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Mental health status of students pursuing professional training: A questionnaire-based study

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Abstract:

BACKGROUND: Globally, depression is one of the leading causes of illness and disability among adolescents, and suicide is the third leading cause of death among the young and adolescents. Since we have limited data on the prevalence of psychological distress among the youth of India, our aim was to estimate the prevalence of psychological distress, anxiety, and depression among students of professional colleges.

MATERIALS AND METHODS: This study was conducted in Visakhapatnam, Andhra Pradesh (India). A total of 502 apparently healthy students have participated in this study. Data were collected from 243 medical students, 119 engineering students, 103 dental students, and 36 nursing students. A pretested, prevalidated, and structured Kessler's Psychological Distress Scale (K_{10}) was used for the assessment of mental health among students. This is a self-administered questionnaire-based cross-sectional study. Microsoft Office Excel was used for data storage and tabulation. Mean, standard deviation, Chi-square test, Mann–Whitney U-test, and Kruskal–Wallis test were used to find the association difference between various parameters using SPSS 22 software.

RESULTS: Out of 502 students, 34.7% of students were found to have normal mental health, 135 students were having mild mental problems, and 116 and 77 had moderate and severe mental illness, respectively. Out of 197 males, 66 were normal, 61, 46, and 24 had mild, moderate, and severe mental problems, respectively. Out of 305 females, only 108 were found to be normal.

CONCLUSION: Male students were found to have higher prevalence of mental abnormalities. A significant higher prevalence of depression is seen in day-scholars compared to hostellers. Nursing students are having significantly higher prevalence of depression and nonpsychotic mental illness as compared to dental, engineering, and medical students. Medical students are having the lowest rate of depression than other nonmedical professional subjects.

Keywords:

Anxiety, Kessler's scale, professional education, psychological distress, students, young adults

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Introduction

According to the World Health Organization (WHO), the definition of mental health is "A state of well-being in which every individual realizes his/her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his/her community."[1] Mental health is an integral and essential part of health as defined by the WHO: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."

The National Mental Health Survey 2015–2016 reveals that nearly 15% of Indian adults need active intervention for one or more mental health issues and one in 20 Indians suffers from depression. It is estimated that in 2012, India had over 258,000 suicides, with the age group of 15–49 years being most affected.[2] There are effective measures

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and treatments, but due to extreme shortage of mental health workers such as psychologists, psychiatrists, and doctors, adequate care and interventions are not available. As reported in 2014, our doctor patient ratio for mental diseases can be as low as "one in 100,000 people." The average suicide rate in India is 10.9 for every 1 lakh population, and the majority of them are below 44 years of age. In India, mental health concerns are considered as a social taboo. People opt not to pursue mental health services at all due to existing social stigma and to avoid the label of mental illness on them.[3]

India is currently home to over one billion population. It has >50% of its population below the age of 25 and >65% below the age of 35. Youth is the most valuable, dynamic, and productive segment of the population. India is a young nation as the youth population in India in 2011 stands at 34.8%.[4] A country's ability and potential for growth undoubtedly are determined by the size and ability of its youth. College years are the preparatory years for the youth to learn the necessary skills to face real challenges. A sound mind is crucial for teamwork, creative thinking, and problem-solving and to possess positive attitude toward life. Many students might be struggling with mental health concerns such as anxiety, depression, and substance abuse. However, only a small percentage of these students seek services at their counseling centers. Untreated mental health issues can result in academic underachievement, acting out behaviors in the classroom, self-destructive or aggressive behavior, etc.

Students pursuing professional education are the population segment that is very crucial for determining the future growth and success of any country. Good health that includes both physical and mental attributes is crucial to learn new skills, communication ability, living skills, employability, and social ability as well as to enhance the overall quality of life. College years are peak time for onset of mental disorders such as mood disorders, anxiety, depression, and substance abuse, and if not intervened at correct time, then it might lead to suicides.[5] It is estimated that around 90% of suicides have a history of mental illness.[6]

Aim

The present study aims to estimate the prevalence of psychological distress, anxiety, and depression among students who are pursuing professional studies.

