

## Well-being among Medical Students in Clinical Years at a Private College in Oman: Cross Sectional Study

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### Abstract

**Objective:** Medical school is considered as one of the most stressful period during the physician's career. The purpose of this study is to explore the well-being among medical students in Oman Medical College in their clinical years and to detect any possible association between the level of stress and (a) gender, (b) marital status, (c) residency during the studying period, (d) academic year and (e) academic grade.

**Design:** Cross-sectional study.

**Methods:** All registered students in the clinical years (6<sup>th</sup> and 7<sup>th</sup> year) in Oman medical college who attended the academic year 2016-2017 were enrolled in this study.

Data was collected by using medical Student Well- Being Index (MSWBI), which is a self-reported questionnaire.

**Results:** A total of 189 participants were enrolled in the study in which 104 in 6<sup>th</sup> year and 85 participants in 7<sup>th</sup> year. The response rate was 91%. The mean age of the participants is 23.91. Among those; 90.5% are female and 9.5% are male. 89.9% of the participants are single. Only 12.1% living with family during studying period. Medical students were asked multiple questions to evaluate distress in multiple domains which are burnout, depression, fatigue stress, mental and physical quality of life. All distress domains, except fatigue domain have scored very high. The highest score was in mental quality of life domains. 79.9% of the participants have felt depressed or anxious in the past month. Participants also score high (71.3%) in the burnout and depression domains, while only scoring 29.5 % in fatigue domain. Among all distress domains in both years, there is only significant difference in the physical health domain ( $p = 0.020$ ).

**Conclusion:** High level of physical and psychological distress was found among students in Oman Medical College during their clinical years. The association between psychological and physical distress with depression is well known; therefore it is important to involve students support service extensively to prevent further progress of distress to major mental illness.

**Keywords:** Distress; Medical Students; Oman Medical College; Burnout; Physical Distress; Mental Stress; Depression

### Introduction

Medical school is considered as one of the most stressful periods of a physician's career. The main purpose of medical education is to help medical students develop skills, knowledge, and attitudes which is a fundamental need for best patients' care. However, there are

multiple factors that medical students encounter during their undergraduate years which affects their health, wellbeing and ultimately; their cognitive functioning, learning and academic performance. The main stressful factors are academic pressure, long studying hours, poor sleep, limited social life, exposure to chronically ill patients and deaths [1]. In general, education system in medical school in Oman is spending two years in basic science studies, followed by two preclinical years focus in biomedical science and the final two years are clinical training which is considered as the most stressful period.

There is no precise definition for wellbeing. However in general “wellbeing includes the presence of positive emotions and moods (e.g. contentment, happiness), the absence of negative emotions (e.g. depression, anxiety), satisfaction with life, fulfillment and positive functioning [2].

The positive correlation between medical student’s performance and their wellbeing is well known. “Several studies have shown that the intense pressures and demands medical education can have detrimental effect on the academic performance, physical health and psychological well-being of the student [3].

Some amount of academic stress is useful in a way as it can help students learn and progress in their career. However, abandoned stress is associated with negative consequences such as depression, anxiety, withdraw from medical school, drug abuse, alcohol consumption and suicide [4]. Ball and Amy Bax’s study (2002) found that there is noticeable increment in alcohol consumption and decrease in healthy habits such as exercise and socialization among first year medical students [4].

Prevalence of psychological distress among medical school students were found in multiple studies. For instance, 57% of medical students in the United States experience high levels of psychological distress and this figures is not different than other parts of the world such as Malaysia (42%) and Kingdome of Saudi Arabia (56%) [5,6].

In Oman, Albusaidi., *et al.* (2010) used Patient Health Questionnaire (PHQ-9) to evaluate the prevalence of depressive symptoms among students (medical and non-medical) of Sultan Qaboos University who attended the students’ clinic. She was found that around 27.7% of the students involved in the study suffered from depressive symptoms [6]. In this study,17% of the medical and nursing students reported depressive symptoms [6].

The present study was conducted to explore the well-being among medical student in Oman Medical College in their clinical years and to detect any possible association between the level of stress and (a) gender, (b) marital status, (c) residency during the studying period, (d) academic year and (e) academic grade.

## Methodology

A cross sectional study was conducted in May 2017 at Oman medical college which is the only private medical college in Oman. The target population of this study were registered students in their clinical years, (6<sup>th</sup> and 7<sup>th</sup> year) who attend the academic year 2016 - 2017.

