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Original Research Article

A study on assessment of depression and factors associated with it among medical students of Raichur Institute of Medical Sciences, Raichur

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ABSTRACT

Background: Depression among medical students represents a neglected public health problem in India. Early onset depression among medical students interferes with psychological, social, and academic functioning. Clearly, depression in medical students is of paramount importance and warrants serious study to detect early symptoms of depression. This study was conducted to find out the prevalence and the risk factors associated with depression among medical students of RIMS, Raichur.
Methods: Cross-sectional study conducted among medical students from 1st year to final year of RIMS, Raichur who gave consent. Socio-demographic and risk factors details were collected using pre-tested, semi-structured questionnaire and beck depression inventory scale was used to assess the depression level. Data was analyzed using Epi-Info 7 software and appropriate statistical tests were applied. Level of significance was set at a $p<0.05$.
Results: Of the 421 medical students participated in the study, 214 (50.83%) were males and 207 (49.17%) were females. The overall prevalence of depression was found to be 22.09%. Statistically significant association of depression was found with family history ($\chi^2=4.23$, $p<0.05$), family problems ($\chi^2=61.98$, $p<0.001$), relation with parents ($\chi^2=51.82$, $p<0.001$), high expectations from parents ($\chi^2=22.76$, $p<0.001$), those who regret joining MBBS ($\chi^2=30.44$, $p<0.001$), relationship status ($\chi^2=4.63$, $p<0.05$).
Conclusions: Our findings emphasize the importance of screening for depression of medical students on a regular basis for early detection and appropriate intervention like group counseling, stress management training, support services etc. to protect this valuable future human resource.

Keywords: Depression, Medical students, MBBS, RIMS, Raichur, Medical college

INTRODUCTION

Depression is a state of low mood and aversion to activity that can affect a person's thoughts, behavior, feelings and sense of well-being.[1] Depression is highly common and according to WHO by 2020, it would be the second-most prevalent condition worldwide.[2] In 2017 WHO selected theme of World Health Day as "Depression, Let's Talk". Training in Medical Colleges is intended to prepare graduates for a personally rewarding, career promoting and socially meaningful health care provider. During medical training students are subjected to different kinds of stressors such as burden of vast academic pressure with an obligation to succeed, an uncertain future, difficulties of integrating into the system along with emotional, social, physical and family problems. These stressors often exert an inadvertent negative effect with catastrophic consequences on students' academic

performances, physical health and psychological well being with a high frequency of depression, anxiety, stress and even attrition from medical course. Psychological distress among students' also reduces their self-esteem, quality of life and the quality of care they provide to patients with decreased empathy. They may engage in potentially harmful methods of coping strategy from stress such as tobacco, alcohol and other substance abuse. Medical students have a higher risk of suicidal ideation and suicide than age matched peers and general population.[3-10] Studies have shown that gender, age, year of study, residence, birth order, parents education and occupation, socio-economic status, family history of depression, type of family, Broken family, problems in the family, relation with parents and friends, relationship status, lack of entertainment in the institution, physical exercise, place of staying during training and presence of any chronic disease have role in development of depression among Medical students.[5,8,11-18] India has one of the largest numbers of medical colleges and medical students, it is very important to detect early symptoms of depression with appropriate intervention so that ill effects of depression could not hamper one's education and career, thereby protecting valuable future human resource.

Few studies have been conducted at a global level to assess the prevalence of depression among medical students. All these studies have been conducted in western countries as well as in other parts of the world. In India, epidemiological studies on depression among medical students are scanty. Hence this study was conducted to find out the prevalence and the risk factors associated with depression among medical students of Raichur Institute of Medical Sciences, Raichur.

METHODS

Study design: Cross-sectional study

Study period: December 2017 to January 2018

Study setting: Raichur Institute of Medical Sciences, Raichur.

Study sample

All medical students **(**MBBS) students from 1st year to final year of Raichur Institute of Medical Sciences, Raichur.

Inclusion criteria

Inclusion criteria were medical students of Raichur Institute of Medical Sciences, Raichur.

Exclusion criteria

Exclusion criteria were students who didn't give consent for the study.

Method of collection of data

Socio-demographic details were collected and beck depression inventory scale[19] was used to assess the depression level after taking verbal consent from students. Data was collected using online survey form after explaining them about the study and each question. Privacy of the participants was maintained throughout the study and we have taken care that participant's identity is not disclosed at any point during the study.

