

Research Paper

Problematic Internet Use Amongst Adolescents: Internet Using Behaviour and Gender Differences

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ABSTRACT

The advent of digital advancement and technology explosion has made the internet an intrinsic part of human lives. Since then, it is serving as an indispensable source of information. It caters to a wide spectrum of needs, from education to entertainment, making it a major contributor to daily activities. Adolescents and youth are major internet users; excessive and uncontrollable use adversely affects their academic and social skills. Increased screen time is believed to have serious repercussions on mental and physical health. The study aimed to investigate problematic internet use (PIU) and any gender variations in behavioural patterns regarding Internet usage among adolescents. In all, 610 Lucknow city residents between the age bracket of 12 and 19 years participated in a cross-sectional study. A self-reporting questionnaire of IAT (Internet addiction test- Dr Young) was utilised to investigate the level of PIU or Internet dependency in the sample of adolescents. The z-test analysis of means concluded that Problematic Internet Use (PIU) is more prevalent in females than males. According to the study, both males and females between the ages of 16-19 years have a greater possibility of getting addicted to the internet than adolescents between 12-15 years of age. Furthermore, the study findings revealed that 47.9% of adolescents had mild PIU, whereas 22% had moderate PIU scores, and 0.7% were found in the severe category of PIU and had internet addiction. Study indicates that adolescents are particularly susceptible to the possibility of rapidly spiraling into severe dependency levels as the majority have mild to moderate levels of internet dependency.

Keywords: *Problematic Internet Use (PIU), Adolescent, Internet Dependency*

In the age of technological growth, the Internet sparks a paradigm change. Internet usage is unavoidable in many aspects of contemporary life, from entertainment to education. With the advent and popularity of the Internet, everyone can now quickly access information and live more conveniently. The world has come on one platform through the Internet allowing knowledge to be ubiquitous.

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Problematic Internet Use (PIU)

Goldberg introduced the idea of PIU, or Internet addiction, in 1995. This idea is referred to by several names such as pathological Internet use, net addiction, online addiction, Internet addiction disorder, and cyber disorder. PIU can lead to difficulties in one's personal, professional, or social life, as noted by Beard and Wolf (2001). It covers a broad range of activities, such as social media, online commerce, streaming video, video games, and pornography. PIU is described as excessive internet use resulting in social, academic, professional, psychological and occupational challenges (Moreno et al., 2013). According to Dr Kimberly Young (1998), internet addiction is "any online-related, compulsive behaviour that interferes with normal living and causes severe stress on family, friends, loved ones, and one's work environment."

The social and academic spheres of adolescent's lives are immensely impacted by their internet usage patterns. The Internet can be considered as a coin with two sides: on one side, it offers many benefits, and on the other, it also has many adverse effects. A survey revealed that more than 35% of Indian internet users are teenagers (Chundawat et al., 2022). Globally the prevalence of Problematic Internet Use considerably varies from one country to another country. In a prevalence study in Europe (2014), it was observed that the prevalence of adults was 7.9% whereas, adolescents was 4.4%. 1.6% of Korean adolescents reported internet addiction, with 38% of them having a high probability of internet dependency in future. Further, in recent studies, prevalence is up by 26% in adolescents (Mathew, 2021).

Problematic internet use is on the rise among teenagers which can be related to many adverse mental and physical health conditions. Internet addiction, which is regarded as a new psychiatric disease, is characterised by withdrawal symptoms such as anxiety, tolerance, and an increased time spent on the internet or other sophisticated technology without disclosing the time spent using them. The majority of dependents experience back strain, carpal tunnel syndrome, sleeplessness, and eye strain (Vyjayanthi et al., 2014). Excessive internet use affects academic performance negatively. Issues noticed were absenteeism in classes, inferior grades, and affecting student's academic performance (Chundawat et al., 2022).

