Determination of Factors that Affect Health-Related Quality of Life in Health Sciences Students

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Abstract

BACKGROUND/AIMS: The aim of this study was to evaluate health sciences students' health-related quality of life and the factors which affect it.

MATERIALS AND METHODS: This study was conducted with 293 faculty of health sciences students who were selected using stratified sampling by department. A questionnaire about their demographic characteristics and the Short Form-36 (SF-36) were administered in face-to-face interviews, and some anthropometric measurements were made.

RESULTS: The males' mean scores on the social functioning, pain and general health perception subscales of SF-36 were higher than those of the females (p<0.05). The non-smokers had higher mean scores on the physical role limitation, emotional role limitation, vitality, mental health and pain subscales of SF-36 than those who smoked (p<0.05). The sports science students had the highest scores on vitality, mental health, pain and general health perception (p<0.05). The students with low risk of cardiovascular disease according to their waist/height ratios had higher vitality scores (p<0.05).

CONCLUSION: To conclude, gender, smoking, department and anthropometric measurements affected the quality of life of the health science students. In order to determine which factors affect quality of life, it may be useful to conduct more studies with larger samples.

Keywords: Health, lifestyle, quality of life, young adult, student

INTRODUCTION

Health concerns an individual's lifestyle. The definition of quality of life by the World Health Organization is "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. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment".[1] Good quality of life indicates physical, professional, social and mental wellness.[2] Individual lifestyles consist of social practices and individual choices. Lifestyle can be influenced by factors such as socio-economic conditions, ethnicity and gender.[3] Starting a university education and thus experiencing changes in residence and lifestyle can cause problems with nutrition, housing and social life. Students may be exposed to different stresses such as academic pressure, social problems and financial problems. This may affect their academic achievement and increase mental problems which can affect their quality of life.[4] In addition, it has been indicated that health sciences students perceive higher stress levels compare to other study areas, which may be related with lower quality of life.[5] As a result, health sciences students differ from other individuals at university in terms of their anxieties, burdens and worries. This study evaluated health sciences students' health-related quality of life and the factors which affect it.

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MATERIALS AND METHODS

This is a cross-sectional study which evaluated the quality of life of health sciences students at the Eastern Mediterranean University. This study was approved by the Ethical Board of Scientific Research and Publication of Eastern Mediterranean University (approval number: ETK00-2016-0021, date: 14.03.2016). All participants were asked to sign an informed consent form according to the Declaration of Helsinki. A questionnaire about the students' general characteristics, their nutritional habits and the Short Form-36 (SF-36) were administered via face-to-face interviews.

Study Population and Sample

The study population consisted of 1,293 students who attended the Eastern Mediterranean University's Faculty of Health Sciences in the 2015-2016 academic year. The sample size was calculated with a 95% confidence interval and 5% sampling error by using the stratified sampling method according to departments [physiotherapy and rehabilitation, nutrition and dietetics, nursing, health management (HM), and sport sciences]. The sample included 293 students from each department who all participated voluntarily (Table 1).

Short From-36

SF-36 is a frequently used measure of health-related quality of life. It has 36 items in eight dimensions which are physical function (PF), physical role limitation (PRL), emotional role limitation (ERL), vitality (VT), mental health (MH), social functioning (SF), pain (PA) and general health perception (GHP). Higher scores in these dimensions indicate increased quality of life. SF-36 was first developed in 1992 and it has Cronbach's alpha coefficients between 0.62-0.94 for each of the eight dimensions. In 1999, it was validated in Turkish with Cronbach's alpha coefficients between 0.73-0.76 for each of the eight dimensions.[6,7] In this study, the Cronbach's alpha coefficients were calculated as being between 0.72-0.79 for each of the eight dimensions.

Anthropometric Measurements

The participants' body weights were measured using a digital scale sensitive to 0.1 g, and their height was measured in the frontal plane, with the head, back, buttocks and heels touching a wall. Body mass index (BMI) was calculated by dividing body weight in kilograms by height in meters squared (kg/m²). The WHO rates adults with a BMI of <18.5 as underweight, 18.5-24.9 kg/m² as normal, 25-29.9 kg/m² as overweight, and ≥30 kg/m² as obese. Waist circumference was measured from the middle of the lower rib bone and the middle of the crista iliaca adjacent to the feet, with the hands held freely. Hip circumference was measured as the widest hip circumference measurement. When assessing the risk of obesity-related metabolic complications, a waist circumferences of ≥94 cm for men and ≥80 cm for women are considered as risks, and

≥102 for men and ≥88 cm for women are considered to be high risk. The recommended waist/hip circumference is <1.0 for males and <0.85 for females.[8] The waist/height ratio was determined to be 0.5 for Turkish adults, and values above this are considered to be related to increased cardiovascular risk.[9]

Statistical Analysis

The data obtained from the questionnaire was processed with Statistical Package for the Social Sciences (SPSS) 21 software. In order to determine the hypothesis tests for comparing SF-36 scores according to the descriptive characteristics of the students, the normal distribution of the data set was tested using the Kolmogorov-Smirnov test, a Q-Q plot and skewness-kurtosis values, and the variance of the data set was seen to be homogeneous as a result of the normal distribution and Levene's test. Independent samples t-test was used when the independent variable was composed of two categories, and variance analysis (ANOVA) was used when the independent variable was composed of more than two categories. If there was a difference between the categories of the independent sample as a result of variance analysis, the post-hoc Tukey test was used to determine the categories in which the difference originated. Statistical significance was set at p-values less than 0.05.

