

Original Research Article

Internet addiction and its effects on psychological wellbeing among adolescents in the urban health and rural health training centre, Jaipur, Rajasthan, India

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ABSTRACT

Background: In 2023, there were almost 4.8 billion active internet users worldwide, equivalent to 62% of the global population. The majority of Indian youth comprising 85% of non-adult users, have access to smartphones. Most of them were online five hours a day and 80% admitted to using social media.

Objective: To assess internet addiction prevalence among adolescents in UHTC and RHTC areas, evaluate varying usage levels, analyze their correlation and identify demographic factors (age, sex, socioeconomic status) influencing its impact on psychological well-being.

Methods: A community based cross-sectional study of 200 adolescents from urban and rural areas was conducted via by simple random sampling from January to July 2023 at Sawai Man Singh Medical College, Jaipur to determine their internet usage patterns and psychological implications. We acquired the data from the subjects via the IAT-Internet Addiction Test and the GHQ-12 General Health Questionnaire-12. We took oral interviews of the subjects' sociodemographic information and internet usage patterns.

Results: A statistically significant difference in internet usage patterns was detected, as measured by the average internet Addiction Test (IAT) score. A difference was also observed in psychological health, as measured by the average General Health Questionnaire (GHQ) score. Additionally, there was a significant positive association between overall severity of internet use and poorer psychological health (GHQ-12 score).

Conclusions: Our study highlights rural-urban disparities in internet usage and psychological health. It emphasizes the need for educational initiatives to promote responsible internet use and enhance mental well-being among youth.

Keywords: GHQ, Internet addiction, IAT, Psychological health, Rural and urban health training center

INTRODUCTION

Rapid advancements in technology, particularly the internet, have significantly transformed the landscape of education, enabling students to acquire a wide range of learning skills that are now essential for their academic success. The internet facilitates quick and easy access to information and global communication, which are invaluable in today's complex world. However, the benefits of internet use come with concerns, particularly regarding the potential physical and mental health risks

associated with excessive use.¹ Mental health issues are becoming more prevalent globally and have significant economic and social costs. The WHO reports that millions of people suffer from severe and mild mental illnesses, with similar trends observed in Iran.²

Epidemiological studies in Iran indicate variability in the prevalence of psychiatric dysfunction, ranging from 11.9% to 30.2%.³ Uncontrolled internet use can negatively impact individuals' living standards and relationships, potentially leading to instability in their

emotions and social interactions.^{4,5} The surge in internet users globally, which marks a digital industrial revolution, has also brought new challenges. By December 2023, the number of internet users worldwide had grown to over 4.574 billion, with projections suggesting this number will reach 5 billion by 2024 due to smartphone access.^{6,7}

The concept of internet addiction disorder (IAD) encompasses the problematic and compulsive use of the internet, resulting in significant impairments in various aspects of an individual's life over extended periods.⁸ This phenomenon has attracted considerable attention from researchers across multiple disciplines, including medicine, psychology, sociology and computer science, due to its complex nature and widespread implications.⁹

According to the data, the majority of Indian youth comprising 85% of non-adult users, have access to smartphones. Most of them were online five hours a day and 80% admitted to using social media. A growing number of youths watch videos on OTT platforms other than YouTube.^{10,11}

The purpose of my study was to determine the importance of internet addiction and its effects on psychological wellbeing among adolescents. The Internet is an invaluable tool for education and communication and its excessive use poses significant risks to physical and mental health. Addressing internet addiction through interdisciplinary research and promoting balanced use are essential for the well-being of individuals and society as a whole.

Aim

To compare the effect of internet Addiction and on Psychological Wellbeing among Adolescents in the UHTC And RHTC field areas at Sawai Man Singh Medical College and Hospital Jaipur, Rajasthan, India

Objective

To assess the prevalence of internet addiction among adolescents in the specified field areas (UHTC and RHTC). To evaluate the psychological wellbeing of adolescents who exhibit varying levels of internet usage. To determine the correlation between internet addiction and psychological distress among adolescents. To determine demographic variables (such as age, sex and socioeconomic status) that may influence the relationship between internet addiction and psychological wellbeing.

