



INTERNET ADDICTION, PSYCHOLOGICAL DISTRESS, AND DEPRESSIVE SYMPTOMATOLOGY AMONG HEALTH SCIENCES STUDENTS OF THE WEST BENGAL UNIVERSITY OF HEALTH SCIENCES: A CROSS-SECTIONAL EXPLORATORY STUDY

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ABSTRACT

Background: Medical and nursing students face an unusually demanding combination of academic pressure, clinical exposure, separation from family, and limited autonomy — conditions that have repeatedly been shown to elevate the risk of depressive disorders, anxiety, and burnout. Alongside these well-documented stressors, the rapid expansion of internet access has introduced a new dimension of risk: problematic or compulsive internet use, which may serve simultaneously as a coping strategy and as an additional source of psychological harm. Despite a growing body of research on medical student mental health in India, studies that simultaneously measure internet addiction, general psychological distress, and depressive symptomatology within a single health sciences university system remain scarce.

Objectives: To estimate the prevalence of problematic internet use, general psychological distress, and clinically significant depressive symptoms among students affiliated to the West Bengal University of Health Sciences (WBUHS), and to examine associations between daily online time, internet addiction scores, depression severity, and sociodemographic variables including career satisfaction.

Methods: A cross-sectional, self-administered questionnaire study was conducted among 60 students (MBBS, MD/DNB, DM/MCh, and Nursing) across WBUHS-affiliated institutions. Young's Internet Addiction Test (YIA; 20 items, 0–100), the 12-item General Health Questionnaire (GHQ-12; Likert scoring), and the Patient Health Questionnaire-9 (PHQ-9; 0–27) were administered. Sociodemographic and adversity data were collected concurrently. Analysis used Spearman rank-order correlations, Mann-Whitney U tests, Kruskal-Wallis tests, and one-way ANOVA, performed in IBM SPSS version 25.

Results: The mean age was 21.87 ± 4.58 years; 61.7% were male. One in four students (25.4%) met criteria for problematic internet use ($YIA \geq 50$). The prevalence of probable psychiatric morbidity on the GHQ-12 was 91.7%. On the PHQ-9, 68.3% reported at least mild depressive symptoms and 35.0% met criteria for moderate or worse depression. Passive death wishes (PHQ-9 item 9 ≥ 1) were endorsed by 40.0%, and active suicidal ideation in the preceding six months was reported by 13.3%. Daily online time showed a clear dose-response relationship with both internet addiction scores ($r_s = 0.428$, $p < 0.001$) and PHQ-9 scores ($r_s = 0.332$, $p < 0.01$). Students who felt they had chosen the wrong career had significantly higher PHQ-9 scores than those who were satisfied (median 14 vs 7; Mann-Whitney $z = 2.18$, $p < 0.05$). Students who practised regular relaxation exercises had significantly lower YIA scores (mean 33.5 vs 45.4; $z = -2.72$, $p < 0.01$). Direct instrument-to-instrument correlations (YIA vs GHQ-12, YIA vs PHQ-9) were small and non-significant, likely reflecting insufficient statistical power.

Conclusions: A substantial and overlapping burden of internet addiction, psychological distress, and depressive symptoms exists among health sciences students in West Bengal. The relationship between daily online time and both internet addiction and depression is a clinically actionable finding. Career dissatisfaction emerges as an independent correlate of depression. Relaxation practices appear protective against problematic internet use. Routine mental health screening, structured guidance on internet use, and attention to career counselling should be integrated into university-level student welfare programmes. Larger, prospective studies are needed to establish causal pathways.

Keywords: Internet Addiction, Medical Students, Depression, PHQ-9, GHQ-12, Psychological Distress, Online Time, Young's Internet Addiction Test, West Bengal, Career Satisfaction.



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INTRODUCTION

There is something quietly alarming about the mental health of those who are training to look after the mental health of others. Medical and nursing students enter their programmes carrying the same vulnerabilities as any young adult — uncertainty about identity, pressures of performance, the evolving complexity of romantic and social relationships — and then add to these the specific burdens of their training: examinations that can reshape entire careers, hierarchical hospital environments where silence is often expected, night duties that fracture sleep, and the weight of witnessing suffering before they have developed the professional or psychological tools to process it.