Materials and Methods

Study design and setting

This is a questionnaire-based cross-sectional study, conducted in Visakhapatnam, Andhra Pradesh (AP, India) during May–July 2019. Study population included students from medical, engineering, dental, and nursing colleges in Visakhapatnam, AP (India).

Study participants and sampling

Young adults in the age group of 18–24 years who are studying in the various professional colleges were randomly enrolled for the study. Assuming the psychological distress as 59%,[7] 95% confidence level, allowable error of 5%, and design effect of 1.3, the sample size required was 499 using the appropriate formula.[8] Adding 10% extra for nonresponse or incomplete response, 550 students were contacted. Students were enrolled from different professional courses by stratified random sampling with proportional allocation.

Students were asked to participate after taking informed consent. Young adults of both genders aged between 18 and 24 years of age who were not having any serious illness and studying in a professional college were included in the study. Students having psychiatric conditions requiring medication at present or any previous history of diagnosed mental illness were excluded. Students having any other serious chronic or acute illness were also not included in the study.

Data collection tools and technique

A pretested, validated, and structured Kessler's Scale (K_{10}) having a good validity (ending kappa and weighted kappa scores ranged from 0.42 to 0.74) and strong reliability (Cronbach's α =0.88) was used for assessment.[9] It has 10-item questionnaire widely used in epidemiological studies to measure psychological distress. For each question, there were 5 possible responses; these were collected from students and then scored. This score was used as basis for intervention.[10] The numbers attached to the participant's responses were added up, and the total score obtained was the final score on the Kessler's Psychological Distress Scale (K_{10}). Scores ranged from 10 to 50. Subjects having score <20 were likely to be well. Participants scoring 20–24 were likely to have a mild mental disorder, 25–29 were likely to have moderate mental disorder, and >30 score are likely to have a severe mental disorder.

Questionnaires were distributed among 550 young adults aged between 18 and 25 years pursuing professional studies in the selected institutions as per sampling procedure. The questionnaire was distributed among students, instructing rules to be followed while filling up along with a consent form. They were explained that participation was voluntary. The interested subjects participated. Anyone who did not want to participate was allowed to do so without any questions asked. The filled questionnaire along with consent forms was collected. Privacy and anonymity were ensured after distribution as well as during collection. Out of 550 students, 502

completed the questionnaire along with consent form. The total score was obtained by collating all the responses.

Ethical consideration

The study was conducted in accordance with "Guidelines for Biomedical and Health Research involving Human Participants, 2017" by the ICMR and approved by the institutional ethics committee.

Microsoft Office Excel was used for data storage, tabulation, and the generation of descriptive statistics. Mean, standard deviation, Chi-square test, Mann–Whitney U-test, and Kruskal–Wallis test were used to find the association difference between various parameters using software IBM SPSS statistics for Windows, version 22 (IBM Corp., Armonk, N.Y., USA onfidence interval of 95% and $P < 0.05$ were considered statistically significant.

Results

Table 1 and Figures 1-3 depict that out of 502 students, 174 (34.7%) students have normal mental health, 135 students (26.9%) were having mild mental problems, and 116 (23.1%) and 77 (15.3%) had moderate and severe mental illness, respectively. Out of 197 males 66 (33.5%) were normal, 61 (31%) have mild mental problem. 46 (23.4%) have moderate and 24 out of 197 males (12.2%) have severe mental abnormalities. Out of 305 females, 108 (35.4%) were found to be normal, 74 (24.3%) were having mild mental abnormalities, and 70 (23%) and 53 (17.4%) female students were having moderate and severe mental disorders, respectively.

As per Table 2, only 66 males and 108 females were not having any psychological distress, whereas 131 (66.5%) males and 197 (64.6%) females were having psychological distress which includes mild, moderate, and severe categories. Gender difference was not significant. However, the prevalence of psychological distress is found to be more in males.