Hypothesis

Ho

There is a significant relationship between internet addiction and its effects on psychological wellbeing

among adolescents under field area of urban Health and rural health training centres.

HA

There is no significant association between internet addiction and its effects on psychological wellbeing among adolescents under field area of urban health and rural health training centers.

METHODS

Study type

This was a community-based observational study.

Study place

This study was conducted in the field area under UHTC and RHTC conditions at Sawai Man Singh Medical College and Hospital, Jaipur, Rajasthan, India.

Study duration

The study duration from January to July 2023.

Sample size

The sample consisted of two groups: one from the rural health training center area and the other from the urban health training center area, both of which were within Jaipur. With a sample size of 200 adolescents, the 95% confidence interval (CI) and an absolute allowable error of 5% were calculated using the formula Z^2pq/d^2 ($Z=1.96$, $p=15\%$, $q=85\%$, $d=5\%$).

Inclusion criteria

The inclusion criteria were that adolescents aged 10-19 years had used the internet for more than a year and were willing to give assent with parental consent.

Exclusion criteria

The exclusion criterion was that they had psychiatric comorbidities or were unwilling/unable to consent.

After identifying eligibility, participants were instructed about the study, provided written consent and completed questionnaires via face-to-face interviews.

The data were gathered using a semi structured platform detailing demographics and internet usage, the internet addiction test (IAT) to measure compulsive internet use and the General Health Questionnaire-12 (GHQ-12) to assess mental health status.

The data collection was collected from 100 patients from both rural and urban backgrounds, selected through

simple random sampling and analyse using MS-Excel and SPSS v.r 25.

Ethical approval

Ethical standards as approved by the Institutional Ethics Committee of Sawai Man Singh Medical College, Jaipur, Rajasthan.

Study tools

The semi structured proforma included details on age, sex, educational qualification, money spent on internet use, place of access, type of internet connection, login status, location of internet access, duration of internet use and reasons for internet use. The data were collected from those using the internet for at least six months

Internet addiction test

Validated and reliable measure of addictive use of the internet. A 20-item 5-point Likert scale was used to measures the severity of self-reported use of the internet. \

The Cronbach's alpha coefficient was 0.889. The questionnaire score ranged from 20 to 100 points; higher marks indicate greater dependence on the internet. A total score that did not exceed 30 indicated a normal level of internet consumption, whereas total scores between 31 and 49 indicated mild addiction, 50–79 designated moderate addiction and scores of 80 or above reflected a severe internet dependency.⁴

General Health Questionnaire

Instrument for measuring status of mental health. The GHQ-12 has reliability coefficients ranging from 0.78 to 0.95 in various studies, with well-established internal validity.

The GHQ-12 uses a four-point Likert scale. GHQ-12 scores are calculated by summing the scores of all 12 items for a total possible score ranging from 0–36. A GHQ score of 5 was kept as a marker for being a case; that is, the participant had psychological distress.⁴

RESULTS

A total of 200 participants, equally divided between rural (N=100) and urban (N=100) populations, were analyzed. The two groups had similar sex distributions (Figure 1) and internet usage media (Figure 3).

However, there were significant differences in age distribution (Figure 4) ($\chi^2=21.54$, p value=0.001) and purposes of internet use (Figure 5) ($\chi^2=5.14$, p value=0.023).

Urban youth primarily used the internet for social media, gaming and browsing, while rural youth predominantly

used it for educational purposes (Figure 2). This difference may be due to cultural factors. Internet exposure was high during this study due to ongoing online classes for schoolchildren and adolescents.

The distributions of IAT (mild, moderate, severe) and GHQ-12 scores significantly differed between the urban and rural groups. The urban population had more individuals with higher IAT and GHQ-12 scores (Table 4). A higher IAT was linked to a significantly greater GHQ-12 score in moderate to severe cases, with a large effect size ($p=0.000$) (Table 1).

