ORIGINAL ARTICLE

Assessment of Stress Prevalence among Pakistani Medical Students

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ABSTRACT

Background: In the modern era of medical teaching the application of the integrated medical education system has substituted boring conventional lectures with more student centered, interesting and interactive techniques based on organ systems with clinical applications.
Aim: To determine the prevalence of stress (by DASS scoring system) in male and female students of private medical school in integrated teaching system.
Methodology: This study with enrolled students (n=190) was carried out after research ethical committee's IIMC approval at Islamic International Medical college, Riphah university, Islamabad-Pakistan. Both male and female medical students were enrolled. Level of stress among them was noted after filling DASS questionnaire profoma. Data was analyzed by SPSS software, version 23. Chi square was used to determine the association of stress with gender and year of study as p-value ≤0.05 was considered significant.
Results: The mean age of all the enrolled students was 22.5±1.6 with the range of 20 to 24 years. Female students (65%) had stress of varying degrees. This difference between male and female students depending on stress parameter was statistically significant with p-value of <0.001.
Conclusion: We concluded that females medical students develop more stress in integrated medical education system than male students.
Keywords: Medical students, Stress and DASS system.

INTRODUCTION

Integration as defined by Harden is "the organization of teaching matter to interrelate or unify subjects frequently taught in separate academic courses or departments"[1]. In USA Cleveland (1952) the new methodology of Integrated system of medical teaching was introduced for the first time[2].

The purpose of switching over from conventional teaching methodology to integrated system is to make the medical students to acquire knowledge, to apply the disciplinary content, become critical thinkers and master the skills of life-long learning, communication, and team building[3].

In the modern era of medical teaching the application of the integrated medical education system has substituted boring conventional lectures with more student centered, interesting interactive techniques based on organ systems with clinical applications.[4]At the same time students are subjected to a series of regular formative, summative assessments and objectively structured clinical examinations (OSCE) in the integrated modular system.[5]

The implementation of integrated Curriculum is an important approach in medical education. Different type of medical curricula have been adopted by many medical schools worldwide to make the medical student to develop holistic approach in medical education to help boost up a meaningful learning[6]. Stress is the body's unfocussed retort or reaction to the burden put on it, or to distressing factors in the environment. It is a course of action by which we recognize and deal with environmental pressure and challenges There are different kinds of stressors which a medical student has to face throughout its education like pressures of academics with a compulsion to pass with good grades from parents, difficulties in adapting with integrated modular system and also to overcome social and family problems[7,8].

The prevalence of depression and anxiety levels in the population are important indicators for mental health. Many studies have highlighted the occurrence of various mental and physical problems like autoimmune disorders, anxiety and depression more in females than males.[9] Physical and mental health problems due to too much stress result in reduced student's self-esteem and affect their academic performance[10].

Many studies have highlighted the occurrence of various mental and physical problems like autoimmune disorders, anxiety and depression more in females than males[11]. Literature review has revealed that many research studies have been done to highlight the effects of integrated system on the student's academic performance[12]. Scientific data revealed that there is increase in prevalence stress among medical students globally in integrated teaching due to less social interaction and limited student/faculty longitudinal relationships but limited data is available in private medical colleges of Pakistan. In this back drop present study was carried out to determine the prevalence of stress (by DASS scoring system) in male and female students of private medical school in integrated teaching system. It helped us in assessing the prevalence of stress among students so that it can be properly managed in-order to reduce this mental disease.

METHODS

This cross sectional study was carried out after research ethical committee's IIMC approval at Islamic International Medical college, Riphah university from June 2017 to December 2017 Islamabad, Pakistan. The sample size of 190 was calculated using WHO software taking proportion of depression among medical students is equal to 40.9%, confidence level equal to 95% and margin of error equal to 7%. Both male and female medical students were enrolled. Students who did not give informed consent and had any disease were ruled out of the project. Students were informed with written consent taken. Level of stress among them was noted after filling DASS questionnaire profoma[13].

Statistical Analysis: The data were analysis by using SPSS 23. Frequency and percentage were given for gender, year of study and stress status. Chi square was used to determine the association of stress with gender and year of study as p-value ≤ 0.05 was considered significant.

RESULTS

Frequency and percentages (%) were given for gender and year of study (Table 1) for enrolled students. Out of 190 subjects, 112(58.9%) were females and 78 (41.1%) were males. Parameters like age was noted at the time of enrollment. It was presented by mean± S.D (Table 1).

The distribution of students with respect to stress in the current study are shown in table-2 below. In current project, results showed that the prevalence of stress was 51.6% among enrolled subjects. Severe stress was seen in 10% of students.