Table 1: Gender-wise distribution of K10 scores among all the study participants

K10-based score	Total, *n* (%)	Gender, *n* (%)	
		Males	Females
Normal	174 (34.7)	66 (33.5)	108 (35.4)
Mild	135 (26.9)	61 (31)	74 (24.3)
Moderate	116 (23.1)	46 (23.4)	70 (23)
Severe	77 (15.3)	24 (12.2)	53 (17.4)
Total	502 (100)	197 (100)	305 (100)

Normal (0-20), mild (21-24), moderate (25-29), and severe (>30)

Table 2: Gender-wise distribution of psychological distress among study participants (*n*=502)

Gender	Psychological distress, *n* (%)		Total, *n* (%)
	Absent	Present	
Male	66 (33.5)	131 (66.5)	197 (100)
Female	108 (35.4)	197 (64.6)	305 (100)
Total	174 (34.7)	328 (65.3)	502 (100)

$P>0.05$ (not significant), $\chi^2=0.192$, df=1

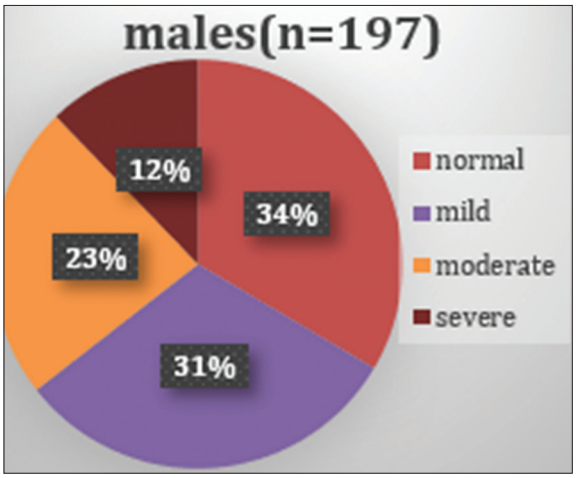

Figure 1: Distribution of Kessler's scores in male students

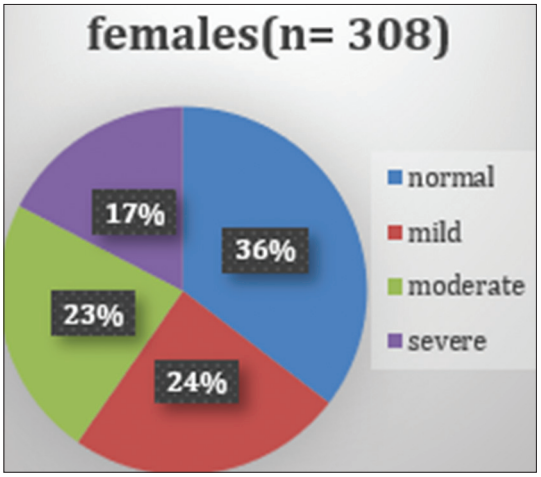

Figure 2: Distribution of Kessler's scores in female students

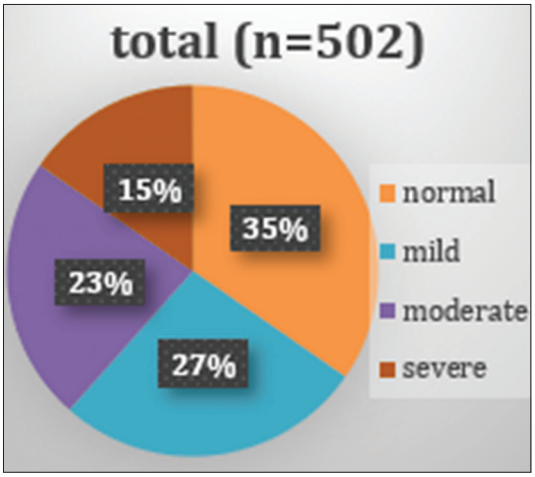

Figure 3: Distribution of Kessler's scores among all study participants

As per Table 3, day-scholars (70.7%) are having higher psychological distress as compared to hostellers (61.6%) which was found to be statistically significant.

