

Assessment of Internet Addiction, Mental Health Status, and their Correlation among Graduating Students in Hassan District, Karnataka

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ABSTRACT

Background: The widespread adoption of internet technology among university students has intensified concerns about internet addiction and its impact on mental health outcomes. **Objective:** This study examined internet addiction levels and mental health status among graduating students in Hassan district, Karnataka, and explored their correlational relationships. **Methods:** A descriptive cross-sectional study was conducted among 608 final-year undergraduate students from twelve Government First Grade Colleges using stratified random sampling. Data collection employed standardized instruments including the Internet Addiction Test (IAT) and Depression, Anxiety, and Stress Scale-21 (DASS-21). **Results:** Internet addiction prevalence was 39.3% (27.8% mild, 11.0% moderate, 0.5% severe), while mental health issues were prevalent: depression 55.6%, anxiety 61.7%, and stress 45.2%. Significant positive correlations emerged between internet addiction and depression ($r = .480, p < .01$), anxiety ($r = .428, p < .01$), and stress ($r = .382, p < .01$). **Conclusion:** The moderate correlations between internet addiction and mental health problems necessitate immediate integrated interventions within Karnataka's educational system, emphasizing comprehensive support systems through evidence-based approaches including cognitive-behavioural therapy, digital literacy programs, and universal screening protocols.

Keywords: Internet addiction, mental health, graduating students, Hassan district, Karnataka

INTRODUCTION

The proliferation of smartphones and internet technology among university students has intensified concerns regarding internet addiction and its profound impact on mental health outcomes. Internet addiction, characterized by excessive or compulsive internet use leading to psychological problems (Bjelajac et al., 2022), demonstrates clear associations with poor mental health, including increased emotional distress and problematic behaviours among adolescents (Fu et al., 2022). The COVID-19 pandemic exacerbated these concerns, as increased reliance on digital technologies resulted in deteriorating mental health outcomes and elevated internet addiction levels among younger adults (Oliveira et al., 2022). Among university students, problematic smartphone use manifests through mental health symptoms, bedtime procrastination, and poor sleep quality, collectively affecting academic performance and overall well-being (Cemei et al., 2024).

This relationship establishes a bidirectional association where internet addiction and poor mental health mutually reinforce each other, creating cyclical risk patterns (Otsuka et al., 2020), while personality traits and emotional stability serve as mediating factors, suggesting targeted interventions may effectively alleviate addiction symptoms (Fu et al., 2022). Internet addiction significantly compromises mental health through anxiety, depression, and psychological distress (Bottaro et al., 2024), with university students exhibiting higher

internet addiction levels reporting substantially increased stress and depression (Gorgich et al., 2017). Additional predictors include shame and experiential avoidance, suggesting students use internet excessively as maladaptive coping mechanisms to escape negative emotions (Teymouri Farkush et al., 2022).

Despite growing recognition of these interconnected issues, significant gaps persist in understanding how internet addiction and mental health manifest among graduating students in regional contexts. Understanding these reciprocal relationships is essential for practitioners to devise effective intervention strategies (Cemei et al., 2024), while research insights can guide educators and policymakers in creating programs promoting healthy online habits and enhancing mental health. Therefore, this study focusing on Hassan district's graduating students aims to contribute valuable regional insights while informing targeted interventions for this critical demographic during their transition from academic to professional life.

METHODOLOGY

Study Aim: To understand the level of internet addiction and mental health among graduating students of Karnataka with special reference to Hassan district.

Objectives: The study objectives were: (1) to evaluate the prevalence and severity levels of internet addiction and mental health status among undergraduate students; and (2) to examine the relationship between internet addiction and mental health among study participants.

Study Design: A descriptive cross-sectional research design was employed to examine internet addiction and mental health levels among final-year undergraduate students in Hassan district, Karnataka.

Study Population and Setting: The target population comprised 3,040 final-year undergraduate students enrolled in Bachelor of Arts, Commerce, and Science programs during 2023-2024. The study was conducted across twelve Government First Grade Colleges strategically selected from zones C, D, and E of Hassan district (four colleges per zone).

