



## PSYCHIATRIC MORBIDITY, SUICIDAL IDEATION AND ASSOCIATED FACTORS IN PHYSIOTHERAPY STUDENTS

**Aseem Mehra\***

Associate Professor, Department of Psychiatry, Postgraduate Institute of medical education and research, Chandigarh. \*Corresponding Author

**Anirudh Uniyal**

Final Year Student of Bachelor of Physiotherapy, department of physical and rehabilitation medicine, Postgraduate Institute of medical education and research, Chandigarh.

**Nishank Verma**

Physiotherapist, department of physical and rehabilitation medicine, Postgraduate Institute of medical education and research, Chandigarh.

**Neha Kumari**

Post-graduate Biology Teacher, Air-force school 3Brd, Chandigarh.

**Krishan Kumar**

Associate Professor, Department of Psychiatry, Postgraduate Institute of medical education and research, Chandigarh.

**ABSTRACT** **Background:** There is a paucity of research to evaluate the psychological morbidity and suicidal ideation in physiotherapy students. **Aim and objectives:** To assess the prevalence of psychological disorders, suicidal ideation and associated factors in physiotherapy students. It also evaluates the association of psychological disorders, suicidal ideation, internet addiction, and substance use. Participants were assessed on instruments of the Beck Suicidal Ideation Scale, Internet addiction test, Perceived Stress Scale, Patient Health Questionnaire-9 and Generalized Anxiety Disorder-7. **Results:** 213 physiotherapy students were included with a mean age of 21.4±1.9 yrs. Majority were females (63.4%), from nuclear families (74.2%), and upper socioeconomic status (73.7%). Suicidal ideation was present in 13.1%. 25.4% had an anxiety disorder, and 31.5% had a depressive disorder. 62.9% reported moderate-severe levels of stress. 14.1% were diagnosed with internet addiction, and 11.3% reported use of substances. Females and younger ones reported more anxiety and depressive symptoms. Substance use was more prevalent in males. Males reported significantly more substance use than females ( $t(211) = -2.179, p < 0.038$ ). A significant positive association was seen between depressive symptoms, anxiety symptoms, internet addiction, and stress. **Conclusion:** It can be said that physiotherapists could face significant psychological problems along with suicidal ideation and internet addiction. Hence, awareness programs should be done for teachers and students at the beginning of the course. Also, early identification and intervention programs should be done.

**KEYWORDS :** Physiotherapist student, psychological problems, suicidal ideation

### INTRODUCTION

In the past few years, there has been a robust increase in physical therapy institutes worldwide and more in countries like India. An increase in the number of physiotherapy institutes has opened new opportunities and simultaneously increased the number of students enrolled in the undergraduate course of physiotherapy.<sup>1</sup> College students must adapt to numerous new situations and experience high stress and psychological morbidity.<sup>2</sup> The professional education of physiotherapists in India is similar to that of students from medicine and dentistry backgrounds, with a demanding physical and academic component from challenging lectures to intense clinical training. The undergraduate course of physiotherapy is highly demanding like, time demands, amount of material to be learned, uncertainty about expectations, lack of skills, and personal factors like relationships with family/partner and physical and psychological health, which could contribute to psychological morbidity.<sup>3</sup> Studies from different countries reported that healthcare professionals have consistently demonstrated a higher level of anxiety and stress than the general population.<sup>4,5</sup> Even medical health and allied professional students are less likely to receive appropriate treatment despite being a part of a health professional team or having better access to care. It has been found that health professional students engage in harmful coping methods, such as excessive alcohol consumption, and, despite their training, may fail to recognise that depression is a significant illness that requires treatment.<sup>6</sup>

There is not much data available on psychological morbidity and suicidal ideation in physiotherapy students. One of the studies, which included 60 physiotherapy students, reported that 43.3% had psychiatric morbidity. Among them, substance use was most common (33.3%), followed by major depressive disorder (20%).<sup>7</sup> Another study assessed the association between psychological stress and self-esteem among doctors of physical therapy and reported a significant positive association between suicidal thoughts and behaviour with psychological distress.<sup>8</sup> The study conducted by Abiola et al. reported that 42.5% had depressive disorder and 38.4% had anxiety disorder among the students of physiotherapy.<sup>9</sup> A cross-sectional study evaluated depression, anxiety and stress among undergraduate and postgraduate medical students. The study reported that depression,

anxiety, and stress were present in 27.02%, 42.34%, and 15.76%, respectively. Psychological disorders can limit academic performance and contribute to substance abuse.<sup>10</sup> Psychological disorders may affect medical and paramedical training, making them less rewarding personally and socially meaningless.<sup>10</sup> Psychological disorders can pose serious concerns like suicidal ideation in this vulnerable group. Several multi-institutional studies reveal that healthcare professionals have a high tendency to suicidal ideation.<sup>11,12</sup> However, there is a paucity of literature on suicidal ideation among physiotherapy students in India.<sup>13</sup>

