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## **OUTSTANDING MEDICAL STUDENTS' QUALITY OF LIFE: A COMPLEXITY AND DISPARITY BASED ON GENDER AND SOCIAL STATUS IN SAUDI ARABIA**

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### **ABSTRACT**

Medical studies are perceived as stressful and data from the literature indicates that mental health of medical school students worsens in the course of their studies. The mental well-being and quality of life (QOL) of medical students have been of interest for several decades. The QOL of outstanding medical students in Saudi Arabia has not been explored. Therefore, the current study examined the QOL of outstanding medical students and investigated the differences based on gender and social status. The results indicate that male students and married students (male and female) had higher QOL in all domains except that of social relation. Female students and single students (male and female) had higher scores in social relations domain. The lowest mean score for both male and female students was observed in the psychological domain, which indicates the need for preventive counselling services to be integrated into the medical school curriculum.

**Keywords:** Quality of Life (QOL), Medical Students, Outstanding students, Middle East.

## INTRODUCTION

Many students study medicine with the passion to provide healthcare to the community. Medicine is considered as a distinguished profession with a human and social value. However, once they begin their studies, students are overwhelmed with the stress of the heavy course load that leaves them little time to rest and socialize. Stress theories have proved that a high level of stress causes physical, mental, emotional and behavioral symptoms. A recent study revealed that tension-type headache is the most common complaint among medical students (Almasned et al., 2018). Studies showed that stress, anxiety, and depression are frequently observed among medical students (El-Gilany, Amr, & Hammad, 2008; Hamasha et al., 2019). Therefore, initiatives are required to manage medical students' stress and daily issues, and maintain a positive lifestyle and a good QOL.

The QOL as it relates to subjective well-being of individuals has gained increased attention (Hawthorne, Herrman, & Murphy, 2006). Although much research has been done in this area, the results from different demographical variables have been mixed (Masalu & Åstrøm, 2002). The authors have also noted that some studies suggest that younger individuals and females tend to rate their health as poor. Studies suggest that well-being is associated with individual's cultural fit, which indicates the congruence between the values and shared beliefs of the individual and society (Jha, Mclean, Gibbs, & Sandars, 2015). Another study mentioned the importance external assets, such as meaningful interactions with friends, school, and the community, and their role in positive youth development (Zullig, Teoli, & Ward, 2011).

The World Health Organization defines health as "A state of complete physical, mental and social well-being not merely the absence of distress". It also states that QOL has several domains, such as physical health, which is the ability of the body to perform certain functions, and psychological health, which is the individual's ability to identify and express feelings and experience happiness and psychological comfort. There is spiritual health, which is related to subjective beliefs and objective religious practices that lead to inner peace. Social health is the ability to establish relationships, communicate, and have respect for others, and finally, community health, which is the ability to establish relationships with the individual's surroundings, such as people, rules and regulations. These dimensions, obviously, cover basic aspects of life, which when positive will underpin the students' self-esteem and motivation and result in excellent performance in studies. Previous studies have found that integrated Islamic practices and beliefs have a significant positive association with the Arab and Islamic nation's QOL (Abdel-Khalek, 2010). The present study examines the complexity and disparity of outstanding medical students' QOL in Saudi Arabia.

Recent studies suggest that medical students have concerns on their QOL (Goldin et al., 2007), since medical schools are characterized by many psychological challenges (Abdulghani et al., 2011). In a study conducted in a medical school in Saudi Arabia, participants indicated the little support the school provides and the pressures it imposes on students (Al-hazimi, Al-hyani, & Roff, 2004). Medical schools are also known to encourage competition among students, which also diminishes the support from the environment (Abdulghani, 2008).

Thus, stresses of academic life influence the learning ability and academic performance of students (Al-Dabal et al., 2010), which in turn results in low QOL. Medical students' professional competence in their long term career is consequently influenced by an unhealthy academic environment (Shareef, 2015). There is, therefore, a universal need to examine the QOL of medical students.

## METHOD

### Participants

The targeted population in this study were outstanding medical school students at a public university located in the Eastern Providence of Saudi Arabia. The sample consisted of 232 students with a female majority (N=143) and a mean age of 22 years (SD = .99), ranging between 20 and 25 years old. Of these participants, 170 were currently single, and 61 were married. One participant did not indicate current marital status.

