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Assessment of Depression among Adolescent Students of Government Medical and Engineering Colleges, Hassan, Karnataka

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ABSTRACT

Background: Depression is the leading cause of disability worldwide. An estimated 20% of the world's adolescents report a lifetime prevalence of depression. Especially Students of professional courses are under stress, owing to ever-increasing study load and expectations from the society that they fall into depression. If adolescents with mental health problems get the care they need, they can avoid suffering throughout life.

Objectives: To assess the magnitude of depression among adolescent students of Government Medical and Engineering colleges, Hassan, Karnataka and its association with the psycho-social factors.

Methods: A Descriptive questionnaire-based study was conducted among adolescent students of Hassan Institute of Medical Sciences (Government Medical College) and Government Engineering College. Depression was assessed using Beck's Depression Inventory-II and psychological wellbeing and stress were measured using General Health Questionnaire-12.

Results: Of the total 150 Medical and 150 Engineering students, 22% of Medical and 35.3% of Engineering students were found to be depressed and 65.3% of Medical and 57.33% of Engineering students were found to be in distress. Statistically significant association was found between psycho-social factors and depression.

Conclusion: Mental health issues have to be identified and addressed in the Professional colleges by providing them counselling, stress management training and moral support so that the potential of the students is optimized to the fullest.

Keywords: Depression, Distress, BDI-II, GHQ-12, Professional courses

INTRODUCTION

WHO defines adolescents as individuals aged 10-19 years and they are generally perceived as a healthy age group, and yet 20% of them, in any given year, experience a mental health problem, most commonly depression.[1] Depression is the leading cause of disability worldwide, and is a major contributor to the overall global burden of disease. At its worst, depression can lead to suicide.[2] Depression is under recognized among adolescents because depressive symptoms are considered a familiar part of adolescent experience.[3]

Depression may affect teen's socialization, family relations, performance at college and they are at risk for recurrent depression, psychosocial impairment, alcohol abuse and other anti-social behaviours.[4] Depressed mood that is stable across at least 3 years of adolescence is indicative of adult depression and other psychological difficulties.[3]

University students are a special group of people that are enduring a critical transitory period in which they are going from adolescence to adulthood and making many major life decisions.[5] This period is a time of contradictions when a person

goes through emotional, behavioural, sexual, economic, academic, and social changes, and as well as efforts of discovering one's identity with psychosocial and sexual maturation. During this period, the mental health of university youth constitutes one of the important components of social health.[6]

Among young college-going adolescents, students pursuing degrees in Medicine or Engineering appear to be exposed to relatively higher levels of mental stress compared to others. One important reason for this reality appears to be the tough competition for limited openings in these relatively prestigious professions, thereby generating a stressful environment, leading to depression.[7] Other factors may be academic pressure, rising parents' and teachers' expectations, hindrances to goal achievement, favouritism, vastness of the curriculum, workload, student abuse, change in role from students to professionals, recent breakup, and childhood adversities.[8]

There is a significant difference among Medical and Engineering Students in relation to Depression.[6] Failure to detect these disorders unfortunately leads to increased psychological morbidity with unwanted effects throughout their careers and lives.[9] Early detection of psychological problems shortens the duration of the episode and results in far less social impairment in long term.[10]

It is important to study depression among university students because most lifetime mental disorders have their first onset during the typical university age.[5]Hence this study was taken up in the two main Professional colleges - Medical and Engineering.

OBJECTIVES

The study was conducted to assess the magnitude of depression among adolescent students studying in Government Medical and Engineering colleges, Hassan, Karnataka; and also to assess the association of depression with its psycho-social factors.

MATERIALS AND METHODS

A Descriptive questionnaire-based study was conducted in the Government Medical College- Hassan Institute of Medical Sciences and Government Engineering College of Hassan, Karnataka for a period of three months from June 2017 to August 2017. The undergraduate students who were in their adolescent age group from both the colleges were the study subjects.

Inclusion criteria: Undergraduate students who were in their adolescent age group and who have been exposed to their course curriculum at least for a period of one year, because they have already been accustomed to the college as well as curriculum, were included in the study.

