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A STUDY ON STRESS AND DEPRESSION AMONG MEDICAL STUDENTS

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Abstract:

Objectives: *Identification of stress prevalence amongst undergraduate medical students and examine the relationship between stress and academic year, physical problems, regularity, grades.*

Methodology: *600 medical students from College of Medicine, Allied Hospital Faisalabad were enlisted in the present study. They were studying in 1st, 2nd, 3rd, 4th and 5th years. They were asked to complete a stress inventory (Kessler10).*

Results: *After getting 83 percent response rate, total 494 responses were recorded. 57 percent subjects were found with all kinds of stress whereas severe stress was observed in 19.6 percent of the cases. A significant relationship was found between years of study and stress levels. The relationship between stress levels and academic grades was not found statistically substantial as distribution of stress prevalence was not considerably dissimilar across each of 04 educational grades. Main reason of stress was their studies (60.30 percent). Home environment was the reason in 2.8 percent of the cases. However, study population in 36.9 percent of the cases did not demonstrate any other potential reason of stress.*

Conclusion: *During the preliminary three years of academic studies, serious psychological distress was observed in the students. It may be a cause of challenge to students' support services delivery to further alleviate mental issue and present them with common health strategies to cope with such issues.*

Key Words: *Depression, Medical Student, Stress, Educational Achievements, Saudi Arabia.*

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INTRODUCTION:

Stress is part and parcel in medical education. It brings about numerous psychological changes amongst the students. There are emerging trends of stress in medical education. It is found in various studies that undergraduate students experience personal stress during the course of their studies [1]. To acquire mastery in academic syllabus, negative effects of stress can hinder it. Various issues such as emotional problems, stress problems etc are enhanced during undergraduate medical education. Ultimately, they can affect learning and cognitive abilities of students [2]. Keeping in view strict curriculum of medical studies, the stress is ever increasing owing to undesirable competition amongst the students rather than cooperation among them. According to a study, it has been noted that stress aggravates when a student gets admission in medical institution and thus remains poor in his training too. Study conducted in the paradigm of stress mainly focuses on documenting the stress and its correlation details [3, 4]. Stress may continue unabated from school life to internship period and then to doctor's professional life too. It may further lead to burnout level. In various studies, emotional disturbances were found greater in general population. Stress prevalence in 03 British universities was recorded as 31.20 percent [5, 6]. In Malaysian medical school, stress was 41.9 percent. Stress level noted in Thai medical school was 61.40 percent. Stress in medical school may trigger later complications in life and students have occasionally sought medical advice. Depressive signs amongst medical students in a Swedish research were observed as 12.90 percent and 2.70 percent of students made attempts of suicide. Thus, it is paramount for medical teaching faculties to point out such cases before it is too late. Otherwise such complications will not only affect their health but also academic achievement too.

A vast internet-based study has failed to reap any fruit in case of prevalence of stress amongst medical students in Pakistan. Following were the key objectives of this study:

1. To verify the self perceived stress amongst under graduate medical students.
2. To monitor a relationship between stress levels and study variables: (i) Academic grades (ii) Academic year (iii) Physical problems and (iv). Regular to course.

METHODOLOGY:

A variety of measures were taken in order to relieve medical students from depressive and stress symptomatology. Various tools i.e. Beck's Depression Inventory and General Health Questionnaire were used for assessment. Other significant tools were also utilised too.

Kessler and colleagues developed Kessler10 Psychological Distress (K10) which is frequently used to measure present distress in population-based epidemiologic studies. It is found without biasness in relation to sex and level of education. It is used in population surveys to determine the severity of psychological symptoms and level of distress. It has been commonly used in World Mental Health Survey, World Health Organization and in clinical outcome measures.

Kessler10 has 10 questions in the form. The 05 likely responses are recorded. Scoring ranges from two to five. All the items are supposed to achieve total score. A score below 20 indicated no sign of mental illness. A score in the range of 20-24 represented mild stress. Moderate stress was exhibited when the score ranged from 25 to 29. Severe stress was manifested in the scoring range of 30-50. Author's instructions were followed in the usage of these coding.

Kessler10 self-administered Arabic version questionnaires were distributed amongst 5- year undergraduate students (male) at College of Medicine It was an academic session of 2006. Prior to one month of examination, all the completed questionnaires were obtained from the participants. Extra questions for instance, source of stress; the number of days without study, medical illness in past four weeks and academic achievement etc were also noted. All the participants were properly guided about the instrument by competent research professionals and they were thoroughly made conversant about the objectives of this study. Students who were volunteers, their responses were without time limitations. Secrecy of students was also ensured. Final approval of the study was carried out by research ethical committee.

Microsoft Excel was utilised to record data. Its analysis was executed by SPSS (version 12.0) statistical software. Calculation of prevalence of an outcome variable with 95 percent confidence interval was carried out. To trace and quantify a relationship between different study variables and categorical outcome, Pearson's chi-square test along with odds ratio were used. For the sake of comparing mean values of study variables with respect to stress, Student's t-test for independent samples was utilised. P- Value less than 0.05 was thought to be statistically important. Categorization of final variable stress was done into dichotomous as stress (Yes/No) by taking into view 03 stress levels i.e. mild, moderate and severe as existence of stress.

RESULTS:

Out of about 600 student population, 494(83 percent) responses were obtained. 21.4±1.9 years were the mean age of the study. All types of Stress prevalence were noted as 57 percent, whereas severe stress prevalence was observed as 19.6 percent (Table-I). Table-II contains distribution of study variables. Higher stress prevalence i.e. 74.20 percent was noted in first year of study which was followed by 69.8 percent in 2nd year. 48.6 percent, 30.40 percent, 49 percent were the obtained results for 3rd, 4th and 5th years of study respectively. There existed a higher relationship between level of stress and year of study subjects.