Research consistently documents the cost. A 2016 meta-analysis published in JAMA covering 195 studies found that nearly 27% of medical students globally experienced depression or depressive symptoms, with rates rising as training progressed.[1] Indian data largely mirror these findings, with reported prevalences of PHQ-9-defined depression ranging from 23% to over 50% depending on the sample and setting.[2,3] Rates of suicidal ideation among Indian medical students, though less consistently reported, have ranged from 8% to 15% in published studies — a figure that demands serious institutional attention.[4]

Into this already burdened landscape has come the internet. For students in health sciences, internet access is indispensable: for studying, accessing journals, communicating with supervisors, and navigating the administrative machinery of medical education. But the same connectivity that enables learning also enables avoidance, compulsive distraction, and the gradual erosion of offline social relationships. Young's Internet Addiction Test, first described in 1998, has become the most widely used instrument to operationalise the spectrum from ordinary internet use to genuinely problematic engagement that interferes with daily functioning.[5] Studies in Indian medical student populations have reported problematic internet use rates ranging from 18% to 35%, with associations identified with depressive symptoms, poor sleep, academic underperformance, and social isolation.[6,7]

The relationship between internet use and mental health is bidirectional and contextually nuanced. Students who are already depressed or anxious may retreat into online activity as a form of escape;

sustained compulsive use in turn reinforces avoidance behaviours, disrupts circadian rhythms, and reduces the quality of in-person relationships that ordinarily serve as protective factors against depression.[8] Duration of daily internet use is a particularly consistent predictor of problematic use — a relationship that has clinical and policy implications if confirmed in student populations.

Beyond internet use and depression, several other variables in medical student life have received comparatively little attention in the Indian literature. Career satisfaction — whether students feel they are in the right field — is one such factor. Anecdotal reports from psychiatric clinical settings suggest that a meaningful proportion of students pursuing medicine or nursing did so under family or social pressure rather than personal motivation, and that this discordance between aspiration and occupation is a source of ongoing psychological distress. Similarly, the role of protective lifestyle factors such as regular physical relaxation practice has been underexplored in this context.

The present study was conducted under the aegis of the WBUHS mental health initiative, which surveyed 3,578 students across affiliated institutions. A sub-cohort of 60 students who completed all three validated instruments — the YIA, GHQ-12, and PHQ-9 — forms the basis of this analysis. Our aim was to provide a granular, exploratory picture of the mental health landscape of these students, with particular attention to the role of internet use duration, career satisfaction, and lifestyle habits as correlates of psychological outcomes.

OBJECTIVES

The primary objective was to estimate the prevalence of problematic internet use, general psychological distress, and depressive symptomatology among WBUHS-affiliated health sciences students. The secondary objectives were:

- To examine whether daily online time predicts YIA scores and PHQ-9 depression scores.
- To explore associations between career dissatisfaction and depressive symptoms.
- To assess whether regular relaxation practice is associated with lower levels of internet addiction.
- To document attitudes toward mental illness and awareness of mental health legislation among this cohort.
- To describe the prevalence of suicidal ideation, passive death wishes, and other clinical risk indicators.

MATERIALS AND METHODS

Study Design and Setting

This was a cross-sectional, questionnaire-based observational study conducted among students enrolled at institutions affiliated to the West Bengal University of Health Sciences (WBUHS), Kolkata, India. Data were collected between December 2024 and January 2025 through a structured self-administered online questionnaire (Google Forms) embedded within the broader WBUHS Mental Health Survey. The parent survey received 3,578 responses; the present analysis is restricted to 60 participants who completed all three primary study instruments in full.

Participants

Students enrolled in MBBS (undergraduate medicine), MD/DNB (postgraduate medicine), DM/MCh (super-specialty medicine), or Nursing programmes at WBUHS-affiliated colleges were eligible for inclusion. Participation required current enrolment, voluntary completion of all three instruments, and provision of a valid email address. Participation was neither incentivised nor mandatory. Completion of the survey was taken to imply informed consent, as stated in the survey header. A convenience sample of 60 participants was obtained. No formal a priori sample size calculation was performed, which is acknowledged as a limitation.

Instruments

Young's Internet Addiction Test (YIA): A widely validated 20-item self-report instrument developed by Young (1998) to measure compulsive and problematic internet use.[5] Items are rated on a 5-point Likert scale from 0 (Not applicable) to 5 (Always), yielding a total score of 0–100. Published categories applied in this study were: 0–19 (rarely a problem), 20–49 (average user without significant concern), 50–79 (mild to moderate concern with internet use), and 80–100 (severe concern). For analytical purposes, participants scoring ≥ 50 were classified as having problematic internet use.

12-item General Health Questionnaire (GHQ-12): A well-established population-based screening tool for general psychological distress.[9] Items were scored using Likert format (0–3 per item), yielding a possible total of 0–36. The threshold of ≥ 15 on Likert-scored GHQ-12 was used to define probable psychiatric morbidity, consistent with standard guidelines.

