

Original article:

Impact of Socio-demographic factors on Quality of life in Medical Students of Eastern Saudi Arabia

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Abstract

Background: Quality of life of medical students may influenced by different socio-demographic components and disrupt their capability to study medicine. An in-depth exploration of these elements may encourage enhancement in learning and retention of medical students. **Aim:** This study was designed to identify the role of socio-demographic factors in quality of life in undergraduate medical students. **Material and Method:** A cross-sectional study was conducted among 223 undergraduate medical students (male = 125, females = 98) at King Faisal University, Saudi Arabia between February and September 2019. An Arabic version of WHOQOL-BREF was used to explore the QOL of medical students. Regression analysis were employed to evaluate association between QOL and socio-demographic factors including age, sex, academic year, family type, area of residence, monthly income, parental education and housing status. **Result:** The results showed a significant relationship between various socio-demographic variables and quality of life. The findings of the study revealed that gender, academic year, marital status, monthly income and family type were found significant predictors of quality of life among medical students. **Conclusion:** The present study has explored the impact of socio-demographic factors on the quality of life of medical students.

Keywords: socio-demographic; quality of life; medical students; Saudi Arabia

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Introduction

The World Health Organization (WHO) defined Quality of Life (QoL) as “an individual’s perception of their position in life, in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns”¹. Quality of life focused all aspects of life, including physical health, family, security, status, education, beliefs, and the environment. Quality of life is influenced by many factors such as, biological, behavioral, psychological and demographical². However, the link between these elements and

QOL are varying among different communities and population³.

Generally, medical students experience more stress than general population.⁴⁻⁶ The causes of their stress could be due to the academic burden, less leisure time, more material to be retained, high parental expectation, peer pressure, and repeated formative and summative examinations.⁷ Previous research reported that poor quality of life among medical students is linked with poor attention and concentration, increased incidence of errors, negligence, absenteeism, self-medication, and cheating during examinations.⁸

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Several studies have examined quality of life among medical students. For instance, in a cross-sectional study conducted among Saudi medical students, the students experienced environmental domain as their highest QOL, whereas physical domain and social relations domain were experienced as the lowest.⁹ Mahmoud and Fareed¹⁰ reported that final year medical students score higher in environmental domain than students in initial years. Another study reported that first year and final year medical students experienced better quality of life in terms of psychological and social domain.¹¹

There is tremendous research works on the quality of life among medical students. However, few studies have examined the impact of demographic factors on quality of life among medical students¹². There is presently dearth of psychological research on impact of different demographic factors on quality of life among medical students especially in Saudi Arabia. Therefore, the current study aimed to assess the effect of various socio-demographic factors on the quality of life of medical students, with the intention of improving learning and retention at medical college.

Materials and Methods

Setting and participants

The present study was conducted in college of medicine, King Faisal University, Saudi Arabia. King Faisal University is one of the leading University in the Kingdom of Saudi Arabia with more than 42227 students. Among the total student body, 1070 students are enrolled at the college of medicine, with nearly 300 new medical students enrolling each semester. The bachelor of medicine and surgery in Saudi Arabia is six-year programme in which first three years are preclinical, and years 4–6 are clinical. College of Medicine utilizes an innovative teaching methodology to achieve their vision and mission of preparing future physicians. Participants of the present study were 223 medical students (Male =125, Females = 98) studying in college of medicine, King Faisal University, Saudi Arabia. Ages of these participants were ranging from 18 to 25 years.

Study Design

A cross sectional study was performed among undergraduate medical students attending College of Medicine, King Faisal University between February and September 2019. Medical students in their 1st to 5th year in College of Medicine voluntarily participated in the study. In the beginning of the third semester of the academic year, students were asked to complete

a self-reported questionnaire on demographic factors and quality of life.

Measures

In order to achieve the goals of the present study, the different measures were used. Quality of life was assessed by World Health Organization Quality of Life-Biomedical Research and Education Facility (WHOQOL-BREF). Demographic questionnaire prepared by the researcher was also include in the study.

