collection*

3.3.1 General Health Questionnaires -28 (GHQ-28)

GHQ-28 is self-report screening measure used to detect possible psychological disorder. The GHQ-28 identifies two main concerns: (1) the inability to carry out normal functions; and (2) the appearance of new and distressing phenomena (Goldberg & Hillier, 1979). In this study, it was used as screening tool. Score on GHQ greater than 4 was excluded from the study.

3.3.2 Smartphone Addiction Scale (SAS)

The scale was developed and validated by Kwon et al (2013). Smartphone addiction scale (SAS) is a scale for smartphone addiction that consists of 33 items with a six-point Likert scale (1: “strongly disagree” and 6: “strongly agree”) based on self-reporting. In this study, the internal-consistency test result (Cronbach's alpha) of SAS was 0.966.

3.3.3 Mental Health Inventory (MHI)

The MHI was developed by Veit and Ware, which helps assess general psychological distress and well-being. The MHI can be scored as a Global mental health index with higher scores indicating less psychological distress and greater psychological well-being.

Two global scales indicating either the level of psychological well-being (higher scores indicating greater well-being) or psychological distress (higher scores indicating greater distress)

All the MHI items are scored on six-point scale (1-6) except for items 9 and 28, which are scored on a five-point scale (1-5). The raw score range is 38-226, with higher scores on the Mental Health Index indicating less psychological distress and greater psychological well- being. The items that make up the many subscales and global scales may be reverse-scored depending on the measured underlying construct (Veit, & Ware,1983). The reliability of the MHI has Cronbach Alpha of .94(Pandya,2018).

3.3.4 Big Five Inventory (BFI)

44-item inventory that measures an individual on the Big Five Factors (dimensions) of personality (Goldberg, 1993). Each of the factors is then divided into personality facets. Big Five Dimensions are Extraversion vs. introversion, agreeableness vs. antagonism, conscientiousness vs. lack of direction, neuroticism vs. emotional stability, openness vs. closedness to experience. All of the items are scored on five-point scale (1-5) (among them, some of the items are reversed scored item).

3.3.5 Emotional Regulation Questionnaire for Children and Adolescents (ERQ-CA)

The Emotion Regulation Questionnaire is designed to assess individual differences in the habitual use of two emotion regulation strategies: cognitive reappraisal and expressive suppression. It is 10 item questionnaires developed by James J. Gross and Oliver P (2003).

*3.4 Data Analysis*

Table 1. Showing % of individual score low, average and high levels in Smart Phone Addiction Test among male and female sample

| SCALE | Gender | TOTAL (N) | LOW | LOW% | AVERAGE | AVERAGE% | HIGH | HIGH% |
|---|---|---|---|---|---|---|---|---|
| Smartphone Addiction | Male | 50 | 0 | 0.00% | 50 | 100.00% | 0 | 0.00% |
| Smartphone Addiction | Female | 50 | 0 | 0.00% | 41 | 82.00% | 9 | 18.00% |