Adolescents

Adolescence is the period in human development that begins when puberty sets in (10–12 years) and ends when a person reaches physiological maturity (around 19 years). During this period prominent changes are seen in physical appearance, sexual characteristics and interests. This affects their concept of body image, their self-concept and self-esteem. Important cognitive and social developments are seen in this period. During this period adolescents are peer-focused and are involved in peer-related activities. Adolescents emphasise social acceptance and seek autonomy and independence from their parents (American Psychological Association, 2018). Adolescence is associated with a period belonging to increased risk-taking behaviours and a spurt in emotional reactivity (Casey BJ et al, 2008). Therefore, it is crucial to examine the impacts of PIU on adolescents and further investigate how the internet influences their social, physical, cognitive, and emotional development. The DSM-V acknowledges the inclusion of Internet Gaming Disorder (IGD). It was discovered that Asian nations such as China and Korea have significant prevalence rates of this illness. The present research can provide a background to help adolescents to be vigilant of internet-using behaviours. The study will act as a base to build on strategies for wise use of the internet and managing their time effectively. Press articles and polls reveal parents' opinions, which vary from enthusiastically praising social media for rescuing

children from loneliness and depression to gravely warning against the negative effects of continuous usage of these platforms on the development of antisocial conduct (Turow & Nir, 2000).

METHOD

Aim and Objectives

- The study evaluates the variations and frequency of PIU in adolescents.
- The incidence of PIU among adolescents is observed.
- To assess any difference in PIU among males and females of different age groups (12-15 and 16-19).

Hypotheses

- PIU will affect male adolescents more frequently than female adolescents.
- The older (adolescents) will have higher PIU than the younger (adolescents).
- Male adolescents of the older age group will have higher PIU than those in the younger age group.
- Older female adolescents will have higher PIU than younger female adolescents.

Variables

Independent Variables

- Gender (male and female)
- Age (12-15 and 16-19 years)

Dependent variable

- Problematic Internet Use (PIU)

Sample

The sample size was 610 adolescents comprising 301 Males and 309 Females. The sample was divided into two groups of Males and Females. Each category of Males and Females is further divided into two groups based on their age comprising early and late adolescence whereas middle adolescence overlaps in both groups, i.e. Group I (12-15 years) and Group II (16 – 19 years).

Tools

- **Socio-demographic data sheet:** A semi-structured questionnaire was designed and data was collected on the candidate's socio-demographic variables. A demographic profile was obtained by eliciting information on age, class, gender, number of siblings, time of sleep, hours of sleep, eating habits while using the internet, interest in any outdoor or indoor games, and parents' names and contact numbers.
- **IAT:** The 20 statements of the questionnaire are self-reporting questions. It is a scale of 5-point Likert scale, (Every item can score between 1 and 5 representing, [1] Rarely and [5] Always). This scale measured the problematic behaviour of internet use. The scoring of the scale ranges from 20 to 100 points. Based on the scoring of the respondents the students are classified as mild addiction (31-49 score), moderate addiction (50-79 score) whereas, severely dependent on internet (80-100 score). Six components were identified by factor analysis salience, excessive Use, neglecting Work, anticipation, lack of Control and neglecting Public Life. The factors showed good internal consistency and concurrent validity. The scale is reliable where the

Problematic Internet Use Amongst Adolescents: Internet Using Behaviour and Gender Differences

internal consistency is $\alpha=0.91$ and the test-retest reliability is $r=0.82$. The scale has high face validity.

Procedure

Self-reporting questionnaires were filled out by the school and college-going adolescents of Lucknow city. The questionnaires were in English and filled at the convenience and comfort of the participants. The study involved adolescents 12 to 19 years old, with a mean age of 15.5 years. Participants who took part in the survey were from English medium schools. To gather data, the sample was chosen using a random sampling technique. A total of 610 adolescents registered to participate in the study and consent from parents of minor participants was obtained. Participants above 18 gave consent to participate in the study. A z-test was used for data analysis and inferential statistics to examine any variation in group means. Percentage analysis was implied to express the internet dependency in the sample. The graphical representation of the result and the descriptive analysis are included for explanation.

Inclusion Criteria

- Age criteria 12 to 19 years of age
- Group I (12-15 years) Group II (16-19 years)
- Both Males and Females are included.
- Adolescent students of Lucknow City
- English medium students

Exclusion Criteria

- Excluding students less than 12 years or more than 19 years of age
- Other gender categories
- Excluding any other mental debilitating condition.
- Non-English medium students

Research design and statistical method

A cross-sectional approach for research was selected and a z-test was employed for statistical analysis.