Demographic Questionnaire: The information about demographic profile of the participants was collected with the help of questions related to their age, sex, marital status, and academic year. In addition, information about their family were include area of residence, family type, education level of parents, family occupation, income, housing status etc.

World Health Organization Quality of Life Assessment –Abbreviated Version (WHOQOL-BREF): Quality of life was measured by using WHOQOL-BREF.¹³ The scale comprises of twenty six items, covering four domains: physical health, psychological health, social relationships, and environment. The first two questions separately assess the overall perception of quality of life and general health. Participants were asked to rate their responses to each item using a 5-point Likert scale ranging from 1 (very dissatisfied/ very poor) to 5 (very satisfied/ very good). The total score is derived by adding the scores of the items belonging to different areas and mean scores are obtained. In this scale higher scores indicate better QOL¹⁴. Mahmoud and Fareed¹⁰ have reported internal reliability for the total scale as 0.83. Internal consistency reliability (Cronbach's alpha) of this measure was found as 0.92.

Procedure

After seeking required permission from concerned college authorities, the participants were personally contacted. They were briefed about the purpose of research and questionnaire used in the study. After seeking consent of the student, a suitable time and date was fixed for data collection. Before administering the questionnaire, the purpose of the study was again explained to the participants and they were assured that their responses would be kept confidential and would be used for research and academic purpose only. A good rapport was built with the participants for getting correct responses. Necessary instruction and guidelines were provided to them for properly filling the questionnaire. After this, the questionnaires

were provided to them and they were requested to fill up the questionnaire as per the instructions given in the questionnaire. It took 20 minutes to complete the questionnaire. After completion of the questionnaire participants returned the questionnaire and they were thanked for their participation and cooperation.

Statistical Analysis

The data were first exported to Microsoft Excel and then to Statistical Package for Social Sciences (SPSS version, 22) computer software used for quantitative statistical analyses. Prior to analysis, all variables were screened for possible code. In order to obtain an understanding of the socio-demographic characteristics of the participants, frequency, percentage, means, standard deviations and other descriptive statistics were conducted. To investigate a relationship between WHOQOL-BREF scores

and socio-demographic factors, multiple regression models were performed. For this, separate analysis was run for each aspect of WHOQOL-BREF.

Ethical clearance: The ethical committee of human research at the College of Medicine approved the study protocol.

Result

Socio-demographic characteristics of study population

The present study invited 250 students’ studying in colleges of medicine at King Faisal University. A total of 223 students answered the questionnaire. The response rate was 89.20%. Among the 223 students, 125 were males and 98 were females. The mean age of these students was 21.36 years. Table 1 shows that majority (83.4%) of participant were single. Only 30 (13.5%) participants were married. Most of students

Table 1: Quality of life scores (Mean and Standard Deviation) according to Demographic characteristics

