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Research Article

FACTORS CAUSING STRESS AMONG FEMALE STUDENTS OF AL JOUF MEDICAL COLLEGE IN SAUDI ARABIA

*¹ Dr. Umrana Mirza, ¹ Amjad Treheeb Alkaseb, ¹ Maya Khaled Almutairi,
¹ Hamda Saud Alrwaili, ¹ Raghad Mwafag Alrwaili, ¹ Rawan Mohammad Alrwaili
¹ Al Jouf University, Al Jouf, Saudi Arabia

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Abstract:

Background: Medical students feel a significant amount of stress due to a variety of factors. Few studies have explored the relative size of these various stressors to identify which are most important. Early identification and necessary interventions targeting the alleviation of modifiable stressors might result in a less stressful academic life for students, which in turn could enhance their academic performance and skill development as medical graduates. This study is undertaken to quantify the magnitude of various sources of stress among female students of Al Jouf medical college in Saudi Arabia.

Objectives: To determine the level of stress among female students of Al Jouf medical college and to know the factors associated with stress.

Methods: Present cross-sectional study was conducted from December 2017 to January 2018 among 86 medical students from year one to three using MSSQ-20 questionnaire.

Results: The overall prevalence of stress was about 88.4%. The prevalence of stress was the highest among the second-year students (96.4%) followed by first year students (84.8%) and third year students (84%). A significant number of study participants in our setting suffer from moderate to high stress. Most of the students (44.2%) reported stress due to academic-related factors (ARS) followed by Social Related Stressor (SRS) (15.1%).

Conclusion: The study showed a high prevalence of stress in the medical students with preponderance among the second-year students. A significant number of study participants in our setting suffer from moderate to high stress. The main sources of stress stated by the students were academic-related factors (ARS). Implementing effective changes in the curriculum to make it more student-friendly should receive priority in addressing this high prevalence of stress among medical students.

Keywords: MSSQ, Stress, Medical Students, ARS, SRS

Corresponding author:

Dr. Umrana Mirza,
Al Jouf University, Al Jouf, Saudi Arabia

QR code



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INTRODUCTION:

A student can be stressed due to different reasons or stressors such as the academic problems, financial problems, health problems or loss of close family member or friend, etc. It is the persons' ability to face the everyday challenges which will determine whether he/she will be stressed or not." (1) Stress in academic situation can have both positive and negative consequences. Stress can inhibit and suppress learning, which is called unfavorable stress and is associated with inhibition of students' academic performance. (3)

Medical education has been reported to be one of the most stressful academic curricula worldwide, negatively affecting the physical and mental health of medical students. Examination fear, high parental expectations, peer pressure, lack of leisure time, financial problems, relationship disharmony, and aspirations for higher studies are some of the many factors known to contribute to the development of stress among undergraduate medical students.(1,2) Early identification and necessary interventions targeting the alleviation of modifiable stressors might result in a less stressful academic life for students, which in turn could enhance their academic performance and skill development as medical graduates.(4)

In many medical schools, the environment itself is an all prevailing pressure situation, providing an authoritarian and rigid system, one that encourages competition rather than cooperation between learners (5). It is not just the undergraduate study period which brings stress but it may continue during the internship, postgraduate study period, and later into physician's practical life (8-10). The stress may also reach burnout levels (11). The estimated prevalence of emotional disturbance found in different studies on medical students was higher than that in the general population. In three British universities, the prevalence of stress was 31.2% (12), and it was 41.9% in a Malaysian medical school (13) and 61.4% in a Thai medical school (14). Stress in medical school is likely to predict later mental health problems but students seldom seek help for their problems (15). In a Swedish study, the prevalence of depressive symptoms among medical students was 12.9%, and 2.7% of students had made suicidal attempts (6). 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.

Rational of study:

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 suggest

high rates of anxiety and depression among medical students (16, 17). An extensive electronic Internet-based search failed to locate any study which shows an association between stress and academic achievement in undergraduate medical students in Saudi Arabia.

