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

| Parameters                      | N   | %  |
|---------------------------------|-----|----|
| **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 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% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 71.33% agreed having too many assignments, 20.67% agreed while 38.67% disagreed. 64% agreed having financial problem, 20.67% found it neutral while 12% disagreed. 40.67% 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 while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% 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 while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% 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 while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% 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 while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% 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 while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% 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 while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% 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 while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% 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 while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% 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 while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% 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 while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% 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 while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% 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 while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% 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 while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% 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 while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% 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 while 15.33% agreed. 71.33% agreed having too many lectures, 26.67% found it neutral while 2% disagreed. 40.67% 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 while 15.33% agreed.
Table 3: Some problems that one may face in studying career among study group (N=300).

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

Table 4: Assessment of stress among study group.
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 results 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, 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.

**References**

1. MdAris SMY, Mariam AD (2011) Differences in depression, anxiety and stress between low-and high-achieving students. J Sustain Manage 6:169-178.

2. Khodorahimi S, Hashim IHM, Mohd-Zaharin N (2012) Perceived stress, positive-negative emotions, personal values and perceived social support in Malaysian undergraduate students. Int J Psychol Behav Sci 2: 1-8.

3. Linn BS, Zeppa R (1984) Stress in junior medical students: Relationship to personality and performance. J Med Educ 59: 7-12.

4. Kaplan Hl, Saddock BJ (2000) Learning theory. In: Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry. (8th edn.) Philadelphia: Lippincott Williams & Wilkins 148-154.

5. Niemi PM, Vainiomaki PT (1999) Medical students’ academic distress, coping and achievement strategies during the pre-clinical years. Teach Learn Med 11: 125-134.

6. Silver HK, Glicken AD (1990) Medical student abuse. Incidence, severity, and significance. JAMA 263: 527-532.

7. Singh S, Lal, Singh A, Shekhari (2010) Prevalence of depression among medical students of a private medical college in India. Online J Health Allied Scs 9: 8.

8. Imam SN, Saqib A, Alam E (2003) Prevalence of anxiety and depression among medical students of private university. J Pak Med Assoc 53: 44-47.

9. Kaufman DM, Mensink D, Day V (1998) Stressors in medical school: Relation to curriculum format and year of study. Teach Learn Med 10: 138-144.

10. Yusoff MS (2013) Associations of pass–fail outcomes with psychological health of first year medical students in a Malaysian medical school. Sultan Qaboos Med J 13: 107-114.

11. Guthrie E, Black D, Bagalkote H, Shaw C, Campbell M, et al. (1998) Psychological stress and burnout in medical students: A five-year prospective longitudinal study. J R Soc Med 91: 237-243.

12. Givens JL, Tija J (2002) Depressed medical students’ use of mental health services and barriers to use. Acad Med 77: 918-921.

13. Vitaliano PP, Mauro RD, Mitchell E, Russo J (1989) Perceived stress in medical school: Resistors, persistors, adaptors and maladaptors. SocSci Med 28: 1321-1329.

14. Yusoff MS, Abdul Rahim AF, Baba AA, Ismail SB, Mat Pa MN, et al. (2013) The impact of medical education on psychological health of students: A cohort study. Psychol Health Med 18: 420-30.

15. Yusoff MS, Abdul Rahim AF, Baba AA, Ismail SB, Mat Pa MN, et al. (2013) Prevalence and associated factors of stress, anxiety and depression among prospective medical students. Asian J Psychiatr 6: 128-133.

16. World Health Survey (2002) Institute for Health System Research Country report for Malaysia: Mental health condition, Kuala Lumpur.

17. Smith CK, Peterson DF, Degenhardt BF, Johnson JC (2007) Depression, anxiety, and perceived hassles among entering medical students. Psychol Health Med 12: 31-39.

18. Salam A, Yousuf R, Abu Bakar SM, Haque M (2013) Stress among medical students in Malaysia: A systematic review of literatures. Int Med J 20: 649-655.

19. Sahraian A, Javadpour A (2010) Sleep disruption and its correlation to psychological distress among medical students. SEMJ 1: 12-17.

20. Paro HB, Morales NM, Silva CH, Razende CH, Pinto RM, et al. (2010) Health related quality of life of medical students. Med Educ 44: 227-235.

21. El-Gilany AH, Amr M, Hammad S (2008) Perceived stress among male medical students in Egypt and Saudi Arabia: Effect of socio-demographic factors. Ann Saudi Med 28: 442-448.

22. Amr M, El-Gilany A, El-Sayed M, El-Shehawy E (2007) Study of stress among medical students at Mansoura University. Banha Med J Med 37: 25-31.

23. Central department of statistics and information, Saudi Arabia. (2010) Preliminary results of general population and housing census 1431 A.H.

24. Kessler RC, Andrews G, Colpe LJ, Hiripi E, Mroczek DK, et al. (2002) Short screening scales to monitor population prevalence and trends in non-specific psychological distress. Psychol Med 32: 959-976.

25. Cairney J, Veldhuizen S, Wade TJ, Kurdyak P, Streiner D (2007) Evaluation of 2 measures of psychological distress as screeners for depression in the general population. Can J Psychiatry 52: 111-120.

26. Sani M, Mahfouz MS, Bani I, Alsomily AH, Alagi D, et al. (2012) Prevalence of stress among medical students in Jizzan University, Kingdom of Saudi Arabia. Gulf Medical Journal 1: 19-25.

27. Salam A, Raynuha M, Amir AR, Norsyafiqah A, AiniAqilah AH, et al. (2015) Stress among First and Third Year Medical Students at University Kebangsaan Malaysia. Pak J Med Sci 31: 169-173.