Self-administered data sheet was distributed among the students after consenting to participate in the study. This data sheet has two sections:

1. Personal data of participants which include age, gender, marital status, residency during the studying period, academic year and academic grade.
2. A Medical Student Well-Being Index (MSWBI) to measure physical and psychological distress among medical students. It is well known that distress is common among medical students, however it has different forms and varieties. Medical student wellbeing index aims to evaluate this distress in seven items which are burnout, depression, mental quality of life, physical quality of life, stress and fatigue. In contrast to different long surveys which used to evaluate multiple aspects of physical and psychological distress, MSWBI is simple, short and easy to be filled. In order to generate accurate, reliable and brief screening tools for different dimensions of distress among medical students, MSWBI authors involve group of experts, medical students, deans and detailed literature review. Therefore, important and relevant concepts of distress are under representation, and an irrelevant concept in the questionnaire is unlikely [7].

The MSWBI questions of the form, “in the past month did you feel...” and offers specific symptoms in some questions such as “depressed, hopeless, anxious, and irritable”. All response options were a yes/no option, in which the answer of yes represented distress in that domain.

Repeated sampling was avoided to prevent duplicate sampling of the participants.

This study was approved by the medical research committee and the ethical committee of Oman medical college. The main objectives of this study were confidently explained to all students who participated and a written consent was obtained from all participants before filling the questionnaire. The participation in the study was totally voluntary. All questionnaires were entered in the database after being filled and there were no missing responses.

**Data analysis**

Data were analyzed using Statistical Package for Social Sciences (SPSS) version 22 (IBM Corp. Chicago, Illinois). For descriptive purposes, categorized variables were presented as number and percentages. Chi-squared test ( $\chi^2$ ) was used to find associations between the demographic factors and the stress domains. The p-value of < 0.05 was considered as significant.

**Results**

A total of 189 participants were involved in the study. There were 189 responses from a total student population of approximately 207. The response rate was 91.3% (in which 104/120 students were in 6<sup>th</sup> year and 85/87 students in 7<sup>th</sup> year). The mean age of the participants is 23.91. Of all participants, 90.5% (171) were females and 9.5% (18) were males. 89.9% (170) of the participants were single and only 12.1% living with family during studying period. Table 1 summarizes the demographic data of all participants.

Characteristics	N	%
Age (Mean ± sd)	(23.91 ± 1.148)	
<b>Gender</b>		
Male	18	9.5
Female	171	90
<b>Marital Status</b>		
Single	170	91.3
Married	16	8.6
<b>Residency during study period</b>		
With family	24	12.8
Away from family	164	87.2
<b>Academic Year</b>		
Year 6	104	55
Year 7	85	45
<b>Academic performance</b>		
A	34	22.5
B	92	60.9
C	24	15.9

**Table 1:** Distribution of socio-demographic characteristics among medical students in clinical years at a private college in Oman.

In the questionnaire, medical students were asked multiple questions to evaluate distress domains which are burnout, depression, fatigue stress, mental quality of life and physical quality of life. The highest score of all distress domain was in mental quality of life domains. 79.9 % of the participants feel depressed or anxious in the past month. Participants also scored high (71.3 %) in the burnout and depression domains while only scoring 29.5 % in the fatigue domain. In the stress domain 56.4% of the student reported feeling stressed in the past month. Furthermore, 96 participants (50.8 %) felt that physical health interfered with their ability to do daily work.

Students in the 6<sup>th</sup> years reported more distress than students in the 7<sup>th</sup> year. However, there was no statistical difference in the scores of the distress domains between the 6<sup>th</sup> and 7<sup>th</sup> year students except for physical health domain. Hence, 58.7 % (61) of 6<sup>th</sup> year medical students found that physical health interfered with their ability to do daily work compared to 41.2% (35) of the 7<sup>th</sup> year medical students. Table 2 demonstrate the MSWBI scores of all participants in different stress domains.

Stress domain	n	%
Do you feel burned out from medical school? (burnout)	134	71.3
Do you worry that medical school is hardening you emotionally? (burnout)	134	71.3
During the past month have you often been bothered by feeling down, depressed or hopeless? (depression)	137	72.9
In the past 1 month, have you fallen asleep while stopped in the traffic or driving? (fatigue)	56	29.6
During the past month, have you felt that all things you had to were piling up so high that you could not overcome them? (mental quality of life)	106	56.4
During the past month, have been bothered by emotional problems (such as feeling anxious, depressed, or irritable)? (physical quality of life)	150	79.4
During the past month, has your physical health interfered with your ability to do your daily work at home and/or away from home? (mental quality of life)	96	50.8

**Table 2:** The number of participants and percentage endorsement in Medical Student Well- Being Index.

The grading system of Oman medical college consists of five letters (A, B, C, D, F) where A is the highest score for academic performance and F is the lowest. In the present study, more than half of the students (60%) were in grade B. There was no statistical difference between students’ academic performance and scores in any of the distress domains. Table 3 illustrates the relationship between stress domains and academic performance.

