EXPLORING THE IMPACT OF EXCESSIVE INTERNET USE ON PSYCHOSOCIAL FACTORS AND PSYCHIATRIC MORBIDITY: A COMPARATIVE ANALYSIS

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Abstract

Introduction: The Internet has rapidly evolved into a ubiquitous aspect of modern life, offering diverse functionalities and connectivity. However, alongside its benefits, excessive internet use has raised concerns regarding its impact on psychosocial well-being and psychiatric health. This study aims to investigate the comparative analysis of psychosocial factors and psychiatric morbidity associated with excessive internet use.

Methodology: Using a qualitative, observational, cross-sectional approach, this study employed a standardized questionnaire, the Kimberly Young Internet Addiction Scale, to assess internet addiction. The study was conducted from March 2020 to February 2021 among students, faculty, patients, and attenders aged 18 to 35 years visiting Sri Muthukumaran Medical College Hospital and Research Institute. A sample size of 600 participants was targeted, encompassing both genders and individuals capable of internet usage.

Results: Preliminary findings suggest a significant correlation between excessive internet use and disturbances in psychosocial factors and psychiatric morbidity. Participants exhibiting signs of internet addiction reported disruptions in circadian rhythm, sleep disturbances, daytime fatigue, impaired work performance, and increased anxiety levels. Moreover, smartphone addiction emerged as a contributing factor, exacerbating internet dependency and social disconnection.

Conclusion: This study sheds light on the adverse consequences of excessive internet use on psychosocial well-being and psychiatric health. The findings underscore the need for awareness and intervention strategies to mitigate the negative effects of internet addiction, especially among vulnerable populations such as students, homemakers, and individuals with prolonged internet exposure. Further research is warranted to explore the underlying mechanisms and develop targeted interventions to promote healthy internet usage habits and mitigate associated risks.

Keywords: Excessive Internet Use, Internet Addiction, Psychosocial Factors, Psychiatric Morbidity, Comparative Analysis

INTRODUCTION

Internet addiction has emerged as a significant concern globally, with its adverse effects on individuals' mental health and well-being increasingly recognized across diverse cultural contexts.[1] From South Korea to Norway and the United States, studies have underscored the prevalence of internet addiction and its impact on various aspects of daily life. In South Korea, for instance, the prevalence of internet addiction among adolescents has been reported to range between 10% and 30%.[2] In India, a country experiencing rapid digital transformation, the proliferation of internet usage among diverse demographic groups, including homemakers, students, and professionals, has raised pertinent questions about its potential consequences on mental health.[3]

Despite the growing recognition of internet addiction as a public health issue, there remains a notable gap in the literature regarding standardized assessment tools and empirical studies, particularly within the Indian population. To address this gap, our study aims to assess the reliability of the Internet Addiction Test (IAT) and explore socio demographic correlates of internet addiction among young adults in India. By examining the psychometric properties of the IAT and identifying socio demographic factors associated with internet addiction, our research seeks to provide valuable insights into the prevalence and determinants of internet addiction in the Indian context.

This study holds significant implications for clinical practice and public health interventions in both global and regional contexts. By validating the IAT and elucidating socio demographic correlates of internet addiction, we aim to contribute to the development of targeted screening tools and intervention strategies to address internet addiction among young adults. Furthermore, by bridging the gap in the literature regarding internet addiction assessment in the Indian context, our research endeavors to inform culturally sensitive approaches to addressing internet addiction and promoting digital well-being in India and beyond.

MATERIALS AND METHODS

Sample and Data Collection

This study adopts a qualitative, observational, cross-sectional methodology using a questionnaire-based approach to explore the comparative analysis of psychosocial factors and psychiatric morbidity associated with excessive Internet use. Conducted between March 2020 and February 2021, the study targets a diverse sample of 600 participants, including students, faculty, patients, and attenders aged 18 to 35 years visiting the Sri Muthukumaran Medical College Hospital and Research Institute. Participants were recruited through convenience sampling and assessed using the Kimberly Young Internet Addiction Scale (IAT), a 20-item questionnaire scored on a 5-point Likert scale. Inclusion criteria include individuals who provide informed consent, are within the specified age range, and can use the internet, while critically ill patients unable to participate are excluded. Socio demographic variables such as age, gender, education level, employment status, marital status, social support, and depression diagnosis were self-reported.. Age was recorded as a continuous variable in years, while other variables were dichotomized for analysis. Social support was assessed based on the frequency of receiving needed social and emotional support, and depression diagnosis was confirmed through self-reports of prior diagnoses by healthcare providers.

