



Impact of Motivational Enhancement Therapy on Internet Use Disorder and Psychological Distress Among Medical Students.

Dr. Kirti Anurag^{1*}, Dr. Ruchit Mohanty², Dr. Devdutta Raiguru³.

¹Assistant Professor, Department of Psychiatry IMS & SUM HOSPITAL CAMPUS II

²Assistant Professor Department of Community Medicine SCB Medical College & Hospital, Cuttack

³Assistant professor Department of Anaesthesia IMS & SUM HOSPITAL CAMPUS II



Correspondence:

Dr. Kirti Anurag.

Assistant Professor, Department
of Psychiatry IMS & SUM
HOSPITAL CAMPUS II.

Received: 15-07-2026

Revised: 03-08-2026

Accepted: 18-08-2026

Published: 01-09-2026

Abstract

Background: The exponential rise in digital connectivity has led to a parallel increase in behavioural addictions, particularly Internet Use Disorder (IUD) and smartphone addiction. Medical students, facing high academic stress, are particularly vulnerable. **Objective:** This study aims to estimate the prevalence of internet and smartphone addiction among medical students, assess associated psychological distress, and evaluate the efficacy of Motivational Enhancement Therapy (MET) as an intervention. **Methods:** A hospital-based cross-sectional study was conducted during June 2018 to September 2019 among medical students of SCB Medical College and Hospital. Participants were assessed using the Internet Addiction Test (IAT), Smartphone Addiction Scale-Short Version (SAS-SV), and General Health Questionnaire-28 (GHQ-28). A subset of 35 students exhibiting moderate to severe addiction underwent a 4-session MET intervention. **Results:** The prevalence of internet addiction was 26.4%, while smartphone addiction was 49.2%. Psychological distress was significantly higher in students with moderate/severe addiction. Post-MET evaluation revealed a statistically significant reduction in IAT scores ($p=0.001$), SAS-SV scores ($p=0.001$), and GHQ-28 scores ($p=0.001$). **Conclusion:** Internet and smartphone addiction are highly prevalent among medical students and are strongly associated with psychological distress. MET is a highly effective, brief intervention for mitigating internet use disorder and improving overall mental well-being.

Keywords: Internet Addiction, Smartphone Addiction, Motivational Enhancement Therapy, Psychological Distress, Medical Students, Behavioural Addiction.



This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC-BY) license (<http://creativecommons.org/licenses/by/4.0/>).

INTRODUCTION

The concept of addiction has evolved significantly in recent decades, expanding beyond substance dependence to include behavioural and process addictions. Among these, Internet Addiction (IA) or Internet Use Disorder (IUD) has emerged as a critical global health concern. Characterized by excessive or poorly controlled preoccupations, urges, or behaviours regarding computer use and internet access, IA leads to significant impairment and distress.

Medical students represent a highly vulnerable demographic. The rigorous demands of the medical curriculum often result in high levels of stress, leading many students to use the internet and smartphones as a primary coping mechanism and source of entertainment. While the internet is an invaluable educational tool, the pathway from adaptive to pathological use is notoriously ambiguous.

Despite the growing burden of this obscure disorder, standardized, evidence-based treatment guidelines remain sparse. Motivational Enhancement Therapy (MET), a manual-based brief psychotherapy designed to enhance intrinsic motivation to change addictive behaviours, has proven highly efficacious in substance use disorders. However, its application in behavioural addictions like IUD is still in its nascent stages. This study seeks to quantify the prevalence of internet and smartphone addiction among medical students, identify associated psychopathology, and critically evaluate the impact of MET on this population.

MATERIALS AND METHODS

Study Design and Participants

A hospital-based cross-sectional study with an interventional component was conducted over one-year during June 2018 to September 2019 among 250 medical students of SCB Medical College and Hospital. The study population was selected

via systematic random sampling. Informed written consent was obtained from all participants, and the study was approved by the Institutional Ethics Committee.

Assessment Tools

Participants were evaluated using the following standardized instruments:

- **Internet Addiction Test (IAT):** A 20-item scale measuring the intensity of internet obsession. Scores categorize users into normal (<30), mild (31-49), moderate (50-79), and severe (80+) addiction.
- **Smartphone Addiction Scale-Short Version (SAS-SV):** A 10-item scale identifying the level of smartphone addiction risk.
- **General Health Questionnaire (GHQ-28):** A screening tool to assess psychological distress (somatic symptoms, anxiety, social dysfunction, and severe depression).