Medical students feel a significant amount of stress due to a variety of factors. Few studies have explored the relative size of these various stressors to identify which are most important. Early identification and necessary interventions targeting the alleviation of modifiable stressors might result in a less stressful academic life for students, which in turn could enhance their academic performance and skill development as medical graduates. This study is, therefore undertaken to quantify the magnitude of various sources of stress among female students of Al Jouf Medical College in Saudi Arabia.

Aim of the study:

To quantify the magnitude of various sources of stress among female students of Al Jouf medical college in Saudi Arabia

Objectives:

1. To determine the level of stress among female students of Al Jouf medical college.
2. To know the factors associated with stress among female students of Al Jouf medical college.

PARTICIPANTS & METHODOLOGY:**Study Design:**

Cross sectional study

Study Setting:

The study was conducted among female students from first, second and third year of Al Jouf Medical College, Saudi Arabia in the months of December 2017 and January 2018.

Response rate:

Total coverage was attempted and achieved.

Inclusion criterion:

All female students in year1, 2 and 3 of Al Jouf Medical College were included in the study.

Exclusion criterion:

Female student in clinical years of Al Jouf Medical College were excluded from the study.

Ethical review & informed consent:

The study protocol was submitted to college research committee for ethical approval and data was collected after the ethical clearance. The participation was entirely voluntary after a proper consent.

Data collection procedure:**Questionnaire:**

A questionnaire which consisted of having relevant demographic profiles such as age, year of education, was collected by a structured demographic form. Other part consisted of the Medical Students Stressor Questionnaire which was used to identify

sources of stress. The items on MSSQ represent 20 events that have been reported to be possible sources of stress in medical students.

Completed questionnaires were collected one month before the examination period so that the actual examination stress would not affect the responses of the students.

Participation of students: The students were allowed to respond in their own time and privacy. The participation was entirely voluntary after a proper consent.

Data collection tool & variables:

The six-factor model with 20 items, MSSQ-model-4 was used in the present study. The MSSQ is a validated instrument used to identify sources of stress (19-21). The instrument has been validated on medical students across years of study and across medical schools in Malaysia (19, 20). These studies showed that it was remarkably reliable and valid in detecting stressors of medical students. A confirmatory factor analysis study on the Medical Student Stressor Questionnaire among Malaysian medical students, suggested that the six factor model with 20 items of the MSSQ –model-4 had a good fit and showed good psychometric values. (21)

The questions in MSSQ are divided into six domains. Domain I: Academic Related Stressor (ARS) represented by items 1 to 5, domain II:

Interpersonal & Intrapersonal Related Stressor (IRS) represented by items 6 to 9, domain III: Teaching and Learning Related Stressor (TLRS) represented by items 10 to 12, domain IV: Social Related Stressor (SRS) represented by items 13 to 15, domain V: Drive & Desire Related Stressor (DRS) represented by items 16 and 17 and domain VI: Group Activities Related Stressor (GARS) represented by items 18 to 20.(21)

Respondents were asked to rate each source by choosing from five responses, 'causing no stress at all', 'causing mild stress', 'causing moderate stress', 'causing high stress' and 'causing severe stress'. The scoring method assigns marks from 0 to 4 to each of the responses respectively. The reliability coefficients of the stressor groups have ranged from 0.64 to 0.92 (19-21).

Data analysis procedure / statistical procedure:

Mean item scores for individual students were calculated and graded into mild (0.01–1), moderate (1.01–2), high (2.01–3), and severe (3.01–4) categories of stress. All the four categories of stress were pooled to get the overall prevalence of stress among the students and across different years.

Data were entered in Microsoft Excel and analyzed using the SPSS software (version 20). Descriptive statistics and Chi-square tests were performed. P value ≤ 0.05 is taken as statistically significant.

RESULTS:

A total of 86, first, second- and third-year students were invited to fill the questionnaire and all the students provided near complete responses to the questionnaire. The median age of the respondents was 21 years.