Exclusion criteria: Students who were unwilling to participate and who submitted incomplete data were excluded from the study.

Sampling Procedure: This study was conducted after obtaining Institutional Ethical Clearance approval. After getting permission from the Head of the Institutions and informed verbal consent from the students, the students were subjected for the study. The students fulfilling the inclusion and exclusion criteria selected from Government Medical college were 150 and the same number was selected from the Government Engineering college by simple random sampling. Then the proforma was given to the students and the students were asked to fill it after a brief explanation about the questionnaire.

Two instruments were administered to the students for assessment of distress and depression respectively, General Health Questionnaire-12(GHQ-12) and Beck's Depression Inventory II(BDI-II).

General Health Questionnaire (GHQ), developed by British scholar Goldberg in 1972, is one of the most popular and widely used screening instruments for recognition and measurement of mental health. The GHQ-12 consists of 12 items, each of which is evaluated by four indexes. The two most commonly used scoring types are the bi-modal (0-0-1-1) and Likert scoring methods (0-1-2-3). We adopted the four-point Likert scale, with each item ranging from 0 to 3. For negatively worded items, '0' indicated Not at all, '1' indicated Seldom, '2' indicated Usual and '3' indicated More than usual, while positively worded items were reversely scored. All items were added to obtain the total score, making the score range 0-36 (with a higher score indicating worse mental health). Scores over the cut-off point of 12 could be classified as students with distress.[11]

The Beck's Depression Inventory II (BDI) is a self-administered questionnaire to measure the intensity and severity of depression. It consists of 21 items with multiple choice answers with score from 0 to 3. Maximum score was 63. A score of 0-16 was considered as normal, 17-20 as mild / borderline depression, 21-30 as moderate depression, > 30 as severe depression. Suicidal ideation was analyzed using the item number 9 of BDI.[4]

Data on psycho-social factors was collected using a separate pre-tested structured proforma.

Statistical Analysis: Data was entered in Microsoft Excel spread sheet and analyzed using SPSS 16 and

interpreted using Descriptive statistics. Chi square test of significance was used to find out the association between depression and various psychosocial factors under study. Results depicted as tables.

RESULTS

Out of the total 300 students participated, 150 students were from Hassan Institute of Medical Sciences and 150 students from Government Engineering college. Among the Medical students, 67 (44.7%) were males and 83 (55.3%) were females and among the Engineering students, 40 (26.7%) were males and 110 (73.3%) were females.

Among the study subjects, 33 (22%) Medical students and 53 (35.3%) Engineering students were found to be depressed on Becks Depression Inventory (BDI)-II scale. (Table 1)

On General Health Questionnaire (GHQ)-12, 98 (65.3%) Medical students and 86 (57.3%) Engineering students were found to be distressed. (Table 2)

On assessing the socio-demographic factors in association with depression, among the Medical students, males (29.9%) were found to be more depressed than females (15.7%) and similarly among Engineering students also, males (29.9%) were found to be more depressed than females (15.7%) which were found be statistically significant ($p<0.05$). Among the Medical students, students residing in Nuclear family (81.3%) were found to be more depressed than those in Joint family (50%) that had a statistically significant association. Other factors like Religion, Parents' education, Socio-Economic status did not reach a statistically significant level in this study. Among Engineering students, factors like Type of Family, Religion, Parents' education, Socio-Economic status did not have a statistical significance ($p>0.05$). (Table 3)

Table 1: **Distribution of study subjects with Depression on BDI-II**

Course	Subjects without Depression (%)	Subjects with Depression			Total subjects with depression (%)
		Mild (%)	Moderate (%)	Severe (%)	
Medical (n=150)	117 (78)	6 (4.0)	17 (11.3)	10 (6.7)	33 (22)
Engineering (n=150)	97 (64.7)	20 (13.3)	25 (16.7)	8 (5.3)	53 (35.3)

Table 2: **Distribution of study subjects with Distress on GHQ-12**

Course	No. of Subjects with no distress (%)	No. of subjects with Distress (%)	95% CI
Medical (n=150)	52 (34.7)	98 (65.3)	57.7-72.9
Engineering (n=150)	64 (42.7)	86 (57.3)	49.4-65.2

