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Original Research Article

Prevalence and factors associated with depression and anxiety among students of backward community and minority girl's hostels of Mysuru city

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ABSTRACT

Background: Mental health is one of the major concerns among Non-communicable diseases with 10-20% of children and adolescents suffering mental disorders worldwide. If untreated, these conditions severely influence child's development, education and their potential to live productive lives. This study is an effort to find out factors influencing mental health in hostel students, and its effects in their daily routine which will help hostel supervisors, parents and teachers to deal with students and help to achieve maximum progress in their academics.
Methods: This is a Cross sectional study done among 353 students in BCM (backward community and minority) girls hostels of Mysuru. Students above 18 yrs and willing to participate in study are included and those suffering from acute illness/recent trauma /injury are excluded. Data collected using validated questionnaire (PHQ 9 for depression and GAD7 for anxiety).
Results: Among 353 students included depression was observed in 245 (69.4%) of students and anxiety was found in 222 (62.8%) students. Depression and anxiety was associated with single parenting, socioeconomic class, masters degree courses, food habits, lifestyle and menstrual irregularities, multi logistic regression showed association of depression with premenstrual syndrome and anxiety with exercise, socioeconomic class, financial difficulties and premenstrual syndrome.
Conclusions: Depression and anxiety were more prevalent in adolescent students and are associated with sedentary lifestyle, socioeconomic condition of students and reproductive health. Depression and Anxiety has impact on comfortable stay in hostel and relation with peers. These factors can be addressed to mitigate the effects.

Keywords: Depression, Anxiety, Hostelites

INTRODUCTION

Mental health is one of the major concerns among Non-communicable diseases and 10-20% of children and adolescents suffer from mental disorders worldwide. If untreated, this severely influences children's development, their education and their potential to live productive lives.[1] Depression and anxiety are common among them. Globally mental and behavioural disorders are one of the 20 leading cause for disability-adjusted life years (DALYs) accounting for 6% of DALYs with unipolar depressive disorder for 2% DALYs and anxiety disorder 1% DALYs.[2] And it is more in high income countries.

Depression is a common mental disorder, characterized by persistent sadness and a loss of interest in activities that a person normally enjoys, accompanied by an

inability to carry out daily activities for at least 2 weeks. Globally 300 million people are suffering from depression. Depression is the leading cause of disability worldwide, and is a major contributor to the overall global burden of disease. More women are affected by depression than men and more in metropolitan cities.[3] It can lead to suicide which is second leading cause of death in 15-29-year-olds.[4,5] Close to 800000 people die due to suicide every year and 78% of global suicides occur in low- and middle-income countries. Anxiety is common in adolescent students and more in urban areas than rural areas.[6] Hostel stay plays important role in students life and hostel students are more stressed than others.[7,8]

Although there are known, effective treatments and prevention options for depression and anxiety, it does not reach the affected persons. Barriers to effective care include a lack of resources, lack of trained health-care providers, and social stigma associated with mental disorders and inaccurate assessment.[4] For a young person with symptoms of a mental disorder, the earlier treatment is started, the more effective it can be and prevent more severe, lasting problems as a child grows up.[9] Every US$ 1 invested in scaling up treatment for depression and anxiety leads to a return of US$ 4 in better health and ability to work, according to a new WHO-led study which estimates both the health and economic benefits of investing in treatment of the most common forms of mental illness globally.[10]

According to the WHO, India is one of the most depressed countries in the world with a 36% of Indians likely to suffer from major depression at some point in their lives. This study is an effort to find out factors influencing depression and anxiety in hostel students, And also to find effects of this in their daily routine which will help hostel supervisors, parents and teachers to deal with students and help to achieve maximum progress in their academics. This study was done with objective to assess prevalence and factors associated with depression and anxiety among students of backward community and minority (BCM) girls hostels of Mysuru and to assess the influence of depression and anxiety on social and academic performance of students.

