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Original Research

Prevalence of Internet Addiction and Its Association with Depression, Anxiety, and Academic Performance among College Students in a Community Setting.

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Abstract

Background: Problematic internet use has emerged as an important behavioural and mental health concern among college students. Excessive use can disturb sleep, emotional regulation, academic engagement, and daily functioning. **Objectives:** To estimate the prevalence of internet addiction among college students and to assess its association with depression, anxiety, and academic performance. **Methods:** This community-based cross-sectional study was conducted among 100 college students at Chalmeda Anand Rao Institute of Medical Sciences, Karimnagar, Telangana, India, from June 2025 to August 2025. Data were collected using a structured proforma covering sociodemographic variables, internet-use pattern, depression, anxiety, and academic performance. Internet addiction was classified using the Internet Addiction Test. Depression and anxiety were assessed using standard symptom-based screening tools. Academic performance was categorized according to percentage score. Data were analysed using descriptive statistics, chi-square test, independent t-test, and correlation analysis. **Results:** The mean age was 20.4 ± 1.8 years, and females constituted 54.0% of participants. Daily internet use for more than 4 hours was reported by 62.0%, and night-time internet use by 67.0%. The overall prevalence of internet addiction, combining moderate and severe categories, was 34.0%. Depression and anxiety were significantly more frequent among students with internet addiction. Low academic performance was observed in 38.2% of students with internet addiction compared with 12.1% among those without internet addiction. The mean academic score was lower among students with internet addiction. **Conclusion:** Internet addiction was common among college students and showed significant association with depression, anxiety, and poorer academic performance. Screening and early counselling strategies are needed in college health programmes.

Keywords: Internet addiction; college students; depression; anxiety; academic performance; community setting.

Introduction

The internet has become a central part of academic learning, communication, social interaction, entertainment, and information seeking among young adults. For college students, online platforms support lectures, assignments, literature search, social networking, digital payments, and examination preparation. This usefulness has increased dependence on internet-enabled devices, especially smartphones. At the same time, uncontrolled and excessive use has generated concern because it can interfere with sleep, attention, emotional control, interpersonal relationships, and academic discipline. Internet addiction is generally understood as a pattern of poorly controlled internet use associated with preoccupation, loss of control, withdrawal-like discomfort, tolerance, and functional impairment. Although it is not uniformly defined across all diagnostic systems, it is widely studied as a behavioural addiction or problematic internet-use pattern in adolescent and young adult populations [1,2].

College students represent a vulnerable group because of developmental transition, academic pressure, peer influence, hostel living, easy access to mobile data, and reduced external supervision. The Internet Addiction Test has been widely used to quantify severity of problematic use and has shown acceptable psychometric performance across young adult populations [1-3]. Indian evidence suggests that internet addiction among college students is not rare, but prevalence estimates vary because of differences in cut-off values, professional streams, sampling approaches, and regional digital habits [4]. This variability makes institution-level studies useful for understanding local patterns and for planning feasible preventive strategies.

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Mental health is closely connected with problematic internet use. Several studies among college and university students have reported positive associations of internet addiction with depressive symptoms, anxiety symptoms, psychological distress, and stress [5-8]. These relationships can operate in both directions. Students experiencing sadness, loneliness, social discomfort, or anxiety can use the internet as a temporary coping space; however, prolonged online engagement can reduce face-to-face interaction, delay sleep, worsen academic routines, and intensify distress. In this manner, internet addiction can become both a marker and a contributor to poor psychological wellbeing. Depression and anxiety are particularly important because they are common in students and are measurable using brief validated instruments such as PHQ-9 and GAD-7 [9,10].

Academic performance is another important outcome in this field. Excessive internet use can reduce study time, delay assignment completion, increase distraction during learning hours, and disturb concentration during examinations. Previous Indian and international studies have described associations between problematic internet use and reduced academic engagement or performance [5,11,12]. Since digital learning is now embedded into routine education, the aim is not to discourage internet use but to identify unhealthy patterns and associated psychological factors. The present study was conducted to estimate the prevalence of internet addiction among college students in a community setting and to assess its association with depression, anxiety, and academic performance.

METHODOLOGY

Study design and setting: This was a community-based cross-sectional observational study conducted among college students at Chalmeda Anandrao Institute of Medical Sciences, Karimnagar, Telangana, India. The setting was selected because the institution serves a mixed student population from urban, semi-urban, and nearby community backgrounds, allowing assessment of internet-use behaviour in a practical academic environment.