There is scanty literature to evaluate the psychological morbidity among students of physiotherapy programs. Some studies have explored psychological morbidity but are limited to assessing depression or anxiety disorders only. There is a lack of data to evaluate the comprehensive details of psychological morbidity and their association. With this background, the current study aimed to evaluate the prevalence of psychological disorders, suicidal ideation and associated factors in physiotherapy students.

### Methods

It was an online web-based cross-sectional study conducted among regular undergraduate physiotherapy students studying in any college in India from September 2022 to December 2022. The link was circulated by the Exponential Non-Discriminative snowballing method; participants receiving the message were requested to complete the survey and then forward the link to their colleagues.

### Study Participants And Sampling

No prior study has been conducted in India to evaluate the prevalence of suicidal ideation and psychological morbidity and their determinants in undergraduate physiotherapy students. In previous studies, depression and anxiety disorders were reported in 20-40%. Hence, we have taken the prevalence of 30%. Daniel method<sup>14</sup> was used to calculate the sample size (confidence interval of 95% and a precision of 10%). The sample size came out to be 81. However, we aimed to get the maximum number of participants in the present study. We approached more than 500 students and received responses from 277. We were able to include 277 participants. The institute's Ethics

Committee approved the study.

**Eligibility Criteria**

All regular undergraduate young adult students aged 18 years and above study in an undergraduate Bachelor of Physiotherapy course. The participants could understand English and provided consent for the present study. A convenient sampling technique was used. Those who refused to consent or did not fill in the response in the present study were not included in the study.

**Data Collection Procedure**

Using a Google research form platform, a survey link was circulated among the undergraduate students pursuing a Bachelor of Physiotherapy using WhatsApp.

The first response was to get the Informed consent from the participants. If the participants consented, the following questions opened; otherwise, they could not proceed further. The link was designed to generate only one response using one mobile number. One of the co-investigators of the present study obtained the participants' contact details, who is also a member of the registered society, i.e. Student Association for Physical Therapy (SAPT). On their (SAPT) platform, the co-investigator briefed participants about the study's purpose and informed them that participants would receive a link on their mobile number for the study. When the study was conducted, around 700 students were registered in SAPT. Repeated reminders were sent to every individual to enrol in the present study. Privacy and confidentiality were ensured for the participants.

**Assessment tools used**

For the present study, a semi-structured proforma was designed to gather information about the demographics like age, gender, place of posting, type of family, etc. The following were the tools used to get the data. All the scales are accessible to everyone without any cost and can be used for research and academic purposes. Even these scales have been used in previous Indian studies.

**Beck's Suicidal Ideation Scale:**

19-item self-reporting instrument that evaluates the presence and intensity of suicidal thoughts a week before evaluation.<sup>15</sup> Each item representing a three-point scale (0-2) with a total score ranging from 0-18, indicating that the higher the score, the greater the risk of suicide. First 5 items serve as screening questions for suicidal ideation. Statement groups 4 and 5 assess the presence of active or passive suicidal ideation. If participants scored 1 or 2 on these items, they had to complete the rest. If participants choose the response option rated "0" for both items, they skip items 6 to 19. However, No cut-point was used to categorise the scores.<sup>16</sup> Hence, we used the scores of the screening part (first-fifth items) as positive for suicidal ideation and the full scale for severity of suicidal ideation.

**Internet Addiction Test (IAT):**

This is a self-reported questionnaire with 20 items, each on a 5-point Likert scale. Hence, the total score ranges from 0 to 100. The severity of IA is categorised into various domains based on different scores. A score  $\geq 50$  points was considered as an internet addicts.<sup>17-19</sup> The scale has good psychometric properties with excellent internal consistency ( $\alpha = 0.54-0.82$ ).

**Patient Health Questionnaire-9:**

It is a self-rated questionnaire to measure depression. The scale has excellent psychometric properties with a Cohen kappa value of 0.65.<sup>20</sup> A score of  $\geq 10$  was considered for the presence of depression.<sup>21-23</sup>

**Generalized Anxiety Disorder-7 (GAD-7):**

The scale is a self-reported questionnaire to measure the different amounts of anxiety (mild, moderate, and severe). The scale has adequate psychometric properties.<sup>24,25</sup>

**Perceived stress scale-10:**

It is a self-rated scale to measure the perception of stress. The scale has questions which assess the feelings and thoughts during the last month. It has good psychometric properties.<sup>26-27</sup>

**Statistical Analysis**

The descriptive analysis was used to calculate the continuous variables' mean and standard deviation. Frequency and percentage were calculated for categorical variables. t-test or Mann-Whitney was used for parametric variables and the Chi-square test was used for non-

parametric variables.