Intervention

Students identified with moderate to severe internet addiction were invited to participate in a 4-session Motivational Enhancement Therapy (MET) program. The sessions spanned 12 weeks and utilized standard MET principles: expressing empathy, developing discrepancy, avoiding argumentation, rolling with resistance, and supporting self-efficacy.

Statistical Analysis

Data were analyzed using SPSS. Paired t-tests were used to compare pre- and post-intervention scores, and independent t-tests were used for gender comparisons. Statistical significance was established at $p < 0.05$.

RESULTS

Prevalence of Internet and Smartphone Addiction

The baseline assessment of 250 students revealed that a significant portion of the cohort struggled with digital dependency. Only about one-third of the students exhibited completely normal internet use patterns.

Description: This table outlines the distribution of the study population across different severity levels of internet addiction based on IAT scores.

Table 1: Prevalence and Severity of Internet Addiction (n=250)

Severity of Internet Addiction	Percentage of Population (%)
Normal	34.4
Mild	34.0
Moderate	26.0
Severe	5.6

Smartphone addiction showed even higher prevalence rates, with nearly half the population meeting the criteria for addiction.

Description: This table categorizes the participants based on their risk and active addiction levels to smartphones using the SAS-SV.

Table 2: Prevalence and Severity of Smartphone Addiction (n=250)

Severity of Smartphone Addiction	Percentage of Population (%)
Normal	21.6
High Risk	29.2
Addict	49.2

3.2 Gender Variations in Addiction and Distress

When analyzing the data by gender, males consistently scored higher on both internet and smartphone addiction scales.

Description: An independent t-test comparing the mean scores of male and female students across addiction and psychological distress scales.

Table 3: Gender-wise Variation in IAT, SAS-SV, and GHQ-28 Scores

Assessment Tool	Male Mean (SD)	Female Mean (SD)	t-value	df	p-value
IAT Scores	2.10 (0.88)	1.84 (0.84)	2.307	248	0.022*
SAS-SV Scores	1.39 (0.75)	1.11 (0.82)	2.786	248	0.006*
GHQ-28 Scores	0.67 (0.47)	0.58 (0.49)	1.471	248	0.142

*Statistically significant ($p < 0.05$).

The data indicates statistical significance in addiction severity between genders, with males being more prone to internet and smartphone addiction. However, the level of psychological distress (GHQ-28) did not show a statistically significant gender difference.

3.3 Psychological Distress and Addiction Severity

A strong association was found between the severity of internet addiction and the presence of psychological distress, validating the hypothesis that problematic digital use correlates with negative mental health outcomes.

Description: This table highlights the percentage of students experiencing psychological distress (measured via GHQ-28) based on their level of internet addiction.

Table 4: Presence of Psychological Distress Among Subjects with Internet Addiction

Severity of Internet Addiction	No Distress on GHQ-28 (%)	Distress on GHQ-28 (%)
Moderate	13.6	68.5
Severe	4.1	13.6

3.4 Impact of Motivational Enhancement Therapy (MET)

A cohort of 35 students with moderate to severe addiction completed the full 4-session MET intervention. The pre- and post-intervention scores demonstrate a dramatic clinical improvement.

Description: Paired t-test results comparing baseline and post-intervention scores for the 35 participants who underwent the MET program.

Table 5: Pre and Post-MET Mean Scores for Addiction and Distress (n=35)

Assessment	Pre-MET Mean (SD)	Post-MET Mean (SD)	t-value	df	p-value
IAT Scores	3.20 (0.41)	1.69 (0.87)	46.65	34	0.001*
SAS-SV Scores	1.80 (0.53)	1.26 (0.70)	20.04	34	0.001*
GHQ-28 Scores	0.77 (0.43)	0.26 (0.45)	10.71	34	0.001*

*Highly statistically significant ($p \leq 0.001$).

The MET intervention yielded a highly statistically significant reduction across all three metrics. Students not only reduced their addictive behaviours regarding the internet and smartphones but also experienced a profound decrease in overall psychological distress.

DISCUSSION

The current study sheds light on the alarming prevalence of digital behavioural addictions among medical students. We found a 26.4% prevalence of internet addiction (combining moderate and severe cases), which aligns with Asian (26.5%) and European (22.8%) data, but is slightly higher than the general Indian national average (19.85%). The prevalence of smartphone addiction was exceptionally high at 49.2%, likely due to the easy accessibility of smartphones, free campus Wi-Fi, and the integration of digital tools into modern medical education.