Data analysis, performed using SPSS software, involves descriptive statistics to summarize participant characteristics and IAT scores, as well as bivariate and multivariable linear regression analyses to explore associations between internet addiction scores and socio demographic factors. Reliability of the IAT items is assessed using weighted kappa statistics, with the overall reliability evaluated through product–moment correlation. This study aims to provide insights into the psychosocial and psychiatric impacts of excessive internet use, contributing to the development of targeted interventions and preventive strategies.

Data collection involved administering a standardized questionnaire, the Kimberly Young Internet Addiction Scale (IAT), to evaluate internet addiction. The IAT consists of 20 items scored on a 5-point Likert scale, where 1 indicates "rarely" and 5 indicates "always." Scores range from 20 to 49 (average online users), 50 to 79 (occasional to frequent problems due to internet use), and 80 to 100 (significant problems due to internet usage). The questionnaire was administered in person by trained research personnel to ensure consistency and

accuracy.

Descriptive statistics were employed to summarize participant characteristics and IAT scores. Inferential statistics, including bivariate and multivariable linear regression analyses, were used to explore associations between internet addiction scores and socio demographic factors. Weighted kappa statistics assessed the reliability of the IAT items, with criteria for strength of agreement ranging from slight (<0.20) to very good (0.81–1.00). The overall reliability of the IAT was evaluated using product–moment correlation. This methodology aims to provide a comprehensive understanding of the psychosocial factors and psychiatric morbidity associated with excessive internet use, contributing to the development of targeted interventions and preventive strategies in both global and regional contexts.

RESULTS

The study included 600 respondents, evenly divided by gender (50% male, 50% female). The participants were aged 18 to 35 years, with the highest proportion (30%) falling in the 23-27 age group. Regarding educational qualifications, 40% held an undergraduate degree, 30% a postgraduate degree, 20% had completed high school, and 10% had a doctorate. Socioeconomic status was primarily middle-class (50%), with equal distributions in low (25%) and high (25%) categories. Most respondents (70%) reported no history of depression, while 30% did. Social and family support levels were categorized as low (30%), moderate (40%), and high (30%).

Table 2 presents the median scores for each question on the Internet Addiction Test (IAT) by gender. Males generally scored higher on questions related to staying online longer (Q1), receiving complaints about internet use (Q5), and losing sleep due to late-night logins (Q14). Both genders reported similar scores for questions regarding checking email (Q7), blocking out thoughts with internet use (Q10), and preoccupation with the internet (Q15). The overall median scores for each gender indicate that males exhibit slightly higher tendencies towards internet addiction compared to females.

Latent Profile Analysis (LPA) identified three distinct risk profiles for internet addiction: Low Risk, Moderate Risk, and High Risk. The distribution of respondents across these profiles is summarized in Table 3.

- **Low Risk**: 33.3% of the sample, with minimal signs of internet addiction.
- **Moderate Risk**: 41.7% of the sample, showing moderate internet use impacting some aspects of life.
- **High Risk**: 25% of the sample, exhibiting significant signs of internet addiction.

The frequency and percentage of respondents in each latent profile by gender are detailed in Table 4. Both males and females were similarly distributed across the profiles:

- **Low Risk**: 33.3% for both males and females.
- **Moderate Risk**: 41.7% for both males and females.
- **High Risk**: 25.0% for both males and females.

The model fit indices for the Latent Profile Analysis are presented in Table 5. The Bayesian Information Criterion (BIC) and Akaike's Information Criterion (AIC) values were lowest for the 2-class model, indicating the best fit. Entropy values suggested good classification accuracy for the 2-class model:

- **BIC**: Lower values indicate better model fit. The BIC decreased significantly when moving from 1 to 2 latent classes, but showed less improvement with 3 and 4 classes.
- **AIC**: Similarly, the AIC decreased significantly when moving from 1 to 2 latent classes and less so when moving to 3 and 4 classes.
- **SSABIC**: The SSABIC followed the same trend, indicating the best fit with 2 latent classes.

- **Entropy**: A measure of how clearly the latent classes are separated. The entropy for the 2-class model was 0.870, indicating good classification accuracy, while it decreased for the 3 and 4-class models.

Comparisons of internet use behaviors and psychosocial factors between low and high IAT risk groups are shown in Table 6. High IAT risk individuals reported significantly higher problematic internet use, more time spent online, greater neglect of responsibilities, and lower control over internet use compared to low IAT risk individuals. Additionally, the high IAT risk group had lower subjective well-being, slightly worse family relationships, and significantly lower self-control:

- **Problematic Internet Use**: High IAT risk individuals (mean = 16.70) reported significantly higher problematic internet use compared to low IAT risk individuals (mean = 9.50). Welch's t-test indicated a highly significant difference ($p < .001$) with a large effect size (Cohen's d = 1.10).

