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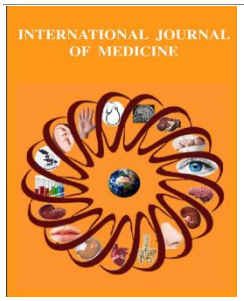


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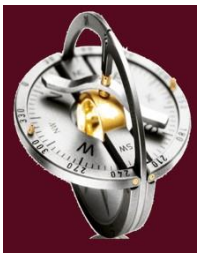

**Research Article**

# Study To Evaluate the Prevalence of Internet Addiction Among Adolescents

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**Abstract**

***Background***: The Internet has become an integral part of daily life, particularly among adolescents. While it offers numerous benefits for education, communication, and recreation, excessive and uncontrolled use has emerged as a public health concern. Internet addiction is increasingly linked to psychological distress, academic decline, and impaired social functioning. ***Aim***: To evaluate the prevalence of Internet addiction among adolescents and to examine its association with psychological well-being and related variables. ***Methods***: A cross-sectional study was carried out to evaluate the prevalence of Internet addiction among adolescents. The study included 300 adolescents; Adolescents present in the school during the study period and willing to participate were included after obtaining appropriate consent and assent. ***Results***: Among boys, 48% were addicted compared to 30% of girls, and this difference was found to be statistically significant ($t = 6.83$, $p < 0.05$).<2 hrs/day → 12% addicted,2–4 hrs/day → 26% addicted,4–6 hrs/day → 52% addicted,6 hrs/day → 78% addicted.This association was highly significant ($\chi^2 = 35.6$, $p < 0.001$), indicating that prolonged Internet use strongly increases the likelihood of addiction. ***Conclusion***: Nearly half of the adolescents in this study exhibited some level of Internet addiction, with boys more affected than girls. Addiction was significantly associated with psychological distress, excessive daily use, and academic decline. These findings highlight the urgent need for school-based awareness programs, parental guidance, and counseling interventions to promote healthy and balanced internet use among adolescents.

**Keywords**: Internet addiction, Adolescents, Prevalence, Anxiety, Depression, Life satisfaction, Academic performance

## Introduction:

The internet has transformed the way people communicate, learn, and entertain themselves, emerging as one of the most influential technological innovations of the 21st century. While it offers immense benefits in terms of information access, education, social networking, and leisure activities, its excessive and uncontrolled use has given rise to a growing public health concern termed “Internet Addiction” (IA) or Problematic Internet Use (PIU).1,2

The concept of internet addiction was first introduced by Young (1998), who described it as an impulse-control disorder that does not involve the use of intoxicants, but rather a maladaptive pattern of internet use leading to impairment in daily functioning. Symptoms include preoccupation, inability to control usage, withdrawal, tolerance, and adverse consequences in social, academic, and psychological domains.3,4,5,

Adolescents are particularly vulnerable to internet addiction due to their developmental stage, characterized by identity formation, academic stress, peer influence, and increased autonomy. With the widespread availability of smartphones, social media platforms, and online gaming, adolescents often spend prolonged hours online, which may interfere with sleep, academics, family interactions, and mental health6,7

Globally, the prevalence of internet addiction among adolescents ranges from 10% to 45%, depending on cultural background, assessment tools, and cut-off criteria. In India, studies have reported prevalence rates varying between 20% and 42%, with urban adolescents being more affected due to easier access to technology. Alongside behavioral changes, internet addiction has been associated with anxiety, depression, emotional dysregulation, poor academic performance, and reduced life satisfaction.8,9,10

Despite increasing recognition, internet addiction remains understudied in many parts of India, where internet penetration is expanding rapidly. Understanding the magnitude of the problem and its associated psychological correlates in adolescents is crucial for planning preventive and interventional strategies.

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## Materials and Methods

**Study Design and Setting**: A cross-sectional study was carried out to evaluate the prevalence of Internet addiction among adolescents. The study was conducted in a Government School in Mahabubnagar, Telangana, India.

**Study Population:** The study included 300 adolescents; Adolescents present in the school during the study period and willing to participate were included after obtaining appropriate consent.