METHODS

This is a cross-sectional study was conducted in Backward community and minority girls hostels of Mysuru from 1st October 2016 to 30th November 2017. Considering the prevalence 29.9% α- 5%, β 20%, and non-response rate as 10%, sample size was calculated to be 353.[11] Approval was taken from institutional ethical committee of JSS Medical College. Mysuru city has 11 post-metric girls hostels with total 1185 students residing. Hostels were listed and every alternate hostels were selected. Among 5 hostels selected, number of students needed for the study from each hostel was calculated by using population proportion to sample size (PPS) technique. These hostels were visited and students were briefed about objective of the study and explained about depression and anxiety. After taking informed consent, students required for the study were randomly selected considering inclusion criteria that is, those above 18 years. Those suffering from acute illnesses like viral fevers, trauma and on any medications were excluded. Information regarding socio-demographic details was collected using prestructured questionnaire and self-administered, validated questionnaires-patient health questionnaire PHQ9 used for depression and general anxiety disorder (GAD 7) for anxiety. Data was entered in Microsoft excel and coded in SPSS 22 and analyzed. Descriptive statistics like percentage, mean and standard deviation were used to describe variables; and chi-square test was used to find association of depression with socio-economic and demographic factors. P<0.05 was taken as statistically significant. Multiple logistic regressions used to confirm association among significant variables and to adjust confounding variables.

Variables are defined as follows-exercise was taken as physical workouts or brisk walking that is >30 minutes for minimum 3 times in a week that cause sweating. Physical activities are defined as any continuous work in hostel like cleaning, washing or gardening that is done for >30 minutes at least 3 days in a week. Outside food consumption is considered as having those junk foods that are oil fried or containing cheese like chips, burgers, gobi-manchurian more than 2 times in a week.

RESULTS

Table 1: Distribution of study participants based on socio-demographic features, course and year.

Variables		Number of students	%
Locality	Rural	327	92.6
	Urban	26	7.4
religion	Hindu	347	98.3
	Muslim	3	0.8
	Christian	2	0.6
	others	1	0.3
Marital status	Married	351	99.4
	Unmarried	2	0.6
Native place	within 300km	258	73.1
	>300 km	95	26.9
course	Pre-university	41	11.6
	Degree	183	51.8
	Engineering	51	14.4
	Paramedical	39	11.0
	Diploma	7	2.0
	MSc	32	9.1
Year of studying	1st year	116	32.9
	2nd year	132	37.4
	3rd year	88	24.9
	4th year	17	4.8
Socioeconomic class according to BG Prasad classification	class 2	9	2.5
	class 3	3	.8
	class 4	33	9.3
	class 5	308	87.3

Table 2: Factors associated with depression.

Variables		Depression					Chi-square value	P value
		Absent		Present		Total		
		Number of students	Percentage (%)	Number of students	Percentage (%)	Students		
Locality	Rural	102	31.2	225	68.8	327	0.747	0.39
	Urban	6	23.1	20	76.9	26		
Head of family	Father	99	31.5	215	68.5	314	5.829	0.04*
	Mother	5	15.6	27	84.4	32		
	Grandparent	4	57.1	3	42.9	7		
Total family members	<4	51	29.7	121	70.3	172	0.141	0.71
	>4	57	31.5	124	68.5	181		
Course	Puc	19	46.3	22	53.7	41	10.602	0.05*
	Degree	56	30.6	127	69.4	183		
	Engineering	15	29.4	36	70.6	51		
	Paramedical	11	28.2	28	71.8	39		
	Diploma	3	42.9	4	57.1	7		
	Masters	4	12.5	28	87.5	32		
Year of study	1st Year	33	28.4	83	71.6	116	3.740	0.29
	2nd Year	37	28.0	95	72.0	132		
	3rd Year	34	38.6	54	61.4	88		
	4th Year	4	23.5	13	76.5	17		
Diet	Vegetarian	25	28.1	64	71.9	89	0.352	0.55
	Mixed	83	31.4	181	68.6	264		
Outside food	No	25	42.4	34	57.6	59	4.628	0.03
	Yes	83	28.2	211	71.8	294		
Exercise	Yes	88	34.0	171	66.0	259	5.239	0.02
	No	20	21.3	74	78.7	94		
Physical activities	Yes	67	37.2	113	62.8	180	7.597	<0.01
	No	41	23.7	132	76.3	173		
Beverages	No	39	38.6	62	61.4	101	4.284	0.03
	Yes	69	27.4	183	72.6	252		
Bmi	Low Weight	53	31.9	113	68.1	166	0.621	0.91
	Normal	49	30.2	113	69.8	162		
	Overweight	2	20.0	8	80.0	10		
	Obese	4	26.7	11	73.3	15		
Menstrual cycle	Follicular Phase	81	27.2	217	72.8	298	10.496	<0.01
	Luteal Phase	27	49.1	28	50.9	55		
Irregular	Regular	92	33.6	182	66.4	274	5.126	0.02
	Irregular	16	20.3	63	79.7	79		
Duration of stay in months	<1yr	47	24.6	144	75.4	191	7.027	<0.01
	>1yr	61	37.7	101	62.3	162		
H/o hostel stay	Absent	66	31.1	146	68.9	212	0.072	0.79
	Present	42	29.8	99	70.2	141		
Financial difficulties	Absent	68	36.4	119	63.6	187	6.232	0.01
	Present	40	24.1	126	75.9	166		
Socioeconomic class	2nd Class	7	77.8	2	22.2	9	8.899	0.02*
	3rd Class	1	33.3	2	66.7	3		
	4th Class	10	30.3	23	69.7	33		
	5th Class	90	29.2	218	70.8	308		
Pms	Present	45	18.00	205	82.00	250	64	<0.01
	Absent	63	61.20	40	38.80	103		