**RESULTS**

A total of 213 physiotherapist students were included in the study. The mean age of the study participants was 21.4 $\pm$ 1.9 yrs. The majority were females (63.4%), belonging to nuclear families (74.2%), and were from upper socioeconomic status (73.7%). More than half of the participants were from urban localities (52.6%) and studied in private institutes (50.7%). Only 5.2% reported a family history of mental illness, as in Table 1.

**Table 1: Sociodemographic Profile Of The Study's Participants (N=213)**

Variables	Frequency (%) / Mean (SD)
Age in yrs	21.4 (1.9)
Gender	
Male	78 (36.6)
Female	135 (63.4)
Socioeconomic status	
Lower	45 (21.1)
Middle	11 (5.2)
Upper	157 (73.7)
Type of Institution	
Government	105 (49.3)
Private	108 (50.7)
Type of family	
Nuclear	158 (74.2)
Non-nuclear	55 (25.8)
Locality	
Urban	112 (52.6)
Rural	101 (47.4)
Family history of mental illness	
Present	11 (5.2)
Absent	202 (94.8)

**Suicidal Ideation In The Students Of Physiotherapy**

In the present study, 28 participants (13.1%) responded positively to the fourth and fifth items and were labelled screen-positive. 28 participants answered the following 14 items. The mean score ( $\pm$  SD) of the first five items of the BSSI (screening part) was 2.3  $\pm$  2.4 in these 213 individuals. The mean total score of 28 participants who had answered the whole questionnaire ( $\pm$  SD) was 18.9  $\pm$  6.3. The rest of the details are provided in Table 2.

**Table 2: Presence And Intensity Of Suicidal Ideation In Study's Participants In The Last Week**

Variables	Response (score 0) Frequency (%)	Response (score 1 or 2) Frequency (%)
Frequency Distribution of Individuals' Answers to the First Five Items (screening part) BSSI (N=213)		
Wish to live	82 (38.5)	131 (61.5)
Wish to die	142 (66.7)	71 (33.3)
Reasons for living/dying	144 (67.6)	69 (32.4)
Desire to make an active suicide attempt	196 (92.0)	17 (8.0)
Passive suicidal desire	185 (86.9)	28 (13.1)
Screen positive	28 (13.1)	
Overall score on screening of BSSI (First 5 items) (Mean/SD)	2.3 (2.4) (CI-1.96-2.6)	
Frequency Distribution of Individuals' Answers (N=28) to the second 14 Items of the Beck Scale for Suicidal Ideation (BSSI)		
Duration of suicide ideation/wish	9 (32.1)	19 (67.9)
Frequency of suicide ideation/wish	9 (32.1)	19 (67.9)
Attitude toward ideation/wish	13 (46.4)	15 (53.6)
Control over suicidal ideation/acting out wish	7 (25.0)	21 (75.0)
Deterrants to active attempt (e.g. Family, Religion, irreversibility)	5 (17.9)	23 (72.1)
Reason for contemplated attempt	5 (17.9)	23 (72.1)
Availability/ opportunity for contemplated attempt	11 (39.3)	17 (60.7)
Specificity or Planning for Contemplated Attempt	12 (42.9)	16 (57.1)
Sense of "capability" to carry out an attempt	8 (28.6)	20 (71.4)

Expectancy/anticipation of actual attempt	10 (35.7)	18 (64.3)
Actual preparation for a contemplated attempt	13 (46.4)	15 (53.6)
Suicide note	12 (42.9)	16 (57.1)
Final acts in anticipation of death (e.g., insurance, will)	19 (67.9)	9 (32.1)
Deception/concealment of contemplated suicide	17 (60.7)	11 (39.3)
Overall mean score (N-28 Screen Positive)	18.9 (6.3)	
Overall score on BSSI (6-19 items) (Mean/SD)	3.9 (6.5) (CI-3.0-4.8)	
Overall score on BSSI (Mean/SD)	1.6 (4.6) (CI-0.9-2.2)	

When the participants were evaluated for psychological disorders, it was noted that 54 (25.4%) had anxiety disorder and 67 (31.5%) had a depressive disorder with a cut-off score of 10 each on GAD-7 and PHQ-9, respectively. More than half, 121 (56.8), reported a moderate level of stress, and 13 (6.1%) had a severe level of stress, as mentioned in Table 3. 30 (14.1%) reported a presence of internet addiction on IATT with a cut-off score of 50 and 24 (11.3%) reported use/abuse of substance as depicted in Table 3.