Patient Health Questionnaire-9 (PHQ-9): A validated 9-item depression screen derived from DSM-IV criteria, widely used in clinical and research settings.[10] Each item is scored 0–3 (frequency over the previous two weeks), giving a total of 0–27. Severity was classified as: minimal (0–4), mild (5–9), moderate (10–14), moderately severe (15–19), and severe (≥ 20). PHQ-9 item 9 — which asks about thoughts of being better off dead or of hurting oneself — was examined separately as

a measure of passive suicidal ideation (death wishes), with any score ≥ 1 considered a positive endorsement.

Additional Variables

Sociodemographic data included age, gender, student category, permanent residence, current accommodation, stipend receipt, financial support obligations, and daily online time (measured on a 5-point ordinal scale: < 1 hour, 1–2 hours, 2–4 hours, 4–8 hours, > 8 hours). Lifestyle variables included regular exercise (≥ 30 minutes per day), relaxation practice (yoga, pranayama, or breathing exercises), and spirituality use as a coping strategy. Adversity variables included childhood sexual abuse, witnessing domestic violence, childhood bullying, ragging after enrolment, and abuse by teachers or superiors. Clinical variables included suicidal ideation in the past six months, lifetime suicide attempt history, current substance use, and current psychotropic medication. Career satisfaction was assessed via the question: 'Do you think you have chosen the right field to pursue as your career?' (Yes / No / Maybe). Attitudes toward mental illness were assessed through seven items covering stigma, asylum-keeping, awareness of the Mental Health Care Act 2017, and support for Psychiatry as a standalone MBBS subject.

Statistical Analysis

Data were entered and analysed in IBM SPSS Statistics version 25. Continuous variables are described using means and standard deviations; categorical variables using frequencies and percentages. Normality was assessed with the Shapiro-Wilk test. One-way ANOVA was applied where assumptions were met (YIA); Kruskal-Wallis tests and Independent-Samples Median Tests were used as non-parametric alternatives where normality was violated. Mann-Whitney U tests were used for two-group comparisons. Spearman's rank-order correlation coefficient (rs) was used to assess bivariate associations between continuous and ordinal variables. All tests were two-tailed; statistical significance was defined as $p < 0.05$. Given the small sample size, the study is acknowledged to be underpowered for detecting modest correlations and results should be interpreted as exploratory.

Ethical Considerations

The study was conducted under the institutional framework of the WBUHS Mental Health Survey, designed by faculty from the Departments of Psychiatry of affiliated medical colleges. Survey completion was voluntary and anonymous. Informed consent was implied by survey completion, as stated in the opening screen. Strict confidentiality was maintained. Institutional oversight was provided within the WBUHS academic governance structure.

RESULTS

Sociodemographic Profile

Sixty students participated. The mean age was 21.87 years (SD = 4.58; range 18–55). The majority were male (37; 61.7%), reflecting the gender composition of medical postgraduate training in this region. Nursing students formed the largest single group (19; 31.7%), followed by MD/DNB postgraduates (15; 25.0%), MBBS undergraduates (13; 21.7%),

and DM/MCh super-specialty trainees (13; 21.7%). Most participants came from urban areas (40; 66.7%) and lived in institutional hostels (33; 55.0%). Only 10.0% received a stipend. A notable 18.3% reported financially supporting their families alongside their studies. Approximately one in three students (35.0%) exercised regularly, and 25.0% practised some form of relaxation such as yoga or pranayama. Full sociodemographic details are presented in Table 1.

Table 1. Sociodemographic and Lifestyle Profile of the Study Sample (N = 60)

Variable	n	% or Mean ± SD
Age (years)	60	21.87 ± 4.58
Range (18 – 55 years)	—	—
Gender		
Male	37	61.7%
Female	22	36.7%
Not specified	1	1.7%
Student Category		
MBBS (Undergraduate Medicine)	13	21.7%
MD / DNB (Postgraduate Medicine)	15	25.0%
DM / MCh (Super-specialty)	13	21.7%
Nursing	19	31.7%
Permanent Residence		
Urban	40	66.7%
Semi-urban	9	15.0%
Rural	11	18.3%
Current Accommodation		
Hostel	33	55.0%
Home	16	26.7%
Paying Guest	7	11.7%
Mess	4	6.7%
Lifestyle Factors		
Exercises regularly (≥ 30 min/day)	21	35.0%
Practises relaxation (yoga / pranayama / breathing)	15	25.0%
Receives stipend	6	10.0%
Financially supporting family	11	18.3%

Internet Addiction (YIA)

The mean YIA score was 42.36 (SD = 14.69; median 42.0; range 4–85; N = 59, one missing response). This figure places the sample as a whole in the 'average user' category, though with considerable individual variation. Fifteen students (25.4%) scored at or above the threshold of 50, meeting criteria for mild-to-moderate or severe concern. Fourteen of these fell in the 50–79 range and one student scored 85 — the single case of severe concern in the sample. Male students showed numerically higher rates of problematic use (30.6%)

compared to females (18.2%), but this difference did not reach statistical significance (Mann-Whitney U, $p > 0.10$).

