INSTAGRAM ADDICTION AND MENTAL HEALTH AMONG UNDERGRADUATE STUDENTS: A GENDER-BASED STUDY IN MANDYA, KARNATAKA

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ABSTRACT

Social media use among college students has surged globally, raising concerns about its impact on mental health. Instagram, one of the most popular platforms, can become "addictive" for some users – characterized by excessive use and difficulty in disengaging. This study examines Instagram addiction and its relationship with mental health (anxiety, depression, self-esteem) among undergraduate students in Mandya district, Karnataka. We pay special attention to gender differences, analyzing data from 400 students (200 females, 200 males). A cross-sectional survey design was employed. Participants completed the Test for Instagram Addiction (TIA), Mental health was assessed using standard scales: the Beck Anxiety Inventory (BAI) for anxiety, Beck Depression Inventory-II (BDI-II) for depression, and Rosenberg Self-Esteem Scale (RSES) for self-esteem. SPSS 28 was used for analysis. Group comparisons (independent t-tests) were conducted to assess gender differences, and Pearson's correlations examined associations between Instagram addiction scores and mental health indicators. Results: On average, female students had higher Instagram addiction scores than male students. Females also reported greater anxiety and lower self-esteem on average, while depression scores were moderately elevated in both groups with a non-significant gender difference. Instagram addiction was significantly correlated with worse mental health: higher addiction scores correlated with higher anxiety and depression and lower self-esteem. These correlations held for both genders; notably, the negative link between Instagram use and self-esteem was slightly stronger in female students. Conclusion: Excessive Instagram use is associated with poorer mental health among undergraduates, with some gender-specific nuances. Female students showed higher proneness to Instagram addiction and may experience more anxiety and self-esteem issues linked to usage, although both genders are vulnerable to negative effects.

Key words: Instagram addiction, Anxiety, Depression and Self-Esteem

INTRODUCTION

Instagram has become ingrained in the daily lives of college students, sparking concern about its impact on mental health. In India, Instagram's popularity is staggering – as of 2022, the country had the largest Instagram user base, with over 230 million users, and roughly 30% of these users are 18–24-year-olds, the typical age of undergraduates. Mandya district in Karnataka, like many others, has witnessed a boom in smartphone and social media use on campuses. Students use Instagram not only to socialize and share experiences but also as a platform for self-expression and entertainment. However, excessive use of Instagram can lead to "Instagram addiction," a form of behavioral addiction marked by compulsive checking, scrolling, and preoccupation with the app. While not a formal clinical diagnosis, Instagram addiction is characterized by symptoms such as loss of control over usage, neglect of real-life obligations, mood changes, and interpersonal issues due to Instagram. With numerous

students reporting hours of screen time on Instagram each day, it is crucial to examine how this might be affecting their mental well-being.

Mental health issues like anxiety and depression are already prevalent in college populations, and social media overuse may be aggravating these problems. Psychological well-being can be influenced by online interactions: constant exposure to curated images and social feedback on Instagram might impact how students feel about themselves. Prior research internationally has flagged Instagram as a platform with potentially detrimental effects on users' mental health and self-image.

Crucially, young adults in college may be just as susceptible as teenagers to these negative effects. Emerging evidence links excessive Instagram use with mental health problems in university students: for example, studies have found that higher "Instagram addiction" scores correlate with increased depressive symptoms and social anxiety, and with lower life satisfaction. In India, research by D'Souza and colleagues has shown that Instagram overuse was significantly correlated with depression and anxiety among college students. At the same time, some of these studies hint at possible gender differences. Women, on average, tend to engage more in appearance-focused social media activity and may internalize online feedback differently than men. This raises the question: Do female students experience Instagram's mental health impact more strongly or differently than male students? Some findings suggest yes – for instance, a 2022 study found female young adults had higher Instagram addiction scores than males and confirmed a negative correlation between Instagram addiction and self-esteem (more use linked to lower self-esteem). On the other hand, a 2019 study in Karnataka reported no significant gender difference in overall Instagram addiction levels among medical and dental students[1]. Given these mixed results, a closer examination of gender dynamics in the Instagram–mental health relationship is warranted.

In sum, our study investigates: How is Instagram addiction related to mental health among college students, and do female and male students differ in this regard?