As presented in Table 4 and Figure 4, 174 professional students have mental health disorders. Nursing students are having the highest prevalence of depression (86.5%, i.e. 31 out of 36) than dental (68%) and engineering students (65%). Medical students (62.1%) have the lowest prevalence of mental abnormalities. The result is found to be statistically significant.

Discussion

This study includes a population of 502 from professional colleges. As seen in Tables 1, 2 and Figures 1-3, more number of males were suffering from depression than females though the difference is nonsignificant. Karmakar and Behera[11] did not find any gender-related bias on the college students of West Bengal. Other researchers such as Kaur[12] and Prabha *et al*.[13] also did not find any significant gender-related variation though boys were found to have higher prevalence of depression and anxiety than the female students. On the contrary, studies done by Wani *et al*. and Singh showed that females are more depressed than males.[14,15] The study by Basnet *et al*.[16] also found female students to have marginally higher prevalence of depression than in men.

The day-scholars in this study were found to be have significant depression [Table 3, Figure 5] than hostellers. However, researchers such as Kabra and Tokuta[17] found no significant difference between the mental health status of day-scholars and hostellers and Khan *et al*.[18] found boarders to be emotionally more stable, whereas nonboarders were academically better but emotionally unstable. They also found that hostellers have less emotional support, but they are more self-confident and independent than day-scholars. Emotional maturity, self-conceptualization, and intelligence of day-scholar might be better than hostellers. However, autonomy, overall adjustments, and friendship are found to be more in hostellers. In our case, hostellers perhaps have more opportunity to study and share together and reduce each other's burden of stress. Study conducted by Nayar[19] found the hostellers having more anxiety and depression compared to students staying in their own homes.

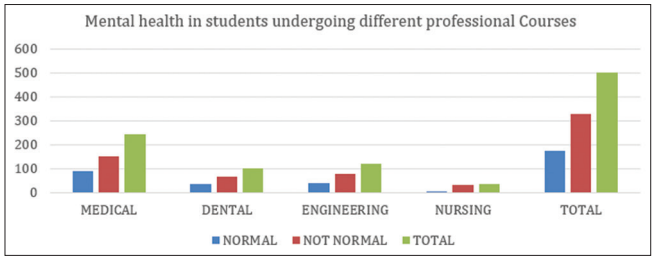

Figure 4: Distribution of students having normal and abnormal (mild + moderate + severe) Kessler's scale, i.e. K_{10} scores; taking into account the professional courses, they were pursuing medical, dental, engineering, and nursing

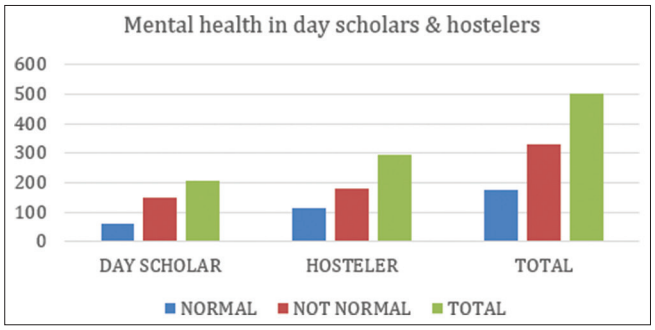

Figure 5: Distribution of students having normal and abnormal (mild + moderate + severe) Kessler's scale, i.e. K_{10} scores; taking their place of residence into consideration, while they were pursuing their professional course (hostels or day-scholar)

Table 3: Residence wise distribution of psychological distress among study participants