Among student categories, MBBS students had the highest mean YIA score (47.6 ± 9.9) and Nursing students the lowest (37.6 ± 14.9), though differences across groups were not statistically significant. The relationship between daily online time and YIA scores, however, was strikingly consistent and statistically significant — described in detail in Section 4.5 below.

Table 2. Distribution of Scores on Study Instruments

Instrument / Threshold	n (%) or Value
Young's Internet Addiction Test (YIA; N = 59)	
Mean ± SD	42.36 ± 14.69
Median (Range)	42.0 (4 – 85)

Rarely a problem (< 20)	2 (3.4%)
Average user, no significant concern (20–49)	42 (71.2%)
Mild to moderate concern (50–79)	14 (23.7%)
Severe concern (≥ 80)	1 (1.7%)
Problematic internet use (≥ 50) — overall	15 / 59 (25.4%)
Problematic use — Male	11 / 36 (30.6%)
Problematic use — Female	4 / 22 (18.2%)
GHQ-12 — General Health Questionnaire (N = 60)	
Mean ± SD	18.10 ± 2.81
Median (Range)	18.0 (13 – 26)
Probable psychiatric morbidity (Likert score ≥ 15)	55 / 60 (91.7%)
PHQ-9 — Patient Health Questionnaire (N = 60)	
Mean ± SD	8.05 ± 5.59
Median (Range)	8.0 (0 – 27)
Minimal (0 – 4)	19 (31.7%)
Mild (5 – 9)	20 (33.3%)
Moderate (10 – 14)	12 (20.0%)
Moderately Severe (15 – 19)	8 (13.3%)
Severe (≥ 20)	1 (1.7%)
Any depressive symptoms (PHQ-9 ≥ 5)	41 / 60 (68.3%)
Moderate or worse depression (PHQ-9 ≥ 10)	21 / 60 (35.0%)
Passive death wish — PHQ-9 item 9 score ≥ 1	24 / 60 (40.0%)

General Psychological Distress (GHQ-12)

The mean GHQ-12 score was 18.10 (SD = 2.81; median 18.0; range 13–26). Applying the standard Likert threshold of ≥ 15, fifty-five students (91.7%) exceeded the caseness threshold for probable psychiatric morbidity. This is an unusually high figure, even accounting for the known sensitivity of the GHQ-12 in detecting transient distress. The compressed range of scores (13–26) and the near-universal caseness rate suggest that the psychological environment experienced by this cohort was broadly — not just individually — adverse. GHQ-12 scores did not differ significantly across student categories or depression severity groups.

Depressive Symptomatology (PHQ-9)

The mean PHQ-9 score was 8.05 (SD = 5.59; median 8.0; range 0–27). The distribution was moderately positively skewed, with the majority of scores falling in the mild to moderate range. Almost a third of participants (31.7%) reported minimal

symptoms; however, 33.3% reported mild, 20.0% moderate, 13.3% moderately severe, and 1.7% severe depressive symptoms. Taken together, 68.3% of the sample endorsed at least mild depressive symptoms, and 35.0% met criteria for moderate or worse depression — a figure that is clinically significant in any population but particularly so among individuals in healthcare training.

Of particular concern is the finding from PHQ-9 item 9, which screens for passive suicidal ideation by asking about thoughts that one would be better off dead or thoughts of self-harm. Twenty-four students — 40.0% of the full cohort — endorsed this item at a frequency of at least 'several days' in the preceding two weeks. This finding is reported separately from the active suicidal ideation data (Section 4.6) because it captures a broader population of students who may be experiencing significant psychological pain without having formed an active suicidal intent.