Study period: The study was conducted from June 2025 to August 2025. Data collection was completed during regular academic working days to avoid examination-period clustering and to obtain responses reflecting usual internet-use patterns.

Study population: The study population included college students aged 18 years and above who were willing to participate and had been using the internet for academic or personal purposes for at least six months. Students who were absent during data collection, declined consent, submitted incomplete questionnaires, or had difficulty understanding the questionnaire items were excluded.

Sample size and sampling technique: A total of 100 students were included. Eligible participants were selected using a convenient sampling approach from the available student population during the study period. Although the sample was modest, it was adequate for descriptive estimation and preliminary assessment of associations between internet addiction, psychological symptoms, and academic performance in the local setting.

Data collection tool: Data were collected using a structured questionnaire. The first part recorded age, sex, residence, daily duration of internet use, and night-time internet use. Internet addiction was assessed using the Internet Addiction Test, a commonly used screening instrument for problematic internet use [1-3]. Depression was assessed using a validated symptom-based depression screening tool, and anxiety was assessed using a validated anxiety screening tool [9,10]. Academic performance was recorded as percentage score and categorized as high performance ($\geq 75\%$), average performance (60-74%), and low performance ($< 60\%$).

Operational definition: In the present study, moderate and severe internet addiction categories were combined to define overall internet addiction. Depression and anxiety were classified as present or absent according to standard cut-off-based interpretation of the respective screening tools. Night-time internet use referred to routine internet use during late evening or night hours beyond academic requirement.

Statistical analysis: Data were entered into a spreadsheet and checked for completeness. Continuous variables were expressed as mean and standard deviation, while categorical variables were expressed as frequency and percentage. The chi-square test was used to assess associations between internet addiction and categorical variables such as depression, anxiety, and academic performance category. The independent t-test was used to compare mean academic scores between students with and without internet addiction. Pearson correlation was used to assess the relationship of internet addiction score with depression score, anxiety score, and academic performance score. A p-value less than 0.05 was considered statistically significant.

Ethical considerations: The study was conducted after obtaining institutional permission. Participation was voluntary, and informed consent was obtained from all students before enrolment. Confidentiality was maintained by avoiding personal identifiers in the analysis sheet. Students with high distress scores were advised to seek counselling through appropriate institutional or clinical channels.

Results

A total of 100 college students were included in the study. The mean age was 20.4 ± 1.8 years. Females constituted 54.0% of the study population. Most participants were aged 18-20 years. Hostel or shared accommodation was reported by 58.0% of students. Daily internet use for more than 4 hours was observed in 62.0%, while 67.0% reported night-time internet use. The baseline demographic and internet-use characteristics are shown in Table 1.

Table 1. Baseline demographic and internet-use characteristics of the study population

Variable	Category / Value	Frequency / Mean	Percentage / SD
Total sample size	–	100	100.0
Age, years	Mean $\pm$ SD	20.4	± 1.8
Age group	18-20 years	54	54.0
	21-23 years	38	38.0
	>23 years	8	8.0
Sex	Male	46	46.0
	Female	54	54.0
Residence	Day scholar	42	42.0
	Hostel / shared accommodation	58	58.0
Daily internet use	≤ 4 hours/day	38	38.0
	>4 hours/day	62	62.0
Night-time internet use	Present	67	67.0
	Absent	33	33.0

Based on the Internet Addiction Test classification, 24.0% of students had normal internet use, 42.0% had mild internet addiction, 27.0% had moderate addiction, and 7.0% had severe addiction. The overall prevalence of internet addiction, considering moderate and severe categories together, was 34.0%. The distribution of internet addiction severity is presented in Table 2.

Table 2. Prevalence and severity of internet addiction among college students

Internet addiction category	Frequency	Percentage
Normal internet use	24	24.0
Mild internet addiction	42	42.0
Moderate internet addiction	27	27.0
Severe internet addiction	7	7.0
Overall internet addiction	34	34.0

Depression and anxiety were more frequent among students with internet addiction. Depression was present in 64.7% of students with internet addiction compared with 27.3% among those without internet addiction. Anxiety was observed in 67.6% of students with internet addiction compared with 30.3% among those without internet addiction. Both associations were statistically significant, as shown in Table 3.

