

Prevalence of Stress and Coping Behaviors among Medical Students at University of AL-Qadisiyah

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Abstract

Background: Studying medicine, particularly, creates considerable deal of stress. Therefore, the aim of current study was to evaluate prevalence of stress and coping behaviors among medical students. **Methods:** Descriptive cross-sectional questionnaire-based study conducted at AL-Qadisiyah Medical School from October to December 2018. The target population was 4th- and 5th-years medical students. Data were collected using Arabic versions of three self-reported questionnaires and analyzed using SPSS statistical software. **Results:** Participation rate was 70% and participants aged 19 to 26 years. Also, the most common stressors were “academic-related stressors” and the most frequently used coping behavior was “problem-solving behavior”. **Conclusion:** The academic and clinical settings at AL-Qadisiyah Medical School were perceived stressful.

Keywords: Stress, stressors, medical students, coping behaviors, problem-solving.

Introduction

Stress can be defined as whatever thing that interrupts humans’ physical and psychological health. In addition, it takes place when the individual becomes unable to deal with the pressures and requirements made on them [1]. Studying at higher education institutes generates a great deal of stress for students and study of medicine, particularly, creates further stress as medical education has its own stressors [2]. The latter can be categorised into [3]: “academic-related stressors, interpersonal and intrapersonal-related stressors, teaching and learning-related stressors, social-related stressors, drive and desire-related stressors and group activities-related stressors”. Also, the top rated stressors are examinations, impact of time and heavy course work. Moreover, curriculum changes may exert differential perception of stress among medical students with more satisfaction toward innovative curricula as opposed to traditional ones [4,5]. Despite that, stress might be beneficial “favourable” as it stimulates students’ learning, yet

it might be “unfavourable” as it negatively affects students’ social lives, their academic performance and achievement of course objectives [6]. Nonetheless, unresolved stress is associated with a wide range of affective, physical and intellectual health problems such as nervousness, depression, inconfidence, impairment of critical thinking and decision-making, personality disorders, alcohol and drugs abuse/ dependence and suicide attempts [7,8]. These problems might reduce numbers of students attending medical schools with consequent shortage of medical workforce [9]. However, early diagnosis of stress, accurate identification of its causes and successful management would help prevent its consequences at all levels of medical education [3]. Unless stressors are identified and eliminated, effective coping with them remains the golden alternative strategy [9,10]. In this regard, four famous coping behaviours have been recognised [11]; “problem-solving, avoidance, optimistic and transference”. Adoption of one or more of these coping behaviors may help medical students achieve their academic goals and live pleasant social lives. However, coping abilities of students might be influenced by their age, gender, living circumstances, place of training, academic grades, their socio-cultural background, the way they had chosen study of medicine

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and educational level of people they deal with [12,13]. Investigating the sources and levels of stress as well as coping behaviours among medical students was the focus of a number of international studies [3,14-17]. However, no previous study had explored this issue in the context of Iraqi medical education. Therefore, current study was aimed to explore the extent of stress among Iraqi medical students, identify potential stressors and recognise coping behaviours adopted by students in dealing with the identified stressors at AL-Qadisiyah Medical School (QMS).

Methods

Study design

A descriptive cross-sectional questionnaire-based study conducted at AL-Qadisiyah Medical School (QMS) from October 2018 to December 2018. The target population was 4th-, and 5th-, year medical student as they were expected to have considerable clinical training compared with students in earlier years of study. In addition, to avoid the effects of examinations on students' perceptions of stress in the medical school, we started collection of information approximately one month following the start of 2018/2019 academic year. Therefore, the extent of stress measured in current study represented natural perceptions of medical students. The latter were informed that their participation is voluntary, anonymous, and confidential as well as will not affect their academic progress. The questionnaires were distributed to students by face-to-face contact at the end of classroom lectures. Verbal informed consents were obtained from all participants prior to the study. Filled questionnaires were collected on the same day.