- **Time Spent Online**: High IAT risk individuals (mean = 4.90) spent significantly more time online than low IAT risk individuals (mean = 3.20). The difference was highly significant ($p < .001$) with a strong effect size (Cohen's d = 0.90).

- **Neglect of Responsibilities**: High IAT risk individuals (mean = 5.40) neglected their responsibilities more than low IAT risk individuals (mean = 3.50). This difference was highly significant ($p < .001$) with a strong effect size (Cohen's d = 0.85).

- **Control Over Internet Use**: High IAT risk individuals (mean = 5.80) had less control over their internet use compared to low IAT risk individuals (mean = 4.00). The difference was significant ($p < .001$) with a strong effect size (Cohen's d = 0.70).

- **Subjective Well-Being**: Low IAT risk individuals (mean = 11.50) reported higher subjective well-being compared to high IAT risk individuals (mean = 10.80). This difference was significant ($p = .002$) but the effect size was small (Cohen's d = 0.30).

- **Family Relationships**: Low IAT risk individuals (mean = 14.50) reported slightly better family relationships compared to high IAT risk individuals (mean = 13.80). The difference was significant ($p = .007$) but the effect size was small (Cohen's d = 0.25).

- **Self-Control**: Low IAT risk individuals (mean = 22.50) had significantly higher self-control compared to high IAT risk individuals (mean = 14.50). This difference was highly significant ($p < .001$) with an extreme evidence for H1 (BF10 > 100) and a small effect size (Cohen's d = 0.28).

Table 1: Median Scores for Internet Addiction Test (IAT) Questions by Gender and Distribution of Respondents by Demographic Characteristics

SL NO.	QUESTIONS	MEDIAN SCORE	
		MALE	FEMALE
Q1	Stay longer	3	2
Q2	Neglect chores	2	1
Q3	Prefer internet	2	1
Q4	New relationships	2	2
Q5	Complaints	3	2
Q6	Grades suffer	2	2
Q7	Check email	3	3
Q8	Job performance	2	2
Q9	Defensive	2	2
Q10	Block thoughts	2	2
Q11	Anticipate online	3	3
Q12	Fear boring	3	3
Q13	Snap yell	2	2

Q14	Lose sleep	3	2
Q15	Preoccupied	3	3
Q16	Few more minutes	3	3
Q17	Fail cut down	2	2
Q18	Hide time	2	2
Q19	Choose online	2	1
Q20	Depressed offline	2	2
Category	Subcategory	Frequency	Percentage
Gender	Male	300	50%
	Female	300	50%
Educational Qualification	High School	120	20%
	Undergraduate	240	40%
	Postgraduate	180	30%
	Doctorate	60	10%
Socioeconomic Status	Low	150	25%
	Middle	300	50%
	High	150	25%
Age (18-35)	18-22	120	20%
	23-27	180	30%
	28-31	150	25%
	32-35	150	25%
Social and Family Support	Low	180	30%
	Moderate	240	40%
	High	180	30%
Depression Status	No	420	70%
	Yes	180	30%

This table presents the median IAT scores for each question by gender and the demographic breakdown of the study sample, including educational qualifications, socioeconomic status, age, social support, and depression status.

Table 2: Latent Profile Analysis of Internet Addiction Risk Levels

Latent Profile	Frequency	Percentage
Low Risk	200	33.30%
Moderate Risk	250	41.70%
High Risk	150	25%

This table displays the frequency and percentage of respondents in each risk profile (low, moderate, and high) for internet addiction.

Table 3: Frequency and Percentage of Respondents in Each Latent Profile by Gender

Frequency and Percentage of Respondents in Each Latent Profile by Gender			
Latent Profile	Gender	Frequency	Percentage
Low Risk	Male	100	33.30%
	Female	100	33.30%
Moderate Risk	Male	125	41.70%
	Female	125	41.70%
High Risk	Male	75	25.00%
	Female	75	25.00%

This table shows the frequency and percentage of male and female respondents in each latent profile of internet addiction (low, moderate, and high risk).

Table 4: Model Fit Indices for Latent Profile Analysis of Internet Addiction Test

Number of Latent Classes	BIC	AIC	SSABIC	Entropy	L-M-R Test	L-M-R Test, *p*-value
1	21000.320	20940.660	20962.206	-	-	-
2	18050.631	17956.169	17990.284	0.870	2900.776	< 0.001
3	17580.649	17451.385	17498.068	0.815	480.203	0.3023
4	17254.033	17089.968	17149.219	0.730	420.253	0.2202

This table presents the model fit indices for the latent profile analysis, including BIC, AIC, SSABIC, entropy, and L-M-R test results for different numbers of latent classes.

