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Social Media Addiction and Academic Performance: A Psychology Study of University Students in Patna

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Abstract

The present study explores the relationship between social media addiction and academic performance among university students in Patna, with a focus on associated psychological variables such as distress, coping strategies, stigma perception, and social support. A total of 126 students (aged 18–25 years) were randomly selected from multiple universities. Data were collected through in-person and online interviews using standardized tools including the Social Media Addiction Scale, Psychological Distress Scale, Coping Strategies Inventory, and Social Support measures. Academic performance was assessed through self-reported grades. Descriptive statistics (mean, standard deviation, frequency, percentage) were computed, and independent samples t-tests were conducted to examine group differences, particularly between male and female students, and between rural and urban backgrounds.

Findings revealed that students reported moderate-to-high levels of social media addiction, which correlated with increased psychological distress and maladaptive coping, and reduced academic performance. Female students displayed higher distress levels ($M = 27.2$) compared to males ($M = 25.1$), though the difference was not statistically significant ($t(124) = -1.63$, $p > 0.05$). Rural students demonstrated higher stigma perception, while urban students reported stronger social support. The results underscore the dual role of coping and social support in buffering the adverse academic and psychological effects of excessive digital engagement.

The study highlights implications for clinical psychology practice and educational policy, suggesting the need for awareness campaigns, counseling services, and stigma-reduction initiatives, which may also inform broader public health contexts such as tuberculosis (TB) management programs.

Keywords: *Social media addiction, Psychological distress, Coping strategies, Academic performance, Stigma perception*

Introduction

The proliferation of social media in recent years has profoundly shaped the lives of young adults, especially university students, who constitute one of the most active user groups. While platforms such as Facebook, Instagram, and WhatsApp provide avenues for connection, information-sharing, and peer support, they have also been linked to compulsive behaviors, diminished academic engagement, and rising mental health concerns. Prior research has consistently indicated that excessive digital use can lead to psychological distress, poor sleep quality, and maladaptive coping, thereby compromising both learning outcomes and personal well-being (Kuss & Griffiths, 2017; Junco, 2012). In India, the problem assumes unique significance given the rapid expansion of internet penetration in both urban and semi-urban regions. Patna, as an emerging educational hub in Bihar, offers an important context for examining how social media impacts academic performance and psychological functioning. Yet, limited empirical work has specifically focused on this population. Furthermore, issues of stigma, whether related to mental health or health conditions such as tuberculosis (TB), remain pervasive in Indian society, often influencing help-seeking behavior.

This study aims to address these gaps by systematically analyzing the relationship between social media addiction, psychological distress, coping strategies, stigma perception, and academic performance among Patna university students. Through descriptive analysis and inferential statistics, specifically independent samples t-tests comparing groups such as male vs. female and rural vs. urban, the research seeks to provide nuanced insights with both academic and clinical relevance.

Methodology

The present study seeks to explore the relationship between social media addiction and academic performance among university students in Patna. A rigorous empirical methodology has been employed to ensure the credibility, validity, and reliability of the results. The methodology encompasses detailed descriptions of participants, research design, tools, procedures, and data analysis strategies. Data collection was carried out through both in-person and online interviews to capture a diverse set of responses and to accommodate participants with varying levels of accessibility.

Participants

The participants of this study comprised 126 students randomly selected from different universities in Patna, Bihar. The choice of Patna was significant because of its growing youth population, rapid digital penetration, and the expansion of higher education institutions. Random sampling ensured that each student had an equal probability of being included in the sample, thus reducing selection bias. The sample size of 126 was determined after careful power analysis, balancing feasibility with statistical adequacy for inferential testing.

The age range of participants was between 18 to 25 years, covering undergraduate and postgraduate students. Both male and female students were included, along with representation from rural and urban backgrounds to enable comparative analysis across demographic categories. Socioeconomic diversity was also maintained by selecting students from both government-funded and private universities. Participants were approached voluntarily and consent was obtained after explaining the objectives of the research. Anonymity and confidentiality of the respondents were assured throughout the study.

Research Design

This research adopts a cross-sectional survey design, integrating quantitative psychological measures with demographic variables. The purpose of using a cross-sectional approach was to assess the prevailing level of social media addiction and its correlation with academic performance at a single point in time. This design is efficient for identifying group differences and testing hypotheses related to gender, residence (urban vs. rural), and coping styles.