Internet use patterns (based on IAT scores) and GHQ scores were significantly correlated. GHQ-12 scores exceeded 5 in the moderate and severe internet addiction categories, with a large effect size (Table 3).

The Mann Whitney U test was used due to nonnormal data distribution, of the data and there was no significant difference in internet use patterns ($p=0.172$) or GHQ scores ($p=0.144$) between the urban and rural groups (Table 6).

However, higher IAT scores predicted more psychological distress, with a stronger correlation in the urban population (Table 6).

Urban adolescents began using the internet at a younger age than did rural adolescents, with a small but significant difference in mean age (Tables 1 and 2).

Sex differences in IAT scores were significant across the total sample ($p=0.027$) (Table 3), but disappeared when analyzing rural and urban populations separately.

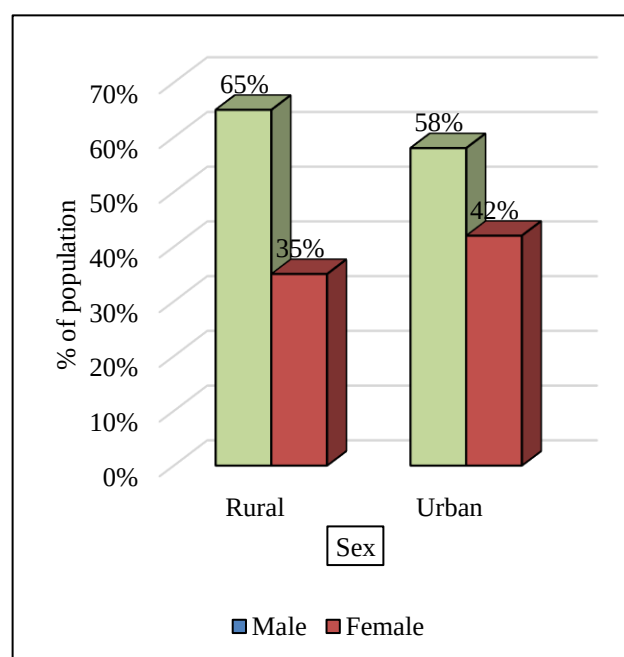


Figure 1: Sex distribution among the study population (chi value: 1.03, p value : 0.309).

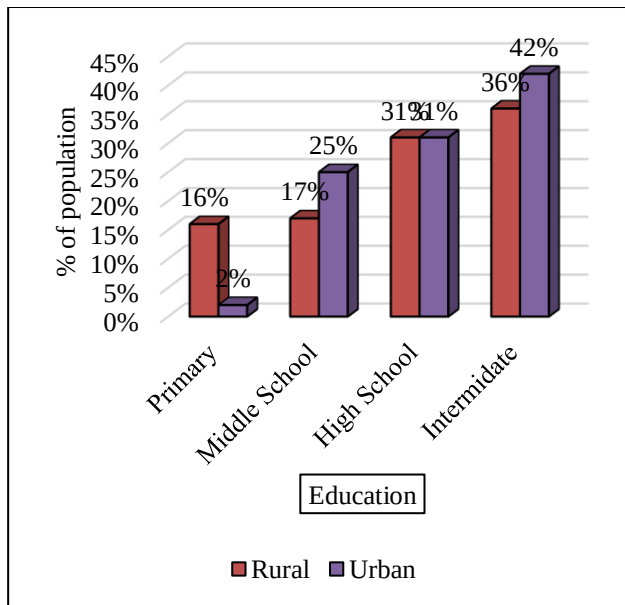


Figure 2: Distribution of education status among the study population (chi value: 12.87, p value: 0.004*).