Our findings reveal a clear gender disparity; males exhibited significantly higher scores on both the IAT and SAS-SV ($p < 0.05$). This echoes previous literature suggesting that males are drawn more heavily to online gaming and social networking, whereas females tend to use digital devices more moderately, primarily for entertainment and calling.

Crucially, over 50% of the total sample exhibited psychological distress on the GHQ-28. Among those with moderate internet addiction, 68.5% reported significant distress. This bidirectional relationship suggests that students may use the internet as a maladaptive coping mechanism for academic stress, which in turn exacerbates feelings of isolation, anxiety, and depression.

The most promising outcome of this study is the remarkable efficacy of Motivational Enhancement Therapy (MET). Originally designed for substance abuse, MET successfully transitioned to treating behavioural addictions here. Following four sessions, participants showed a highly significant drop in IAT, SAS-SV, and GHQ-28 scores ($p = 0.001$). By helping students resolve ambivalence and build intrinsic motivation, MET enabled them to consciously restructure their leisure time, increase face-to-face socialization, and adopt healthier coping mechanisms.

CONCLUSION

Internet Use Disorder and smartphone addiction are highly prevalent among medical students, carrying a heavy burden of comorbid psychological distress. While the digital age demands connectivity, the lack of boundaries can severely impact student well-being and academic performance. This study provides robust statistical evidence that Motivational

Enhancement Therapy (MET) is a highly effective, non-pharmacological intervention for mitigating digital addictions. Medical institutions must prioritize mental health by integrating early screening for digital addiction and providing accessible, brief interventions like MET to foster healthier, more resilient future healthcare professionals.

REFERENCES

1. Young, K. S. (1998). Internet addiction: The emergence of a new clinical disorder. *CyberPsychology & Behavior*, 1(3), 237-244.
2. Miller, W. R., & Rollnick, S. (2012). *Motivational interviewing: Helping people change*. Guilford press.
3. Poddar, S., Sayeed, N., & Mitra, S. (2015). Internet gaming disorder: Application of motivational enhancement therapy principles in treatment. *Indian Journal of Psychiatry*, 57(1), 100.
4. Block, J. J. (2008). Issues for DSM-V: Internet addiction. *American Journal of Psychiatry*, 165(3), 306-307.
5. Caplan, S. E. (2002). Problematic Internet use and psychosocial well-being: development of a theory-based cognitive-behavioural measurement instrument. *Computers in Human Behavior*, 18(5), 553-575.
6. Ko, C. H., Yen, J. Y., Yen, C. F., Chen, C. S., & Chen, C. C. (2012). The association between Internet addiction and psychiatric disorder: a review of the literature. *European Psychiatry*, 27(1), 1-8.
7. Griffiths, M. (2000). Internet addiction-time to be taken seriously?. *Addiction Research*, 8(5), 413-418.
8. Sharma, A., Sahu, R., Kasar, P. K., & Sharma, R. (2014). Internet addiction among professional courses students: A study from central India. *International Journal of Medical Science and Public Health*, 3(9), 1069-1073.
9. Cash, H., Rae, C. D., Steel, A. H., & Winkler, A. (2012). Internet addiction: A brief summary of research and practice. *Current Psychiatry Reviews*, 8(4), 292-298.
10. Kim, Y., Park, J. Y., Kim, S. B., Jung, I. K., Lim, Y. S., & Kim, J. H. (2010). The effects of Internet addiction on the lifestyle and dietary behavior of Korean adolescents. *Nutrition Research and Practice*, 4(1), 51-57.
11. Murali, V., & George, S. (2007). Lost online: an overview of internet addiction. *Advances in Psychiatric Treatment*, 13(1), 24-30.
12. Ceyhan, E., Ceyhan, A. A., & Gürcan, A. (2007). The validity and reliability of the Problematic Internet Usage Scale. *Kuram Ve Uygulamada Egitim Bilimleri*, 7(1), 411.
13. Young, K. S. (2004). Internet addiction: A new clinical phenomenon and its consequences. *American Behavioural Scientist*, 48(4), 402-415.
14. Chakraborty, K., Basu, D., & Kumar, K. G. (2010). Internet addiction: Consensus, controversies, and the way ahead. *East Asian Archives of Psychiatry*, 20(3), 123.
15. Lee, Y. S., Han, D. H., Kim, S. M., & Renshaw, P. F. (2013). Substance abuse precedes internet addiction. *Addictive Behaviors*, 38(4), 2022-2025.