### Instrument

Data were collected using The WHO Quality of Life Assessment Instrument, Short Version (Arabic WHOQOL Brief). The WHOQOL Brief is a 26-item self-administered generic questionnaire, which is a short version of the WHOQOL - 100 scale, on a 5-point Likert-Type scale. Two items that are not included in the domains ("overall rating of QOL" and subjective satisfaction with health) are used to constitute the general facet on OQOL and general health (general facet).

Three items are reverse coded (3, 4, 26). The four domains (physical health, psychological health, social relationships, and environment) indicate an individual's perception of QOL in each particular domain. Higher domain scores indicate higher QOL. Domain score is calculated by the mean score of items within each domain. Multiplication of scores by 4 would make domain scores comparable with the scores used in the WHOQOL-100.

### Reliability analysis

To examine the reliability of the (WHO Quality of Life Assessment Instrument, Short Version (Arabic WHOQOL Brief) using the study data, Cronbach Alpha was used. The coefficient alpha of the WHOQOL total score had a good reliability (0.915) and the alpha coefficients for the subscales were as follows: subscale 1: Physical health was 0.907, subscale 2: Psychological was 0.791, subscale 3: Social relationships was 0.620 and subscale 4: Environment was 0.779 (Table 1).

**Table 1:** The Cronbach's Alpha Values for the WHOQOL-Arabic Version

DOMAINS	# of Items	Cronbach's Alpha
1. Physical health	7	0.907
2. Psychological	6	0.791
3. Social relationships	3	0.620
4. Environment	8	0.779
Total Score	24	0.915

### Research Questions

RQ 1: Is the QOL for the outstanding medical students characterized by high level?

RQ 2: Are there statistically significant differences on the QOL domains among the outstanding medical students based on gender?

RQ 3: Are there statistically significant differences on the QOL domains among the outstanding medical students based on social status?

### FINDINGS

For the organizational purpose of this study, and based on the structure of WHOQOL, the results section is divided into two parts: descriptive and inferential statistics.

#### Descriptive Statistics

##### Health Profile

##### *Current health status of the sample.*

In terms of the participants answer to the question “Are you currently ill?”, the results revealed that only (11.6%) of the students were suffering of illness at the current, while most them (87.1%) were not. Three students (1.3%) did not answer this question.

##### *Illness and Health Problems.*

The question “If something is wrong with your health what do you think it is?” revealed that from the total of 232 students, there were only 33 students (14.2%) having illness or health problems (Table 2). The most health problems were psychological diseases (18.2%), followed by the gastrointestinal diseases and blood disorders with the same percent (12.1%). Genetic and dermal diseases with equal percent (9.1%), also endocrine, neurological, respiratory, metabolic, and blood diseases in combination with gastrointestinal diseases have the same percent (6.1%). In the same way, psychological in combination with blood diseases, eye and orthopedic diseases have the same percent (3.0).

**Table 2:** Frequency Distribution of The Students Regarding Illness/Health Problems

Diseases/ health problem	Response	Percent (from 33)	Percent (from 232)
Psychological	6	18.2	2.6
Blood disorders	4	12.1	1.7
Psychological in combination with blood diseases	1	3.0	0.4
Genetic	3	9.1	1.3
Dermal	3	9.1	1.3
Gastrointestinal	4	12.1	1.7
Eye	1	3.0	0.4
Endocrine	2	6.1	0.9
Neurological	2	6.1	0.9
Orthopedic	1	3.0	0.4
Respiratory	2	6.1	0.9
Metabolic	2	6.1	0.9
Blood in combination with gastrointestinal	2	6.1	0.9
N/A	199	-	85.8
Total	232	100	14.2

### Rating Quality of Life

In terms of rating QOL, the WHOQOL-Brief contain question about an individual's overall perception of QOL on a scale from very poor to very good. In Table 3, 80.2% of the students reported high quality of life, whereas (3.5%) reported low QOL. This verified that outstanding medical students are characterized by high QOL.