Data collection tools

Data were collected using the Arabic versions of three self-reported questionnaires. The first one was a questionnaire for demographic data (Table 1). The second questionnaire was the Medical Student Stress Questionnaire (MSSQ) [18]; the entire questionnaire was translated from English to Arabic then back translated from Arabic to English by team of professionals. It consists of 40 items sub-grouped into six domains. These are "Academic-Related Stressors (ARS; 13 items), "Interpersonal and intrapersonal-Related Stressors (IRS; 7 items), Teaching and learning-Related Stressors (TRS; 7 items), Social-Related Stressors (SRS; 6 items), Drive and desire-Related Stressors (DRS; 3 items) and Group Activities-Related Stressors (GARS; 4 items)". Each

item is scored on a 5-point Likert scale from 0 to 4 for "causing no stress at all", causing mild stress", causing moderate stress", causing high stress" and causing severe stress", respectively. MSSQ was proved to be reliable and valid scale for measurement of extent of stress and intensity of the different stressors [18]. In terms of its mean items scores, developers of the MSSQ stated that a score of 0.00 to 1.00 indicates mild stress, a score of 1.01 to 2.00 indicates moderate stress, a score of 2.01 to 3.00 indicates high stress while a score of 3.01 to 4.00 indicates severe stress [18]. The other questionnaire was the Coping Behavior Inventory (CBI) [9]. It has 19 items categorised into four categories of coping behaviours; "avoidance behavior" (6 items), "problem-solving behavior" (6 items), "optimistic behavior" (4 items) and "transference behavior" (3 items). Each item is scored on a 5-point Likert scale from 0 for "not used coping behavior" to 4 for "mostly used coping behavior". CBI was proved to have both good reliability and construct validity. The Arabic versions of the three questionnaires were piloted before conducting the actual study and the results of the pilot study showed that the Arabic versions of the two questionnaires can be completed without a problem and no adjustments of questions were needed.

Data analysis

Data from current study were entered into Microsoft Excel spreadsheets and processed using computer-based software, the Statistical Package for Social Sciences (SPSS; version 24.0). Descriptive statistics were applied to present percentages and socio demographic data. Data from entire inventories and scores for categorized domains and each item were expressed as Mean \pm Standard Deviation (SD).

Results and Discussion

Results of current study also showed that 76.85% of participants had an intrinsic motivation to study medical sciences, whereas 17.73% decided to study medicine for vocational reasons (extrinsic motivation) (Table 1). In addition, 56.15% of our participants had relatives working in medicine. However, only 43.84% of them had previous experience of looking after sick people. Furthermore, participants' fathers seemed to have higher educational levels than mothers and the vast majority of our participants (86.69%) were living with their families, despite that, 13.79% of them were facing financial difficulties.

A previous study [14] reported participation rate of 72% with 62% of participants were females. Also, [15] reported a response rate of 89.7% with mean(SD) age of participants of 21.4(2.34) years. However, another study [16] reported that 59% of respondents were males and 41% were females with mean(SD) age of 20.31(1.74) years.

One possible explanation for the high participation rate reported in current study was that the researchers informed students that their participation is voluntary, confidential and anonymous. Also, data collection well before final exams would help avoid any potential exam-generated stress that could affect students' natural perceptions. Moreover, the high number of female participants reflected gender distribution within the target population.

Data showed that our participants were young adults; therefore, their immature performance, unreliability, emotional liability and being inexperienced would create a great deal of stress for them during academic as well as clinical studies [19].

Medical students who participated in current study had some demographic criteria that would protect them from stress and its potential complications (Table 1). Despite that, previous studies revealed that the only predictor of stress among medical students was year of study [14].

Level of stress

Medical students at QMS expressed an overall moderate level of stress as the global mean(SD) items score for MSSQ was 1.80(0.54). In addition, this level of stress was similarly expressed by participants in the two years of study with no gender-wise differences (Table 2).

Previous studies reported moderate to high levels of stress among medical students which was higher than among the public as well as higher than among students doing other courses [14,15,20].

Reasons behind this stressful atmosphere at QMS may include curriculum overload, exam anxiety and authoritarian inexperienced [21].

Types of stressors

In terms of stressors, the most common stressors perceived by medical students at QMS were "Academic-

related stressors", "Teaching and learning-related stressors", "Social-related stressors", "Group activities-related stressors", "Interpersonal and intrapersonal-related stressors" and "Drive and desire-related stressors", respectively. In addition, these findings were mostly not affected by year of study (Table 2).

Our findings were in agreement with those reported by [14,15] who showed that the most common stressors for medical students were related to academic issues such as heavy course work, inadequate time for revision and inability to meet the needs of a challenging and demanding clinical environment.

One reason behind our findings could be the traditional curriculum implemented at QMS and the unprogrammed clinical training [22]. However, stressors related to student-student relationships created lower levels of stress as majority of students at QMS were local students and living with their families (Table 2).