Table1: Student profile

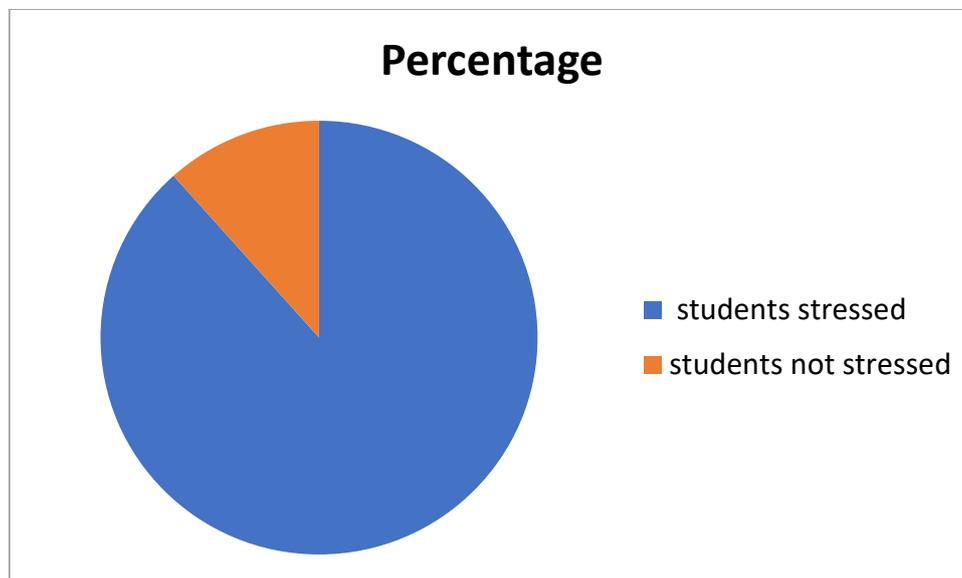
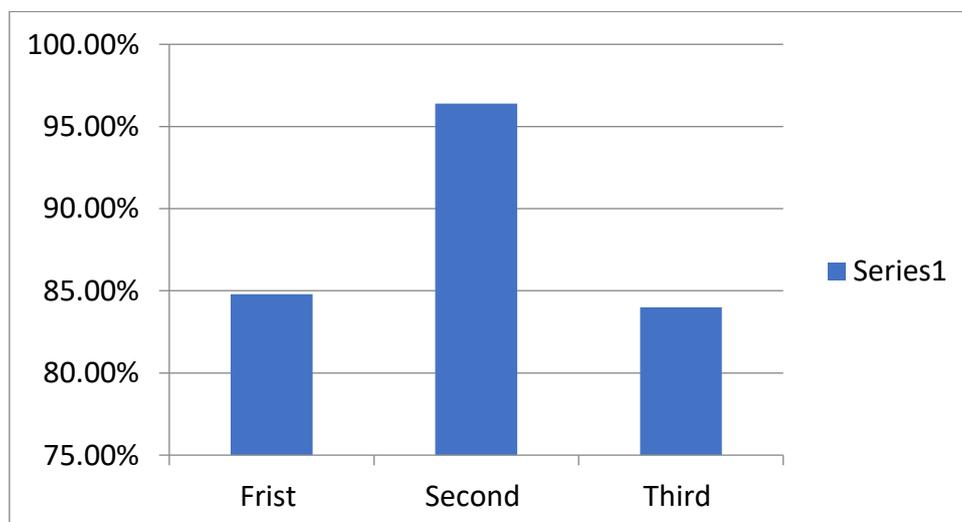
Age	Frequency	Percentage %
17-19	24	27.9
20-22	61	70.9
23-25	1	1.2
Total	86	100.0

Year of study	Frequency	Percentage %
Frist year	33	38.4
Second year	28	32.6
Third year	25	29.1
Total	86	100.0

The overall prevalence of stress was about 88.4% (Table 2). The prevalence of stress was the highest among the second year students (96.4%) followed by first year students (84.8%)and third year students(84%). There was no significant difference in the perception of stress in the first three years of medical college.

Table 2: Prevalence of stress at different years of medical college

Year of study		Stressed		Not stressed		Total	p value
		No.	%	No.	%		
First		28	84.8	5	15.1	33	0.268
Second		27	96.4	1	3.6	28	
Third		21	84	4	16	25	
Total		76	88.4	10	11.6	86	

**Figure 1: Prevalence of stress in total study population****Figure 2: Prevalence of stress at different years of medical college**

Majority of students in all the three years perceived moderate stress (65.8%) followed by high stress (25%) (Table3). There was no statistically significant difference in the level of stress among the students in the first three years of medical college.