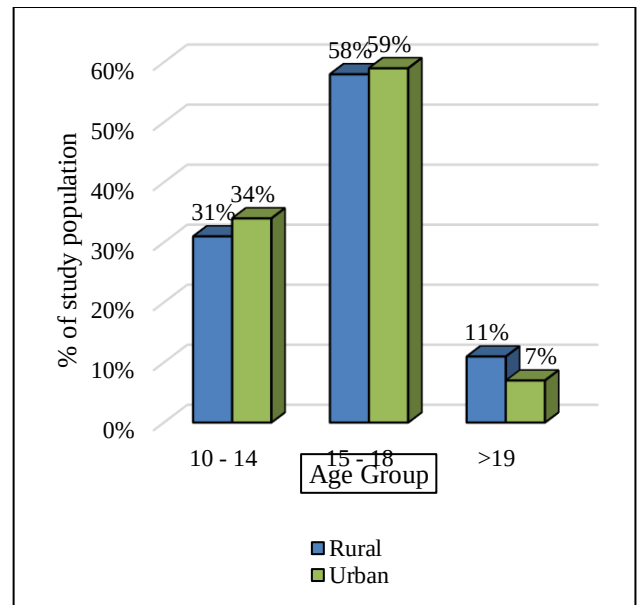


Figure 4: Distribution of age groups (chi value: 21.54, p value: 0.001*).

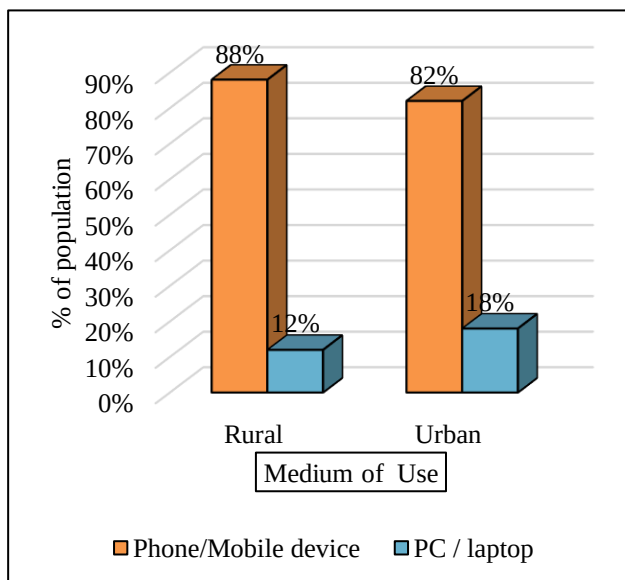


Figure 3: Distribution of Different media used (chi value: 1.41, p value: 0.234).

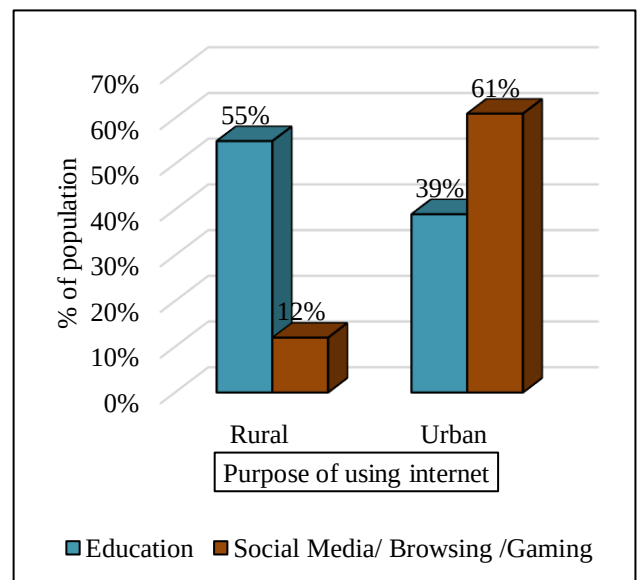


Figure 5: Distribution of different purposes for using internet among the study population (chi value: 5.14, p value: 0.023*).

Table 1: Test of the association between the general health questionnaire (GHQ-12) score and the internet addiction test (IAT) score in the rural population.

GHQ-12	The severity of internet addiction				Chi square (P)
	No addiction (0-30)	Mild (31-49) (% of total)	Moderate (50-79) (% of Total)	Sever (>80) (% of total)	
GHQ <5	59	6	4	0	71.508 (0.001)
GHQ >5	1	3	14	13	
Total	60	9	18	13	

Table 2: Test of the association between the general health questionnaire (GHQ - 12) score and the internet addiction test (IAT) score in the urban population.