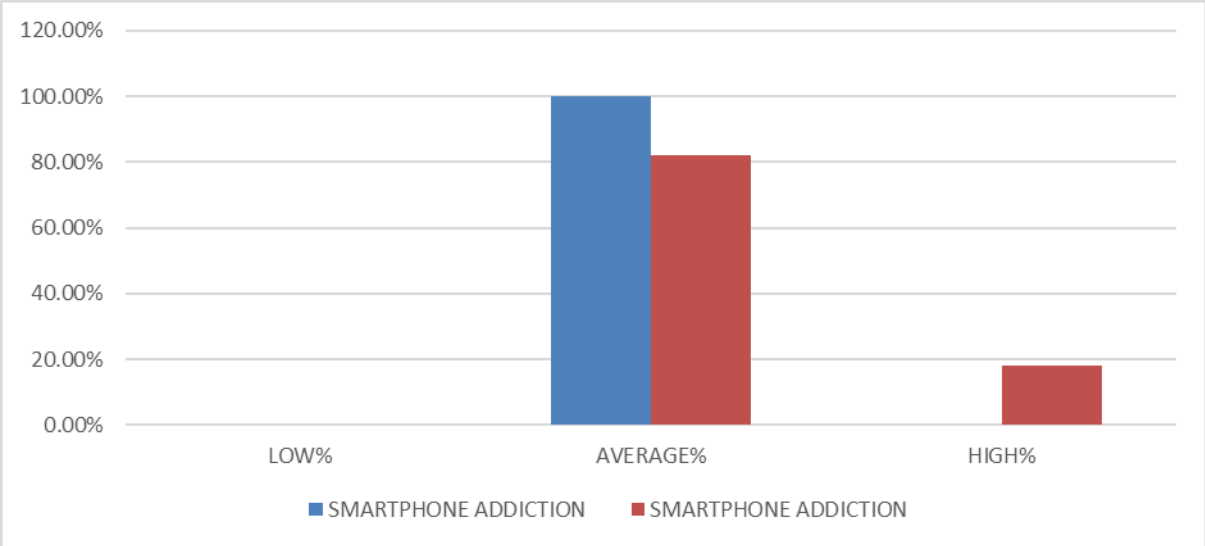


Figure 1. Showing % of male and female score low, average and high levels in Smart Phone Addiction Test

In case of average level of smart phone addiction, 100% of male sample had average level of smart phone addiction, whereas 82% female sample had average level of smart phone addiction.

In case of high level of smart phone addiction, no male sample had high level of smart phone addiction, whereas 18% of female sample had high level of smart phone addiction.

Table 2. Showing % of individual score low, average and high levels in Personality test (Agreeableness, Extra-version, Conscientiousness, Neuroticism and Openness) among male and female sample

| SCALE | TYPE | GENDER | TOTAL(N) | LOW | LOW% | AVERAGE | AVERAGE% | HIGH | HIGH% |
|---|---|---|---|---|---|---|---|---|---|
| Personality | Agreeableness | Male | 50 | 0 | 0.00% | 0 | 0.00% | 50 | 100.00% |
| Personality | Agreeableness | Female | 50 | 0 | 0.00% | 9 | 18.00% | 41 | 82.00% |
| Personality | Conscientiousness | Male | 50 | 0 | 0.00% | 17 | 34.00% | 33 | 66.00% |
| Personality | Conscientiousness | Female | 50 | 0 | 0.00% | 33 | 66.00% | 17 | 34.00% |
| Personality | Extra-version | Male | 50 | 0 | 0.00% | 17 | 34.00% | 33 | 66.00% |
| Personality | Extra-version | Female | 50 | 9 | 18.00% | 8 | 16.00% | 33 | 66.00% |
| Personality | Neuroticism | Male | 50 | 33 | 66.00% | 17 | 34.00% | 0 | 0.00% |
| Personality | Neuroticism | Female | 50 | 8 | 16.00% | 24 | 48.00% | 18 | 36.00% |
| Personality | Openness | Male | 50 | 0 | 0.00% | 0 | 0.00% | 50 | 100.00% |
| Personality | Openness | Female | 50 | 0 | 0.00% | 8 | 16.00% | 42 | 84.00% |