	N (%) (n=223)	Physical Health (Mean and SD)	Psychological Health (Mean and SD)	Social Relationships (Mean and SD)	Environment (Mean and SD)
Gender					
<i>Male</i>	125(57.0)	64.09±16.52*	29.31 ± 22.69	48.47 ± 16.33	63.47 ± 18.22
<i>Female</i>	98(43.0)	54.89 ± 15.74	34.17 ± 17.27	52.38 ± 22.90*	56.36 ± 17.55
Academic Year					
<i>1st</i>	67(30.0)	63.59 ± 18.52	49.17 ± 21.82**	50.70 ± 16.47	56.11 ± 12.98
<i>2nd</i>	40(17.9)	59.45 ± 12.04	34.70 ± 17.72	41.95 ± 12.52	52.57 ± 16.11
<i>3rd</i>	41(18.4)	55.46 ± 13.79	19.75 ± 11.81	39.14 ± 18.80	51.53 ± 21.91
<i>4th</i>	50(22.4)	60.24 ± 14.25	17.16 ± 11.00	54.88 ± 21.33	65.36 ± 16.89
<i>5th</i>	25(11.2)	74.68± 14.65**	27.32 ± 7.35	75.00 ± 17.26**	75.44 ± 19.16**
Marital Status					
<i>Married</i>	30(13.5)	64.93 ± 19.58**	32.37 ± 16.79	71.43 ± 19.18**	71.50 ± 13.27**
<i>Engaged</i>	7(3.1)	61.57± 13.16	23.14 ± 7.88	60.17 ±21.76	69.86 ±14.54
<i>Single</i>	186(83.4)	53.33 ± 16.16	28.78 ± 22.23	48.22 ± 23.45	57.84 ± 19.07
Family Type					
<i>Nuclear</i>	90(40.4)	59.47 ±17.99*	29.44 ± 17.87	56.90 ± 24.26*	64.11 ±20.44*
<i>Joint</i>	133(59.6)	51.71 ± 15.33	28.80 ± 23.37	46.26 ± 22.36	57.31 ± 17.31
Monthly Income					
<10000SAR	76(34.1)	49.03 ± 16.55	28.92 ± 22.01	44.76 ± 22.45	55.09 ± 19.99
10001-25000	107(48.0)	57.82 ± 6.76	28.64 ± 21.10	53.45 ± 24.04	61.83 ± 17.74
25000>	40(17.9)	57.90 ± 5.06**	30.60 ± 20.81***	53.80 ± 23.51***	64.72 ± 18.11
Housing Status					
<i>Own</i>	198(88.8)	54.97 ± 17.09	29.12 ± 21.07	50.88 ± 24.12	60.11 ±18.77
<i>Rented</i>	25(11.2)	53.76 ± 15.11	28.84 ± 23.30	47.96 ± 20.05	59.64 ± 20.1

*p=.01 (t-test), **p=.01 (One-way ANOVA), ***p=.05 (One-way ANOVA),

(30.0%) were from 1st year and 25(11.2%) were from 5th year. The percentages of participants belonging to nuclear and joint families were 40.4 and 59.6 respectively.

With regard to different domains of quality of life presented in Table 1 showed that male participants scored higher in physical health domain of QoL than female participants, whereas, female participants scored better than male participants in social domain of QoL. In terms of academic year, fifth year student's scored higher in physical, social and environmental domain of QoL, while as first year students score better in psychological domain of QoL. For marital status, married participants scored higher in physical, social and environmental domain of QoL. Participants belong to nuclear families showed higher score in physical and environmental domain of QoL. In terms of monthly income, participants having more income perceive higher score in physical, psychological and social domain of QoL.

Quality of life according to socio-demographic factors

Separate multiple linear regression analyses were performed to identify predictors variables for the physical, psychological, social and environmental quality of life, as measured by the WHOQOL-BREF. Result of multiple regression analysis presented in Table 2 revealed that five variables, gender ($\beta = -.20$), academic year ($\beta = .25$), marital status ($\beta = -.12$), monthly income ($\beta = .11$) and family type ($\beta = -.15$) are the strongest predictors in the physical domain

of QoL. The obtained results clearly revealed that gender was negatively and significantly related to physical domain. This means that male participants showed good physical quality of life than female participants. Result also revealed that marital status was found negatively and significantly related to physical domain of quality of life. This indicates that married students showed good physical quality of life than unmarried students. Similarly, family type was negatively and significantly related to physical domain. This means that students belong to nuclear families showed good physical quality of life compared to students living in joint families. However, results clearly revealed that academic years were found positively and significantly related to physical component of quality of life. This indicates that students who are final stage of their degree showed good physical quality of life than students of initial years of their course. Also, study revealed that monthly income was found positively and significantly related to physical domain of quality of life. This means that students having high monthly income experience better physical quality of life than students having low monthly income.