**Table 3: Prevalence Of Psychological Disorder Among The Study Participants**

Variables	Frequency (%)/ Mean (SD)
<b>Generalised Anxiety Disorder-7</b>	
Severity of anxiety	
Minimal	98 (46.0)
Mild	61 (28.6)
Moderate	37 (17.4)
Severe	17 (8.0)
Anxiety disorder	
Present (≥10)	54 (25.4)
Absent (<10)	159 (74.6)
Overall score on GAD-7	6.1 (5.1)
<b>Patient Health Questionnaire-9</b>	
Minimal	94 (44.1)
Mild	52 (24.4)
Moderate	34 (16.0)
Moderate-severe	24 (11.3)
Severe	9 (4.2)
Depressive disorder	
Present (≥10)	67 (31.5)
Absent (<10)	146 (68.5)
Overall score on PHQ-9	7.3 (6.3)

**Table 4: Correlation Of Psychological Disorder With Suicidal Behaviours**

	GAD-7	PHQ-9	PSS-10	IAT	BSIS Screening score (1-5 items)	Overall BSIS score	Overall BSIS Score (except 1-5 items)
GAD-7	---	.745 (<.001) ***	.387 (<.001) ***	.418 (<.001) ***	.056 (.415)	.069 (.319)	.067 (.329)
PHQ-9	.745 (<.001) **	---	.373 (<.001) ***	.536 (<.001) ***	-.045 (.518)	-.032 (.642)	-.022 (.751)
PSS-10	.387 (<.001) **	.373 (<.001) ***	---	.338 (<.001) ***	.008 (.911)	-.005 (.939)	-.011 (.869)
IAT	.418 (<.001) **	.536 (<.001) ***	.338 (<.001) ***	---	-.118 (.086)	-.080 (.243)	-.052 (.453)
BSIS Screening score (1-5 items)	.056 (.415)	-.045 (.518)	.008 (.911)	-.118 (.086)	---	.851 (<.001) ***	.676 (<.001) ***
Overall BSIS score	.069 (.319)	-.032 (.642)	-.005 (.939)	-.080 (.243)	.851 (<.001) ***	---	.962 (<.001) ***
Overall BSIS Score (except 1-5 Items)	.067 (.329)	-.022 (.751)	-.011 (.869)	-.052 (.453)	.676 (<.001) ***	.962 (<.001) ***	----

**\*\*Correlation is significant at the 0.01 level (2-tailed)**

**DISCUSSION**

The current study assessed the prevalence of psychological morbidity and suicidal behaviours among physiotherapy students. In the study, 213 students participated; the majority were females from upper-socioeconomic status and nuclear families. The sociodemographic details align with existing literature conducted worldwide.<sup>7,8</sup>

Participants were assessed on the Beck suicidal ideation scale for the suicidal ideation. 13.1 participants were found to be expressed suicide ideation. The overall mean score was 18.9 ± 6.3. As no previous data is available, difficult to compare the findings of the study. However, studies conducted among health professionals other than physiotherapists reported a prevalence of suicide ideation varies from

<b>Substance use/abuse*</b>	
Present	24 (11.3%)
Absent	189 (88.7%)
<b>Perceived Stress Scale (PSS-10)</b>	
Level of stress	
Low	79 (37.1%)
Moderate	121 (56.85)
High	13 (6.1%)
Overall score on PSS	14.9 (8.1)
<b>Internet Addiction Test (IAT)</b>	
The severity of Internet addiction	
Absent (0-19)	100 (46.9%)
Mild (20-39)	68 (31.9%)
Moderate (40-69)	31 (14.6%)
High (70-100)	14 (6.6%)
Internet addiction	
Present (>50)	30 (14.1%)
Absent (≤50)	183 (85.9%)
Overall score on IAT	26.1 (23.6)

\*Alcohol-17; Tobacco-12

**Association of sociodemographic variables with suicidal ideation and psychological health**

When the association of sociodemographic variables was seen, it was found that the age of the participants had a significant negative correlation with the severity of depression (r(211)=-.15, p<0.031\*), the and severity of anxiety (r(211)=-.17, p<0.016\*). Unlike males, females reported significantly higher anxiety (t(211)=-3.337, p<0.001) and depressive symptoms (t(211)=-2.361, p<0.019\*). Males reported significantly more substance use than females (t(211)=-2.179, p<0.038). Those pursuing graduation from private institutes reported significantly more depressive symptoms compared to studying in government institutions (t(211) =-2.108, p<0.036). Those students from lower-middle socioeconomic status reported significantly more anxiety symptoms than those from upper socioeconomic status (t(166)=-2.223, p<0.028). The participants from nuclear families reported a higher level of internet addiction than those from extended/joint families (t(211)=-2.105, p<0.037). No significant differences were noted among other sociodemographic variables with the psychological disorder and suicidal ideation.