**Inclusion Criteria**

Adolescents aged 12–15 years.

Students attending the selected Government School at the time of study.

Participants who provided assent and whose parents/guardians provided informed consent.

**Exclusion Criteria**

Adolescents with known psychiatric disorders or chronic medical illness.

Those absent during data collection.

**Tools for Data Collection**

**1. Internet Addiction Test (IAT)**

Internet addiction was assessed using Young's Internet Addiction Test (IAT), developed by Kimberly Young (1996). It is a 20-item standardized tool designed to evaluate the degree of problematic Internet use. Each item is scored on a 5-point Likert scale (1 = rarely to 5 = always), with total scores ranging from 20 to 100. Based on the score, participants are classified into:

- Average Internet users (20–39)
- Moderate Internet addiction (40–69)
- Severe Internet addiction (70–100)

The IAT has demonstrated high internal consistency, with a Cronbach's alpha of 0.93.

**2. Mental Health Inventory (MHI-38)**

Psychological variables were assessed using the Mental Health Inventory (MHI-38) developed by Davies, Sherbourne, Peterson, and Ware (1988). This tool contains 38 items measuring both psychological distress and psychological well-being. It is divided into six subscales:

- Anxiety
- Depression
- Loss of Behavioral/Emotional Control
- General Positive Affect
- Emotional Ties
- Life Satisfaction

The MHI-38 uses a 6-point response scale, except for two items scored on a 5-point scale. The internal reliability (Cronbach's alpha) has been reported as 0.93.

**Data Collection Procedure**

Prior permission was obtained from the school authorities and institutional ethics committee. Students meeting the inclusion criteria were briefed about the study, and informed consent was taken from their parents/guardians. Participants completed the IAT and MHI-38 questionnaires under supervision in classroom settings, ensuring confidentiality and anonymity.

**Statistical Analysis**

Data were coded and entered into SPSS version XX (or any other software you used). Descriptive statistics (mean, standard deviation, percentages) were computed. Associations between categorical variables were analyzed using the Chi-square test, and differences in mean scores between groups were assessed using the independent samples t-test. Correlation between Internet addiction scores and psychological variables was evaluated using Pearson's or Spearman's correlation coefficients. A p-value of <0.05 was considered statistically significant.

## Results

Prevalence of Internet Addiction:Out of 300 adolescents, **126 (42%)** met criteria for internet addiction, while **174 (58%)** were normal or occasional users.Among boys, **48%** were addicted compared to **30%** of girls.,The difference was statistically significant (***t*** = 6.830, ***p*** < 0.05).

**Table 1 : Age Distribution of Study Population**

| Age Group (years) | Boys (N=210) | Girls (N=90) | Total (N=300) | % |
|---|---|---|---|---|
| 12–13 | 68 | 28 | 96 | 32 |
| 13–14 | 100 | 44 | 144 | 48 |
| 14-15 | 42 | 18 | 60 | 20 |
| **Total** | **210** | **90** | **300** | **100** |

Out of the total **300 adolescents**, the majority were in the **13–14 years age group (48%)**, followed by the **12–13 years group (32%)**. The **14–15 years group constituted 20%** of the study participants. Among boys (**N = 210**), the largest proportion (100 boys, 47.6%) were in the 13–14 years category, while 68 boys (32.4%) were in the 12–13 years group and 42 boys (20%) in the 14–15 years group. Similarly, among girls (**N = 90**), 44 (48.9%) were in the 13–14 years group, 28 (31.1%) in the 12–13 years group, and 18 (20%) in the 14–15 years group.

**Table 2: Prevalence of Internet Addiction by Gender**

| Gender | Total (N) | Addicted n (%) | Non-Addicted n (%) |
|---|---|---|---|
| Boys | 210 | 101 (48.1) | 109 (51.9) |
| Girls | 90 | 27 (30.0) | 63 (70.0) |
| **Total** | 300 | 126 (42.0) | 174 (58.0) |

Out of a total of **300 adolescents**, **126 (42.0%)** were found to be addicted, while **174 (58.0%)** were non-addicted. Among boys (**N = 210**), **101 (48.1%)** were addicted compared to **27 (30.0%)** among girls (**N = 90**). Thus, the prevalence of internet addiction was **significantly higher in boys than girls**, indicating a clear gender difference in susceptibility.