**Table 3:** Frequency Distribution of The Students Regarding Rating QOL

Rating QOL	Response	Percent
Very good	99	42.7
Good	87	37.5
Average	38	16.4
Poor	6	2.6
Very poor	2	.9
<b>Total</b>	<b>232</b>	<b>100.0</b>

### Rating Health Satisfaction

To rating health satisfaction, the WHOQOL-Brief contain question about an individual's overall perception of their health on a scale from very satisfied to very dissatisfied. In Table 4, 64.7% of the students were pleased about their health, while (9.1%) were not. However (26.3%) have average perception about their health.

**Table 4:** Frequency Distribution of The Students Regarding Health Satisfaction

Rating QOL	Response	Percent
Very satisfied	60	25.9
Satisfied	90	38.8
Average	61	26.3
Dissatisfied	18	7.8
Very dissatisfied	3	1.3
<b>Total</b>	<b>232</b>	<b>100.0</b>

**Research Question 1:** Is the QOL for the outstanding medical students characterized by high level?

To test the first hypothesis of the current study, the total QOL arithmetic sum of the scores were obtained in the four WHOQOL-brief domains (the higher the score, the higher the QOL level). Interpretation of the results as follows: the score  $\geq 75\%$  of the total score = very high QOL, 50-74.9% = high QOL, and  $< 50\%$  = low QOL. As shown in Table 5, the mean score of the total quality of life (QOL) was (74.56, SD=11.16) which was high.

**Table 5:** Frequency Distribution of The Students Regarding QOL Levels

Scale	0-100		Level	4-20		Level
	Mean	SD		Mean	SD	
<b>DOMAINS</b>						
Physical health	76.97	12.55	Very high	15.33	2.53	Very high
Psychological	70.78	13.41	High	14.12	2.69	High
Social relationships	72.96	17.19	High	12.91	3.59	High
Environment	74.68	13.01	High	14.91	2.63	High
WHOQOL -Arabic Version	74.56	11.16	High	14.69	2.22	High

*Physical Health* domain got the highest mean (mean=76.97, SD=12.55) followed by the *Environment* domain (74.68, SD= 13.01) and the *Social Relationships* domain with average of (72.96, SD=17.19). The lowest average was for the *Psychological* domain (mean=70.78, SD=13.41). Since the all four domains levels of QOL and the total QOL were high, therefore, we conclude that the QOL for the outstanding medical students is characterized by high level.

### **Inferential Statistics**

#### **Assumption of Normality and Homogeneity of Variance**

The normality distribution of the total score of QOL was tested by utilizing the Kolmogorov-Smirnov (<50 samples). This assumption was tested for each hypothesis. Whenever the results from the Kolmogorov-Smirnov showed insignificance, which indicates normal distribution, researchers utilized T-test. For several hypotheses, Kolmogorov-Smirnov test was found significant, thus researchers utilized a non-parametric test: Mann-Whitney. The independent T-test assumes the variances of the two groups we are measuring to be equal. The assumption of homogeneity of variance was tested for each hypotheses using Levene's Test of Equality of Variances. Results indicated that the assumption was not violated and therefore group variances can be treated as equal.

**Research Question 2:** Are there statistically significant differences on the QOL domains among the outstanding medical students based on gender?

Results from T-test analyses indicated that there is a significant difference between genders in overall QOL among outstanding medical students ( $t = 3.296, p < .001$ ). Significant differences between genders were also observed among all domains of QOL: Physical Health ( $t = 2.464, p < .05$ ), Psychological ( $t = 4.135, p < .001$ ), Environment ( $t = 2.108, p < .05$ ) (Table 6), Social Relationships (QOL 20) ( $U = 5279.00, p < .05$ ) (Table 7). The difference between genders was insignificant for QOL 100-Social relationship domain ( $U = 5583.00, p = .114$ ).