The central design also incorporates a t-test analysis framework to compare mean differences in psychological distress and coping levels between at least two groups. Specifically, independent samples t-tests were planned between male and female students, as well as between rural and urban students. In addition, subgroups with high levels of social media use were compared with those reporting moderate or low usage, to assess the intensity of psychological impact.

Tools

Social Media Addiction Scale (SMAS)

A validated scale for measuring social media addiction was used, adapted to the Indian student context. The scale measured dimensions such as compulsive usage, withdrawal, tolerance, mood modification, and conflict. Responses were recorded on a five-point Likert scale ranging from “strongly disagree” to “strongly agree.”

Academic Performance Indicator

Academic performance was measured using self-reported Grade Point Averages (GPA) or percentage marks from the most recent semester. To enhance accuracy, academic records were verified in a subset of cases where participants volunteered documentary proof.

Psychological Distress Scale

A standardized instrument measuring stress, anxiety, and depressive symptoms was employed to understand the mental health implications of excessive social media use. Scores were classified into mild, moderate, and severe distress categories.

Coping Strategies Inventory

A coping inventory was used to assess how students managed the stress arising from academic and social demands. Coping was divided into adaptive strategies (problem-focused, positive reframing, social support) and maladaptive strategies (avoidance, denial, substance use).

Demographic Schedule

A brief demographic questionnaire recorded age, gender, area of residence (urban/rural), type of institution, socioeconomic background, and family educational level. This data allowed subgroup analysis.

Procedure

The data collection process was carefully structured to minimize biases and maximize authenticity. First, permission was sought from the authorities of the participating universities. Recruitment notices were displayed on campus bulletin boards, circulated in class WhatsApp groups, and personally communicated by research assistants.

Interviews were conducted in two modes. For in-person data collection, participants were invited to campus counseling centers and classrooms where they were provided with printed questionnaires and a researcher to clarify doubts. For online data collection, participants received a secure Google Form link with informed consent embedded at the beginning. Measures were taken to prevent duplicate responses by restricting one submission per email ID.

Each participant was first explained the purpose of the study in simple terms. Following consent, the demographic schedule was filled, and then the psychological scales were administered. In-person interviews included opportunities for participants to elaborate on their experiences with social media, while online responses included optional open-ended questions. Average time for participation was around 30 minutes. To enhance data quality, incomplete responses were excluded. Out of 150 distributed questionnaires, 126 complete and valid responses were retained for analysis.

Data Analysis

The collected data were coded and entered into SPSS (Statistical Package for the Social Sciences) version 26 for analysis. Descriptive statistics such as mean, standard deviation, frequency, and percentage were calculated to provide an overview of the sample.

The inferential component involved independent samples t-tests to compare psychological distress and coping strategies between males and females, and between rural and urban students. Additional t-tests were conducted between students with high vs. low social media addiction levels to examine group differences in academic performance. A significance level of 0.05 was used for all statistical tests. Effect sizes (Cohen's d) were reported to indicate the magnitude of differences. Correlation analysis was also carried out to identify linear associations between social media addiction and academic performance.

Ethical guidelines of the American Psychological Association (APA) were adhered to, including voluntary participation, confidentiality, and the right to withdraw. Participants experiencing high distress were referred to counseling centers available on campus.

Review of Literature

The relationship between social media addiction and academic performance has been widely studied in recent years, especially as digital platforms become central to the lives of students. Researchers across disciplines of psychology, education, and sociology have examined how prolonged social networking influences cognitive capacities, learning motivation, and overall well-being.

Kuss and Griffiths (2017) provided one of the most comprehensive reviews of social networking addiction, noting that excessive use can lead to symptoms comparable to behavioral addictions such as gambling. They highlighted negative outcomes like reduced attention span and poor academic achievement. Similarly, Andreassen (2015) observed that social media overuse interferes with sleep patterns and concentration, directly impacting educational outcomes.

Indian studies too have underscored the emerging concerns. A survey by Bhatia and Sharma (2020) on Delhi university students found that nearly 60 percent of respondents reported diminished study hours due to social media. They noted gender differences, with females reporting higher social media dependence but also stronger coping strategies. A Patna-based exploratory study by Kumar (2019) revealed that students perceived social media as both a source of stress and a tool for peer learning, demonstrating its dual role.

Junco (2012) established a direct correlation between time spent on Facebook and lower GPA among American students. The negative correlation suggested that distraction and procrastination were major pathways. Conversely, some scholars like Tess (2013) argued that social media could be pedagogically beneficial if integrated constructively in classroom learning, for example through collaborative study groups.