Table 3: levels of stress

		Mild		Moderate		High		Severe		Total	p value
		No.	%	No.	%	No.	%	No.	%		
Year	Frist	1	3.6	17	60.7	8	28.5	2	7.1	28	0.225
	Second	0	0	21	77.8	5	18.5	1	3.7	27	
	Third	3	14.3	12	57.1	6	28.6	0	0	21	
Total	4	5.3	50	65.8	19	25	3	3.9	76		

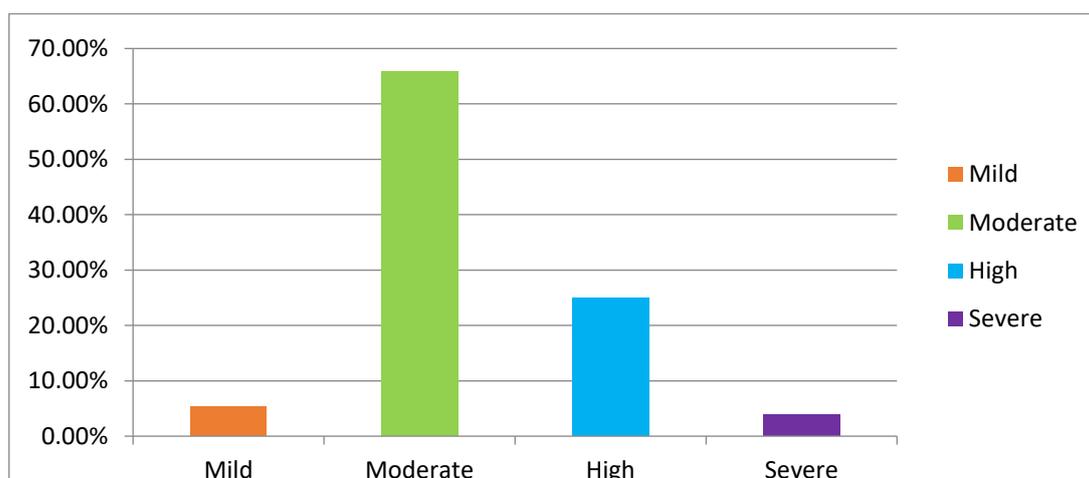


Figure 3: Level of stress

Most of the students (44.2%) reported stress due to academic-related factors(ARS) followed by Social Related Stressor (SRS) (15.1%).Group Activities Related Stressor (GARS) (9.3%),Interpersonal & Intrapersonal Related Stressor (IRS) (8.1%),Teaching and Learning Related Stressor (TLRS) and Drive & Desire Related Stressor (DRS) (5.8%).The frequency of students found to be stressed in each domain and the percentage score of each stressor domain are presented in [Table 4]. There is no significant difference in the major domain of stress among the students in the first three years of medical college.

