Original Papers

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How is the Quality of Life of Students?: The Role of Depression, Anxiety and Stress

Abstract: *O b j e c t i v e s : The aim of study was to investigate the association between anxiety, depression, stress and determinants of quality of life among Iranian students.*
M e t h o d s : The questionnaires were completed by 275 students. The random sampling was conducted in two phases, the stratified sampling which some classes were selected among different classes of faculty of health and at the second phase, in each class the number of students who had the requirements to enter in the study were selected randomly. the logistic regression to find out the association between demographic characteristics with the quality of life was run and according to the normality status of the distribution of data the parametric or non-parametric tests were used.
R e s u l t s : In the univariable model, the students that were living in their own homes had the odds of 2.18 times more than the others to have a higher quality of life level (95% CI: 1.07–4.45). In the multi variable model the anxiety and stress were significantly related to the quality of life and for increasing each 1 unit in the amount of anxiety and stress the odds of a better quality of life decreases 0.19 and 0.03 respectively. Even after adjusting for other covariates – in the multivariable model – both anxiety and stress were associated with the quality of life.
C o n c l u s i o n : It is useful for the universities to understand different aspects of the students' lives which are under the influence of stress, anxiety and depression, and also determining the resources from which they are originated.

Keywords: *Quality of Life, Students, Depression, Anxiety, Stress*

Introduction

Depression, anxiety and stress are the most prevalent psychiatric disorders among the students (Bayram & Bilgel, 2008). Studies, have reported the range of prevalence of medical students from 30 to 50% and the anxiety prevalence around varies from 21.9 to 66.9%. around the world (Ibrahim et al., 2013; Mosley et al., 1994; Bunevicius, Katkute, & Bunevicius, 2008). Medical

students are in a stressful environment which are exposed to decrease of academic performance, physical health and psychological well-being the probability of high levels of depression, anxiety, stress and even Unwillingness to medical courses (Yadav, Gupta, & Malhotra, 2017). Depression may lead to growth of the rate of suicide among medical students (Eller et al., 2006), and chronic stress affects the performance of memory and learning, especially problem solving of the students which are

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related to thinking abilities (Ray & Joseph, 2010). Increasing incidence of anxiety and depression arises from the stress which leads to decline in academic performance among medical students (Dahlin, Joneborg, & Runeson, 2005). Also, professional development and academic performance of students may be affected by the distress that concequences the increased rate of academic dishonesty and substance abuse among them (Ray & Joseph, 2010; Dahlin, Joneborg, & Runeson, 2005). World Health Organization (WHO) has proposed that health is not only defined by lack of diseases, but complete physical, mental, and social welfare levels must be accounted (Firth-Cozens, 1989). The most important factors that are supposed to have influence on quality of life are the state of positive value of happiness, success, wealth, health and satisfaction of life that have many dimensions of physical and mental health, financial situations, personal beliefs, sleep quality, interaction with environment and personal functionality (Rezaei et al., 2017). Since medical students have an important position for the society, getting depressed among them may led negative influences on patient care (Firth-Cozens, 1989). Understanding medical university students' mental health may also have major implications for forthcoming health services and mental health policy making for this vulnerable group. Furthermore, as medical students are more vulnerable to the disorders we need to understand them better such that they can be better equipped to helping others upon graduation. Therefore, the aim of this study is to assess the association between anxiety, depression, stress and determinants of quality of life among Iranian students.

Methods

This research was a descriptive and analytical study, which conducted on college students of public health faculty of Shahid Beheshti University of Medical Sciences (SBMU) at the scholarly year 2015 and was conducted in accordance with the Strengthening the Reporting of OBservational studies in Epidemiology (STROBE) Statement (Von Elm et al., 2008). Ethical approval was obtained from the Ethics Committee of the Shahid Beheshti University of Medical Sciences IRB (No. 165-26/11/93). The questionnaires were completed by 275 students. The random sampling was conducted in two phases, the stratified sampling which some classes were selected among different classes of faculty of health and at the second phase, in each class the number of students who had the requirements to enter in the study were selected randomly.

Pursuant to the study done by Rezaei et al. (2017) we considered the sample size to be 275 ($\alpha = 0.05$, $d = 0.02$) and predicted a 10% attrition rate.

The questionnaires consisted of 3 parts: first part was the demographic questionnaire included (age, sex, education, occupation, current housing status, marital status), the second including 21 questions of evaluating the stress, anxiety and depression (DASS21) and the last

part was the world health organization quality of life questionnaire (WHOQOL-BREF) which included 26 questions evaluating 4 fields of Physical Health, Mental Health, Social Relationships, and Environmental Health (Soltani et al., 2010).

A study done by Soltani et al. (2010) reported that for the evaluation of quality of life among the students of Gilan University Cronbach's α gained 0/87 the WHOQOL-BREF.