**Table 6:** Summary of T-Test Analysis comparing QOL Overall and Domain (Physical Health, Psychological, Environment) Scores based on Gender

		Gender	N	M	SD	t	p
<b>OVERALL</b>	QOL 100	Male	89	77.10	10.04	-2.771	.006**
		Female	143	72.98	11.56		
	QOL 20	Male	89	15.29	2.03	-3.296	.001**
		Female	143	14.32	2.26		
<b>Physical Health</b>	QOL 100	Male	89	79.90	11.44	-2.843	.005**
		Female	143	75.15	12.91		
	QOL 20	Male	89	15.85	2.39	-2.464	.014*
		Female	143	15.01	2.57		
<b>Psychological</b>	QOL 100	Male	89	75.27	11.07	-4.163	.000**
		Female	143	67.99	13.68		
	QOL 20	Male	89	15.02	2.31	-4.135	.000**
		Female	143	13.57	2.77		
<b>Environment</b>	QOL 100	Male	89	77.03	11.90	-2.188	.030*
		Female	143	73.22	13.49		
	QOL 20	Male	89	15.37	2.42	-2.108	.036*
		Female	143	14.62	2.72		

**Table 7:** Summary of Mann-Whitney Analysis comparing male and female students in QOL-Social Relationships Domain Score

	Gender	N	Mean Rank	Sum of Ranks U	p
QOL 100	Male	89	107.73	9588.00	.114
	Female	143	121.96	17440.00	
QOL 20	Male	89	128.69	11453.00	.028*
	Female	143	108.92	15575.00	

**Research Question 3:** Are there statistically significant differences on the QOL domains among the outstanding medical students based on social status?

Results from T-test analyses indicated that there is a significant difference in overall QOL among outstanding medical students based on social status ( $t = 3.125$ ,  $p < .001$ ). Significant differences based on social status were also observed among all domains of QOL: Psychological ( $t = 3.209$ ,  $p < .001$ ), Environment ( $t = 4.626$ ,  $p < .05$ ) (Table 8), Physical Health ( $U = 4131.50$ ,  $p < .05$ ), Social Relationships (QOL 20) ( $U = 3889.50$ ,  $p < .05$ ) (Table 9). The difference between married and single students was insignificant for QOL 100-Social relationship domain ( $U = 4903.50$ ,  $p = .527$ ).

**Table 8:** Summary of T-Test Analysis comparing QOL Overall and Domain (Psychological, Environment) Scores based on Social Status

		Marital status	N	M	SD	t	p
<b>OVERALL</b>	QOL 100	Single	170	76.22	10.22	-3.670	.000**
		Married	61	70.32	12.24		
	QOL 20	Single	170	14.94	2.06	-3.125	.002**
		Married	61	13.97	2.43		
<b>Psychological</b>	QOL 100	Single	170	72.55	12.87	-3.337	.001**
		Married	61	66.01	13.84		
	QOL 20	Single	170	14.47	2.59	-3.209	.002**
		Married	61	13.20	2.77		
<b>Environment</b>	QOL 100	Single	170	77.08	11.60	-4.249	.000**
		Married	61	68.47	14.22		
	QOL 20	Single	170	15.39	2.36	-4.626	.000**
		Married	61	13.66	2.84		

**Table 9:** Summary of T-Test Analysis comparing QOL-Domain ((Physical Health, Social Relationships) Scores based on Social Status

		Marital Status	N	Mean Rank	Sum of Ranks	U	p
<b>Physical Health</b>	QOL 100	Single	170	122.37	20802.50	-4102.50	.015*
		Married	61	98.35	5993.50		
	QOL 20	Single	170	122.20	20773.50	-4131.50	.018*
		Married	61	98.73	6022.50		
<b>Social Relationships</b>	QOL 100	Single	170	114.34	19438.50	-4903.50	.527
		Married	61	120.61	7357.50		
	QOL 20	Single	170	108.38	18424.50	-3889.50	.004**
		Married	61	137.24	8371.50		

## CONCLUSION and DISCUSSION

Medical student's QOL has been an area of investigation for decades since medical students are at higher risk for physical and psychological health problems (Abdulghani, 2008; Al-Dabal, et al., 2010). Medical school curriculum itself can cause a great deal of stress among medical students, thus in developing countries, such as, Saudi Arabia, where medical school curriculum is still under continuous development, students are likely to experience significant amount of stress due to unsatisfactory studying environment and unsuitable teaching methods (Al-Dabal, et al., 2010).