Table-I: Distribution of stress levels among medical students.

Not stressed	43.1%
Mild	21.5%
Moderate	15.8%
Severe	19.6%

Table-II: Distribution of variables of study sample

Variables	Number (%)
Academic level (n = 494)	
First year	120 (24.3)
Second year	106 (21.5)
Third year	148 (29.9)
Fourth year	69 (14)
Fifth year	51 (10.3)
Academic grades (n = 439)	
Excellent	224 (51)
Very good	111 (25.3)
Good	76 (17.3)
Poor	28 (6.4)
Regular to academic course (n = 480)	
Yes	432 (90)
No	48 (10)
Physical problems (n=450)	
No	267 (59.3)
Mild to moderate	158 (35.1)
Severe	25 (5.5)

Table-III: Association of stress and year of study

Year of study *	Stress No. (%)				Odds ratio	95% CI's or OR
	No		Yes			
First year	31	(25.8)	89	(74.2)	6.4	3.2-13.1
Second year	32	(30.2)	74	(69.8)	5.2	2.5-10.6
Third year	76 (51.4)		72 (48.6)		2.4	1.2-4.5
Fourth year#	47	(69.6)	21	(30.4)	1.0	-
Fifth year	26	(51)	25	(49)	2.1	0.9-4.9

Table-IV: Association between stress and study variables (academic grades, regular to academic course and physical problems)

Study Variables	Stress No. (%)			Odds ratio	95% CI's of OR
		No	Yes	(OR)	
Academic grade*					
(n = 439)					
Excellent	91 (40.6)		133 (59.4)	1.23	0.5-3.1
Very Good	54 (48.6)		57 (51.4)	1.7	0.7-4.4
Good	32 (42.1)		44 (57.9)	1.3	0.5-3.5
Poor	10 (35.7)		18 (64.3)	1.0	--
Regular to academic**					
course (n=480)					
Yes	187 (43.3)		245 (56.7)	1.39	0.7-2.7
No	17 (35.4)		31 (64.6)	1.0	--
Physical problems***					
(n = 450)					
No	130 (48.7)		137 (51.3)	1.0	--
Mild to	43 (27.2)		115 (72.8)	2.5	1.6-3.9
moderate					
Severe	8 (32)		17 (68)	2.0	0.8-5.3
X2 - Value		P- value			
* 2.57		0.46			
** 0.78		0.37			
*** 19.78		<0.0001			

Stress prevalence was reduced when the years of study were increased. The odd ratios were 6.4 for first year, 5.2 for second year, 2.4 for third year and 2.1 for fifth year when fourth year was thought to be as reference category also manifested greatly statistically considerable relationship. Odd ratio of students suffering from stress was higher in the first and second year while a decline in odd ratio was seen in third and fifth year (as in Table-III).

The relationship between stress levels and academic grades of study subjects is not statistically important as distribution of stress prevalence is not considerably dissimilar across all 04 study grades i.e. X^2 = 2.57, p =0.46. No statistically considerable relationship was seen between stress levels of study subjects and regularity (No/Yes) to the academic course. Stress level distribution is not considerably dissimilar, being a student either irregular or regular to academic course i.e. X^2 = 0.78, p =0.37. Non-considerable relationship is also demonstrated by relevant odd ratios.

Prevalence of physical issues is statistically considerably related to levels of stress. (X^2 = 19.78, p <0.001). Odds ratios 2.0 and 2.5 demonstrates the odds of getting into stress is greater with mild to moderate and severe physical problems when comparison was made with no physical problems (as in Table-IV). The major cause of stress was their studies i.e. 60.3 percent. Home environment was noted as 2.8 percent. Nonetheless, 36.9 percent of the cases indicated ambiguous sources of stress.

DISCUSSION:

Response rate of this study was 83 percent. This study demonstrates higher prevalence of stress in our medical students. Level of depression or stress varied in various education stages. Increased stress level not only affected psychological health of students but also impaired their cognitive faculties and thus decreasing their educational grades. Stress prevalence is found to be 57 percent in aggregate which corresponds to Thai study i.e. 61.4 percent. It was more than Malaysian study i.e. 41.9 percent and British study i.e. 31.2 percent. This study brings about some interesting facts about decline in stress when study year was increased. These results negate the results of a study in which stress level was increasing with every study year [8]. Other researchers have also confirmed that mental health of the students exacerbates after getting admission to a medical institution and continues the same in the training tenure. It is especially true in the transitional phase from basic science to clinical training. Results of One study was matching with the results of ours which describes the stress prevalence decreased in the following years of study [9].

It is pertinent to mention here the uniqueness of our study in which our students might have developed a coping mechanism due to our student's support system. Another point is that our education is free in which a small stipend is granted to students during their studies. Whereas students in foreign may have stress level implications owing to burdensome of their studies. This is not true in case of our college as Ministry of education render help to students. Medical studies and its adverse effects have been brought to light by many researches earlier [10]. A British study has indicated that one third medical students do not graduate from medical college due to psychiatric issues. Issues which originate in earlier stages can prevent from future ailment by effective psychological services. Additionally, academic pressure and lack of social interaction can be other reasons too. Earlier diagnosis of stress and related issues can mitigate any future complications [11]. In USA and Canada medical care programmes have been in place to counter such problems and have helped students with positive results on both their health and academic studies. It is interesting to note that negligible stress is mandatory in order to add spice in our lives.

CONCLUSIONS:

This study presents a pragmatic proof of psychological health of our college students. During the preliminary three years of academic studies, serious psychological distress was observed in the students. It may be a cause of challenge to students' support services delivery to further alleviate mental issue and present them with common health strategies to cope with such issues. Our study indicates that special attention must be extended to psychiatric problems of the students getting admission into medical colleges.

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