Coping behaviors

Results of current study revealed that there was an overall average, without gender-related differences, use of coping behaviors among participants at QMS (Table 3).

On the other hand, coping behaviors employed by participants were "problem-solving behaviors", "optimistic coping behaviors", "transference behaviors", "avoidance behaviors", respectively; this finding was not affected by year of study or student's gender (Table 3).

A previous study [14] showed that medical students used active coping behaviors rather than avoidance behavior. Another study also reported frequent use of "problem-solving" behavior among undergraduate medical students [15].

Adoption of coping behaviors by medical students is greatly influenced by cultural norms and values [13].

Problem-solving behavior is the most effective coping strategy and it is usually adopted by senior medical students [23] who are experienced and skillful in contrast to "avoidance behavior" that is frequently adopted by junior medical students who are unconfident and have inadequate knowledge and skills [24].

"Transference behavior" is adopted when stress results from looking after patients as students depend on

their teachers when conflicts happen [25].

Furthermore, “optimistic behavior” is usually adopted by students who choose medicine for job security, therefore, they need to be self-assured, realistic and having constructive attitudes when dealing with stressful circumstances [26].

Conclusions

The academic and clinical settings at QMS were perceived stressful and remedial interventions are highly indicated to lessen this stress. In addition, implementation of novel medical curriculum, establishment of students’ support system and educating students about time-, self- and stress-management are highly recommended.

Table (1) Mean(SD) items scores for MSSQ and its subscales for participants

Scale (No. of items)	4th year			5th year			Overall N= 203
	Females N= 61	Males N= 46	Total N= 107	Females N= 64	Males N= 32	Total N= 96	
Total MSSQ (40)	1.83 (0.56)	1.87 (0.58)	1.85 (0.57)	1.63 (0.53)	1.86 (1.86)	1.74 (0.51)	1.80 (0.54)
*ARS (13)	2.38 (0.68)	2.33 (0.63)	1.48 (0.65)	2.17 (0.67)	2.25 (0.59)	2.20 (0.64)	2.29 (0.65)
*IRS (7)	1.27 (0.75)	1.37 (0.88)	2.36 (0.81)	1.11 (0.69)	2.09 (0.77)	1.24 (0.75)	1.28 (0.78)
*TRS (7)	1.74 (0.69)	2.01 (0.82)	1.86 (0.76)	1.72 (0.73)	2.01 (0.83)	1.83 (0.78)	1.84 (0.77)
*SRS (6)	1.72 (0.63)	1.64 (0.74)	1.69 (0.67)	1.54 (0.68)	2.02 (0.70)	1.48 (0.63)	1.59 (0.68)
*DRS (3)	1.13 (0.82)	1.33 (0.92)	1.22 (0.86)	1.26 (0.83)	1.30 (0.94)	1.28 (0.86)	1.25 (0.86)
*GRS (4)	1.65 (0.85)	1.56 (0.76)	1.57 (0.90)	1.41 (0.84)	1.53 (0.76)	1.45 (0.81)	1.52 (0.86)

*: Subscales within MSSQ (see Methods section).

Table (2) Mean(SD) items scores for CBI and its subscales for participants

Scale (No. of items)	4th year			5th year			Overall N= 203
	Males N= 46	Females N= 61	Total N= 107	Males N= 32	Females N= 64	Total N= 96	
Total CBI (19)	1.88 (0.50)	1.84 (0.49)	1.86 (0.49)	1.77 (0.43)	1.75 (0.37)	1.78 (0.40)	1.82 (0.45)
*C1 (6)	1.35 (0.82)	1.29 (0.72)	1.29 (0.74)	1.08 (0.73)	1.22 (0.61)	1.23 (0.69)	1.26 (0.71)
*C2 (6)	2.36 (0.74)	2.32 (0.78)	2.34 (0.76)	2.34 (0.69)	2.13 (0.66)	2.20 (0.68)	2.28 (0.73)
*C3 (4)	1.98 (0.72)	2.11 (0.73)	2.05 (0.73)	1.92 (0.58)	2.13 (0.60)	1.92 (0.67)	1.99 (0.70)
*C4 (3)	1.82 (1.02)	1.79 (0.96)	1.79 (0.98)	1.75 (0.87)	1.79 (0.84)	1.78 (0.85)	1.79 (0.92)

* : Subscales within CBI (see Methods section).

Financial Disclosure: There is no financial disclosure.

Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the College of Medicine, Iraq and all experiments were carried out in accordance with approved guidelines.

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