Table 3. Daily Online Time and Its Association with Internet Addiction and Mental Health Scores

Online time /day	n	YIA Mean ± SD	PHQ-9 Mean ± SD	GHQ-12 Mean ± SD	Prob. use (YIA ≥ 50)
< 1 hour	9	34.2 ± 7.5	4.1 ± 4.8	17.0 ± 2.2	0 (0%)
1 – 2 hours	29	41.4 ± 14.2	8.2 ± 6.2	18.7 ± 3.0	6 (21%)
2 – 4 hours	19	48.6 ± 13.5	10.1 ± 4.0	17.7 ± 2.9	8 (44%)
4 – 8 hours	1	66.0	5.0	19.0	1 (100%)

Kruskal-Wallis: YIA across online-time groups $H = 10.08$, $df = 3$, $p < 0.05$. Spearman: online hours vs YIA $r_s = 0.428$, $p < 0.001$; online hours vs PHQ-9 $r_s = 0.332$, $p < 0.01$. The 4–8 h group contains one participant and is reported descriptively only.

Daily Online Time: A Dose-Response Pattern

One of the most clinically interpretable findings in this study concerns the relationship between self-reported daily online time and both internet addiction severity and depressive symptoms. Students spending less than one hour online per day ($n = 9$) had a mean YIA score of 34.2 and a mean PHQ-9 of 4.1 — well within the non-problematic and minimal-symptom ranges, respectively. As online time increased to 1–2 hours per day ($n = 29$), the mean YIA rose to 41.4 and PHQ-9 to 8.2. Among those spending 2–4 hours online daily ($n = 19$), the mean YIA reached 48.6 — approaching the problematic use threshold — and the mean PHQ-9 was 10.1, consistent with moderate depression. Among this 2–4 hour group, 44% met criteria for

problematic internet use, compared with 21% in the 1–2 hour group and 0% in the < 1 hour group. Kruskal-Wallis analysis confirmed that YIA scores differed significantly across online time groups ($H = 10.08$, $df = 3$, $p < 0.05$). Spearman's correlation between the ordinal online-time variable and YIA score was $r_s = 0.428$ ($p < 0.001$), and between online time and PHQ-9 score was $r_s = 0.332$ ($p < 0.01$). These are the strongest and most statistically reliable associations in the entire dataset. The dose-response character of the relationship — with each increment of online time associated with higher addiction and depression scores — is consistent with a plausible causal pathway, though causality cannot be established from cross-sectional data.

Table 4. Adversity, Clinical, and Interpersonal Variables (N = 60)

Variable	n	%
Childhood adversity		
Any childhood adversity (CSA / DV / bullying — composite)	20	33.3%
Witnessed domestic violence	9	15.0%
Victim of childhood bullying	12	20.0%
History of childhood sexual abuse	2	3.3%
Current clinical variables		
Suicidal ideation in past 6 months	8	13.3%
Lifetime history of suicide attempt	4	6.7%
Passive death wishes (PHQ-9 item $9 \geq 1$)	24	40.0%
Current substance use (past 6 months)	7	11.7%
Currently on psychotropic medication	3	5.0%
Institutional adversity		
Ragging after enrolment	3	5.0%
Physical / emotional abuse by teacher or superior	4	6.7%
Interpersonal variables		
Anxiety / hesitancy with opposite sex	17	28.3%
Romantic break-up in past 6 months	5	8.3%
Career satisfaction		
Feels chosen wrong field (No to right career choice)	15	25.0%
PHQ-9 (career-uncertain vs satisfied): Mann-Whitney	$z = 2.18$	$p < 0.05$

Adversity and Clinical Variables

One in three students (33.3%) reported at least one form of childhood adversity — sexual abuse, witnessing domestic violence, or bullying. Childhood bullying was the most common (20.0%), followed by witnessing domestic violence (15.0%). Suicidal ideation in the preceding six months was reported by 8 students (13.3%), and 4 (6.7%) reported a lifetime history of at least one suicide attempt. Seven students (11.7%) reported current substance use, and 3 (5.0%) were taking psychotropic medication. Importantly, 17 students (28.3%) reported hesitancy or anxiety in interactions with members of the opposite sex — a figure that speaks to the social isolation that may accompany

intensive medical training. Full adversity and clinical data are presented in Table 4.

Career Satisfaction and Depression

Fifteen students (25.0%) reported that they did not feel they had chosen the right field. This group had a substantially higher mean PHQ-9 score (10.6 ± 5.9) compared to those who felt their career choice was correct (7.5 ± 5.9) or were uncertain (6.2 ± 3.6). Mann-Whitney testing showed this difference was statistically significant ($z = 2.18$, $p < 0.05$; median PHQ-9: 14 for the 'wrong career' group vs 7 for the rest). This finding suggests that career discordance — entering medicine or nursing for reasons other than genuine vocation — may be an independent correlate of depressive burden that is distinct from training stress per se.

