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Prevalence of Stress among Junior Medical Students, Taif University

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Abstract

Background: Medical students are exposed to diverse varieties of stress. It is reported during undergraduate medical education stress is related to academic, financial and social. Sometime stress arises from compulsion to succeed and also in difficulties of integrating education system.

Methodology: The study was conducted from junior medical students, Taif University, KSA during the academic year 2016-2017; Self-administered questionnaire was utilized to know the prevalence, causes, and levels of stress among students.

Results: 82% of study group had moderate stress, 12.67% had severe stress and 5.33% had mild stress.

Conclusion: The prevalence of stress among junior medical students in Taif University, KSA was high especially in the past 30 days. Type of residence, average family monthly income, between history of sleep disorder, travel duration in minutes and BMI were the dominators for stress in general.

Keywords: Stress; Medical students; Taif university

Introduction

Background

Stress is a state of an individual that result from the interaction of the individual with the environment which is perceived as threatening or threat to the well-being. It is an external constraint which directly upsets the individual both mentally and physically. Individual in a stressful situation is influenced by his or her mental ability to carry out on-going tasks [1,2].

Linn and Zeppa [3] have suggested that some stress in medical school training is needed for learning. Stress that facilitates learning is called 'favorable stress' and stress that suppresses learning is called 'unfavorable stress'. Depending upon their cultural backgrounds, personal traits, experience and coping skills, medical students may perceive the same stressors differently.

An optimal level of stress, referred to earlier as 'favorable stress', can enhance learning [4] However, excessive stress can lead to physical and mental health problems [5]. It can reduce students' self-esteem [4,6] and may affect academic achievement and personal or professional development. Medical students are exposed to diverse varieties of stress. It is reported during undergraduate medical education stress is related to academic, financial and social. Sometime stress arises from compulsion to succeed and also in difficulties of integrating education system [7,8].

Researcher identified stress of medical students are mainly due to curricular overload but not due to personal difficulties [9]. It is because of demanding, intense environment of medical education has created excessive pressure on medical students [10]. There are number of reports indicated that medical school's environment is not congenial and friendly to enhance psychological and physical health of students [11-13]. It is less than 3% in any population suffers from psychiatric diseases. Similar figure also observed with medical students before taking admission in medical school [14-17].

Medical students are exposed to regular pressure with overwork of academic burden and examination that brings various changes in their daily routine such as lack of sleep, irregular diet, smoking and substance abuse in order to cope with stress [18,19]. Coping is a way that a person reacts or responds towards stressors. Failing to cope with stress effectively causes deterioration of academic and professional performances and increases the psychological distress [18,20].

It is important for medical educators to know the prevalence, causes, and levels of stress among students, which not only affect their health but also their academic achievements at different points of time of their study period. In Saudi Arabia, local epidemiological data about psychological morbidity among medical undergraduate students are scarce. Results of two recent studies from Egypt and Saudi Arabia suggested high rates of anxiety and depression among medical students [21,22].

Methodology

Study setting

This study was conducted at medical college, Taif University (male and female sections). Taif City is located at the West of Saudi Arabia. It is located in the Mecca Province of Saudi Arabia at an elevation of 1700 meters on the slopes of the Al-Sarawat mountains. The college of medicine at the Taif University is one of the most recent medical schools in Saudi Arabia. It started on 1425 AH (2005 AB). The female part started at 2010 AB [23].

Study design

It will be a cross sectional study.

Study population

The study population was consists of junior medical students, males and females in Taif University enrolled during the academic year 2016-2017 (second and third years). The estimated number of eligible medical students is 154 females and 243 male students. This figure is obtained from Admission and Registration Deanship. They are distributed as follows; 2nd year (80 females and 124 males), 3rd year (74 females and 119 males).

Inclusion criteria

The inclusion criteria are:

- 2nd and 3rd year's male and female medical students.
- Regular attendees in the University.

Exclusion criteria

Students who was absent at the time of study conduction or those who was refuse to participate in the study.

Sampling method and sample size

All male and female medical students (2nd and 3rd) years eligible to include was invited to participate in the study.