For the psychological domain, academic year ($\beta = -.42$) and monthly income ($\beta = .13$) were found strongest predictors. Results clearly revealed that academic years were found negatively and significantly related to psychological aspect of quality of life. This indicates that students who are initial stage of their degree showed good psychological quality of life

Table 2: Association between Quality of life and Predictor variables

Variables	Physical QOL		Psychological QOL		Social QOL		Environment QOL	
	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>	β	<i>p</i>
<i>Gender</i>	-.20	.00	.01	.90	.16	.02	-.10	.14
<i>Age</i>	.20	.17	.05	.77	-.14	.38	.13	.38
<i>Academic Year</i>	.25	.05	-.42	.01	.54	.00	.35	.02
<i>Marital Status</i>	-.12	.05	-.11	.12	-.03	.67	-.18	.01
<i>Area of residence</i>	-.01	.85	-.04	.49	-.02	.80	.00	.96
<i>Monthly income</i>	.11	.05	.13	.04	.12	.05	.10	.10
<i>Family occupation</i>	-.05	.42	-.06	.32	-.03	.57	-.05	.38
<i>Fathers education</i>	.06	.39	-.05	.44	-.07	.31	.02	.80
<i>Mothers education</i>	-.01	.89	-.02	.74	-.03	.62	-.02	.81
<i>House status</i>	-.05	.38	.04	.54	-.03	.66	-.03	.53
<i>Family type</i>	-.15	.01	-.03	.63	-.14	.03	-.12	.02
<i>R</i>²	38%		31%		26%		36%	

than students of final years of their course. However, monthly income was positively and significantly related to psychological quality of life. This means that students having high monthly income experience better psychological quality of life than students having low monthly income.

In regard to the social quality of life of participants results of multiple regression presented in Table 2 revealed that gender ($\beta = .16$), academic year ($\beta = .54$), monthly income ($\beta = .12$), and family type ($\beta = -.14$) were found significant predictors of social quality of life. The obtained results clearly revealed that gender was positively and significantly related to social domain of quality of life. This means that female participants showed good social quality of life than male participants. Similarly, academic years was positively and significantly related to social domain. This indicates that students were in final phase of their course showed good social quality of life as compared to students who are in initial years of their courses. Also, monthly income was positively and significantly related to social quality of life. This shows that students having high monthly income experience better social quality of life than students having low monthly income. However, family status was negatively and significantly related to social domain. This means that students belong to nuclear families showed good social quality of life compared to students living in joint families.

Result of regression analysis predicting environmental domain from different demographic factors presented in Table 2 revealed academic year ($\beta = .35$) and marital status ($\beta = -.18$) as significant predictors of environmental quality of life. These results clearly indicate that academic years were positively and significantly related to environmental domain. This means that students were in final phase of their course showed good environmental quality of life as compared to students who are in initial years of their courses. However, result revealed that marital status was found negatively and significantly related to environmental component of quality of life. This indicates that married students showed good environmental quality of life than unmarried students.

Discussion

The present study was conducted to examine the role of demographic factors that potentially influence

the quality of life among undergraduate medical students attending college of medicine, King Faisal University, Saudi Arabia. It was hypothesized that demographic factors will significantly predict quality of life of medical students. The results showed a significant relationship between various socio-demographic variables and quality of life. The findings of the study revealed that gender, academic year, marital status, monthly income and family type were found significant predictors of quality of life among medical students.

Gender effects

Findings of the present study regarding gender differences in quality of life showed significant differences between male and female participants on the measure of WHOQOL-BREF. In the domain of physical health, male participant reported better quality of life in comparison to their counterpart female participants. These results regarding gender differences in quality of life of the participants extended support to the previous studies showing differences between males and females in quality of life.¹⁵⁻¹⁹ Better quality of life reported by the male participants in the present study may be because of a tendency to perceive their personal health as excellent and that they always feel energetic, as compared with females. This is in line with the cultural norms of the Saudi Arabia where men are generally considered to be the stronger and dominant sex, thus men perceive themselves to be so. These factors may be more responsible for better quality of life among male medical students. However, these issues could not appropriately be explained by our study and requires further investigation. In the present study, female students scored higher than males in social domain of quality of life, studies shown that females are better than men in dealing with interactions.²⁰ Moreover, female medical students had handful of experiences and maturity to manage their social relations and the environment in comparison to male students.