Table 5. Instrument Scores by Student Category (Mean $\pm$ SD)

Instrument	MBBS (n = 13)	MD/DNB (n = 15)	DM/MCh (n = 13)	Nursing (n = 19)
YIA Total	47.6 ± 9.9	43.5 ± 15.5	42.8 ± 17.1	37.6 ± 14.9
PHQ-9 Total	7.9 ± 5.0	7.9 ± 7.4	7.8 ± 4.7	8.4 ± 5.3
GHQ-12 Total	18.8 ± 2.8	18.3 ± 2.4	17.8 ± 3.3	17.6 ± 2.9
One-way ANOVA and Kruskal-Wallis: no statistically significant differences across student categories for any instrument (all $p > 0.05$). MBBS students had numerically highest YIA scores; Nursing students had the lowest.				

Lifestyle Factors

Students who practised regular relaxation exercises (yoga, pranayama, or breathing techniques; $n = 15$) had a mean YIA score of 33.5, compared to 45.4 among those who did not ($n = 45$). Mann-Whitney U testing indicated this difference was statistically significant ($z = -2.72$, $p < 0.01$). No significant association was found between relaxation practice and PHQ-9 scores ($z = -0.71$, $p > 0.10$), nor between exercise and either YIA or PHQ-9 scores. These findings tentatively suggest that structured relaxation practice may be specifically protective against compulsive internet use, rather than depression more broadly.

Associations between Instruments and ANOVA Results

One-way ANOVA comparing YIA, GHQ-12, and age across the five PHQ-9 severity groups found no statistically significant differences for any variable (YIA: $F = 1.27$, $p = 0.292$; GHQ-12: $F = 0.68$, $p = 0.609$; Age: $F = 0.52$, $p = 0.721$). Non-parametric Median Tests were concordant. The high F value for PHQ-9 across its own severity groups ($F = 204.01$, $p < 0.001$) is analytically tautological and is reported for completeness only. Bivariate Spearman correlations between instrument pairs were uniformly small and non-significant: YIA vs GHQ-12 ($r_s = 0.117$), YIA vs PHQ-9 ($r_s = 0.137$), GHQ-12 vs PHQ-9 ($r_s = 0.040$). The non-significance of these correlations is discussed in the context of statistical power in Section 5.3. Full statistical results are presented in Table 7.

Table 7. Statistical Associations: ANOVA and Spearman Correlations

Comparison	Test	Statistic	p	Interpretation
One-Way ANOVA: continuous variables across PHQ-9 severity groups				
YIA across depression severity groups	ANOVA	$F = 1.27$	0.292	Not significant
GHQ-12 across depression severity groups	ANOVA	$F = 0.68$	0.609	Not significant
Age across depression severity groups	ANOVA	$F = 0.52$	0.721	Not significant
PHQ-9 across own severity groups†	ANOVA	$F = 204.01$	< 0.001	Tautological — not interpreted
Spearman Rank Correlations (r_s)				
YIA vs GHQ-12	Spearman	$r_s = 0.117$	> 0.05	Not significant
YIA vs PHQ-9	Spearman	$r_s = 0.137$	> 0.05	Not significant
GHQ-12 vs PHQ-9	Spearman	$r_s = 0.040$	> 0.05	Not significant
Online hours vs YIA	Spearman	$r_s = 0.428$	< 0.001	Significant — strong positive
Online hours vs PHQ-9	Spearman	$r_s = 0.332$	< 0.01	Significant — moderate positive
Career dissatisfaction vs PHQ-9	Mann-Whitney	$z = 2.18$	< 0.05	Significant
Relaxation practice vs YIA	Mann-Whitney	$z = -2.72$	< 0.01	Significant — lower YIA
† PHQ-9 significance across its own severity categories is analytically expected (self-referential) and carries no independent interpretive value. Non-parametric Median Tests (Independent Samples) were concordant with all ANOVA results. Levene's test showed variance heterogeneity for PHQ-9 ($p = 0.010$); results are consistent with Welch-corrected ANOVA.				

Attitudes Toward Mental Illness and Mental Health Awareness

Table 6 presents students' responses to seven attitude and awareness items. The picture is broadly

encouraging on the most clinically concerning stigma markers: 90% correctly disagreed that mental illness is either contagious or invariably associated with violence, and 88% disagreed that all mentally

ill persons should be institutionalised. However, 23% of respondents felt that persons with mental illness should not be permitted to marry — a notable finding in a cohort of future healthcare professionals. More than one in ten were uncertain or supportive of the idea that mentally ill persons should be physically restrained.