GHQ-12	The severity of internet addiction				Chi-square (P)
	No addiction (0-30)	Mild (31-49)	Moderate (50-79)	Sever (>80)	
GHQ <5	48	18	0	1	95.77 (0.001)
GHQ >5	0	0	19	14	
Total	48	18	19	15	

Table 3: Sex-wise comparison of the internet addiction test (IAT) score of the total sample.

Parameter	Sex-wise (mean rank) (total participants=200)		Mann-Whitney Test	P value
	Male	Female		
IAT (total score)	107.67 (n=123)	89.04 (n=77)	3853	0.027
Rural	53.68 (n=65)	44.60 (n=35)	931	0.135
Urban	54.87 (n=58)	44.46 (n=42)	964	0.076

Table 4: Comparisons of the internet Addiction Test (IAT) and General Health Questionnaire (GHQ-12) score at the two sites.

Parameter	Residence (Mean rank)		Mean (SD) n=200	Mann- Whitney Test	P value
	Rural (n=100)	Urban (n=100)			
GHQ -12	94.56	106.45	5.91 (6.65)	4405.5	0.144
IAT	94.92	106.08	31.40 (28.45)	4442	0.172

Table 5: Comparisons of the mean age and age at the beginning of internet use in both populations.

Parameter	Mean age (SD)		Unpaired T-Test (P)
	Rural (n=100)	Urban (n=100)	
Beginning age of internet use (years)	13.50 (2.33)	11.97 (1.88)	5.439 (0.001)
Age (years)	15.80 (2.47)	14.86 (2.35)	1.284 (0.006)

Table 6: Correlations between individual IAT scores and GHQ scores.

Residence	Spearman's rho coefficient	P value
Rural	0.855	0.001
Urban	0.943	0.001

DISCUSSION

The present study analyzed 200 participants equally divided between rural and urban areas. While sex distribution and internet usage media were similar, significant differences were observed in age distribution ($p=0.001$) and internet use purposes ($p=0.023$). Urban youth primarily engaged in social media, gaming and browsing, whereas rural youth focused on education. Increased exposure was noted due to ongoing online classes. IAT and GHQ-12 scores varied significantly, with urban participants showing higher values, indicating greater psychological distress. A strong correlation was found between IAT and GHQ-12 scores in moderate to severe cases ($p=0.000$). No significant rural-urban differences were found in internet use patterns ($p=0.172$) or GHQ scores ($p=0.144$), but higher IAT scores predicted greater distress, particularly in urban areas. Urban adolescents started using the internet earlier than

rural peers, with a minor but significant difference in mean age. Sex differences in IAT scores were significant overall ($p=0.027$) but disappeared when analyzed separately for rural and urban groups.

Similar findings were reported by Ying Ying et al, where internet addiction correlated with adolescent lifestyle and psychological health.¹ Joseph et al, found a high prevalence of problematic internet use among Indian adolescents, reinforcing our results.² Kuss et al, highlighted similar addiction patterns and psychological impacts.³

Bisen et al, identified predictors of internet addiction in Indian college students, supporting our findings on demographic influences.⁴ Abbas et al and Zhang et al, observed a significant relationship between internet use and mental well-being, aligning with our conclusions.^{5,6} Bener et al, linked internet addiction with sleep

disturbances and fatigue, complementing our findings on psychological distress.⁸

Nonetheless, our research has limitations, such as a small sample size, interviewer bias and societal barriers, that can affect its comparability and validity. However, further studies are needed to explore the causal relationships and sociodemographic variations in IA levels.

CONCLUSION

A comparative study of internet use between rural and urban populations, significant differences. Urban youth primarily engaged in social media, gaming and browsing, while rural youth focused on educational purposes. A internet addiction test (IAT) score correlated with greater psychological distress, especially in urban areas. Interestingly, sex differences were significant overall but disappeared when analysing rural and urban populations separately.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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