Statistical analysis

Data was entered using Microsoft Excel 2007 and was analyzed using Epi-Info 7 software and appropriate statistical tests were applied. Level of significance was kept at a $p<0.05$.

RESULTS

Of the 421 medical students participated in the study, 214 (50.8%) were males and 207 (49.2%) were females. Mean age of students was 20.3±4.2 years. The overall prevalence of depression was found to be 22.1%. Among those with depression, a majority (18.3%) had mild and moderate degree of depression. The prevalence of severe and extreme depression was 2.37% and 1.18%, respectively (Table 1).

Table 1: Grading of depression among study subjects.

Grading of the subjects	Frequency
No depression	
Normal	249 (59.14)
Mild mood disturbance	79 (18.76)
Depression	
Borderline depression	32 (7.60)
Moderate depression	46 (10.92)
Severe depression	10 (2.38)
Extreme depression	5 (1.20)
Total	421 (100)

The present study showed that prevalence of depression was 23.67% among females and 20.56% among males; but the depression between depression and sex was not statistically significant (χ^2=0.59, df=1, p=0.32). Prevalence of depression was 2.73 times more among students staying in hostel as compared to day-scholars and it was statistically significant (χ^2=5.39, df=1, CI=1.13-6.57). There was no statistically significant association between other socio-demographic factors like birth order, residence, type of family and socio-economic status (Table 2).

The prevalence of depression was found 2.16 times more in students with family history of depression and it was found to be statistically significant (χ^2 =4.23, df=1, Odds, p<0.05). Problems in families had highly significant association with prevalence of depression (χ^2 =61.98,

df=1, p<0.001, Odds Ratio=6.82, CI=4.08-11.39), similarly with relationship with parents (χ^2 =51.82, df=, p<0.001). We also found highly significant association with the other factors like students relationship status (having girlfriend/boyfriend), regretting joining MBBS and high expectations from parents (Table 3).

Table 2: Relationship of depression with socio-demographic factors.

Factors	Depression		Total (%)	Test	P value
	Yes (%)	No (%)			
Gender					
Male	44 (20.56)	170 (79.44)	214 (100)	χ^2 =0.59, df=1, Odds Ratio=1.19, CI=0.75-1.9	0.44
Female	49 (23.67)	158 (76.33)	207 (100)		
Birth order					
Eldest	42 (21.99)	149 (78.01)	191 (100)	χ^2 =2.49, df=2	0.28
Intermediate	22 (28.21)	56 (71.79)	78 (100)		
Youngest	29 (19.08)	123 (80.92)	152 (100)		
Residence					
Urban	65 (24.16)	204 (75.84)	269 (100)	χ^2=1.86, df=2, Odds Ratio=1.41, CI=0.85-2.31	0.17
Rural	28 (18.42)	124 (81.58)	152 (100)		
Present stay					
Hostellite	87 (23.97)	276 (76.03)	363 (100)	χ^2=5.39, df=1, Odds Ratio=2.73, CI=1.13-6.57	<0.05
Day-scholar	6 (10.34)	52 (89.66)	58 (100)		
Type of family					
Nuclear	74 (21.02)	278 (78.98)	352 (100)	χ^2=1.42, df=1, Odds Ratio=1.42, CI=0.79-2.56	0.23
Joint	19 (27.54)	50 (72.46)	69 (100)		
Socio-economic status (Modified BG Prasad classification-December 2017)					
Class I	45 (20.83)	171 (79.17)	216 (100)	χ^2 =1.37, df=3	0.71
Class II	27 (25.00)	81 (75.00)	108 (100)		
Class III	13 (19.40)	54 (80.60)	67 (100)		
Class IV	8 (26.67)	22 (73.33)	30 (100)		
Total	93 (22.09)	328 (77.91)	421 (100)		

Table 3: Relationship of depression with other factors.