Sampling: Stratified simple random sampling was employed to ensure representative coverage across academic streams, gender groups, and geographical zones. Using proportionate stratified random sampling methodology, 608 students (approximately 20% of total population) were selected, maintaining proportional representation across all course streams and gender categories.

Data Collection: Primary data was collected through structured questionnaires administered bilingually (English and Kannada) via secure, password-protected Google Forms to ensure accessibility across diverse linguistic backgrounds.

Research Instruments: Three standardized instruments were utilized: Personal Data Sheet (self-designed) for socio-demographic information, Internet Addiction Test (IAT) for assessing internet addiction levels, and Depression, Anxiety, and Stress Scale-21 (DASS-21) for evaluating mental health status.

Data Analysis: Data analysis was performed using Microsoft Excel and SPSS software, employing descriptive statistics (frequency analysis, means, standard deviations) and inferential statistics (correlation analysis) to examine variable relationships.

Ethical Considerations: The study adhered to ethical research standards with institutional permissions from all participating colleges, written informed consent from participants ensuring voluntary participation and confidentiality, and ethical clearance from the Institutional Human Ethics Committee (IHEC), University of Mysore.

Study Limitations: Generalizability is limited by geographical scope (Hassan district only), restriction to three academic streams.

RESULTS

Internet Addiction Prevalence

Table 1: Distribution of Respondents by Level of Internet Addiction (N=608)

Level of Internet Addiction	Frequency	Percent	Cumulative Percent
Normal	369	60.7	60.7
Mild	169	27.8	88.5
Moderate	67	11.0	99.5
Severe	3	0.5	100.0
Total	608	100.0	-

The majority of students (60.7%, n=369) demonstrated normal internet usage patterns, while 39.3% exhibited varying degrees of internet addiction: 27.8% (n=169) mild, 11.0% (n=67) moderate, and 0.5% (n=3) severe. The low prevalence of severe addiction indicates most problematic usage cases are at manageable levels.

Mental Health Status

Table 2: Distribution of Respondents by Level of Depression (N=608)

Level of Depression	Frequency	Percent	Cumulative Percent
Normal	270	44.4	44.4
Mild	127	20.9	65.3
Moderate	150	24.7	90.0
Severe	42	6.9	96.9
Extremely Severe	19	3.1	100.0
Total	608	100.0	-

Depression prevalence reveals 55.6% of students experiencing depressive symptoms, with moderate depression being most prevalent (24.7%). Ten percent exhibit severe to extremely severe depression requiring clinical intervention.

Table 3: Distribution of Respondents by Level of Anxiety (N=608)

Level of Anxiety	Frequency	Percent	Cumulative Percent
Normal	233	38.3	38.3
Mild	65	10.7	49.0
Moderate	176	28.9	78.0
Severe	72	11.8	89.8
Extremely Severe	62	10.2	100.0
Total	608	100.0	-

Anxiety symptoms affect 61.7% of students, with moderate anxiety being predominant (28.9%). Twenty-two

percent experience severe to extremely severe anxiety, indicating significant psychological distress.

Table 4: Distribution of Respondents by Level of Stress (N=608)

Level of Stress	Frequency	Percent	Cumulative Percent
Normal	333	54.8	54.8
Mild	123	20.2	75.0
Moderate	92	15.1	90.1
Severe	49	8.1	98.2
Extremely Severe	11	1.8	100.0
Total	608	100.0	-

Stress levels show 45.2% experiencing elevated stress, with mild stress being most common (20.2%). Severe to extremely severe stress affects 9.9% of students, representing the lowest prevalence among mental health variables.

Correlational Analysis

Table 5: Pearson Correlation Matrix Among Study Variables (N=608)

Variables	1	2	3	4
1. Internet Addiction	1			
2. Depression	.480**	1		
3. Anxiety	.428**	.678**	1	
4. Stress	.382**	.664**	.667**	1

Note: ** Correlation is significant at the 0.01 level (2-tailed).