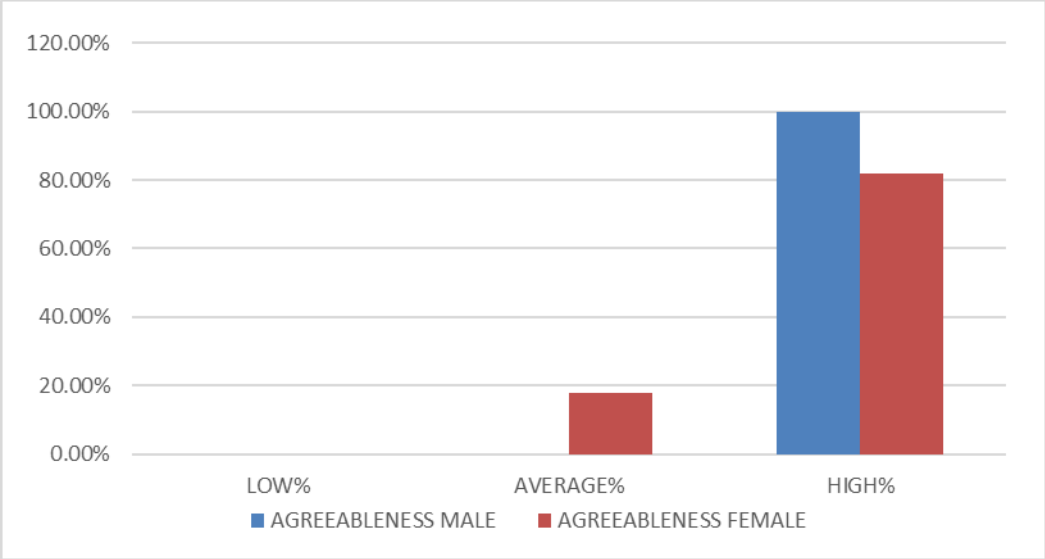


Figure 2a. Showing % of male and female score low, average and high levels in Personality Test (Agreeableness)

In case of average level of agreeableness (in personality test), no male sample had average level of agreeableness (in personality test), whereas 18% of female sample had average level of agreeableness (personality test).

In case of high level of agreeableness (in personality test), 100% male sample had high level of agreeableness (in personality test), whereas 82% of female sample had high level of agreeableness (in personality test).

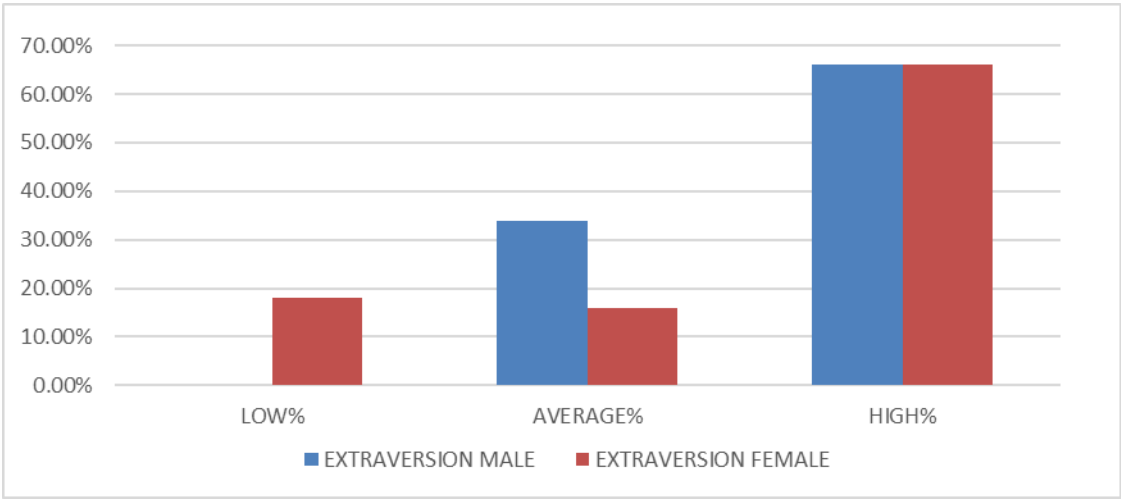


Figure 2b. Showing % of male and female score low, average and high levels in Personality Test (Extra-version)

In case of low level of extra-version (in personality test), no male sample had low level of extra-version, whereas 18% of female sample had low level of extra-version (in personality test).

In case of average level of extra-version (in personality test), 34% male sample had average level of extra-version (in personality test), whereas 16% of female sample had average level of extra-version (personality test).

In case of high level of extra-version (in personality test), both 66% of male and female sample had high level of extra-version (in personality).