Jafari et al. (2017) in depression anxiety stress scales-21 across medical student genders showed that Cronbach's α was 0/87 the DASS21. After necessary calculations, in each part a score between 4 to 20 were achieved that 4 indicated the worst and 20 was the best status of the fields. These scores, then were transformed to the domain of 0–100 and the highest score represented the best level of quality of life.

To tabulating the demographic variables, descriptive statistics (frequency distribution) were used. Additionally, the logistic regression to find out the association between demographic characteristics with the quality of life was run and according to the normality status of the distribution of data the parametric or non-parametric tests were used. All analyses were carried out with SPSS software V.19 after coding the data.

Results

In this study, 275 students answered the questionnaires. Demographic characteristics are represented in Table 1. Samples comprised of 87 men (32%) and 188 women (68%). The mean age ± standard deviation (SD) was (22.1 ± 3.6). The majority (81%) of the students were undergraduates and had mean sleep quality ± SD (2.6 ± 0.46). Ninety percent of participants were unemployed and about half of them were living in dormitories. Descriptive characteristics of covariates, stratified by the quality of life, were tabulated in Table 1. ANOVA and chi-square test were used for continuous and categorical variables, respectively. According to the results, except for current housing status, anxiety and stress, none of the differences was statistically significant related to the quality of life.

The results of logistic regression tabulated in Table 2. As it shown, all of the demographic variables were not significantly associated with quality of life. In fact, merely anxiety and the depression had a significant association with quality of life. In the univariable model, the students that were living in their own homes had the odds of 2.18 times more than the others to have a higher quality of life level (95% CI: 1.07–4.45). In the multi variable model the anxiety and stress were significantly related to the quality of life and for increasing each 1 unit in the amount of anxiety and stress the odds of a better quality of life decreases 0.19 and 0.03 respectively.

Even after adjusting for other covariates – in the multivariable model – both anxiety and stress were associated with the quality of life.

Table 1. Demographic variables and different grades quality of life (N = 275)

| Covariate | Quality of life | | *P* value |
	Low and Moderate (n = 44)	High (n = 231)	
Age, y, mean (SD)	22.86 (0.59)	22.17 (0.23)	0.25
Sex			0.74
Male, n (%)	13 (14.94)	74 (85.06)	
Female, n (%)	31 (16.49)	157 (83.51)	
Education			0.67
Bachelor, n (%)	35 (15.56)	190 (84.44)	
Master science and upper, n (%)	9 (18)	41 (82)	
Occupation			1
Unemployed, n (%)	40 (16)	210 (84)	
Employed, n (%)	4 (16)	21 (84)	
Current housing status			0.02
Dormitory, n (%)	32 (20.13)	127 (79.87)	
Home with family, n (%)	12 (10.34)	104 (89.66)	
Marital status			0.88
Single, n (%)	39 (16.12)	203 (83.88)	
Married, n (%)	5 (15.15)	28 (84.85)	
Anxiety			<0.001
Anxiety	12 (44.44)	15 (55.56)	
Not anxiety	32 (12.9)	216 (87.1)	
Depression			0.07
Depression	6 (30)	14 (70)	
Not depression	38 (14.9)	217 (85.1)	
Stress			<0.001
Stress	5 (71.43)	2 (28.57)	
Not Stress	39 (14.55)	229 (85.45)	

Table 2. Logistic regression model for the association of demographic characteristics with quality of life (N = 275)

Covariate	Univariable model		Multivariable-adjusted model	
	OR (95% CI)	*P* value	OR (95% CI)	*P* value
Age-groups				
<20	1	–	1	–
20–25	0.87 (0.41–1.83)	0.72	1.34 (0.056–3.17)	0.50
>25	0.52 (0.21–1.29)	0.16	0.40 (0.08–1.90)	0.29
Sex	0.88 (0.43–1.79)	0.74	1.17 (0.42–3.28)	0.75
Weight	1.00 (0.97–1.03)	0.61	1.01 (0.97–1.04)	0.58
Height	0.99 (0.97–1.01)	0.74	.99 (0.96–1.03)	0.92
Marital-status	1.07 (0.39–2.95)	0.88	1.32 (0.36–4.83)	0.66
Housing	2.18 (1.07–4.45)	0.03	1.99 (0.86–4.60)	0.10
Disease	2.64 (0.94–7.39)	0.06	1.52 (0.37–6.14)	0.55
Occupation	1.00 (0.32–3.06)	0.98	1.18 (0.31–4.45)	0.80
Education	0.83 (0.37–1.87)	0.67	2.56 (0.56–11.65)	0.48
Anxiety	0.18 (0.07–0.43)	<0.001	0.19 (0.06–0.58)	0.003
Depression	0.40 (0.14–1.12)	0.08	2.91 (0.50–16.89)	0.23
Stress	0.06 (0.01–0.36)	0.002	0.03 (0.002–0.43)	0.01