Factors	Depression		Total (%)	Test	P value
	Yes (%)	No (%)			
Family history					
Yes	12 (36.36)	21 (63.64)	33 (100)	χ^2 =4.23, df=1, Odds Ratio=2.16, CI=1.12-4.58	<0.05
No	81 (20.88)	307 (79.12)	388 (100)		
Relationship with parents					
Friendly	33 (15.07)	186 (84.93)	219 (100)	χ^2 =51.82, df=2	<0.001
Neutral	39 (22.41	135 (77.59)	174 (100)		
Fear	21 (75.00)	7 (25.00)	28 (100)		
Problems in family					
Yes	49 (51.58)	46 (48.42)	95 (100)	χ^2 =61.98, df=1, Odds Ratio=6.82, CI=4.08-11.39	<0.001
No	44 (13.50)	282 (86.50)	326 (100)		
In relationship (having girlfriend/boyfriend)					
Yes	20 (32.79)	41 (67.21)	61 (100)	χ^2 =4.63, df=1, Odds Ratio=1.92, CI=1.25-3.44	<0.05
No	73 (20.39)	285 (79.61)	358 (100)		
Phase of study					
1st	32 (23.36)	105 (76.64)	137 (100)	χ^2 =4.21, df=3	0.238
2nd	31 (24.60)	95 (75.40)	126 (100)		
3rd	21 (23.86)	67 (76.14)	88 (100)		
Final	9 (12.86)	61 (87.14)	70 (100)		
Type of batch					
Regular	85 (21.41)	312 (78.59)	397 (100)	χ^2 =1.86, df=1, Odds Ratio=1.83, CI=0.75-4.43	0.17
Repeater	8 (33.33)	16 (66.67)	24 (100)		

Continued.

Factors	Depression		Total (%)	Test	P value
	Yes (%)	No (%)			
Regret joining MBBS					
Yes	29 (50.00)	29 (50.00)	58 (100)	χ^2 =30.44, df=1, Odds Ratio=4.67, CI=2.61-8.35	<0.001
No	64 (17.63)	299 (82.37)	363 (100)		
High expectations from parents					
Yes	85 (28.15)	217 (71.85)	302 (100)	χ^2 =22.76, df=1, Odds Ratio=5.43, CI=2.54-11.62	<0.001
No	8 (6.72)	111 (93.28)	119 (100)		
Total	93 (22.09)	328 (77.91)	421 (100)		

DISCUSSION

Consistent with the economic changes in the country, medical student population is increasing every year. In this competitive era, this has enhanced the risk of developing various mental disorders like depression. This study presents the report of 421 undergraduate medical students of a Medical College in Raichur, Karnataka, India where this type of study was never done in the past. We have used the reliable and valid depression screening tool, BDI scale. The overall depression reported by our respondents was 22.1%, of which a majority (18.3%) had mild and moderate degree of depression. The prevalence of severe and extreme depression was 2.37% and 1.18%, respectively Using same BDI scale, findings of the study done by Singh et al (49.1%) in a Medical College in Northern India and another study in India by Kumar et al (71.25%) in Mangalore, Karnataka found higher proportion of depressive symptoms among medical undergraduates.[8,11] Other studies in different parts of the world also showed wide range of variation of depression among medical trainees, from 2.2% upto 85% of the students.[20-28] Reasons are different geographical regions, different sample sizes with varied demographic characteristics, scales used to assess depression and cutoffs used were also different and different medical curricula in these countries. In our study we found that prevalence of depression was more (75%) among respondents who don't have cordial relations with their parents and fear them and also it was 5.43 times more among students whose parents have high expectations from their son/daughter. This emphasizes that during medical training, medical educators should also pay attention to develop some strategies for reduction of stress of their students and parents should also be careful that they do not pressurize their sons and daughters for their high expectations. These results are in consistent with study done by Sarkar et al in Kolkata.[29] We found statistically significant association between prevalence of depression and family history of depression which is similar to result of a study in a medical college of Mangalore, Karnataka by Kumar et al.[11] Prevalence of depression was 6.82 times higher among participants with family problems and this association was found to be highly significant, which is similar to results from Kumar et al.[11]

CONCLUSION

This study gives an idea of magnitude of depression among medical students and some of its associated factors, which can be evaluated by further studies in depth by qualitative and quantitative methods. Since it is a cross-sectional study, it is hard to assess direction of influence and it precludes us from making causal inferences from our study findings. However, the sufficient sample size and using a valid scale to classify depressive symptoms of the students increases the validity of the study. Depression is highly prevalent among medical students and our findings point to the importance of screening of this vulnerable population and taking appropriate interventional measures to prevent the complications of depression. An effective system for the prediction of the development of depression in medical students needs to be developed and interventions aimed at reducing the incidence of depression needs further research. Proper counseling, effective treatment and management should be carried out. By providing a healthy environment and encouraging extracurricular activities we can prevent serious consequences to the future providers of health. A proper assessment before medical school admission can help set up a treatment and counseling plan be for the future doctors. This can also in turn not only affect the young students but also their potential future patients and population in general.

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