Data collection tool

Self-administered questionnaire was utilized for data collection. It included 3 main parts: The first part includes socio-demographic data, variables pertaining to demographic profile and personal factors such as age, gender, body weight, place of residence, type of residence, number of siblings, parents' education level, parents' occupation, parent income, whether living with parents, relatives or in other places like hostel, place of residence, distance and time to reach college, physical illness and sleeping habits. The second part includes a list of possible causes of stress either inside or outside the college such as difficulty in understanding lectures and memorize facts, no enough time for revision, no enough references, living environment problems, family problems, having too many lectures and assignments, infrastructure-related problems, and financial problems.

The third part is a valid and reliable tool to measure psychological stress. The Kessler10 Psychological Distress instrument (K10) developed by Kessler and colleagues [24] was utilized. This instrument has been used widely in population-based epidemiological studies to measure current (1-month) distress, to measure the level of stress. The K10 consists of 10 questions in the form of "how often in the past month did you feel ..." and offers specific symptoms, such as 'tired out for no good reason', 'nervous', and 'sad or depressed'.

The five possible responses for each question range from 'none of the time' to 'all of the time' and were scored from 1 to 5 respectively. All the questions were collated to obtain a total score. The total score was interpreted as follows: a score of less than 20 was considered not to represent stress of any level while a score of 20-24 represented mild stress, 25-29 represented moderate stress, and 30-50 represented severe stress [25]. The questionnaire had also additional questions relating to academic achievement, sources of stress, and any perceived medical illness (Table 1).

Pilot study

A pilot study was conducted on 20 students (10 males and 10 females) for the purpose of testing the study feasibility and wording of the questionnaire in particular the first two parts. Their results were included in the main survey in case of no significance detected from the main results (Table 2).

Data analysis

Collected data was coded, verified and analyzed using SPSS program version 22. Descriptive statistics was applied in the form of frequency and percentage for categorical variables while mean and standard deviation was utilized for description of continuous variables. Chi-square test was applied to test for the association and/or difference between categorical variables. Other statistical tests were used whenever appropriate. A p-value of equal or less than 0.05 was considered as statistically significant.

Parameters	N	%
Age		
<20	202	67.33
>20	98	32.67
Range	19-30	
Mean ± SD	20.36 ± 1.15	
Gender		
Male	148	49.33
Female	152	50.67
Year of study		
Second year	230	76.67
Third year	70	23.33
Marital status		
Single	296	98.67
Married	4	1.33
Place of residence		
Taif city	294	98.00
Outside Taif city	6	2.00
Type of residence		
Rented house	84	28.00
Private flat	56	18.67
Private villa	148	49.33
Others	12	4.00
Living status		
With parents	286	95.33

With others	8	2.67
Alone	6	2.00
Number of siblings		
<3	64	21.33
3-5.	74	24.67
>5	162	54.00
Range	1-15	
Mean ± SD	4.79 ± 2.47	
Father's education		
Up to primary	32	10.67
Intermediate/high school	92	30.67
College or above	176	58.67
Father's job		
Governmental	180	60.00
Private	16	5.33
Retired	104	34.67
Mother's education		
Up to primary	74	24.67
Intermediate/high school	92	30.67
College or above	134	44.67
Mother's job		
House wife	186	62.00
Employed	114	38.00
Average family monthly income in SR		
<5000	44	14.67
5000-10000	52	17.33
10000-15000	68	22.67
>15000	136	45.33

Table 1: Demographic data among study group (N=300).

Parameters	N	%
History of chronic health problem		
Yes	30	10.00
No	270	90.00
History of sleep disorders		
Yes	36	12.00
No	264	88.00
Mode of travel to the college		
Private car	274	91.33
Taxi	4	1.33
others	22	7.33
Travel duration in minutes		
<15	50	16.67
15-30	102	34.00
>30	148	49.33
Range	3-60	
Mean ± SD	26.08 ± 13.94	
BMI		
Underweight	50	16.67
Normal weight	148	49.33
Overweight	56	18.67
Obese	46	15.33
Range	12.21-73.00	
Mean ± SD	24.37 ± 8.65	
Academic performance in the last semester		
Excellent	122	40.67
Very good	106	35.33
Good	60	20.00
Pass	12	4.00

Table 2: Factors affecting stress among study group (N=300).