*Fisher Exact.

Table 3: Factors associated with anxiety.

Variables		Anxiety					Chi-square value	P value
		Absent		Present		Total		
		Number of students	Percentage (%)	Number of students	Percentage (%)	Students		
Locality	Rural	123	37.6	204	62.4	327	0.454	0.45
	Urban	8	30.8	18	69.2	26		
Head of family	Father	116	36.9	198	63.1	314	8.196	0.01
	Mother	9	28.1	23	71.9	32		
	Grandparent	6	85.7	1	14.3	7		
Total family members	<4	64	37.2	108	62.8	172	0.001	0.96
	>4	67	37.0	114	63.0	181		
Course	PU	23	56.1	18	43.9	41	10.690	0.05
	Degree	62	33.9	121	66.1	183		
	engineering	18	35.3	33	64.7	51		
	paramedical	16	41.0	23	59.0	39		
	diploma	4	57.1	3	42.9	7		
	masters	8	25.0	24	75.0	32		
YRSEM	1st year	45	38.8	71	61.2	116	0.290	0.96
	2nd year	49	37.1	83	62.9	132		
	3rd year	31	35.2	57	64.8	88		
	4th year	6	35.3	11	64.7	17		
Diet	vegetarian	35	39.3	54	60.7	89	0.250	0.61
	mixed	96	36.4	168	63.6	264		
Outside food	no	28	47.5	31	52.5	59	3.250	0.07
	yes	103	35.0	191	65.0	294		
Exercise	Yes	108	41.7	151	58.3	259	8.770	0
	No	23	24.5	71	75.5	94		
Physical activities	Yes	74	41.1	106	58.9	180	2.519	<0.01
	No	57	32.9	116	67.1	173		
Beverages	No	46	45.5	55	54.5	101	4.312	0.03
	Yes	85	33.7	167	66.3	252		
BMI	low weight	64	38.6	102	61.4	166	1.489	0.65
	Normal	59	36.4	103	63.6	162		
	Overweight	2	20.0	8	80.0	10		
	Obese	6	40.0	9	60.0	15		
Menstrual cycle	follicular phase	101	33.9	197	66.1	298	8.486	<0.01
	luteal phase	30	54.5	25	45.5	55		
	Regular	107	39.1	167	60.9	274	1.976	0.02
	Irregular	24	30.4	55	69.6	79		
Duration of stay in months	<1 yr	67	35.1	124	64.9	191	0.736	0.39
	>1 yr	64	39.5	98	60.5	162		
H/O hostel stay	Absent	78	36.8	134	63.2	212	0.023	0.87
	Present	53	37.6	88	62.4	141		
Financial difficulties	Absent	84	44.9	103	55.1	187	10.390	<0.01
	Present	47	28.3	119	71.7	166		
Socioeconomic class	2nd class	9	100.0	0	0.0	9	15.660	<0.01
	3rd class	1	33.3	2	66.7	3		
	4th class	12	36.4	21	63.6	33		
	5th class	109	35.4	199	64.6	308		
PMS	Present	66	26.4	184	73.6	250	42.11	<0.01
	Absent	65	63.1	38	36.9	103		

*Fisher exact.