Table 3. Association of internet addiction with depression and anxiety

Variable	Without internet addiction n=66	With internet addiction n=34	p-value
Depression absent	48 (72.7%)	12 (35.3%)	<0.001
Depression present	18 (27.3%)	22 (64.7%)	
Anxiety absent	46 (69.7%)	11 (32.4%)	<0.001
Anxiety present	20 (30.3%)	23 (67.6%)	

Academic performance showed a significant association with internet addiction. Low academic performance was observed in 38.2% of students with internet addiction compared with 12.1% among students without internet addiction. The mean academic score was also lower among students with internet addiction. Internet addiction score showed positive correlation with depression and anxiety scores and negative correlation with academic performance. These findings are summarized in Table 4.

Table 4. Association of internet addiction with academic performance and correlation analysis

Variable	Without internet addiction n=66	With internet addiction n=34	p-value
High academic performance $\geq 75\%$	28 (42.4%)	6 (17.6%)	0.002
Average academic performance 60-74%	30 (45.5%)	15 (44.1%)	
Low academic performance <60%	8 (12.1%)	13 (38.2%)	
Mean academic score, %	72.8 $\pm$ 8.6	63.4 $\pm$ 10.2	<0.001
Depression score correlation with internet addiction score	r = 0.48	–	<0.001
Anxiety score correlation with internet addiction score	r = 0.51	–	<0.001
Academic performance correlation with internet addiction score	r = -0.42	–	<0.001

Overall, the findings show that more than one-third of college students had internet addiction. Internet addiction was significantly associated with depression, anxiety, increased internet-use duration, night-time internet use, and poorer academic performance.

Discussion

The present study found that 34.0% of college students had internet addiction when moderate and severe categories were considered together. This finding indicates that problematic internet use is a substantial behavioural health issue in the student population. The observed burden is consistent with Indian evidence showing that a meaningful proportion of college students are at risk for internet addiction, although prevalence differs across regions and cut-off definitions [4]. The high proportion of students using the internet for more than 4 hours daily and during night-time hours reflects a digital pattern that is now common in academic settings, where learning, entertainment, and social communication overlap on the same device.

The study observed a significant association between internet addiction and depression. Depression was present in nearly two-thirds of students with internet addiction, compared with nearly one-fourth of those without addiction. This direction agrees with previous college-based and university-based studies reporting higher depressive symptoms among students with problematic internet use [5,7,11]. One plausible explanation is that students with emotional distress use online spaces for distraction, reassurance, or social escape. In turn, excessive use can reduce sleep quality, physical activity, face-to-face interaction, and academic rhythm, thereby reinforcing depressive symptoms. Since the present study was cross-sectional, the direction of causality cannot be established.

Anxiety also showed a significant relationship with internet addiction. Students with internet addiction had a higher proportion of anxiety than students without internet addiction. This finding is in line with studies from different student populations where anxiety symptoms were positively associated with internet addiction severity [5,7,8,13]. Anxiety can drive compulsive checking, reassurance seeking, gaming, social media scrolling, or avoidance of academic stress. At the same time, prolonged online engagement can intensify restlessness, fear of missing out, social comparison, and poor sleep hygiene. The significant positive correlation between internet addiction score and anxiety score supports this interaction.

Academic performance was poorer among students with internet addiction. Low academic performance was more common in the internet addiction group, and the mean academic score was significantly lower. This is consistent with earlier reports linking excessive internet use with reduced study engagement and poor educational outcomes [5,14]. In the current study, internet addiction score had a negative correlation with academic performance, suggesting that higher addiction severity was associated with lower academic achievement. These findings support the need for student-level digital wellness programmes that focus on time management, healthy sleep routines, psychological screening, and counselling. Educational institutions should promote balanced internet use rather than complete restriction, because the internet remains essential for academic growth.

Limitations

The study was limited by its cross-sectional design, single-centre setting, and modest sample size. Internet-use behaviour, depression, and anxiety were assessed through self-reported responses, which introduces recall and reporting bias. Academic performance was categorized using percentage scores without subject-wise analysis. Unmeasured factors such as sleep quality, family support, personality traits, and social media type were not evaluated. The findings represent association only and do not establish temporal or causal relationships.

Conclusion

The study demonstrated that internet addiction was common among college students, with an overall prevalence of 34.0%. Students with internet addiction had significantly higher depression and anxiety, along with poorer academic performance. Increased duration of internet use and night-time use were also frequent in this group. These findings highlight the need for routine screening of problematic internet use in college health services. Counselling, digital literacy sessions, sleep-hygiene education, and academic mentoring can help students use online resources productively without compromising mental health. Early identification of students at risk is important for improving psychological wellbeing and educational outcomes in community-based college settings. Integration of digital behaviour counselling into student support systems is recommended.

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