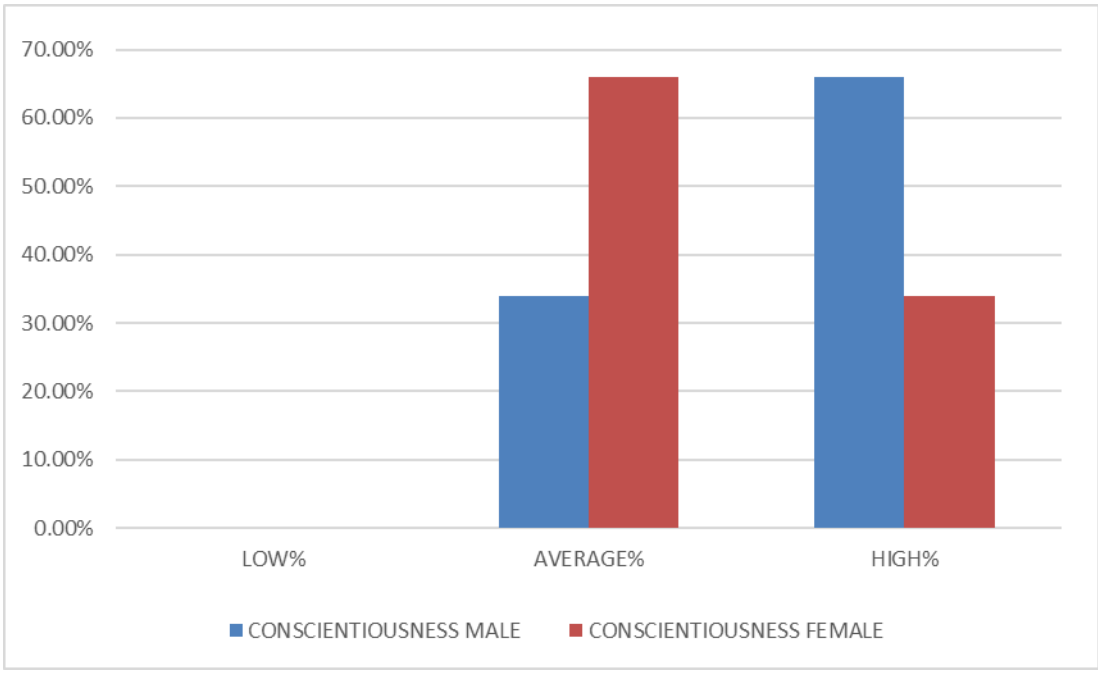


Figure 2c. Showing % of male and female score low, average and high levels in Personality Test (Conscientiousness)

In case of average level of conscientiousness (in personality test), 34% male sample had average level of conscientiousness (in personality test), whereas 66% of female sample had average level of conscientiousness (personality test).

In case of high level of conscientiousness (in personality test), 66% male sample had high level of conscientiousness (in personality test), whereas 34% of female sample had high level of conscientiousness (in personality test).