A total of 353 female students participated in the study. Majority of them were from rural (92.63%) areas perceiving different courses like pre-university (11.6%), degree (51.8%), engineer courses (14.4%), paramedical courses (11%), diplomas (2%), master degrees, (9.1%). They were of age group 18 to 27 with mean age 20±1.6 years. Majority of them belonged to socio-economic class five (87.3%) according to BG Prasad classification (Table 1).

Depression was observed in 245 (69.4%) students with most of them having mild form 140 (39.7%), moderate form in 71 (20.1%), moderately severe in 26 (7.4%) and severe depression in 8 (2.3%) of students.

Among 353 participants Anxiety was found in 222 (62.8%) students, with mild form in 110 (31.2%), moderate in 78 (22%) and severe form in 34 (9.6%) students.

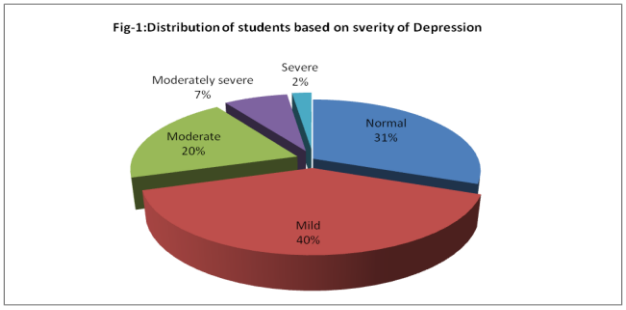

Figure 1: Distribution of students based on severity of depression.

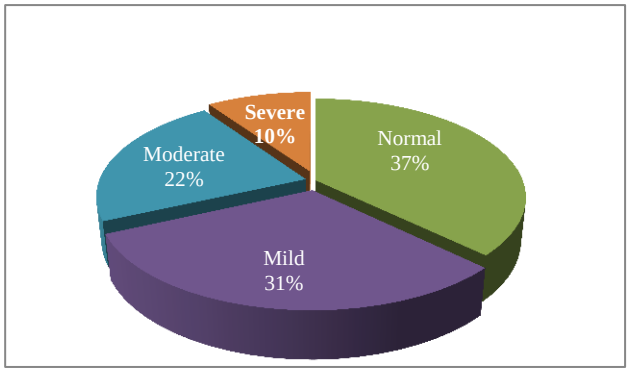

Figure 2: Distribution of students based on severity of anxiety.

Statistically significant association was found with socio economic, academic, and demographic and lifestyle factors (Table 2). Depression was found to be significantly associated with students who had families with mother as head of family (p=0.04), students in their 1st year of stay in hostels (p<0.01; OR 0.54, 95%CI 0.34-0.85), students perceiving masters degree and paramedical degree (p=0.05), lifestyle habits like having outside junk foods (p=0.03;OR 1.86, 95%CI 1.05 -3.3), beverages (p=0.03; OR 1.66, 95%CI 1.02-2.71), and no physical activities (p<0.01; OR=1.90, 95%CI 1.20-3.03) and lack of exercise (p=0.02; OR=1.90, 95%CI 1.09-3.3). Depression was also seen more significant in students in follicular phase of menstrual cycle (p<0.01; OR=38, 95%CI 0.21-0.69) and in irregular menstrual cycles (p=0.02; OR=1.99, 95%CI 1.08-3.63) and in those suffering from premenstrual syndrome (p<0.01; OR=0.13, 95% CI 0.08-0.232), students belonging to class five socioeconomic class (p=0.02)and those having financial difficulties (p=0.01;OR 1.8, 95%CI 1.13-2.86). (Table 2) In multiple logistic regression significant association was found with premenstrual syndrome.

Anxiety was associated significantly with depression. 80% of students having depression also had anxiety disorders (p<0.01; OR 13.62, 95%CI 7.88-23.55). Anxiety was found more in students belonging to class five socioeconomic class (p<0.01) and having financial difficulties (p<0.01;OR=2.06, 95%CI 1.32-3.21),students of single mothers (p=0.01), those doing master degrees(P 0.05), consuming beverages (p=-0.03; OR=1.64, 95%CI 1.02-2.63)) and with no exercise (p=<0.01;OR 2.2, 95%CI 1.29-3.75), students in follicular phase of menstrual cycles (p=<0.01;OR0.42, 95%CI 0.23-0.76) and those having premenstrual syndrome (p<0.01; OR0.21, 95%CI 0.12-0.34)) (Table 2). In multiple logistic regression statistically significant association was found with exercise, premenstrual syndrome, financial difficulties and borderline association with socioeconomic class.