In our study, results according to DASS scoring showed that 66.7% male students did not have stress and 65% of female students had stress of varying degrees. This difference between male and female students depending on stress parameter was statistically significant (p value < 0.001) (Table 3).

In current project, results showed that 62.1% first year students had stress whereas 41.1% of second year students had stress with statistically significant p value of 0.036 (Table 4) .

Table 1: Demographic Parameters Of Enrolled students (n=190)

Variables	Categories	Frequency	%age
Gender	Male	78	41.1
	Female	112	58.9
Year of study	First year	95	50
	Second year	95	50
Age (years)	**Mean± SD**	**Minimum**	**Maximum**
	22.5± 1.6	20	24

Table 2: Prevalence of stress among enrolled medical students (n=190)

Variables	Categories	Frequency	%age
Stress	Normal	92	48.4
	Mild	36	18.9
	Moderate	43	22.6
	Severe	16	8.4
	Extremely Severe	3	1.6

Table 3: Stress comparison between male and female enrolled students (n=190)

Variable	Categories	First year	Second year
Stress	Normal	52(66.7%)	40(35.7%)
	Mild	12(15.4%)	24(21.4%)
	Moderate	8(10.3%)	35(31.3%)
	Severe	6(7.7%)	10(8.9%)
	Extremely Severe	0	3(2.7%)

P value < 0.001*

Table 4: Comparison of stress between first and second year enrolled students (n=190)

Variable	Categories	First year	Second year
Stress	Normal	36(37.9%)	56(58.9%)
	Mild	20(21.1%)	16(16.8%)
	Moderate	25(26.3%)	18(18.9%)
	Severe	12(12.6%)	4(4.2%)
	Extremely Severe	2(2.1%)	1(1.1%)

P value 0.036*

DISCUSSION

This cross sectional study was planned for medical students at Islamic International Medical college, Riphah University, Islamabad-Pakistan. It was done to determine the prevalence of stress in male and female students of private medical school in integrated teaching system. As incidence of stress among our population especially female students is high and has impacted our lives badly. Unfortunately, due to limited resources, this health issue remained undiscovered. Thus we examined the prevalence of stress due to integrated medical education system.

In our project, stress was evaluated in medical students (n=190). It was categorized as students suffering from mild, moderate, severe and extremely severe stress (Table 2). There was gradually increase in grades of stress in all students facing integrated teaching system. In the current project, 98 students (n=190) had stress of varying grades. It showed that the prevalence of stress was 51.6% in our project. Our findings were in line with one study that was held at India among their medical students attending private universities with prevalence of 49.1% as reported by Singh A et al[14]. Paradoxically, study based on medical students attending an American private university showed stress prevalence of 19%[13].

In current project, 41% students had stress of mild to moderate category. Results showed that 8.4% were severely stressed and 1.6% were extremely severe stressed students among enrolled subjects (Table 2). Our findings were in line with another Pakistani study held in 2015 that showed that the prevalence of stress among enrolled medical students was 50%,out of which 18.18% were mildly stressed, 24.24% were moderately stressed and 7.58% were severely stressed[14].

Both males and females medical students were recruited in our work as in other previous studies. Females were 58.9% (112) while males were 78(41.1%) (Table 1). Selection of gender among subjects was in line with our study i.e., 29% males and 71% females in one study held in 2011 at University of Amsterdam[15].

In current projects, we enrolled medical students only from 1st and 2nd academic years so total enrolled subjects were 190. Paradoxically, in another previous study conducted at King Saud University, Saudi Arabia, they enrolled a total of 774 medical students from the five academic years of the College of Medicine[16].

In current study, the frequency of stress of varying grades was compared between male and female students as done in many previous studies. Results showed that there was significant difference in frequency of stress among genders (Table 3). In our study, female (64.3%) whereas (33.3%) male students were stressed. Our work was in lines with one previous studies who showed similar results in their study[17,13].

In current study, the frequency of stress was compared between students of 1st and 2nd year of medical college as done in one Saudi study. Results showed that there was significant difference in frequency of stress among them with p-value of 0.036* (Table 4). In our study, first year medical students (62%) were stressed whereas (41%) 2nd year students were stressed. Students of first year had more stress. Our work was in lines with one previous studies who showed similar results in their study[16].

CONCLUSION

We concluded that there is a high prevalence of stress among female medical students during their academic training. Future studies are required to find the causes that result in stress development among students so that prevention programs can be employed in order to minimize the overall burden of stress among our students.

Limitations: Our study has number of limitations as we failed to assess the causes for stress, their academic performance, memory skills and stress hormones levels. Other limitations included too small sample size, financial constraints, lack of resources and last but not the least only stress were evaluated in present study among medical students..

Conflict of Interest: None to declare
Financial Disclosure: None

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