LITERATURE REVIEW

Researchers have developed psychometric scales to quantify this behavior. One such instrument, the Test for Instagram Addiction (TIA) developed by Lancy D'Souza et al. (2018), measures six dimensions: lack of control, disengagement, escapism, health/interpersonal troubles, excessive use, and obsession. High scores indicate problematic use, analogous to addiction. In a recent survey of 200 college students (aged 18–25) by D'Souza (2024), 15.5% of respondents were identified as prone to Instagram addiction (above threshold), while another ~44% were "average users" and the remainder low users. Similarly, a study of pre-university teens in India found 36.9% had signs of social media addiction. These numbers suggest that a substantial minority of students engage with Instagram at intensity levels high enough to cause concern. Most users are not fully "addicted" by clinical definition, but a large portion spend multiple hours per day on Instagram and other social platforms – for example, one survey in Karnataka reported nearly three-quarters of students used social media 2–6 hours daily. This heavy usage often spills into nighttime and study time, hinting at potential consequences for wellness and academics.

Importantly, several factors drive Instagram's addictive potential. Psychological needs such as social connection, entertainment, or even status seeking can motivate repetitive checking behavior. For some students, Instagram becomes a coping mechanism – a way to escape boredom or stress – which can lead to a dependency cycle. Personal traits also play a role. In

summary, the allure of Instagram lies in its social rewards and immersive content, but those same features can foster compulsivity in vulnerable users.

Impact on Mental Health: In particular, excessive Instagram use correlates with a range of psychological problems, including anxiety, depression, loneliness, and low self-esteem. The Royal Society for Public Health's report (UK, 2017) was among the first high-profile warnings, noting that Instagram use was associated with increased rates of anxiety and depression in surveyed 14–24 year-olds, more so than other platforms. Since then, academic studies have provided empirical support.

For instance, Sherlock and Wagstaff (2019) found that time spent on Instagram was associated with greater depressive symptoms and higher social anxiety, largely mediated by upward social comparison — i.e., users feeling inferior to the idealized images they see. In their study, Instagram users who frequently compared themselves to others (in terms of appearance, achievements, etc.) experienced lower self-esteem and heightened anxiety. Another study by Lup et al. (2015) observed that frequent Instagram usage correlated with depressive symptoms, especially among users who followed many strangers/celebrities (leading to more negative social comparisons). These findings underscore a key mechanism: social comparison and perceived social pressure on Instagram can detract from mental well-being. Users often showcase curated, polished versions of life on Instagram; viewing this can foster feelings of inadequacy, envy, and the sense that one's own life doesn't measure up, thereby fueling anxiety or sadness.

On the other hand, several studies have found no major gender gap in overall social media addiction. The comparative study by D'Souza et al. (2019) on medical vs. dental students in Karnataka reported no significant difference between males and females in Instagram addiction scores. Both genders, when matched in education context, showed similar rates of heavy Instagram use. This aligns with some international literature on internet addiction, where gender differences have narrowed as social networking has become ubiquitous for both men and women.

In summary, the literature indicates that Instagram addiction is associated with elevated anxiety and depression and reduced self-esteem in college-age users, confirming trends seen in adolescents.

METHODOLOGY

To study the relationship between Instagram Addiction and Mental Health among Undergraduate Students: A Gender-Based Study in Mandya, Karnataka

Objectives

1. To examine the prevalence of Instagram addiction among undergraduate students in Mandya District.

2. To compare male and female students in terms of Instagram addiction, anxiety, depression, and self-esteem.

3. To analyze the relationship between Instagram addiction and mental health indicators (anxiety, depression, self-esteem).

4. To explore whether gender moderates these relationships.

Hypotheses

1. There is a significant difference between male and female students in Instagram addiction, anxiety, depression, and self-esteem.

2. Instagram addiction is positively correlated with anxiety, depression and self-esteem.

3. The strength of these relationships may vary between males and females.

Variables

Independent Variable: Instagram addiction (measured by TIA).

Dependent Variables: Anxiety, Depression, Self-Esteem

Measures:

- Instagram Addiction: We administered the Test for Instagram Addiction (TIA) by D'Souza, Samyukta & Bivera (2018)[1]. TIA consists of 26 Likert-scale items (rated 1 = "Rarely/Never" to 5 = "All the time") Higher scores indicate greater addiction.

- Anxiety: Beck Anxiety Inventory (BAI) was used to measure anxiety symptoms.

- Depression: Beck Depression Inventory-II (BDI-II)

- Self-Esteem: Rosenberg Self-Esteem Scale (RSES) measured global self-esteem.

A demographic section collected information on age, gender, field of study, and average daily time spent on Instagram (for descriptive purposes).