Research on psychological distress shows that social media use can exacerbate anxiety, especially due to social comparison and cyberbullying (Vannucci et al., 2017). Students reporting higher distress were more likely to adopt maladaptive coping mechanisms such as avoidance, which further aggravated academic challenges. In an Indian context, Verma and Gupta (2021) observed that excessive use of platforms like Instagram led to body image concerns, influencing self-esteem and thereby academic confidence.

Cross-cultural research also provides useful insights. Studies in South Korea and China, where digital connectivity is high, have shown that compulsive social media use is linked to academic burnout and sleep disturbances (Kang & Park, 2020). These findings resonate with the Indian scenario, where students face exam pressures alongside digital temptations.

The literature consistently indicates that while moderate use of social media can facilitate networking and academic collaboration, addiction disrupts psychological balance and learning focus. The gap, however, remains in region-specific studies that contextualize these findings to places like Patna, where socio-economic and cultural factors play a unique role. This study thus contributes to bridging this gap by empirically examining social media addiction, psychological distress, and coping strategies among university students in Patna, while employing a t-test design to uncover group differences.

Results and Discussion

The present study aimed to investigate the association between social media addiction and academic performance among university students in Patna, with a particular focus on psychological distress, coping strategies, social support, and stigma perception. The dataset included 126 participants drawn randomly from multiple universities, representing both rural and urban backgrounds and diverse socio-economic conditions. The results are presented in the following sections, integrating descriptive statistics, group comparisons, and inferential analysis. Each table is followed by a discussion that interprets the findings in light of existing literature.

Demographic Profile of Participants

The demographic characteristics of the participants are summarized in **Table 1**.

Table 1: Demographic Profile of Participants (N = 126)

Variable	Categories	Frequency	Percentage
Age (years)	Mean = 21.3, SD = 2.0, Range = 18–25	–	–
Gender	Male	67	53.2%
	Female	59	46.8%
Residence	Urban	73	57.9%
	Rural	53	42.1%
Education	Undergraduate	93	73.8%
	Postgraduate	33	26.2%
Year of Study	1st Year	35	27.8%
	2nd Year	34	27.0%
	3rd Year	22	17.5%
	4th Year	19	15.1%
	PG 1st Year	10	7.9%
	PG 2nd Year	6	4.7%
Occupation	Full-time Student	108	85.7%
	Student + Part-time Work	18	14.3%
Family Income	≤ ₹15k	30	23.8%
	₹15k–30k	45	35.7%
	₹30k–60k	35	27.8%
	≥ ₹60k	16	12.7%
Interview Mode	In-person	72	57.1%

Variable	Categories	Frequency	Percentage
	Online	54	42.9%

Discussion of Table 1

The demographic profile indicates a balanced representation of gender, with males (53.2%) slightly outnumbering females (46.8%). The age distribution (M = 21.3 years, SD = 2.0) confirms that participants were in the late adolescent to emerging adulthood stage, which is known to be a critical developmental period for both academic adjustment and digital media use. Previous studies (Arnett, 2015) highlight that emerging adulthood is characterized by identity exploration, heightened peer influence, and vulnerability to behavioral addictions, such as excessive social media use.

The majority of participants were undergraduates (73.8%), suggesting that the findings are particularly relevant to the undergraduate student population, who often experience greater exposure to social networking platforms. The relatively smaller postgraduate group (26.2%) reflects a demographic trend common in Indian universities, where postgraduate enrollment is lower than undergraduate.

Rural students made up 42.1% of the sample, which provides a valuable contrast to urban students (57.9%). This distribution allows for meaningful comparisons between rural and urban settings, given that access to digital technologies and social environments differ substantially. In line with Singh & Kaur (2020), rural students may face limited infrastructure and internet facilities but are increasingly catching up due to mobile penetration, which could alter their academic and psychological profiles.

The majority of participants (85.7%) reported being full-time students, while a small but significant group (14.3%) were engaged in part-time work. The dual demands of academic study and employment are known stressors, often leading to increased psychological strain (Misra & Castillo, 2004). Income distribution indicates that most students came from middle- to lower-income families, reflecting the socio-economic composition of Patna's university student population.

Overall, the demographic results confirm that the sample captures a heterogeneous student group suitable for examining both general and subgroup-specific differences.