In terms of correlations between psychological disorders and suicidal ideation. There was a significant positive association between depressive symptoms, anxiety symptoms, internet addiction, and perceived social stress, as shown in Table 3. However, there was no significant association between the psychological disorder and suicidal ideation, as in Table 4. The rest of the details are depicted in Table 4.

16-34.1%, and the global average of suicidal ideation among medical students is 11%.<sup>28</sup> From the findings, it can be said that there is an urgent and utmost need to screen students for suicide ideation and target modifiable factors to avoid consequences. Other strategies might be beneficial, like providing crisis contact numbers, promoting spirituality or yoga/meditation, and implementing preventive measures in academic and clinical settings.

There is a need for actions, such as screening students and intervention targeting. In terms of the prevalence of psychological morbidity, it was noted that 25.4% had an anxiety disorder, and 31.5% had a depressive disorder. Among the demographic factors, younger age, females, lower-socioeconomic status and studying in private institutions were

associated with depressive and anxiety disorders. In the literature, the prevalence of depression and anxiety disorder has been reported in a range of 20-48.0% and 15.2-68.54%, respectively.<sup>7,9,10,29</sup> The findings are in line with the existing literature. In the previous studies, females were found to be having more severity of anxiety and depressive disorder.<sup>7,9,30</sup> The occurrence of depression at younger age, lower-socioeconomic status and private institutions could be because of transitional change from school to college, poor adjustment, institutional environment and poor coping style. It can be said that students entering the first years of academics should be assessed for the presence of depression or anxiety disorder along with social support. The student-specific care should be provided to them as early as possible.

In the present study, 62.9% reported a moderate-high level of stress. In the previous studies, stress was presented from 26.9-53.2%.<sup>9,29</sup> In the current study, the stress level was higher among the physiotherapist compared to previous studies. The reason could be that different instruments were used in previous studies to assess the level of stress. Other reasons could be different clinical settings; different settings were used. In the present study, 14.1% had internet addiction, while 11.3% reported substance use, either alcohol and tobacco or both substance use. The existing literature reported internet addiction in a range of 33.3-52%,<sup>9,31</sup> which is relatively high compared to the present study. The reason could be that in previous studies, no validated tools were used to assess internet addiction. The present study had a significant positive association between the severity of depression, anxiety disorder, and internet addiction. Previous studies noticed similar relation.<sup>7,9,31</sup> From the findings, it can be said that psychological issues like stress and internet addiction can have detrimental effects on physical and mental health. Resultantly, students can adopt poor coping styles like substance use, academic dropout, poor performance in examinations etc.

## CONCLUSION OF STUDY

It was seen that physiotherapy students reported a significant amount of depression, anxiety, suicidal ideation and internet addiction. Consequently, it is proposed that this physiotherapy institute could take appropriate steps to prevent the above-mentioned psychological symptoms. Supportive and screening systems may be beneficial to provide early interventions for those at higher risk of suicidal ideation and psychological disorders. There is an urgent need to create awareness as well as develop effective preventive measures and treatment strategies in order to tackle psychological disorders, suicidal ideation and internet addiction in students of physiotherapy.

## Limitations Of The Study

The study has certain limitations. First, it was an online web-based cross-sectional study; hence cannot demonstrate the causal relationship between psychological morbidity, suicidal ideation and internet addiction and future longitudinal studies are required for the same. Second, the sample size was small, which is not comprehensive to understand the psychological morbidity, suicidal ideation and stress in this population. Third, it was a web-based study; hence face to face interview is a more valuable and better approach. Fourth, we evaluated psychological morbidity, suicidal ideation and Internet addiction using self-administrated questionnaires; however, this might not be as accurate for evaluating these issues as a qualitative interview and questionnaires with an expert mental health professional. Fifth, we approached only those students who were members of SAPT, which increased the risk of bias. Sixth, the instruments used in the study were screening instruments not structured diagnostic interviews. The last one is that no control group (like other medical specialties) was included in the study.

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