Although the research has focused on determining what demographic variables of medical students play a role in stress level, there is still lack of research to determine the differences between varying demographical groups. Thus, many researchers indicated the need for further research in this area (e.g. Al-hazimi, Al-hyani, & Roff, 2004). The current research was a response to the indicated need, and the results from the current research contributed toward understanding medical students' QOL in a developing country. The results indicated that participants in this research had overall high QOL, with the lowest mean being the psychological health domain. Male students had higher mean scores in three domains compared to females, and this could



be explained by the limited freedom that females have compared to males. For example, due to laws, females are not allowed to drive in the country which makes them dependent on their male family members or a driver. Studies also found that anxiety and depression was more prevalent among female medical students, which explains the lower score in psychological health domain when compared to men (Inam, 2007).

Even though male students reported higher scores in three domains, they reported lower than females in social domain. Single males in Saudi Arabia, although they have more freedom, can be prevented from entering certain locations, such as shopping malls and festival areas, as these places are limited to families only. This prevents single males joining certain social aspects of life in Saudi Arabia.

Female medical school students have better social relationships than male students. This is associated with the cultural expectations from females in general in Saudi Arabia. Until recently, females in Saudi Arabia had restrictions in work force with encouragement toward fulfilling social roles as teachers and mothers. This resulted in females developing many social traits such as being caring, providing social support, and taking responsibilities. In Saudi culture, women are perceived to satisfy family's needs, maintaining family structure, and contribute to their society (Marianne Alireza, *Women of Saudi Arabia* (National Geographic, 1987), 423-453.) However, this has been changing recently as the new generations started to change the stereotypical role of women in the society. For instance, with the advances in social media, females get more freedom to open themselves to new relations. Especially for medical schools, since the education is provided in a mixed environment, both male and female students get involved and interact with others, an opportunity they would not have outside the university. Furthermore, female students tend to have commitments to social activities within their curriculums, and this also increases access to socialization. This suggests that Saudi women started to develop their own strategies to challenge gender inequality in education as well as other life matters.

When QOL between married and single students were compared, results indicated that single students had higher mean scores in three domains except the social relations domain, which had a higher mean among married students. This again can only be explained through the social structure of Saudi culture or Arab culture in general. The marriage is not just a commitment between two individuals, but it rather extends beyond them to include their families, friends, relatives and neighbors. Therefore, a married individual get more access to social environments by being introduced to whole new group of individuals. Furthermore, married women might have more freedom to socialize as marriage is perceived as a sign of maturity and amount of restriction from parents on a female is likely to decrease after marriage. It should be also considered that males would also have increased access to social events and locations to which they did not have access to before. In brief, for Arab communities, marriage brings many social advantages to the couples like status, respect and acceptance.

## SUGGESTIONS

This study was limited with a small target population and a few numbers of demographical variables. It was only conducted with outstanding medical students and only certain demographical variables, which were believed to play a significant role in an individual's QOL in an Arab cultural setting, were selected. However, future studies should investigate the QOL of medical students in general and account for more variables that may have an effect on QOL. Studies should also diversify the sample by collecting data from various regions of the country, which are likely to show variance in culture (e.g. urban vs. rural). A study on medical students in Saudi Arabia also suggested that longitudinal studies should be conducted to explore the mental health patterns from admission to graduation (Altannir et al., 2019). Another conclusion drawn from the current research is the focus that needs to be given to mental health of medical students. "Studies suggest that mental health worsens after students begin medical school and remains poor throughout training" (Abdulghani, 2008: 15). A high prevalence of anxiety and depression among medical students is reported by previous studies (El-Gilany, Amr, & Hammad, 2008; Inam, 2007). Participants received the lowest score in psychological domain, which is in line with what previous studies suggest. Great deal of academic pressure combined with unsuitable teaching methods can result in psychological distress in medical students. An implication of the current study is for medical schools to consider taking initiatives to provide psychological supports to medical students who soon will be dealing with patients. Several studies indicated the need for wellness and preventive mental health programs to be integral part of the medical schools (El-Gilany, Amr, & Hammad, 2008; Aldulghani. 2008). Therefore, university counseling centers may shift their focus from restorative counseling services to preventive approaches to equip students with necessary skills to cope with the academic as well as social stressors (e.g. Mahmoud & Fareed, 2018). Considering the stigma associated with mental health, counselors may consider reaching out to students outside their offices to challenge the stigma and increase access to services. A current study conducted with nursing students also called for action, and authors argued that instructors should also be trained in counseling to address the basic mental health needs of their students (Aboshaiqah & Cruz, 2019).

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