RESULTS

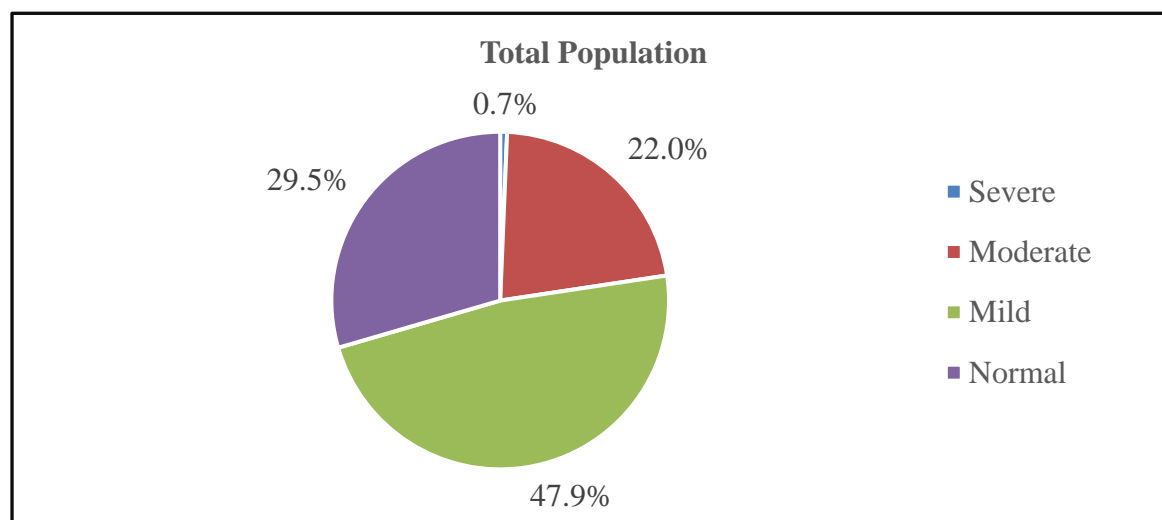


Figure 1: Graphical representation showing sample (n=610) and PIU result (Scores)

Problematic Internet Use Amongst Adolescents: Internet Using Behaviour and Gender Differences

The above diagram is the graphical representation of the sample (n=610) who participated in the IAT Test, to assess the problematic internet use. In the study, 70.6% of the total participants fall in the category of problematic internet use. This consists of 47.9% as mild addiction, 22% as moderate addiction, and 0.7% as severely affected adolescents. Wherein, 29.5% of participants reflect as normal internet users. Thus, we can conclude that there are a high number of participants excessively using the internet and they are at greater risk of slipping into internet addiction and related physical and mental health issues.

Table 1. Summary Table of mean difference between Males and Females for problematic Internet use.

Variables	Male	Female
Mean	37.41	39.70
Standard Deviation	15.53	14.24
Known Variance	241.16	202.68
Observations	301	309
Z	-1.895	
Z critical (one-tail)	1.64	
p-Value	0.97	

*Significance level 0.05

The calculated p-value shows that there is no significant variation in PIU between the males and females. Contrary to the alternate hypothesis, further data analysis revealed that PIU is more common in females than males (p-value= 0.02). Hence, we can conclude that PIU is more prominent in females than males and will accept the H2 hypothesis.

Table 2. Summary Table of the mean difference between Group I (12-15 years) and Group II (16-19 years) both male and female.

Variables	Group I	Group II
Mean	36.55	40.67
Standard Deviation	14.83	14.73
Known Variance	220.14	217.24
Observations	311.00	299.00
Z	-3.44	
z Critical one-tail	1.64	
p-Value	0.00	

The results show that the one-tailed hypotheses computed p-value is 0.00, suggesting a significant difference at the 0.01 level. Thus, the alternate hypothesis (H1) is accepted that Group II (comprising both males and females of 16–19 years) is at higher risk of having PIU than Group I (12-15 years of both males and females).

Table 3. Summary Table of mean difference between the Males of different age groups, Group I (12-15 years) and Group II (16-19 years).

Variables	Group I	Group II
Mean	35.68	39.15
Standard Deviation	14.65	16.22
Known Variance	214.91	263.13

Problematic Internet Use Amongst Adolescents: Internet Using Behaviour and Gender Differences

Variables	Group I	Group II
Observations	151	150
Z	-1.94	
z Critical (one-tail)	1.64	
p-value	0.02	

The findings demonstrate that the p-value obtained is significant at the 0.05 level. Thus, the alternative hypothesis is accepted. Hence, we conclude that the older male adolescents, aged 16 to 19 years are more susceptible to being internet dependent and have PIU than the younger male adolescents of 12 to 15 years of age.

Table 4. Summary Table of mean difference between the Females of different age groups, Group I (12-15 years) and Group II (16-19 years).