There was significant relation between stress and problems that one may face in studying career (p value <0.001). When asking about difficulty to understand lectures 57.33% found it neutral, 31.33% disagreed while 11.33% agreed. When asking about difficulty to memorize facts 57.67% found it neutral, 20.67% agreed while 22.67% disagreed. 64% agreed that no enough time for revision, 24% found it neutral while 12% disagreed. 46.67% found it neutral, 26.67% agreed while 26.67% disagreed Table 3. 64% disagreed that home or hostel environment not comfortable, 20.67% found it neutral while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% found it neutral regards having too many assignments, 20.67% agreed while 38.67% disagreed. 64% found it neutral regards lecturer asking questions, 18% agreed while 18% disagree Figure 1. 45.33% agreed that infrastructure not comfortable, 34% found it neutral while 20.67% disagreed. 72% disagreed regards having financial problem, 19.33% found it neutral while 8.67% agreed. 82% disagreed regards having financial problem, 12% found it neutral while 6% agreed as shown in Table 4. 82% of study group had moderate stress, 12.67% had severe stress and 5.33% had mild stress Table 5.

		Stress			Weight	% of Agreement	Chi-Square	
		Disagree	Neutral	Agree			χ^2	P-value
Difficult to understand lectures	N	94	172	34	540	60.00	95.760	<0.001*
	%	31.33	57.33	11.33				
Difficult to memorize factsC	N	62	170	68	606	67.33	73.680	<0.001*
	%	20.67	56.67	22.67				
No enough time for revision	N	36	72	192	756	84.00	133.440	<0.001*
	%	12.00	24.00	64.00				
No enough references in the library	N	80	140	80	600	66.67	24.000	<0.001*
	%	26.67	46.67	26.67				
Home or hostel environment not comfortable	N	192	62	46	454	50.44	128.240	<0.001*
	%	64.00	20.67	15.33				
I have too many lectures	N	6	80	214	808	89.78	222.320	<0.001*
	%	2.00	26.67	71.33				
I have too many assignments	N	116	122	62	546	60.67	21.840	<0.001*
	%	38.67	40.67	20.67				
Lecturer ask questions	N	54	192	54	600	66.67	126.960	<0.001*
	%	18.00	64.00	18.00				
Infrastructure not comfortable (building, chair, class room, bathroom, etc.	N	62	102	136	674	74.89	27.440	<0.001*
	%	20.67	34.00	45.33				
I have financial problem	N	216	58	26	410	45.56	206.960	<0.001*
	%	72.00	19.33	8.67				
I have family problems	N	246	36	18	372	41.33	321.360	<0.001*
	%	82.00	12.00	6.00				

Table 3: Some problems that one may face in studying career among study group (N=300).

Stress			
		N	%
Mild		16	5.33
Moderate		246	82.00
Severe		38	12.67
Total		300	100.00
Range		10-43	
Mean ± SD		24.63 ± 6.49	
Chi-square	χ^2	112.320	
	P-value	<0.001*	

Table 4: Assessment of stress among study group.

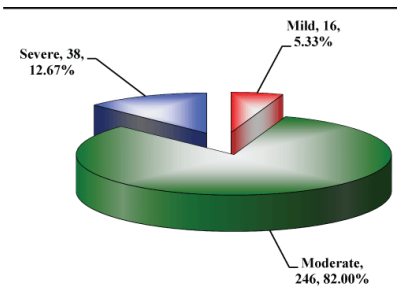

Figure 1: Assessment of stress among study group.

Demographic data		N	Stress	T or F	T-test or ANOVA	
			Mean ± SD		test value	P-value
History of chronic health problem	Yes	30	21.200 ± 2.999	T	-0.039	0.969
	No	270	21.222 ± 2.949			
History of sleep disorders	Yes	36	22.667 ± 2.767	T	3.321	0.002*
	No	264	21.023 ± 2.922			
Mode of travel to the college	Private car	274	21.204 ± 2.965	F	0.753	0.472
	Taxi	4	23.000 ± 1.155			
	others	22	21.091 ± 2.942			
Travel duration in minutes	<15	50	22.120 ± 3.108	F	3.608	0.028*
	15-30	102	20.765 ± 2.637			
	>30	148	21.230 ± 3.044			
BMI	Underweight	50	21.120 ± 3.549	F	3.978	0.008*
	Normal weight	148	20.716 ± 2.860			
	Overweight	56	21.929 ± 2.500			
	Obese	46	22.087 ± 2.731			
Academic performance in the last semester	Excellent	122	21.328 ± 2.908	F	0.122	0.947
	Very good	106	21.113 ± 2.681			
	Good	60	21.233 ± 3.088			
	Pass	12	21.000 ± 4.824			

Table 5: Relation between factors affecting stress and stress among study group (N=300).