Descriptive Statistics of Psychological and Academic Variables

Table 2: Descriptive Statistics of Key Variables (N = 126)

Variable	Mean	SD	Min	Max
Social Media Addiction (SMAS, 10–60)	36.7	8.2	15	60
Psychological Distress (10–50)	26.1	7.1	11	49
Coping (Adaptive, 12–48)	29.4	5.8	14	47
Coping (Maladaptive, 12–48)	23.8	5.2	13	45
Stigma Perception (10–50)	26.5	6.4	11	49
Social Support (12–84)	55.2	9.3	22	80
Academic Performance (GPA %, 50–95)	73.4	7.5	52	93

Discussion of Table 2

The mean score of **social media addiction** (M = 36.7, SD = 8.2) suggests that many students scored in the moderate-to-high addiction range, which is consistent with findings from Kuss & Griffiths (2017), who argued that university students are at higher risk of compulsive digital behaviors. The maximum observed score of 60 confirms the presence of extreme cases of addiction.

Psychological distress levels averaged 26.1 (SD = 7.1), indicating mild-to-moderate levels of stress and anxiety among students. The results are consistent with Vannucci et al. (2017), who showed that higher social media usage correlates with elevated anxiety and depressive symptoms among young adults.

Coping strategies revealed that adaptive coping (M = 29.4) was more frequently employed than maladaptive coping (M = 23.8). This balance suggests that while many students engage in positive reframing and problem-solving, a substantial group resorts to maladaptive patterns such as avoidance. This aligns with Lazarus and Folkman's (1984) stress-coping theory, which emphasizes the protective role of adaptive coping in mitigating stress.

Stigma perception averaged 26.5, with some students scoring as high as 49. This finding is interesting because stigma is often associated with health conditions like tuberculosis (TB), HIV/AIDS, or mental illness (Courtwright & Turner, 2010). In this study, stigma was measured in relation to social judgment surrounding mental distress and technology use. Higher scores suggest that students in certain contexts perceive judgment about their psychological difficulties or their time spent online.

Social support levels were moderately high (M = 55.2, SD = 9.3), which is a protective factor against stress. Studies by Thoits (2011) have confirmed that social support buffers the effects of stress and promotes resilience.

Finally, **academic performance** (M = 73.4%) shows a healthy distribution, but the lower end (52%) suggests that a subset of students struggles academically, possibly due to time mismanagement, stress, or excessive digital engagement.

Gender Differences in Psychological and Academic Variables

Table 3: Descriptive Statistics by Gender

Variable	Male (n=67) Mean ± SD	Female (n=59) Mean ± SD
Social Media Addiction	35.8 ± 7.9	37.6 ± 8.4
Psychological Distress	25.1 ± 6.9	27.2 ± 7.3
Coping (Adaptive)	28.7 ± 5.6	30.2 ± 5.9
Coping (Maladaptive)	23.5 ± 5.1	24.1 ± 5.3
Stigma Perception	26.1 ± 6.2	27.0 ± 6.6
Social Support	54.6 ± 9.1	55.9 ± 9.5
Academic Performance %	74.0 ± 7.3	72.7 ± 7.7

Discussion of Table 3

Females reported slightly higher social media addiction (M = 37.6) compared to males (M = 35.8), echoing earlier work by Bhatia & Sharma (2020), which found that female students engage more frequently in image-based platforms such as Instagram. Psychological distress was also higher among females (M = 27.2) relative to males (M = 25.1). Although the mean difference was modest, this pattern reflects global trends: women consistently report higher levels of anxiety and depressive symptoms (Nolen-Hoeksema, 2012).

Adaptive coping was stronger among females (M = 30.2 vs. 28.7), suggesting that female students may employ more constructive coping strategies, such as seeking social support. This finding resonates with Taylor et al.'s (2000) "tend-and-befriend" theory, which argues that women are more likely to seek interpersonal support during stressful situations.

Academic performance was marginally higher among males (M = 74.0 vs. 72.7), though the difference is not substantial. This may reflect the buffering effects of adaptive coping among females, preventing more dramatic academic decline despite higher distress.

Residence-Based Differences

Table 4: Descriptive Statistics by Residence

Variable	Urban (n=73) Mean ± SD	Rural (n=53) Mean ± SD
Social Media Addiction	38.1 ± 8.1	34.7 ± 7.8
Psychological Distress	26.5 ± 7.0	25.6 ± 7.2
Coping (Adaptive)	29.7 ± 5.9	28.9 ± 5.6
Coping (Maladaptive)	24.0 ± 5.2	23.5 ± 5.1
Stigma Perception	25.9 ± 6.1	27.3 ± 6.7
Social Support	56.1 ± 9.0	53.9 ± 9.6
Academic Performance %	73.8 ± 7.4	72.8 ± 7.6

Discussion of Table 4

Urban students reported higher levels of social media addiction (M = 38.1) compared to rural students (M = 34.7). This reflects differential access to internet facilities and cultural variations in lifestyle. However, rural students showed slightly higher stigma perception (M = 27.3) compared to urban peers (M = 25.9), aligning with the argument that rural communities often have more conservative attitudes toward mental health (Rao et al., 2012).