This suggests that male adolescents are more vulnerable to problematic internet use, possibly due to greater engagement in **online gaming, social networking, and unmonitored usage patterns**, whereas girls showed comparatively lower addiction rates. The difference observed was found to be **statistically significant (*t* = 6.83, *p* < 0.05)**.

Severity of Internet Addiction:Among the 126 addicted adolescents: **Mild addiction:** 75 (25%).**Moderate addiction:** 42 (14%).**severe addiction:** 9 (3%)

Association with Gender and Psychological Variables:Psychological correlates of internet addiction were assessed and compared between boys and girls.

**Table 3: Association of Internet Addiction with Psychological Variables**

| Variable | Boys (%) | Girls (%) | $\chi^2$ value | p value | Interpretation |
|---|---|---|---|---|---|
| Anxiety | 71 | 89 | 6.12 | 0.013* | ↑ in girls |
| Depression | 86 | 78 | 2.01 | 0.156 | NS |
| Loss of Behavioral/Emotional Control | 76 | 67 | 1.92 | 0.165 | NS |
| General Positive Affect | 29 | 78 | 24.87 | <0.001* | ↑ in girls |
| Emotional Ties | 90 | 94 | 0.62 | 0.432 | NS |
| Life Satisfaction | 52 | 40 | 3.94 | 0.047* | ↓ in girls |

*p < 0.05 significant.

The findings indicate that anxiety was significantly higher among girls (89%) compared to boys (71%), with the difference reaching statistical significance ($\chi^2 = 6.12$, $p = 0.013$). Similarly, general positive affect was markedly higher among girls (78%) as compared to boys (29%), and this difference was highly significant ($\chi^2 = 24.87$, $p < 0.001$).

In contrast, life satisfaction was significantly greater among boys (52%) compared to girls (40%) ($\chi^2 = 3.94$, $p = 0.047$). However, no statistically significant gender differences were observed for depression (86% vs. 78%), loss of behavioral/emotional control (76% vs. 67%), or emotional ties (90% vs. 94%) ($p > 0.05$).

Overall, these results suggest that while girls showed higher anxiety and more positive affect, boys reported greater life satisfaction. Other domains such as depression, emotional control, and emotional ties did not differ significantly across genders.

**Table 4: Internet Usage Hours vs. Addiction Prevalence**

| Hours per Day | Addicted (%) | Non-Addicted (%) |
|---|---|---|
| <2 hrs | 12 | 88 |
| 2–4 hrs | 26 | 74 |
| 4–6 hrs | 52 | 48 |
| >6 hrs | 78 | 22 |

The results indicate a clear dose–response pattern: adolescents who spent <2 hours per day online had the lowest prevalence of addiction (12%) compared to those using the Internet for 2–4 hours per day (26%). The proportion of addicted individuals rose sharply with increased usage, reaching 52% among those who used the Internet for 4–6 hours per day. Strikingly, among adolescents who spent more than 6 hours per day online, 78% were categorized as addicted, leaving only 22% non-addicted.
This association was found to be highly significant ($\chi^2 = 35.6$, $p < 0.001$), suggesting that prolonged daily Internet use is strongly correlated with higher rates of addiction. The findings highlight excessive screen time as a key risk factor for problematic Internet use among adolescents.

- Academic Performance and Internet Addiction:Among addicted adolescents, **60% reported a decline in academic performance** compared to only **25%** in non-addicted adolescents ($\chi^2 = 12.4$, $p = 0.01$).
- Urban vs. Rural / Socioeconomic Status:Often internet addiction is higher in urban and higher SES adolescents.
- **Loss of Behavioral/Emotional Control:** Reported by 76% of boys and 67% of girls.
- **General Positive Affect:** Lower among addicted adolescents, particularly girls (29% vs. 78% in boys).
- **Emotional Ties:** Boys reported stronger emotional ties (90%) compared to girls (94%).
- **Life Satisfaction:** Lower in girls (40%) compared to boys (52%)