Table 3: Socio-demographic correlates of Depression among Medical and Engineering students

Variables	Medical				Engineering			
	Subjects	Non-Depressed	Depressed	p value*	Subjects	Non-Depressed	Depressed	p value*
Sex								
Male	67	20 (29.9)	47 (70.1)	0.037	40	20 (50)	20 (50.0)	0.023
Female	83	13 (15.7)	70 (84.3)		77	33 (30)	77 (70.0)	
Religion								
Hindu	138	31 (22.5)	107 (77.5)	0.340	139	49 (35.3)	90 (64.7)	0.240
Christian	6	2 (33.3)	4 (66.7)		3	1 (33.3)	2 (66.7)	
Muslim	6	-	6 (100)		8	3 (37.5)	5 (62.5)	
Type of Family								
Nuclear	134	25 (18.7)	109 (81.3)	0.009	117	43 (36.8)	74 (63.2)	0.494
Joint	16	8 (50)	8 (50)		33	10 (30.3)	23 (69.7)	
Mother Education								
Primary	4	2 (50)	2 (50.0)	0.324	8	5 (62.5)	3 (37.5)	0.216
Secondary	23	6 (26.1)	17 (73.9)		102	6 (32.4)	69 (67.6)	
Degree	123	25 (20.3)	98 (79.7)		40	15 (37.5)	25 (62.5)	
Father Education								
Primary	4	2 (25)	3 (75.0)	0.81	15	6 (40)	9 (60.0)	0.672
Secondary	14	4 (28.6)	10 (71.4)		58	18 (31)	40 (69.0)	
Degree	132	28 (21.2)	104 (78.8)		77	29 (37.7)	48 (62.3)	
SES								
Upper	136	27 (19.9)	109(80.1)	0.135	90	32 (32.15)	63 (67.85)	0.218
Middle	12	5 (41.7)	7 (58.3)		40	14 (35)	26 (65.0)	
Lower	2	1 (50.0)	1 (50.0)		15	7 (25)	8 (75.0)	

Note: Figures in parenthesis indicate percentages, *p value<0.05 = significant

Table 4: Psycho-social correlates of Depression among Medical and Engineering students

Psychosocial factors	Medical					Engineering				
	Non-depressed		Depressed		p value*	Non-depressed		Depressed		p value*
	Yes	No	Yes	No		Yes	No	Yes	No	
Away from home	97	20	25	8	0.447	42	55	35	18	0.008
Parental fights	33	84	11	22	0.666	22	75	28	25	0.000
Siblings/friends quarrel	81	36	24	9	0.831	48	49	35	18	0.066
Teased at college	50	67	23	10	0.016	16	81	23	30	0.000
Bullied at college	37	80	18	15	0.006	16	81	30	23	0.000
Unable to cope up with studies	77	40	28	5	0.035	29	68	28	25	0.000
Difficulty in scoring marks	28	89	10	23	0.457	2	95	7	46	0.010
Mental tension due to parents' expectation	21	96	7	26	0.671	15	82	26	27	0.000
Smoking	2	115	5	28	0.006	1	96	7	46	0.002
Alcoholism	2	115	6	27	0.002	2	95	8	45	0.002
Suicidal ideation	2	115	21	12	0.000	10	87	31	22	0.000

Note: Figures in parenthesis indicate percentages, *p value<0.05 = significant

In this study, the psycho-social factors had a greater influence on the mental status of the students. Among the Medical students, factors like being teased/bullied at college, difficulty in studies, smoking, alcoholism were significantly associated with depression($p<0.05$) whereas other factors like staying away from home, parental fights, quarrelling with others, mental stress due to parents' expectations though they may contribute to depression, they did not reach a statistical significance in this study. Smoking (71.4%) and Alcoholism (75%) were found to be significantly associated with depression. (Table 4)

Among the Engineering students, almost all factors like staying away from home, being teased/bullied at college, difficulty in studies, parental fights, quarrelling with others, mental stress due to parents' expectations did reach a statistically significant level with depression($p<0.05$). Smoking (87.5%) and Alcoholism (80%) were found to be significantly associated with depression. (Table 4)