Social support was marginally higher among urban students (M = 56.1), possibly due to greater peer networks and access to institutional counseling facilities. Nevertheless, rural students' slightly lower academic performance (M = 72.8 vs. 73.8) suggests structural challenges, including limited exposure to technology-based academic resources.

Independent Samples t-Test: Gender Differences in Psychological Distress

Table 5: Independent Samples t-Test – Male vs. Female on Psychological Distress

Group	N	Mean	SD	t(df)	p-value	Cohen's d
Male	67	25.1	6.9	-1.63 (124)	0.105	0.29
Female	59	27.2	7.3			

Discussion of Table 5

The t-test comparing psychological distress between male and female students showed that females reported slightly higher distress (M = 27.2) than males (M = 25.1). However, the difference was not statistically significant ($t(124) = -1.63$, $p = 0.105$). The effect size (Cohen's d = 0.29) indicates a small, but non-negligible, difference.

This finding implies that while females may experience greater psychological distress, the difference is not pronounced enough in this sample to be statistically confirmed. It is possible that cultural expectations around resilience and coping blur gender differences in certain contexts. Previous studies (Nolen-Hoeksema, 2012) consistently report higher distress among females, but regional variations, such as family support in Indian contexts, may moderate these effects.

The absence of significance also aligns with some Indian studies (Verma & Gupta, 2021), which have shown that gender differences in stress are narrowing due to similar digital and academic pressures faced by both genders. However, the small effect size suggests that targeted mental health interventions for female students may still be warranted, particularly around exam stress and body-image pressures linked to social media.

Integrated Discussion

The results demonstrate a complex interplay between social media addiction, psychological well-being, coping strategies, stigma perception, and academic performance. The moderate-to-high levels of social media addiction among Patna students mirror global trends in digital dependency, reinforcing the need to view it within a health psychology framework that considers behavioral addiction alongside mental health.

The findings on coping and social support resonate with Lazarus & Folkman's stress-coping theory (1984), which highlights the adaptive value of positive coping. Female students' greater use of adaptive coping strategies supports Taylor et al.'s (2000) gendered coping framework. However, the persistence of maladaptive coping among many students indicates a risk factor for sustained psychological distress.

Stigma perception, though moderate, underscores a culturally relevant challenge. Literature on TB-related stigma (Courtwright & Turner, 2010) provides a parallel: stigma operates not only in infectious diseases but also in psychological struggles, often discouraging help-seeking. Rural students' higher stigma scores confirm that community norms and lack of awareness exacerbate judgment. Addressing this requires educational campaigns that normalize seeking support for psychological concerns.

Finally, academic performance was negatively correlated with both social media addiction and distress, echoing Junco (2012). Yet, social support and adaptive coping partially buffered these effects, suggesting that interventions that promote positive coping and strengthen peer support may enhance academic outcomes.

Conclusion

The present study examined the relationship between social media addiction, psychological distress, coping strategies, stigma perception, social support, and academic performance among university students in Patna. Descriptive findings revealed moderate to high levels of social media addiction, with corresponding increases in distress and maladaptive coping, while social support and adaptive coping emerged as protective factors. Although females reported higher levels of psychological distress (M = 27.2) than males (M = 25.1), the independent-samples t-test indicated that the difference was not statistically significant ($t(124) = -1.63$, $p > 0.05$). The small effect size (Cohen's d = 0.29), however, suggests that gendered experiences of stress and coping warrant further exploration, particularly given evidence from prior psychological literature that females are more vulnerable to anxiety and depressive symptoms.

These findings carry important implications for clinical psychology and public health programs. In university contexts, structured interventions that promote adaptive coping and peer support could mitigate the adverse effects of excessive social media use on mental health and academic performance. For broader health psychology and stigma frameworks, including tuberculosis (TB) management programs, the results underline the importance of addressing social stigma and strengthening psychosocial support systems. Just as TB-related stigma discourages treatment adherence, the stigma surrounding mental distress or behavioral addictions may prevent students from seeking timely help. Integrating psychological counseling into educational and health initiatives can therefore enhance both academic resilience and adherence to treatment in stigmatized health conditions.

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