On awareness, roughly half the sample (50%) had heard of the Mental Health Care Act 2017, which is the primary legislative framework governing mental

health care and patient rights in India. That one-third (32%) of healthcare trainees had not heard of this Act at all, and a further 8% were uncertain, reflects a gap in professional education that has direct patient-care implications. Encouragingly, 72% of students believed that Psychiatry should be a standalone subject in the MBBS curriculum — a position that aligns with calls from professional psychiatric bodies in India for expanded undergraduate mental health education.

Table 6. Attitudes toward Mental Illness and Mental Health Awareness (N = 60)

Question	No	Yes	Maybe / Unsure
Can a person with mental illness marry?	14 (23%)	30 (50%)	15 (25%)
Are mentally ill persons always violent?	54 (90%)	2 (3%)	4 (7%)
Is mental illness contagious?	54 (90%)	2 (3%)	4 (7%)
Should all mentally ill be kept in asylums?	53 (88%)	1 (2%)	6 (10%)
Should mentally ill persons be chained?	47 (78%)	2 (3%)	7 (12%)
Heard of the Mental Health Care Act, 2017?	19 (32%)	30 (50%)	5 (8%)
Should Psychiatry be a separate MBBS subject?	12 (20%)	43 (72%)	5 (8%)

DISCUSSION

This study presents a cross-sectional snapshot of the mental health of 60 health sciences students affiliated to WBUHS, and the picture it offers is not a comfortable one. One in four students is using the internet in a way that warrants concern. More than nine in ten exceed the GHQ-12 threshold for probable psychiatric morbidity. More than a third meet criteria for at least moderate depression on the PHQ-9. And four in ten report passive thoughts of death or self-harm — a finding that would prompt immediate clinical attention in any other context. These are not statistics about a marginal sub-group: they describe the majority of this student cohort.

Internet Addiction and Online Time

The overall prevalence of problematic internet use (25.4%) in this sample is broadly consistent with published estimates from Indian medical student populations, which have ranged from 18% to 35%.[6,7] What is more clinically useful than this prevalence figure, however, is the dose-response relationship between daily online time and both internet addiction and depression scores. Students spending 2–4 hours online per day had mean YIA and PHQ-9 scores that were meaningfully higher than those spending less than an hour, and nearly half of the 2–4 hour group met criteria for problematic use. This gradient has a practical implication: it suggests that even modest reductions in daily online time — for instance, from 2–4 hours to 1–2 hours — might be associated with

meaningfully lower addiction severity at the population level.

The Spearman correlations of $r_s = 0.428$ (online time vs YIA) and $r_s = 0.332$ (online time vs PHQ-9) are the strongest and most statistically reliable findings in this dataset, and they align with a growing international literature linking excessive screen time to both addictive use patterns and depressive symptomatology.[8,11] The mechanisms are plausibly bidirectional: depression may drive students to seek distraction or connection online, while compulsive online engagement may reduce sleep quality, reinforce social avoidance, and erode the time available for restorative activities. Longitudinal data would be needed to disentangle the directionality.

The numerically higher rates of problematic use among male students (30.6% vs 18.2% for females) are consistent with most published literature, which finds that male students tend to engage more heavily with online gaming and other time-intensive internet activities.[12] However, the difference was not statistically significant in this sample, and should not be over-interpreted.

Depression, Suicidality, and Career Satisfaction

The PHQ-9 findings — 68.3% with any depressive symptoms and 35.0% with moderate or worse depression — are at the higher end of reported rates in Indian medical student literature, though they are not unprecedented. Studies from similar settings have reported comparable figures, particularly in

cohorts sampled during examination periods or from postgraduate programmes.[3,13] The GHQ-12 caseness rate of 91.7% is striking, but needs to be interpreted with some caution: the Likert-scored GHQ-12 is a screen for general psychological distress, not a diagnostic instrument, and it is known to be sensitive to transient situational stressors. Even so, a figure this high is unusual and suggests that the baseline psychological environment in this student population is under substantial chronic strain.

The finding that 40.0% of students endorsed passive death wishes on PHQ-9 item 9 is perhaps the single most important clinical result in this paper. This item asks whether the respondent has had thoughts of being better off dead or of hurting themselves in some way. It does not capture active suicidal intent — which was reported separately by 13.3% — but it does identify a far larger group of students who are experiencing a quality and intensity of psychological pain that warrants attention. In clinical practice, endorsement of PHQ-9 item 9 typically prompts further safety assessment; in an institutional context, it should prompt systematic access to supportive services.