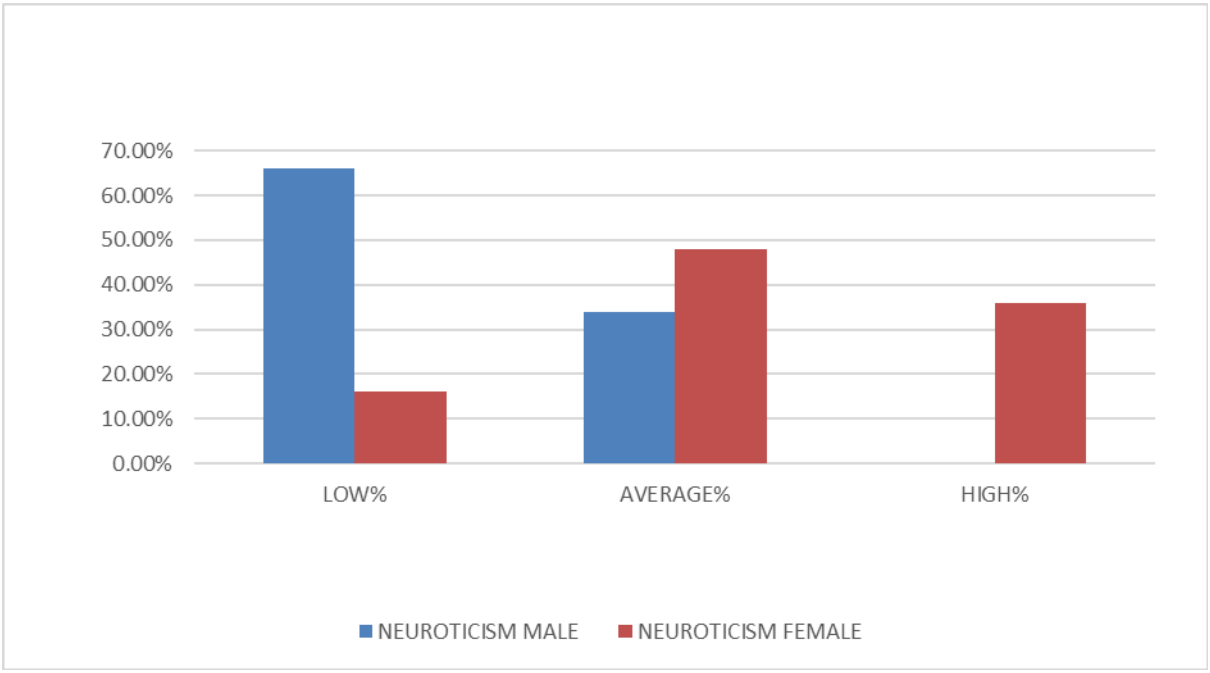


Figure 2d. Showing % of male and female score low, average and high levels in Personality Test (Neuroticism)

In case of low level of neuroticism (in personality test), 66% male sample had low level of neuroticism, whereas 16% of female sample had low level of neuroticism (in personality test).

In case of average level of neuroticism (in personality test), 34% of male sample had average level of neuroticism (in personality test), whereas 48% of female sample had average level of neuroticism (personality test).

In case of high level of neuroticism (in personality test), no male had high level of neuroticism and 36% of female sample had high level of neuroticism (in personality).

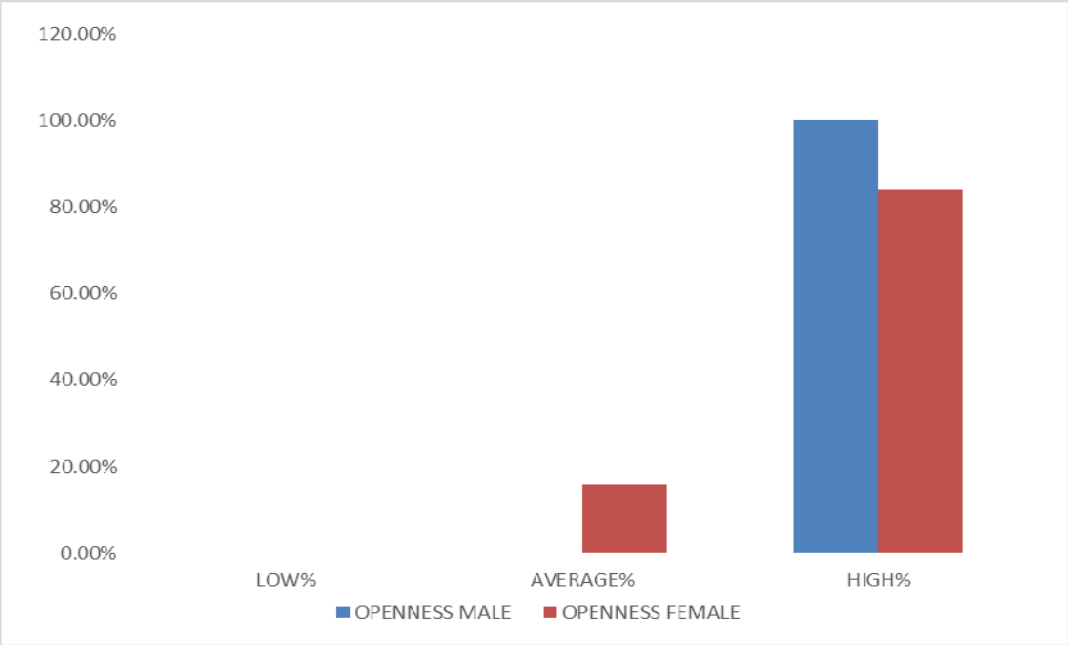


Figure 2e. Showing % of male and female score low, average and high levels in Personality Test (Openness)

In case of average level of openness (in personality test), no male sample had average level of openness (in personality test), whereas 16% of female sample had average level of openness (personality test).