Procedure: An online questionnaire (via Google Forms) to students. Upon consent, participants completed the TIA first, followed by BAI, BDI-II, and RSES in random order. On average, it took about 15–20 minutes to finish all questions. The target population was undergraduate college students in Mandya District, Karnataka, a total of N = 400 students, comprising 200 female and 200 male students. Participants ranged in age from 18 to 22 years and represented various degree programs (arts, science, commerce, engineering, etc.). Participants gave informed consent and were assured of anonymity. To be eligible, students had to be active Instagram users (at least one login in the past month) since the study's focus was on Instagram usage patterns.

Study Design:

The research followed a cross-sectional survey design using standardized self-report questionnaires.

Data Analysis:

Data were analyzed using SPSS version 28.0.

- Gender Differences: We performed independent-samples t-tests comparing males and females on mean Instagram Addiction score, anxiety score, depression score, and self-esteem score.

- Correlations: Pearson's correlation coefficients were computed to examine the relationships between Instagram addiction and mental health measures.

- A Fisher's z-test was considered to formally test differences between male and female correlation coefficients.

Table 1. Instagram Addiction and Mental Health Scores by Gender (N = 400). Means, standard deviations, and group comparisons between female and male students are shown. Pearson correlation coefficients (r) with Instagram Addiction Score are provided for the total sample, as well as separately by gender in italics.

Variable	Female Students (n=200)	Male Students (n=200)	t-test (df)	p-value	Correlation with Instagram Addiction
Instagram Addiction Score *(TIA total, range 26-130)*	62.3 ± 20.5	56.4 ± 19.8	t(398) = 2.87	0.004**	-
Anxiety Score *(BAI, 0-63)*	21.7 ± 12.4	18.3 ± 11.5	t(398) = 2.58	0.010*	+0.36 *Females:+0.33 Males: +0.38**
Depression Score *(BDI-II, 0-63)*	19.5 ± 11.8	18.0 ± 12.6	t(398) = 1.17	1.243 (ns)	+0.42 *Females:+0.45 Males: +0.39**
Self-Esteem Score *(RSES, 10-40)*	25.1 ± 4.8	26.7 ± 5.2	t(398) = -3.26	0.001**	+0.29 *Females:-0.34 Males: +0.25**

Higher scores indicate greater severity for all measures (higher addiction, higher anxiety/depression, and higher self-esteem).

Analysis

From the above results, we observe several important findings regarding Instagram addiction and mental health among the students, as well as differences between female and male participants:

1. Prevalence of Instagram Addiction: The mean Instagram Addiction Score for the entire sample was about 59.3 (SD ≈ 20.3; not in table, but a pooled calculation), on a scale of 26–130. This average suggests a moderate level of Instagram use on the whole. Notably, a non-trivial subset of students scored quite high. Using a provisional cut-off (e.g., ≥84, which is one standard deviation above the mean, roughly indicating "high addiction risk"), found about 17% of students fell into a high Instagram addiction category. This aligns with prior estimates that around 10–20% exhibit problematic social media use. Females had a significantly higher mean addiction score (M = 62.3) compared to males (M = 56.4), with the difference being statistically significant (p = .004). The effect size (Cohen's d ≈ 0.29) indicates a small-to-moderate difference. In practical terms, female students in our sample reported engaging with Instagram slightly more compulsively. However, it is worth noting that males in our study also had substantial usage (their mean score still indicates frequent Instagram activity).

2. Gender Differences in Mental Health Measures: The comparison of anxiety, depression, and self-esteem scores between female and male students revealed a mixed pattern:

- Anxiety: Female students reported significantly higher anxiety levels than males. The mean BAI score for females was 21.7 (SD 12.4) vs. 18.3 (SD 11.5) for males, t(398) = 2.58, p = .010. This indicates that, on average, women in our sample had more frequent or intense anxiety symptoms

- Depression: The mean depression scores (BDI-II) were 19.5 for females vs. 18.0 for males. This difference was not statistically significant (p = .243), suggesting no clear gender difference in depressive symptoms in our sample. Both means fall in the mild-

to-moderate range for depression. It appears that both female and male undergrads are experiencing comparable levels of mood symptoms

- Self-Esteem: Scores on the Rosenberg Self-Esteem Scale showed a significant difference in the opposite direction – males averaged 26.7, whereas females averaged 25.1, $t(398) = –3.26$, $p = .001$. Male students reported slightly higher self-esteem than female students.

Summarizing gender differences: female students in this sample tend to use Instagram more addictively and have higher anxiety and lower self-esteem compared to male students, who have slightly lower anxiety, higher self-esteem, and similar levels of depressive symptoms.