Discussion

The modern life has affected the social and individual health of people specially the youth and has negative consequences on their academic performance (Pozos-Radillo et al., 2014). The primary goal of this study was to determine the relationship between stress, anxiety, depression and quality of life. According to the results the majority of students reported high quality of lives. Although Jamali et al. (2013) and Paro et al. (2010) reported the low and moderate quality of lives the results proved indicated that except for the habitat place, there was no significance level between the rest of demographic variables and the quality of life of students. The findings represented the high quality of students who were living with their families, also Pekmezovic has confirmed this in his study (Henning, Ey, & Shaw, 1998). The difference between quality of life of the students residing in dormitories and students who were lived with their families could be justified by the reduced family support, living in a smaller place with people of different cultures and the economic issues. Stress, depression and anxiety have considerable consequences and it is important to decrease them in students (Doom & Haeffel, 2013). Several studies have reported the prevalence of stress, depression and anxiety among medical students (Henning, Ey, & Shaw, 1998; Dyrbye et al., 2007; Kulsoom & Afsar, 2015). Studding in university is a stressful time (Berlim & Fleck, 2003) and may be one of the determinant factors of academic failure among students (Saklofske et al., 2012). The present study

showed a significant relationship between the quality of life of the students and the stress. Multiple logistic regression showed that for each unit increasing stress, the quality of life decreased by 0.03 (**95% CI:** 0.002–0.43). Kleiveland et al. (2015) reported a statistical significant correlation between the stress and quality of life of Norwegian nursing students. Bhandari et al. (2012) and Ribeiro et al. (2017) indicated a reverse and significant relationship between stress and the physical and mental dimensions of quality of life. Students are in an age range that stress disorders are very prevalent. The stress may be due to individual factors (genetics, age and sex), interpersonal (quality of relationships between individuals) and social (dormitory and university environment) (Cohen & Janicki-Deverts, 2012). Another study represented that using coping strategy and longevity reduction of stressful experiences can play an important role in improving the quality of life of students (Crăciun, 2013). Depression has a major effect on quality of life of people. Depression is related to wrong behaviors such as smoking, inappropriate diet, physical inactivity, inadequate sleep, and non-compliance with medical advice (Doom & Haeffel, 2013). The other factors associated with quality of life in this study were depression and its relationship with quality of life of students. Our findings showed no significant relationship between the two variables while Domantay and another study by Paro et al. reported the significant relationship between depression and the low quality of life (Paro et al., 2010; Domantay, 2014). The difference may be due to differences in the means used to assess the quality of life. Studies have indicated that

people with anxiety disorders have lower quality of life than other individuals. Although anxiety may exist in our lives, it seems to be more intense among students for a lot of reasons (Peters, 2003; Sreeramareddy et al., 2007). In our study, the results of multiple regression represented that there is a significant and inverse relation between anxiety and quality of life in students, so that increasing each unit in anxiety, decreases the quality of life by 0.19 (**95% CI: 0.06–0.58**). The study that is done by Peters confirms our findings and has reported a negative correlation between the anxiety and the quality of life of the students (Peters, 2003). Researches have shown that anxiety can effect on students' learning and performance. There is also a high probability of anxious students tendency to smoking, alcohol and drug to control anxiety and adapt to it (Sreeramareddy et al., 2007). Also, it is recommended to focus on the suitable interventions to reduce the resources of stress and anxiety and increasing the quality of life of students and investigating the effects of different approaches to control them. Of the limitations of this study were the population studied. Participants in this study were selected from the School of Public Health, so there may be a potential bias. Data was collected by self-reporting method, so it may not reflect the true performance of individuals. Using multiple regression models to determine the predictive power of factors affecting the quality of life of students is one of the strengths of this study.

Conclusion

Since the primary finding of this study confirms the relationship between stress and anxiety, and the quality of life, identifying the creator factors of them is important. It is useful for the universities to understand different aspects of the students' lives which are under the influence of stress, anxiety and depression, and also determining the resources from which they are originated (Diener & Diener, 2009).

Compliance with Ethical Standards

Ethical approval was obtained by the ethics committee of the Shahid Beheshti University of Medical Sciences IRB (No. 165-26/11/93). Authors' Statement of Conflict of Interest and Adherence to Ethical Standards Authors Bayani, Mokhayeri, Haroni, Noroozi, Siadnasiri and Armoon declare that they have no conflict of interest. All procedures, including the informed consent process, were conducted in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000.

Conflict of interest

None of the authors has any conflict of interest

Informed consent

Informed consent was obtained from all individual participants included in the study.

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