Significant positive correlations emerged among all variables. Internet addiction demonstrated moderate positive correlations with depression ($r = .480$, $p < .01$), anxiety ($r = .428$, $p < .01$), and stress ($r = .382$, $p < .01$), indicating higher internet addiction levels are associated with increased mental health problems. Mental health variables showed strong positive inter-correlations: depression with anxiety ($r = .678$, $p < .01$), depression with stress ($r = .664$, $p < .01$), and anxiety with stress ($r = .667$, $p < .01$), reflecting typical co-occurrence of psychological symptoms. These findings support both the detrimental impact of internet addiction on student mental health and the interconnected nature of mental health problems in this population.

DISCUSSION

Internet Addiction Prevalence and Regional Comparisons

The present study reveals that 39.3% of graduating students in Hassan district exhibit internet addiction, distributed as 27.8% mild, 11.0% moderate, and 0.5% severe addiction. These findings demonstrate notable regional variations when compared to international studies. Ethiopian university students showed lower overall prevalence at 35.2% (Muche & Asrese, 2021), while Western Rajasthan reported higher rates of 51% (Rajasekhar et al., 2023), and Nepalese students exhibited the highest prevalence at 73% (Adhikari et al., 2022). The predominance of mild addiction levels and minimal severe cases (0.5%) in Hassan district suggests manageable addiction patterns, potentially attributable to factors including peer pressure, low self-esteem (Muche & Asrese, 2021), demographic variations (A.M et al., 2020), and personality traits such as neuroticism and extraversion (Miskulin et al., 2022).

Mental Health Status Among Graduating Students

Mental health challenges are prevalent among graduating students in Hassan district, with 55.6% experiencing depressive symptoms (20.9% mild, 24.7% moderate, 6.9% severe, 3.1% extremely severe), 61.7% reporting anxiety symptoms (10.7% mild, 28.9% moderate, 11.8% severe, 10.2% extremely severe), and 45.2% facing elevated stress levels (20.2% mild, 15.1% moderate, 8.1% severe, 1.8% extremely severe). These prevalence rates align with international findings, including Jordanian university students (Alhemedi et al., 2023) and Bangladeshi students following COVID-19 disruptions (Kan et al., 2022). The etiology of these mental health issues encompasses genetic predisposition (Kumarappan et al., 2020), academic pressures (Johnson et al., 2019; Khorasani et al., 2023), lifestyle factors including excessive internet use (De Paula et al., 2022), psychosocial stressors (Peltzer et al., 1999), and pandemic-related disruptions (Yang et al., 2022; Alfayumi-Zeadna et al., 2022).

Correlational Relationships and Underlying Mechanisms

The study demonstrates significant positive correlations between internet addiction and mental health problems, with moderate correlations observed for depression ($r = .480$, $p < .01$), anxiety ($r = .428$, $p < .01$), and stress ($r = .382$, $p < .01$), while mental health variables showed strong inter-correlations ($r = .664-.678$). These findings corroborate international research documenting similar associations among Malaysian secondary students (M et al., 2020), Syrian medical students (Latifeh et al., 2022), and Malaysian allied health students (Jaafar et al., 2022). The interconnected nature of these relationships stems from multiple mechanisms: excessive online engagement disrupting sleep patterns and social interactions, psychological distress mediating the relationship between addiction and life engagement (Öztekin, 2024), smartphone addiction affecting real-world relationships (Alqaderi et al., 2023; Jahagirdar et al., 2024), and gaming-related sleep disturbances creating deteriorating mental health cycles (Alshammari et al., 2022).