Academic years

Regarding effect of academic years on quality of life among medical students, the present study observed significant relationship of academic years to different domains of quality of life. In the present study, it was observed that fifth year student's scored higher in physical, social and environmental domain of QoL. A similar kind of research among Chinese medical

students reported higher scores in psychological domain and social domain of QoL in clinical years as compared to third year students.²¹ Another study conducted on Brazilian medical students indicated significant differences in the quality of life according to academic year, particularly with respect to the psychological and physical domains.²² The reasons for better quality of life during later years in medical course are that the students had less theoretical content, more experience and maturity to improve their quality of life in comparison to students of preclinical years.

Marital Status

Several researches have suggested the effect of marital status on the quality of life in university students.²³ In the present study, the married students have better physical and environmental domain of quality of life as compare to the unmarried student. The results are in line with previous studies examined marital status and quality of life.²⁴ Previous findings reported that married people have strong mental health than those who are single due to the social support received from their spouse.²⁵ Another research examined the relationship between marital status and mortality. The results indicated that people who were single showed higher mortality in particular diseases compared with those who were married.²⁶ In the present study, good quality of life among married students may be because of care and support provided by their spouses especially during the tough times of their study.

Monthly income

To the best of our knowledge, this is the first study to examine the relationship between socio-economic status and quality of life among undergraduate medical students. The findings of the present study indicates that students with high monthly income showed better physical, psychological and social quality of life as compared to the students with low monthly income. These results regarding relationship between monthly income and quality of life of the participants received extended support from previous studies.²⁷ Previous findings suggests that low income badly affects self-esteem, blocked aspirations, increase frustrations, reduce efficacy, fatalism and lower mastery and personal control.²⁸

Family type

Regarding the role of family type on quality of life

among medical students, the present study indicated, the quality of life is better among the students belongs to nuclear families as compared to joint family subjects. This result is consistent with the findings from a study conducted in India, which suggested the quality of life is higher in nuclear family participants.²⁹ A nuclear family is a very small family having only a few members, less engagements, more freedom, more attention to children and less responsibilities. However, nuclear family faces lot of problems of lower tolerance among individuals, lower maturity, more dependency, adjustment issues and egoism. Other studies also indicates that living in nuclear family unit is related to better health among males as compared to females, than other family structures.³⁰

Several limitations of the present study must be noted. First, the data of the present study were collected from only one medical college from eastern region of Saudi Arabia. Data gathered in this context may therefore be unique, and it is entirely possible that a replication of this study in a different parts of the country might yield different results. Second, the convenience sampling method of medical students in eastern region is not likely to be representative of all medical students studying in other regions of the Saudi Arabia. Therefore, further study needs representative samples in order to establish the generalizability of findings on medical students studying in other parts of the country. Third, the cross-sectional design used in the present study does not allow drawing conclusions regarding causality. Longitudinal research will be needed to support such conclusions. Lastly, sample size of the present study was relatively small and homogeneous which also limits generalization.

The present study demonstrated the differences in scores of different domains for the quality of life related to various demographic factors. Gender, academic year, marital status, monthly income and family type are found strongest predictors of quality of life. Betterment in the quality of life of medical students is very important to ensure the good medical education system. It is also important to maintain a well-balanced academic environment for improved learning experience. A focus on student needs and problems can help prevent the harmful effects of stress on quality of life. In addition, It is also suggested that all required facilities should be provided to

the medical students and programmes like career counseling and stress management training should be executed for the students to reduce their mental stress and improve quality of life during medical education.

Conflict of Interest Statement

There are no conflicts of interest or any financial or personal relationships with other people or organizations.

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The funding sources did not play a role in the study

conceptualization or design; collection, analysis, or interpretation of data; writing of the manuscript; or the decision to submit the article for publication.

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