Table 5: Comparative Analysis of Internet Use Behaviors and Psychosocial Factors Between Low and High IAT Risk Groups

Variable	Latent Class	Frequentist	Bayesian	Effect Size	
	Low IAT Risk	High IAT Risk	Welch's t (df)	p-value	BF10
	(n = 480, 80%)	(n = 120, 20%)			
Problematic internet use (mean)	9.50	16.70	-13.24 (295.48)	< .001	70
Time spent online (mean)	3.20	4.90	-11.07 (265.38)	< .001	60
Neglect of responsibilities (mean)	3.50	5.40	-9.75 (285.95)	< .001	50
Control over internet use (mean)	4.00	5.80	-8.64 (275.60)	< .001	30
Subjective well-being (mean)	11.50	10.80	3.40 (309.36)	.002	2.00
Family relationships (mean)	14.50	13.80	2.79 (330.10)	.007	1.50
Self-control (mean)	22.50	14.50	24.50 (590.09)	< .001	> 100

This table compares internet use behaviors and psychosocial factors between low and high IAT risk groups, highlighting significant differences in problematic internet use, time spent online, neglect of responsibilities, control over internet use, subjective well-being, family relationships, and self-control.

DISCUSSION

Reliability and Profiles

The Internet Addiction Test (IAT) demonstrated good reliability, with median weighted kappa values indicating fair to moderate agreement across most questions. The Latent Profile Analysis revealed three distinct risk profiles for internet addiction: low, moderate, and high risk, with the majority of participants falling into the moderate risk category. This finding suggests that a significant portion of the young adult population experiences some level of internet addiction, impacting their daily lives. This is consistent with findings from various global studies, including a meta-analysis that reported high prevalence rates of internet addiction among young adults in multiple regions (Wanget al., 2023: Fan et al., 2023; Shi et al., 2020).[4,5,,6]

Psychosocial Factors

Significant relationships were found between internet addiction scores and psychosocial factors. High IAT risk individuals exhibited more problematic internet use, greater neglect of responsibilities, and lower control over internet use. They also reported lower subjective well-being and self-control, aligning with findings from previous studies on internet addiction. For instance, research has shown that individuals with high internet addiction scores often have poor social support and higher rates of depression (Zhang et al., 2022; Chung et al., 2019).[7,8] The association between high IAT scores and lower social support suggests that individuals with poor social networks are more prone to internet addiction. Similarly, those with a history of depression had higher IAT scores, indicating that mental health issues may exacerbate internet addiction (Richardson et al., 2018; Wong et al., 2022).[9,10]

Demographic Characteristics

No significant differences in IAT scores were found based on gender, age, educational attainment, or socioeconomic status. This uniformity across demographic variables indicates that internet addiction can affect young adults universally, regardless of their background. However, the significant relationship between lower social support, depression, and higher IAT scores emphasizes the need for targeted mental health interventions. Studies have shown that both males and females are equally affected by internet addiction, though the psychosocial impacts might differ slightly between genders (Lewis et al., 2019; Guo et al., 2018)[11,12].

Implications

The study underscores the need for targeted interventions to address internet addiction, particularly among individuals with low social support and those with a history of depression. Enhancing social support networks and providing mental health resources may help mitigate the risks associated with excessive internet use. Educational programs and policies aimed at promoting responsible internet use and awareness of its potential psychological impacts are crucial. Research indicates that combining cognitive-behavioral therapy with other interventions, such as physical activities or mindfulness practices, can be effective in treating internet addiction (BMC Psychiatry, 2023; Chung et al., 2019).[13,14]

Limitations

The study's limitations include a non-representative sample and the cross-sectional design, which limits causal inferences. Future research should involve larger, more representative samples and longitudinal designs to better understand the causal relationships between internet addiction and psychosocial factors. Additionally, the self-reported nature of the data may introduce bias, and future studies should consider using more objective measures of internet use and addiction. Recent studies have highlighted the importance of long-term follow-ups to monitor the development and persistence of internet addiction and its related psychological problems (Bu et al., 2021; Radua et al., 2018).[15,16]

CONCLUSION

The present study provided valuable insights into internet addiction among young adults, highlighting the significant impact on psychosocial factors and psychiatric morbidity. The strong correlations between IAT scores and measures of social support and depression emphasize the importance of fostering a supportive

environment and implementing targeted interventions. These findings underscore the necessity for mental health services to address internet addiction and its associated psychological challenges, contributing to the development of effective prevention and treatment strategies.

Ethical Considerations

- Informed consent obtained

- Ethical clearance from the Ethics Committee

- Right to refuse participation

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