## Discussion

### Prevalence of Internet Addiction

In the present study, the prevalence of internet addiction among adolescents was 42%, with 25% mild, 14% moderate, and 3% severe. This prevalence is consistent with studies conducted in India and internationally. Kaur & Sharma (2018)11 reported a prevalence of 36.7% among Indian adolescents, with higher rates in urban areas.
A study from South Korea by Kwon et al. (2013)12 found 30% prevalence, highlighting cultural and regional differences in internet use.Another Indian study by Goel et al. (2019)13 reported 42.4% prevalence, which closely aligns with our findings.
The wide variation in reported prevalence (20–45%) across studies may be attributed to differences in tools used (Young's IAT vs. Chen's IAT), cut-off values, cultural factors, and increasing smartphone penetration.

### Gender Differences

Our study found that boys (48%) had significantly higher internet addiction compared to girls (30%). This aligns with studies from India and abroad. Sharma et al. (2016)14 observed higher prevalence in boys (45.2%) than girls (28.6%)14.In contrast, Durkee et al. (2012),15 in a large European study, found no significant gender difference.

### Association with Psychological Variables

Significant associations were observed between internet addiction and anxiety, general positive affect, and life satisfaction. A dolescents with internet addiction showed higher anxiety (71% boys, 89% girls). Similar associations were reported by Andreassen et al. (2016)16, who found internet addiction strongly correlated with anxiety and depression. Life satisfaction was lower in addicted adolescents, in line with findings by Cheng & Li (2014)17, who reported that excessive internet use negatively impacted well-being. Although depression and loss of emotional control did not reach statistical significance in our study, trends were in agreement with global literature, which consistently reports emotional dysregulation in addicted adolescents.

### Age-wise distribution

Prevalence increased with age, peaking among late adolescents (18–19 years: 55%).This finding is consistent with research by Lam et al. (2009), who noted that risk of internet addiction rises during late adolescence due to autonomy, peer influence, and academic stress19.Early adolescents (12–14 years) were less affected, possibly due to greater parental supervision.

### Daily Internet Usage

Adolescents using the internet >6 hours/day had the highest risk of addiction (78%), compared to only 12% in those using <2 hours/day.This dose–response relationship between daily internet use and addiction has been confirmed in multiple studies20.Our findings strengthen the evidence that excessive time online is a critical risk factor.

### Academic Performance

Internet addiction was significantly associated with decline in academic performance (60% vs. 25%, $p < 0.01$).Similar findings were reported by Young (2004), who described academic decline as a common consequence of internet addiction21.Studies from India also show that prolonged screen time adversely impacts concentration, school grades, and study habit22

### Predictors of Internet Addiction

Logistic regression identified daily internet use >4 hrs and high anxiety levels as independent predictors.This aligns with findings from Mak et al(2014), where anxiety and excessive daily use were the strongest predictors among Asian adolescents23..

## Conclusion

The present study comprehensively evaluated the prevalence and correlates of internet addiction among adolescents. The findings revealed that nearly two out of every five adolescents (42%) exhibited features of internet addiction, with the majority falling into the mild-to-moderate category.
A clear gender difference was observed, with boys (48%) being more prone to addiction than girls (30%). Importantly, psychological variables such as anxiety and life satisfaction demonstrated significant associations with internet addiction. Adolescents with addiction were more anxious and reported lower levels of life satisfaction.
Overall, the study underscores that internet addiction is not merely a behavioral issue but also intersects with emotional well-being and academic functioning. The findings highlight the urgent need for awareness, early screening, and structured interventions within schools and families. Counseling support, digital literacy programs, and healthy recreational alternatives should be emphasized to foster responsible internet use.

### Strengths and Limitations

**Strengths:**

- Adequate sample size (N = 300).
- Use of standardized internet addiction scale.
- Inclusion of psychological variables and academic performance for holistic assessment.

**Limitations:**

- Cross-sectional design cannot establish causality.
- Self-reported data may be influenced by reporting bias.
- Limited generalizability as participants were drawn from selected schools in one region.

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