In case of high level of openness (in personality test), 100% of male had high level of openness and 84% of female sample had high level of openness (in personality).

Table 3. Showing % of individual score low, average and high levels in Emotional Regulation Questioner among male and female sample

| SCALE | TYPE | GENDER | TOTAL(N) | LOW | LOW% | AVERAGE | AVERAGE% | HIGH | HIGH% |
|---|---|---|---|---|---|---|---|---|---|
| Emotional Regulation | Reappraisal | Male | 50 | 34 | 68.00% | 16 | 32.00% | 0 | 0.00% |
| Emotional Regulation | Reappraisal | Female | 50 | 33 | 66.00% | 17 | 34.00% | 0 | 0.00% |
| Emotional Regulation | Suppression | Male | 50 | 0 | 0.00% | 50 | 100.00% | 0 | 0.00% |
| Emotional Regulation | Suppression | Female | 50 | 24 | 48.00% | 18 | 36.00% | 8 | 16.00% |

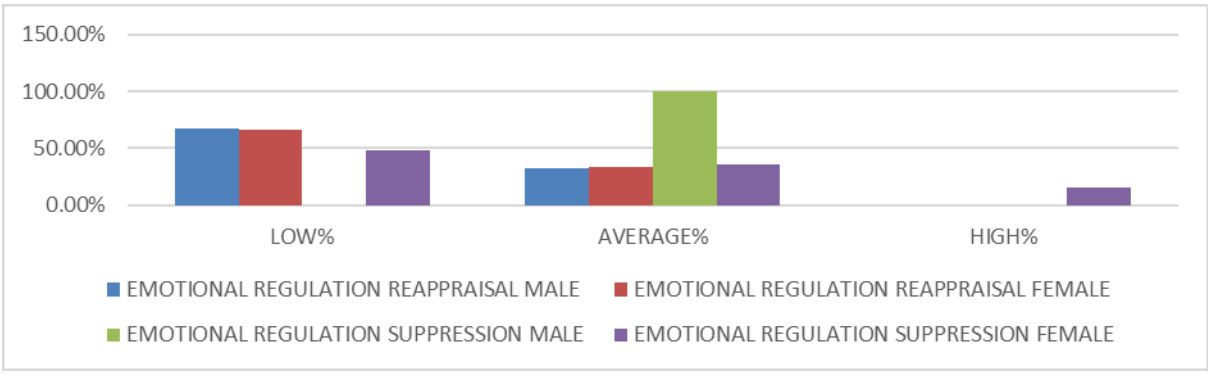


Figure 3. Showing % of male and female score low, average and high levels in Emotional Regulation Questioner

From the Table 3 and Figure 3, it has been seen that 68% of male sample had low level of reappraisal (Emotional regulation) whereas 66% of female sample had low level of reappraisal (Emotional regulation).

In case of average level of reappraisal (Emotional regulation), 32% of % of male sample had average level of reappraisal (Emotional regulation) whereas 34% of female sample had average level of reappraisal (Emotional regulation).

It has been seen that no male sample had low level of suppression (Emotional regulation) whereas 48% of female sample had low level of suppression (Emotional regulation)

In case of average level of suppression (Emotional regulation), 100% of male sample had average level of suppression (Emotional regulation), whereas 36% of female sample had average level of reappraisal (Emotional regulation).

In case of high level of suppression (Emotional regulation), no male sample had high level of suppression (Emotional regulation), whereas 16% of female sample had high level of suppression (Emotional regulation).