Suicidal ideation was found to be more among the depressed students. 91.3% of the depressed subjects in Medical college and 75.6% of the depressed subjects in Engineering college had suicidal ideation and that was found to have statistically significant association ($p<0.05$). (Table 4)

DISCUSSION

Depression among university students all over the world is increasing[6] and it negatively impacts the learning abilities of young adults that may further recede into bipolar illness later in their lives.[7] So it becomes imperative to explore the mental health status of the students as these constitute neglected public health problems in India. It is very important to prevent the ill effects of depression on one's academic attainment and carrier through early identification and effective intervention measures.[9]

This study reveals substantial amount of depression and distress among the Medical and Engineering students. The prevalence of depression among Medical students was found to be 22% which corresponds to the study done by ChenganakkattilS et al[11] in Wayanad, Kerala where 20.6% of the Medical students were found to be depressed. But interestingly, the prevalence of depression was much lesser than those in Engineering students (35.3%) in contrary to other studies where the prevalence of depression among Medical students varies between 38-71% which is found to be a larger proportion.[9-10,12-14] But this result of our study is consistent with the study by Fatimah N et al[7] where Engineering students were more depressed than Medicos. The reason for Engineering students being more depressed than Medical students may be, only engineers with good competency skills get placed in better jobs and that creates fear in the minds of the students about their future as the young engineers remain jobless even after completing their degree.

In this study, 65.3% of Medical students were in distress (on GHQ-12) when compared with Engineering students (57.3%). Medical students were in distress more than the Engineering students which are in line with the studies done by Khan M et al[12] and Waghachavare VB[15] et al. This group of students is of concern because stress as a negative influence can result in feelings of distrust, rejection, anger, and depression in the long run.[16]

In both the Medical and Engineering colleges, Males were found to be more depressed than females and that was found to be statistically significant also. This result is in contrary to the findings of the other studies done by Fatimah N et al[7] and Agarwal N et al[13] where females were more depressed than the males. The reason may be qualities like self-esteem, mastery and coping have been found to be stronger in boys than girls therefore explaining their better ability to cope with depression but with advent of Globalization, opportuni-

ties are available for the youth irrespective of gender and parents also encourage their daughters to compete in almost all spheres that gives a scope for high self-esteem, good problem solving strategies contributing to their ability to cope with life better.[3]

The psycho-social factors had a greater influence on the mental status of the university students rather than the socio-demographic factors in this study. Factors like staying away from home, being teased/bullied at college, parental fights, quarrelling with others, difficulty in studies, mental stress due to parents' expectations were significantly associated with depression in our study. This correlates with the studies done by Kittu D et al[10] and Fatimah N et al[7] among the university students in Pondicherry and Pakistan respectively. All these factors have to be probed further to explore the causes of depression among students so that they can be diagnosed at an earlier stage where students can be reverted back to their productive life.

Many students pick up substance abuse habits to cope with the increased stress which can further lead to depression or can even add to it; thus creating a vicious cycle of substance abuse and depression. Smoking and Alcoholism are the two most common forms of substance abuse[13] and in our study, both the habits were significantly associated with depression.

Mental disorders occupy a premier position in the matrix of causation of suicide. It is noted that around 90% of those who die by suicide have a mental disorder.[17] The suicide rate increased to 35% when mental disorder is associated with depression. The majority of cases committed suicide during their very first episode of depression and more than 60% of the depressive suicides had only mild to moderate depression.[18] In our study, there is a statistically significant association between Suicidal ideation and depression in both the groups of students (Medical and Engineering).

Limitations: Only two institutions were included thus generalising the results to the general population is ambiguous. Being a Descriptive study, the credibility to deduce a cause-effect association is reduced.

CONCLUSION

In our study, Engineering students were found to be more depressed than Medical students. Irrespective of the profession, there exists depression and distress among students. Awareness regarding combating depression has to be provided to the students at colleges and a good mental support is needed to be provided at homes. Students can seek help from counselling services, stay in touch with family members and friends, get involved in extra-curricular activities, develop time management skills and maintain a regular sleep that can ward off depression.

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