3. Correlation between Instagram Addiction and Mental Health: Across the entire sample (combining genders), Instagram addiction scores showed strong and significant correlations with all three mental health indicators.

- There was a positive correlation with anxiety ($r = +0.36$, $p < .01$), meaning students who scored higher on Instagram addiction tended to also report more anxiety symptoms.

- Similarly, depression scores were positively correlated with Instagram addiction ($r = +0.42$, $p < .01$). This indicates a moderate-to-strong association: heavier Instagram use was associated with more depressive symptoms

- Self-esteem was negatively correlated with Instagram addiction ($r = –0.29$, $p < .01$). So, higher addiction scores were associated with lower self-esteem. Although this correlation is a bit weaker in magnitude than those with anxiety/depression, it is still statistically significant and meaningful. It suggests that students who are very wrapped up in Instagram tend to have a poorer self-image and less confidence.

These coefficients suggest that the relationship between Instagram addiction and mental health holds true in both groups, though there is a hint that the link between Instagram use and low self-esteem might be stronger for females ($r = –0.34$) than for males ($r = –0.25$). A Fisher's z-test did indicate a marginal difference on the self-esteem correlation ($z \approx 1.20$, $p \sim .11$, not quite significant). For anxiety and depression, the strength of association was very comparable between genders. In plain terms, regardless of gender, those who overuse Instagram tend to feel more anxious and depressed and less confident

In summary, our analyses confirm that Instagram addiction is associated with detrimental mental health outcomes among Mandya undergraduates. Students (both female and male) who scored high on addictive usage tend to struggle more with anxiety and depression and have lower self-esteem. We also found that female students as a group had higher Instagram addiction and anxiety, and lower self-esteem, compared to males, suggesting some gender-specific patterns.

DISCUSSION

Our results clearly indicate that excessive Instagram use is linked with poorer mental health among college students. Those with more severe Instagram addictive behaviors reported significantly higher levels of both anxiety and depression, and lower self-esteem. This aligns strongly with prior studies from different contexts. For example, Foroughi et al. (2021) similarly found that Instagram addiction had a positive effect on students' depression and social anxiety – essentially, more addiction correlated with higher depression/anxiety.

The negative association between Instagram addiction and self-esteem is also noteworthy. It suggests that students who are heavily invested in Instagram tend to have a shakier sense of self-worth.

Implications:

- For students, the results are a reminder that while Instagram is fun and engaging, overuse can be detrimental. Students should be encouraged to reflect on their Instagram habits and perhaps self-monitor for signs of

- For colleges and counselors, there is a case to incorporate discussions of social media hygiene into student wellness programs. Workshops on managing social media use and its effects could be beneficial.

Limitations:

- We cannot be sure if Instagram addiction led to higher anxiety/depression, or if already anxious/depressed individuals resorted to Instagram as an outlet (or a bit of both).

- Secondly, the measures are self-reported, which means responses could be subject to biases (like social desirability or differential interpretation of questions).

- Third, our sample, although balanced for gender, was a convenience sample from a particular district; it may not be fully representative of all Indian undergraduates.

CONCLUSION:

In conclusion, our research highlights that Instagram addiction is a real phenomenon among undergraduate students in Mandya, and it bears a significant relationship with mental health challenges. Students deeply engrossed in Instagram are more likely to experience anxiety and depression and harbor lower self-esteem. There are also important gender shades: female students showed a tendency towards higher addictive use and face slightly elevated anxiety and reduced self-esteem, suggesting they might be disproportionately affected by the pressures of social media. Male students, while using Instagram a bit less obsessively, are still susceptible to its negative mental health correlates when they do overuse it. These findings echo the global understanding that social media's impact on youth is double-edged – it can connect and entertain, but also isolate and distress.

(1) A considerable fraction of students exhibit signs of Instagram addiction, and higher addiction scores are significantly linked to elevated anxiety and depression levels and diminished self-esteem.

(2) Female students, on average, are engaging more problematically with Instagram than males and also report higher anxiety and lower self-esteem

(3) Male students are also affected by excessive Instagram use – correlations indicate they too experience more anxiety/depressive symptoms when hooked to the app – underscoring that this is an issue impacting all genders.

This study reinforces that Instagram – a keystone of young adults' social life – has a shadow side: when used excessively, it correlates with psychological distress. By shedding light on the extent of Instagram addiction in a local student community and its mental health links, we hope to spur conversations and actions that support students in leading healthier digital lives.

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