Table 4. Showing % of individual score low, average and high levels in Mental Health Inventory among male and female sample

| SCALE | TYPE | GENDER | TOTAL(N) | LOW | LOW% | AVERAGE | AVERAGE% | HIGH | HIGH% |
|---|---|---|---|---|---|---|---|---|---|
| Mental Health | Distress | Male | 50 | 17 | 34.00% | 33 | 66.00% | 0 | 0.00% |
| Mental Health | Distress | Female | 50 | 0 | 0.00% | 50 | 100.00% | 0 | 0.00% |
| Mental Health | Well-Being | Male | 50 | 33 | 66.00% | 17 | 34.00% | 0 | 0.00% |
| Mental Health | Well-Being | Female | 50 | 32 | 64.00% | 18 | 36.00% | 0 | 0.00% |

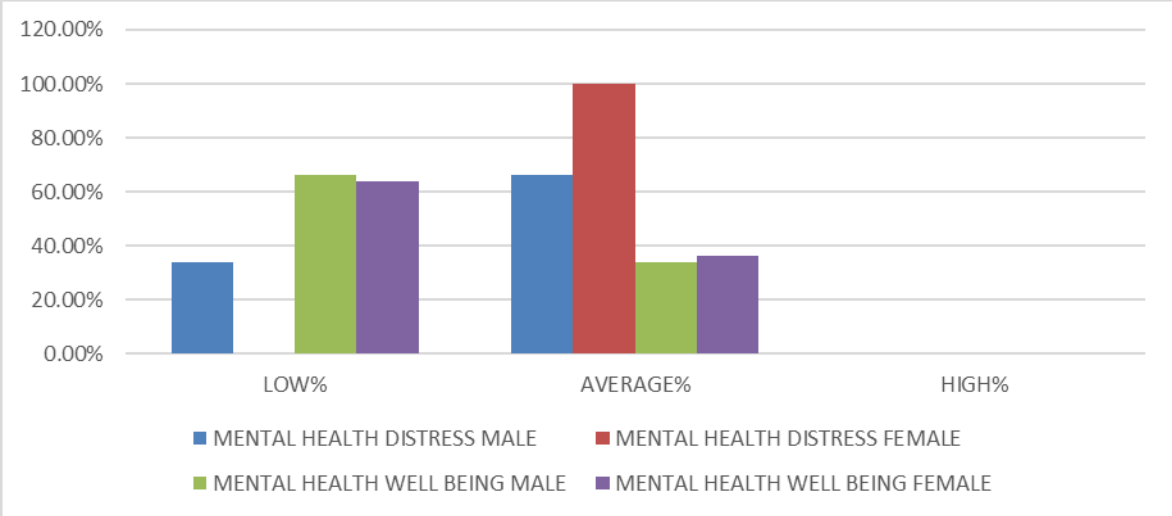


Figure 4. Showing % of male and female score low, average and high levels in Mental Health Inventory

From the above Table 4 and Figure 4, it has been seen that 34% of male sample had low level of mental distress whereas no female sample had low level of mental distress.

In case of average level of mental distress, 66% of male sample had average level of mental distress whereas 100% of female sample had average level of mental distress.

It has been seen that 66% male sample had low level of mental well-being, whereas 64% of female sample had low level of mental well-being.

In case of average level of mental well-being, 34% of male sample had average level of mental well-being, whereas 36% of female sample had average level of mental well-being.

## 4. Conclusion

Data analysis shows gender differences in smartphone addiction, with females being more prone. Gender affects personality factors, with males being more conscientious, agreeable, and open, while females are more prone to neuroticism. No significant gender difference exists in extraversion. Females suppress emotional regulation, while

males focus on reappraisal, indicating a gender imbalance in emotional regulation. Females have higher psychological well-being and less distress than males.

**5. Author's Contributions**

The Authors had full access to all of the information in this research study, which has been studied and approved the final manuscript. The author is sole responsible for the conceptualization, design of the study, review of related literature and discussion.

**6. Funding**

No external funding is received for this study.

**7. Declaration of Interest**

The authors declared that they have no competing interests.

**8. Ethics Approval**

Not Applicable.

**9. Consent to Participants**

Not applicable.

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