Social and academic influence of depression and anxiety were assessed with its association with social factors like quarrels with roommates, participation in cultural programmes, marks obtained, sleep and feel of comfort in hostel stay. Though quarrels with roommates were found more in students with depression comparatively, it was not statistically significant. Even Marks obtained by students with depression was comparatively lower than others but was not significant statistically. Sleep variation was found more in depressed students but was not significant. Students with depression were not comfortable in hostel stay than those without depression (p=0.16, OR 3.49, 95%CI 1.19-10.18). Students without depression felt their subjects more easier than others. Among students with anxiety, quarrels with peers were found significantly more (p<0.01; OR 2.83, CI 1.58-5.09) and they felt their subjects more difficult than others but no association was found with marks obtained. Students with anxiety were significantly not comfortable in hostel stay (p<0.01; OR 4.77. 95%CI 1.63-13.89).

DISCUSSION

In a systematic review done by Ibrahim et al, depression among University students is between 10 to 80% with mean 30%.[12] In Studies at Mangalore among pre-university students, prevalence of depression is 79.2% and in medical students it is 71.25% with majority 80% having mild and moderate depression.[14] Significant

association was there between higher semesters and depression.[15] A similar findings were seen in this study also where prevalence was 69% and majority were with mild depression and more in master degrees that is comparable to present study. In study by Bansal et al depression is associated with economic difficulties and parental fights.[12] Financial difficulties were associated with anxiety in our study. Single parenting also had significant association. Anxiety is seen in 87% of students with depression in study done by Sahoo and Khees which is similar in this study also.[16] In a study done in Alexandria University depression (57.9%) and anxiety (43.9%) among medical students is more than pharmacy students.[17] In our study both depression and anxiety are associated with master degree course. In study at vidhrbha by Shidhaye et al, age, gender, education, poverty and indebtedness along with place of residence (taluka) retained significant association with current depression.[18] Study by Jayanthi et al in Tamil Nadu showed association of academic stress with depression.[19] In our study socioeconomic class was associated with anxiety. But there was no association of depression and anxiety with academic performance. In a study among medical students of Bhubaneswar it was found that depression and anxiety were more in females and lower semesters.[20] But in our study it was found that depression seen in 1st year of hostel stay but not associated with year of study. In study done on nursing students in Wardha by Padhy et al, shows significant association of major depression with severity of premenstrual syndrome.[21] Our study also shows significant association of depression and anxiety with premenstrual syndrome. A meta-analysis by Petruzzello et al shows exercise is associated with Anxiety.[22] A similar finding was also found in our study where students without exercise were more depressed.

CONCLUSION

Depression and Anxiety are prevalent more in hostellites. Mild forms are more prevalent than sever form. Depression is associated with Pre-menstrual syndrome whereas Anxiety is associated with food habits and lifestyle, financial condition and reproductive health of students. Menstrual irregularities and premenstrual syndrome play vital role in mental health of students. Presence of depression and anxiety creates discomfort in hostel stay among students. Students with anxiety are involved in frequent quarrels with their peers and requires attention. Further longitudinal follow up studies are needed to confirm the causal factors of depression and anxiety and to assess their impact on performance of students. As mild form of depression and anxiety can be managed by creating awareness, encouraging active life style and nutritious diet among students, importance to be given to address this. Frequent examinations of physical, menstrual and psychological health can help in early diagnosis of irregularities in reproductive health which is significantly associated with depression and anxiety. Financial support with help of scholarships and education to students to handle financial difficulties can mitigate risk of developing anxiety and depression. Encouraging Physical activities like yoga and sports as a part of hostel routine is useful to avoid anxiety. Psychological and academic counselling helps students in handling their subjects well, Recreational activities are also important for students both in hostel and their institutions. Encouraging team activities among students helps them to develop positive resilience relation with others.

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