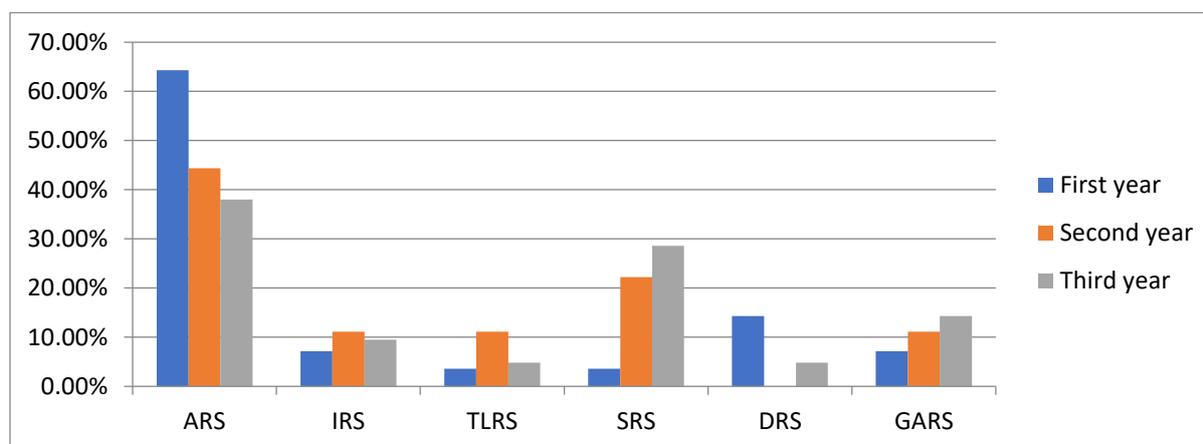


Figure 4: Domain-wise distribution of stress among study population

Table 4: Domain-wise distribution of stress among study population

Year	ARS		IRS		TLRS		SRS		DRS		GARS		Total	p value
	No	%	No	%	No	%	No	%	No	%	No	%		
Frist	18	64.3	2	7.14	1	3.57	1	3.57	4	14.3	2	7.14	28	0.191
Second	12	44.4	3	11.1	3	11.1	6	22.2	0	0	3	11.1	27	
Third	8	38	2	9.5	1	4.8	6	28.6	1	4.8	3	14.3	21	
Total	38	44.2	7	8.1	5	5.8	13	15.1	5	5.8	8	9.3	76	

DISCUSSION:

This study conducted at Al Jouf Medical College; female campus shows a high prevalence of stress among undergraduate medical students. The level of stress varied between the stages of education. The overall prevalence of stress observed in this study was 88.4%, which was higher than in British (31.2%)¹², Malaysian (41.9%)¹³ and Thai (61.4%)¹⁴ studies.

The prevalence of stress among first year students in our setting was found to be 84.4%, which is not similar to that reported from other medical colleges in India (Agartala [94.52%] and Surat [96.5%]), although different rating scales were used in these studies.

The highest prevalence of stress was found in the second year, with 96.4%, followed by the first year with 84.8% this is similar to the findings by Kumaraswamy and contrast to the findings by Avinash Supe(Seth G S Medical college, India). This may be due to greater fear of not attaining their goal of being a doctor.

Majority of the students were identified in the moderate stress category. This is similar to studies from Portugal and Saudi Arabia about stress prevalent in medical students. (6, 7)

In our study academic related stress was having higher score as compared with other domains, which is seen in other studies conducted by other authors as well (2-4, 18).

Previous study showed a number of academic related stressors that included test and examinations, a big range of content to be learnt, lack of time to do the revision, poor marks, having self-expectations to do well, insufficient skill in medical practice, falling behind in reading schedule, heavy workload,

difficulty in understanding the content, and inability to answer teachers questions (2).

It is suggested that larger, multi-institutional and longitudinal studies to be carried out to find the sources of stress, levels of stress and its effect on students' academic performance. To solve problem of poor academic performance, the medical schools and academic planners may need to identify sources, levels of stress and a coping strategy to improve the poor performance.

CONCLUSION AND RECOMMENDATIONS:

The major finding in our study is that the prevalence of stress among medical students is alarmingly high in female students of Al Jouf University, medical college. The stress is more prevalent among the second-year students compared to the first and third year students. A significant number of study participants in our setting suffer from moderate to high stress. The main sources of stress stated by the students were academic-related factors (ARS), followed by Social Related Stressor (SRS).

This paper offers other medical schools and academic planners a window or guideline for a comprehensive use of personal and professional development activities of the students to cope with the academic related matters and also to develop confidence among students for better adjustment in classroom, group and society.

Recommendations suggested are modifying the curriculum to achieve a balance between the content and time distribution, a more student friendly campus, teaching and assessing methods, establishing a student counseling center in the campus with qualified and experienced staff, improving the facilities for extracurricular activities in the campus to reduce psychological stress, and strengthening and activating a tutorial system in the colleges. It is also necessary to undertake further

study focusing on academic issues to identify the specific factors associated with stress among medical students.

LIMITATIONS

We acknowledge that this is a cross-sectional study with sample drawn from only female students. It could be considered as one of the limitations of this study. But other studies showed that gender differences in specific stress symptoms and overall prevalence or mean scores of stresses were not much and did not turn out to be a significant factor in stress reporting. A correlation between stress and academic performance was not studied.

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COMPETING INTEREST

Authors declare that there is no competing interest of conflict.

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