Residence	Psychological distress, *n* (%)		Total, *n* (%)	K10 score		
	Absent	Present		Mean rank	Sum of ranks	MannWhitney *U*-test
Day-scholar	61 (29.3)	147 (70.7)	208 (100)	268.07	55759.50	*Z*=−2.155
Hosteller	113 (38.4)	181 (61.6)	294 (100)	239.77	70493.50	*P*=0.031*
Total	174 (34.7)	328 (65.3)	502 (100)			

*P=0.03 (significant as P<0.05), χ^2=4.463, df=1

Table 4: Distribution of psychological distress among students based on the professional stream they were pursuing

Stream	Psychological distress, *n* (%)		Total, *n* (%)	K10 Score	
	Absent	Present		Mean	KruskalWallis test
Medical	92 (37.9)	151 (62.1)	243 (100)	242.77	8.038
Dental	35 (34)	68 (66)	103 (100)	250.05	df=3
Engineering	42 (35)	78 (65)	120 (100)	251.06	*P*=0.045*
Nursing	5 (13.9)	31 (86.5)	36 (100)	316.06	
Total	174 (34.7)	328 (65.3)	502 (100)		

*P=0.04 (significant as P<0.05), χ^2=7.984, df=3

We found that nursing students were significantly depressed than dental, medical, and engineering [Table 4 and Figure 4]. Bacchi and Licinio[20] and Honney *et al*.[21] concluded that medical students have lower rates of depression compared to other nonmedical degrees (dental, nursing, engineering, etc.). However, Behere *et al*.[22] found medical and engineering students to have higher level of stress than nursing students. Chenganakkattil *et al*.[23] concluded medical students have more stress, anxiety, and depression when compared to engineering students. Several stressors other than severity or extensivity of the professional courses such as financial problems, substance abuse, and family history of mental illness may have an adverse effect on the mental health of students too. Moreover, in India, engineering, dental, and medical students are from affluent families as compared to nursing students. Financial stress and absence of role models in family also may add to the stress among nursing students.

The Kessler's Psychological Distress Scale (K_{10}) is widely used, simple self-reporting measure of psychological distress which can also be used to screen those who might be in need of further assessment for anxiety and depression. Kessler's Psychological Distress Scale (K_{10}) is validated as a good screening tool for nonspecific psychological distress, particularly depression, which is used in assessing mental health.[24]

To develop a healthy professional and social environment for the present youth, it is important that regular mental health assessment, early detection, cure, and prevention should be done proactively. Emphasis should be given to regular counseling, which might help students with emotional problems in the long run. Preventive measures have to be taken by colleges in the form of setting up student counseling centers, creating awareness among college students, and seeking help using helpline numbers with counseling centers might help as well.

Limitation and recommendation

This is a cross-sectional study. Longitudinal study or follow-up for a prolonged period might provide more conclusive results. No stressors or coping techniques were assessed in our study. History of substance abuse and family history assessment might provide better insight. Bigger study groups from multiple institutions all over India can provide a wider perspective too.

Conclusion

This study concludes that out of 502 students, males have higher prevalence of mental abnormalities than females, but gender-related variation is not statistically significant. Significant higher prevalence of depression is seen in day-scholars compared to hostellers. Nursing students are having significantly higher prevalence of depression and nonpsychotic mental illness as compared to dental, engineering, and medical students. Medical students are having the lowest rate of depression than other nonmedical professional subjects.

To develop a healthy professional and social environment for the present youth, it is important that regular mental health assessment, early detection, cure, and prevention should be done proactively. Emphasis should be given on regular counseling which might help students with emotional problems in the long run. Preventive measures have to be taken by colleges in the form of setting up student counseling centers, creating awareness among college students, and seeking help with counseling centers. It is also suggested to have mentor–mentee program compulsorily in all colleges. A student health committee should be formed in each college with mental health professionals as its members. There should be regular seminars and workshop for teachers and college students on various issues of psychological problems and its coping mechanisms. Awareness and acknowledgment are the first step toward treating and dealing with mental health issues.

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Conflicts of interest

There are no conflicts of interest.

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