The finding that career dissatisfaction is a significant correlate of depression — with 'wrong career' students scoring a median of 14 on the PHQ-9 compared to 7 for the rest — is particularly noteworthy because it points to a modifiable antecedent that is distinct from the inherent stressors of training. A quarter of students in this sample felt they were not in the right field, and their depressive burden was correspondingly higher. Career counselling and early identification of students who entered healthcare training under external pressure, rather than intrinsic motivation, could be a targeted intervention strategy.

Why Were Instrument Correlations Non-Significant?

The absence of significant correlations between the three primary instruments (YIA, GHQ-12, PHQ-9) deserves direct discussion rather than quiet acknowledgement. Published meta-analyses have reported associations between internet addiction and depression with pooled effect sizes of $r \approx 0.30$ – 0.40 . [13] To detect a correlation of $r = 0.30$ at 80% power with a two-tailed alpha of 0.05 requires approximately 84 participants — more than this study enrolled. With $N = 59$ – 60 , the study was underpowered to detect anything below a moderate-to-large correlation. The non-significant results are therefore best understood as inconclusive rather than as evidence of no association. The online-time variable — which is more directly behavioural and less subject to the measurement noise inherent in summed psychometric scales — showed robust, significant correlations precisely because its

relationship with outcomes is stronger and thus detectable even in a small sample.

Stigma, Awareness, and the Case for Curricular Reform

The stigma data add a layer of complexity to the mental health picture. On one hand, students correctly rejected the most severe stigmatising beliefs about violence and contagion. On the other hand, nearly one in four did not believe mentally ill people should be permitted to marry — a view that, held by a future clinician, has real-world implications for the advice and attitude a patient might encounter during a consultation. The finding that half the sample was unfamiliar with the Mental Health Care Act 2017, India's landmark legislation on psychiatric patient rights, is a matter of professional concern. This Act governs, among other things, the right to treatment, the prohibition of inhuman treatment, and the rights of persons with mental illness to make decisions about their own care. Healthcare trainees who are unaware of it are in no position to uphold or advocate for these rights. The strong student support (72%) for making Psychiatry a standalone MBBS subject reflects a genuine felt need. Current curricula in many Indian medical colleges allocate limited formal time to psychiatry, and the consequences are seen in the persistence of stigma, the inadequacy of mental health assessment skills, and the poor rates of help-seeking when students themselves develop psychological difficulties. Students are telling us, through this data, what they need.

Limitations

Several important limitations must be acknowledged. The sample of 60 is small and was obtained by convenience, introducing selection bias; students who completed all instruments may differ systematically from the broader WBUHS student population. The cross-sectional design precludes causal inference: the observed associations between online time, internet addiction, and depression might reflect reverse causality, confounding, or both. All data are self-reported and sensitive variables — such as suicidal ideation, substance use, and childhood abuse — are subject to under-reporting. The 'Severe' PHQ-9 category contained a single participant, making any subgroup analysis involving this cell unreliable. The GHQ-12 score range (13–26) was narrower than theoretically possible, suggesting the instrument may have had floor effects in this sample. Despite these limitations, the sample is comparable in size to several published exploratory studies in this domain, and the findings are internally consistent and directionally plausible.

CONCLUSIONS

This study found that a substantial and overlapping burden of internet addiction, psychological distress,

and depressive symptoms exists among health sciences students affiliated to WBUHS. One in four students uses the internet problematically. More than nine in ten show probable psychiatric morbidity on screening. A third meet criteria for clinically meaningful depression. Four in ten are experiencing passive thoughts of death.

These numbers sit alongside three specific findings that are actionable even from a small exploratory sample. First, daily online time predicts both internet addiction and depression in a dose-response fashion that should inform institutional guidance on healthy internet use. Second, career dissatisfaction is an independent correlate of depression that is neither inevitable nor untreatable — and that suggests a role for career counselling within student welfare services. Third, regular relaxation practice is associated with significantly lower internet addiction scores, supporting the integration of structured mindfulness or relaxation programmes into the academic calendar.

The gaps in mental health awareness — including limited knowledge of the MHCA 2017 and residual stigmatising attitudes — underline the importance of embedding mental health education systematically within the health sciences curriculum, not as an optional extra but as a core professional competency.

Larger, prospective, and ideally multi-institutional studies are the necessary next step. But the students represented in this data have already communicated their situation clearly. The question is whether the institutions that train them are listening.

DECLARATIONS

Conflict of Interest

The authors declare no conflicts of interest.

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Ethical Approval

Conducted under the institutional framework of the WBUHS Mental Health Survey. Participation was voluntary and anonymous; survey completion implied informed consent.

Data Availability

De-identified data are available from the corresponding author upon reasonable request.

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