There was a significant relation between history of sleep disorder, travel duration in minutes, BMI and stress (p value=0.002, 0.028 and 0.008). There was no relation of statistical importance between history of chronic disease, mode of travel to the college, academic performance and stress (p value= 0.969, 0.472 and 0.947).

Discussion

Stress is a state of an individual that result from the interaction of the individual with the environment which is perceived as threatening or threat to the well-being.

This study aimed to investigate psychological stress among junior medical students in Taif University, KSA so as intervention strategy can be proposed to reduce psychological stress and enhance student's abilities.

In this study, 300 junior medical students in Taif University were participated, 67.33% aged less than 20 years and 32.67% aged more than 20 year. Age ranges from 19-30 years. 49.33% were males and 50.67% were females. 76.67% were at 2nd year and 23.33% were at 3rd year.82% of study group had moderate stress, 12.67% had severe stress and 5.33% had mild stress. there was no relation of statistical importance between age, gender, year of study, marital status, place of residence, living status, number of sibling and stress (p value=0.604, 0.081, 0.904, 0.834, 0.597, 0.735 and 0.080 respectively). There was a significant relation between stress over the past 30 days, age, gender, marital status, type of residence and living status (p value=0.048, 0.025, 0.003, 0.04 and 0.008 respectively).

While in Sani et al. at Jizan University in Kingdom of Saudi Arabia [26], The prevalence of stress among medical students was 71.9%, with females being more stressed (77%) than the males (64%). There was a statistically significant association between stress and gender (p<0.01, odds ratio 1.89 CI 1.20 – 2.90).

In this study, there was no relation of statistical importance between year of study, place of residence, number of sibling and stress over the past 30 days (p value=0.796, 0.534 and 0.356 respectively). There was a significant relation between stress and average family monthly income in SR (p value=0.001). There was no relation of statistical importance between father's education, father's job, mother's education, mother's job and stress (p value=0.086, 0.091, 0.44 and 0.074 respectively). There was a significant relation between stress over the past 30 days, mother's education and average family monthly income in SR (p value=0.011 and 0.042). There was no relation of statistical importance between father's education, father's job, mother's job and stress over the past 30 days (p value=0.292, 0.451 and 0.556 respectively).

While in Sani et al. Parents' education level or occupation, ownership of house, type of residence, number of siblings, whether living with parents, place of residence, mode of travel to the college,

time taken to reach college, marital status and epidemiological factors other than those related to academic issues were not associated with stress.

In Salam and his colleagues in Malaysia, [27] Stress among Malaysian medical students was as high as 56% which is alarming. Year of study, financial problem and relationship problem with parents, siblings and lecturers were the significant determinants.

In this study, there was a significant relation between history of sleep disorder, travel duration in minutes, BMI and stress (p value=0.002, 0.028 and 0.008). There was no relation of statistical importance between history of chronic disease, mode of travel to the college, academic performance and stress (p value=0.969, 0.472 and 0.947). There was a significant relation between history of sleep disorder, mode of travel to the college, academic performance and stress over the past 30 days (p value=0.004, 0.003 and 0.046). There was no relation of statistical importance between history of chronic disease, travel duration in minutes, BMI and stress over the past 30 days (p value=0.496, 0.81 and 0.225). There is a significant correlation between stress and feeling stress over the past 30 days among study group (p value<0.001 and r= 0.361).

While in Sani et al. Perceived sleeping problems (p<0.01, odds ratio 0.289, C.I- 0.172 – 0.487) and waking time in the morning (p<0.05, odds ratio 0.549, C.I -0.304 – 0.993) showed a statistically significant association with stress. The major factor associated with perceived stress was long hours of study.

Conclusion

The prevalence of stress among junior medical students in Taif University, KSA was high especially in the past 30 days. Type of residence, average family monthly income in SR, between history of sleep disorder, travel duration in minutes and BMI were the dominators for stress in general. age, gender, marital status, type of residence, living status, mother's education, average family monthly income in SR, history of sleep disorder, mode of travel to the college and academic performance were the dominators for stress in the past 30 days.

Recommendations

- Counseling about importance of sleep hygiene.
- Increase awareness about importance of physical activity and schedule exercise programs.
- Counseling about weight reduction and dietary habits.
- Minimizing the duration of travel to college.
- Modification of living environment to avoid stressors.

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