Implications and Intervention Strategies

The findings necessitate comprehensive, multi-tiered intervention approaches within Karnataka's educational system. For internet addiction management, targeted strategies should include counselling and support programs (Özarıcı & Cangöl Sögüt, 2021), self-esteem enhancement initiatives (Khosravi et al., 2022), and structured internet use promotion (A.M et al., 2020). Mental health interventions should encompass evidence-based treatments including cognitive-behavioural therapy (Goldstone, 2016; Heier Vang et al., 2018), pharmacotherapy for severe cases (Piel & Quante, 2023), innovative approaches such as videogame interventions (Tsui et al., 2021), and wellness education integration into curricula (Johnson et al., 2019). Universal screening programs in educational institutions (English & Campbell, 2019) and enhancement of university satisfaction (Liu & Wang, 2024) represent additional preventive measures.

Implications and Intervention Strategies

The research findings necessitate comprehensive, multi-tiered intervention approaches within Karnataka's educational system to address the interconnected challenges of internet addiction and associated mental health issues among college students. For internet addiction management, evidence-based strategies should include structured counselling and support programs (Özarıcı & Cangöl Sögüt, 2021), self-esteem enhancement initiatives (Khosravi et al., 2022), and promotion of healthy internet use patterns (A.M et al., 2020). Concurrent mental health interventions must encompass validated treatments including cognitive-behavioural therapy (Goldstone, 2016; Heiervang et al., 2018), pharmacotherapy for severe cases (Piel & Quante, 2023), innovative therapeutic approaches such as videogame interventions (Tsui et al., 2021), and systematic wellness education integration into academic curricula (Johnson et al., 2019). The implementation of universal screening programs in educational institutions (English & Campbell, 2019) and enhancement of overall university satisfaction (Liu & Wang, 2024) serve as foundational preventive measures that support broader intervention effectiveness.

Implementation Framework for Karnataka College System

Building upon these evidence-based intervention strategies, a comprehensive implementation approach for

Karnataka colleges should systematically integrate digital wellness as a mandatory curricular component while establishing annual screening drives during orientation periods using validated assessment tools to identify at-risk students. The framework must incorporate peer-led awareness programs facilitated by trained student volunteers conducting campus-wide educational sessions, complemented by strategic collaborations with NGOs and technology experts to provide specialized resources and current intervention methodologies. Central to this approach is the implementation of systematic counselling services through a stepped-care model that progresses from self-help resources to group sessions to individual therapy, utilizing established social work intervention methods including case work for individualized support, group work for peer-led therapeutic sessions, community organization to mobilize campus resources, and social action to advocate for institutional policy changes regarding digital wellness. Emphasizing "early prevention or timely intervention" as it proves "more effective than later interventions" Digital Addiction Intervention for Children and Adolescents: A Scoping Review - PMC, the framework should employ evidence-based techniques such as crisis intervention, cognitive-behavioural approaches, solution-focused brief therapy, and psychoeducational group facilitation to comprehensively address internet addiction and associated mental health challenges. Sustainability requires establishing partnerships with local mental health organizations and technology companies for app-based intervention tools, training qualified social workers to facilitate campus-wide initiatives using community development principles and strengths-based assessment methods, while ensuring integration with Karnataka State Higher Education Department for standardized delivery, developing multilingual resources for enhanced accessibility, and leveraging existing campus infrastructure and student organizations for long-term programmatic success.

CONCLUSION

The significant correlations between internet addiction and mental health issues among Hassan district graduating students (22% severe anxiety, 10% severe depression, 39.3% internet addiction) necessitate immediate integrated interventions within Karnataka's educational system, emphasizing comprehensive support systems addressing digital wellness and psychological well-being through evidence-based approaches including cognitive-behavioural therapy, digital literacy programs, and universal screening protocols.

Future Research Directions

Future research should prioritize longitudinal studies to establish causal pathways between internet addiction and mental health deterioration, qualitative research designs to capture students' lived experiences and cultural factors specific to Karnataka's educational environment, quasi-experimental studies to evaluate intervention effectiveness in educational settings without disrupting academic structures, and multi-regional comparative studies across different districts and states to inform evidence-based policy decisions for India's educational and healthcare systems, ensuring culturally sensitive interventions tailored to Karnataka's diverse student population.

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