Variables	Group I	Group II
Mean	37.36	42.20
Standard Deviation	15	12.95
Known Variance	225.08	167.78
Observations	160	149
Z	-3.04	
z Critical one-tail	1.64	
p-Value	0.00	

As indicated in the table, the computed p-value for the one-tailed hypothesis is significant at the 0.01 threshold. The alternative hypothesis is accepted and can be inferred from the data that older adolescent females between the ages of 16 and 19 are more susceptible than younger female adolescents between the ages of 12 and 15 to be internet-dependent and to have PIU.

Ethical Considerations

The established ethical standards of the Institutional Ethics Committee were adhered to during this research. After being informed of the purpose and methods, participants can withdraw at any time without facing any repercussions, every participant gave their informed consent.

DISCUSSIONS

India has the second-highest internet use rate in the world. Internet penetration is rapid, especially in urban India. In most metropolitan families, each member has multiple devices for Internet access. After the COVID-19 pandemic, the Internet has grown in popularity and convenience, becoming essential to people's daily lives. Among Southeast Asian students, the range of internet overuse or potential addiction is 7.4% to 46.4%, whereas the range of severe PIU or internet addiction is up to 47.4% (Balhara et al., 2018).

The study's findings suggest that PIU is more common in females (mean 39.70) than in men (mean 37.41). It is found contradictory to the previous studies, as in most studies males are more susceptible to PIU than females. Additionally, compared to adolescents of 12-15 years, older adolescents between the ages of 16 and 19 spend more time on the Internet and have greater chances of experiencing PIU or Internet addiction. This result was found to be similar in both the groups of males and females. A related study earlier indicated that older students spend more time online (Kumar et al., 2019).

Problematic Internet Use Amongst Adolescents: Internet Using Behaviour and Gender Differences

It is seen in research that individuals with PIU are most likely to experience Seasonal affective disorder, accompanied by poor quality of life and sleep (Vadher et al., 2019). According to the findings of another study, college students' mental health is severely impacted by internet addiction (Chauhan et al., 2022).

The study found that 70.6% of participants have problematic internet use. 47.9% reflected as mild users from the total participants, 22% participants were moderate users and 0.7% were severely affected adolescents. Whereas, 29.5% of participants reflect as normal internet users. Another study conducted in South India reflected that the young urban population is gravely affected by PIU. According to a study, stress, sadness, and anxiety had a major impact on PIU, which was present in 24% of students (Rajanna K et al., 2021).

Therefore, it is suggested that there should be an extreme focus on mild and moderate PIU-scoring adolescents. Proactive and preventive strategies should be implemented to lessen the negative impacts arising due to the excessive use of the internet. Adolescents who got scores indicating mild and moderate PIU are more susceptible to segue into severe problematic internet use, which will expose them to many physical and mental health issues further aggravating psycho-social issues.

CONCLUSIONS

The result of this study suggested that gender plays a notable impact on internet dependency or PIU. According to this study, females are more likely to suffer from internet addiction or PIU than male adolescents. Age has a significant impact on problematic internet use. Therefore, the current study's findings indicate that older age groups of both males and females are more likely to develop Internet addiction and Internet dependency. It was also found that within each group of males and females the older aged adolescents were more prone to PIU.

Thus, the findings indicate the importance of proactive and preventive interventions such as psycho-education of adolescents and family members on PIU and counselling on wise and effective usage. Effective use should be advocated by monitoring screen timing and having a daily schedule, children should be encouraged to take part in social activities, and parents can play as role models to children by refraining from long screen time. There should be days when the entire family can practice digital detox by refraining from all gadgets and devices on some days and spending time together, which will display the importance of spending time together. This will help adolescents build resilience and empathy. Adolescents will develop both intra-personal and inter-personal skills. Future research should explore effective methods to plan the comprehensive guidance plan in policy development. Researchers can also explore the precedent factors predicting higher PIU among older females. This was contrary to previous studies where males scored higher in PIU than females.

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Problematic Internet Use Amongst Adolescents: Internet Using Behaviour and Gender Differences

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Problematic Internet Use Amongst Adolescents: Internet Using Behaviour and Gender Differences

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Conflict of Interest

The authors declare that they have no competing interests thus, no conflicts of interest that would impede the investigation or the interpretation of the results. Additionally, we have not taken any funding, grants, or other forms of support from organisations or individuals that would compromise the study's objectivity or integrity.

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