Stress domain	Performance			p - Value
	A n (%)	B n (%)	C n (%)	
1. Burnout	23 (21.1)	67 (61.1)	19 (17.4)	0.595
2. Burnout	23 (20.7)	73 (65.8)	15 (13.5)	0.221
3. Depression	21 (19.1)	69 (62.7)	20 (18.2)	0.144
4. Fatigue	12 (27.9)	22 (51.2)	9 (20.9)	0.264
5. Stress	20 (23.3)	50 (58.1)	16 (18.6)	0.579
6. Mental Quality of Life	27 (21.8)	78 (62.9)	19 (15.3)	0.689
7. Physical Quality of Life	17 (21.8)	47 (60.3)	14 (17.9)	0.790

**Table 3:** Association between performance grades with stress as indexed by medical student well- being index.

Furthermore, males and females medical students described approximate levels of distress in all domains. Similarly, there was no association between level of distress and place of residency or the marital status of the students.

## Discussion

This is the first study that examines the well-being among medical students in a private college in Oman. The results of the study scored high in all distress domains except for fatigue domains. High levels of stress experienced by participants reflect the challenges facing the medical students in their academic year of the study. These challenges may include overloaded studying materials, frequent written and clinical examinations, transportation to different hospitals and lack of support.

The reason for low score at the fatigue domain is most likely related to the question in the MSWAB questionnaire. Most of the students at Oman Medical College are females who rely on the college transportation services, thus the question assessing the fatigue in MSWBI may not be applicable to all of the students.

The findings of this study of high level of distress among academic year medical students are consistent with many studies carried out in governmental and private medical colleges. Al-Alawi, *et al.* (2017) demonstrated that the prevalence of burnout and depression among medical students in Sultan Qaboos university-the only governmental university in Oman- as 7.4% and 24% respectively [8]. Al Alawi attributed the high rates of burnout and depression among medical students to the high work burden, difficulties in time management and periodic academic assessments and examinations [8].

This study found no statistical difference between the level of burnout among medical students in the 6<sup>th</sup> and 7<sup>th</sup> year in all stress domains of MSWBI except for quality of physical health. This could be explained by the similar situations that encounter students in these academic years. For instance, students in the 6<sup>th</sup> and 7<sup>th</sup> year live in the same area and rotate in almost similar hospitals. In regard with quality of physical health, 7<sup>th</sup> - year students are possibly more developed in coping with their emotional problems due to the accumulating experience in dealing with daily stressors during the 6<sup>th</sup> year. Therefore, 7<sup>th</sup> year students may be more tolerant to stress and hence reporting being less bothered by emotional problems. In fact, some studies concluded that the level of stress decreases in the advanced academic year of the medical college. Low failure rates, development of coping skills and higher confidence are among the postulated reasons for lesser stress in the academic year [9-11].

Parallel to the finding of negative correlation between stress and physical quality of life, Backović, *et al.* (2011) examined 722 medical students in their final years and concluded that higher level of stress was associated with poor state of self-estimated physical health [12].

The study showed no statistical significance correlation between the level of stress and academic performance. This finding is in line with a similar study conducted in King Saud University-Saudi Arabia- where Abdulghani, *et al.* (2011) found no statistical significance between the reported level of stress and academic performance [9]. Moreover, Al-Alawi, *et al.* (2017) showed no statistical significance between burnout among Omani medical students and depression in the academic year but this association was statistically significant in the pre-clinical years [8]. Another study from Serbia showed that despite the high level of stress among students in the finals years, the success at the exams were relatively good [12]. For students at Oman medical college, adopting effective coping mechanisms may protected them against declining academic performance in the face of high level of stress.

A recent study conducted in the Oman medical college to investigate the stress sources and coping strategies in clinical and preclinical years. It showed that high prevalence of distress among medical students is related to insufficient time for family gathering and socialization. There was no significant difference in stress factors among students in clinical and preclinical year [11].

Stress and burnout are common among medical students in all over the world. In agreement with this study, overseas studies from US and Canada demonstrated similar findings of high level of stress among medical students in the preclinical and academic years [13].

The association between psychological and physical distress and depression are evident in many studies [8]. Therefore, Student support, strengthening their coping skills and better time management are the main factors can reduce stress among students in medical college and thus mitigate the risk of depression and other consequences.

Further studies are required to examine the stressors and other factors that affect the student's wellbeing. Also, medical school are required to initiate well-being programs in order to promote mental and physical health for the future physicians.

### Conclusion

High level of physical and psychological distress was found among students in Oman Medical College during their clinical years. There was no statistical differences between the stress domains of the MSWBI and the academic year except for the physical quality of life which was more impaired among 6<sup>th</sup> year medical students. The findings of this study were consistent with other studies conducted in different parts of the world.

### Limitation of the Study

This is a cross sectional study which depended on a self-reported questionnaire provided by students therefore reporting bias may occur due to students misunderstanding of the questions or recall bias.

### Disclosure

The authors declare that they have no conflict of interest.

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