RESULTS

The students' mean age was 20.9±2.22 (18-31) years. They obtained the highest mean score on the SF-36 subscale of PF (91.7±11-32) and the lowest mean score on the VT subscale (63.8±17-75). The males' mean scores on the PA and GHP subscales of SF-36 were higher than those of the females (p<0.05) (Table 2). The non-smokers had higher mean scores on the PRL, ERL, VT, MH and PA subscales than the students who smoked (p<0.05). There were no statistically significant differences in the SF-36 subscale scores by age group or alcohol use (p>0.05) (Table 1). The students in the health sciences department had the highest VT, MH, PA and GHP scores, and the HM students had the lowest PF score (p<0.05) (Table 2).

The students who had a high waist/hip ratio cut-off point had higher ERL scores than those with a low cut-off point (p<0.05). The students with low risk of cardiovascular disease according to their waist/height ratio had higher VT scores (p<0.05). However, SF-36 subscale scores were not statistically different by BMI classification (Table 3).

DISCUSSION

A variety of factors affect quality of life. A study conducted with medical school students in Brazil reported that their health-related quality of life was low, and this was mainly related to their MH. A more detailed evaluation found that the females had lower SF-36 scores with cases of insomnia, headache and inadequate physical activity. Their highest scores on the SF-36 subscales were on the PF subscale, and their lowest scores were on the ERL subscale.[10] This study determined that the students had the highest mean score on the PF subscale (91.7±11.32), and the lowest mean score on the VT subscale (63.8±17.75) (Table 2). In a study conducted with 119 nursing students in Jordan, the highest score was on the PF subscale, and the lowest was on the VT subscale.[11] The students got the next lowest scores on the ERL (65.9±38.51), MH (65.6±15.74) and GHP (68.0±18.15) subscales (Table 2). However, these values were higher than those of 429 health sciences students in Türkiye. That study determined that the SF-36 subscale scores were low (<50 points), and that this was related to MH.[12] A study conducted with 527

Table 1. Sample size according to departments			
Department	N	N/Ni	n
Physiotherapy and rehabilitation	583	45.09	132
Nutrition and dietetics	398	30.78	90
Nursing	60	4.64	14
Health management	87	6.73	20
Sport sciences	165	12.76	37
Total	1,293	100.00	293

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Table 2. SF-36 scores by the students' demographic characteristics (n=293)

		PF, x̄ ± SD	PRL, x̄± SD	ERL, x̄ ± SD	VT, x̄ ± SD	MH, x̄ ± SD	SF, x̄± SD	PA, x̄± SD	GHP, x̄ ± SD
Gender	M	92.5±13.80	84.3±26.30	69.4±37.30	66.1±18.94	65.8±16.07	82.5±19.77	81.8±20.54	73.9±19.42
	F	91.4±10.14	86.6±27.73	64.5±39.01	62.8±17.18	65.5±15.64	77.1±19.18	76.3±21.57	65.5±17.06
	p	0.45	0.51	0.33	0.15	0.89	**0.03***	**0.05***	**0.00***
Age (years)	<21	92.0±11.58	86.9±25.29	62.9±38.38	64.7±17.05	65.9±15.51	77.6±19.19	77.8±21.61	68.3±18.60
	≥21	91.2±10.86	83.9±30.68	71.5±38.32	62.1±18.92	65.0±16.21	80.7±19.93	78.2±21.05	67.4±17.38
	p	0.56	0.37	0.07	0.22	0.62	0.19	0.88	0.67
Alcohol use	Yes	90.5±14.30	82.5±28.97	63.4±37.12	63.6±16.32	63.6±15.82	77.9±20.80	74.9±22.90	70.5±18.46
	No	92.3±9.61	87.5±26.40	67.1±39.18	63.9±18.40	66.5±15.66	79.0±18.87	79.4±20.54	66.8±17.94
	p	0.20	0.14	0.44	0.90	0.14	0.65	0.09	0.10
Cigarette use	Non-smoking	91.6±11.31	87.8±26.22	68.2±37.47	64.8±17.15	66.6±15.09	79.1±19.02	80.0±19.91	68.6±17.75
	Smoking	92.4±11.42	78.3±30.24	57.0±41.54	59.6±19.51	61.6±17.69	76.9±21.25	69.6±24.88	65.4±19.63
	p	0.60	**0.01***	**0.04***	**0.04***	**0.03***	0.42	**0.00***	0.21
Department	PR	91.7±11.10	86.9±27.70	64.8±39.35	63.1±16.94	66.2±14.72	80.8±18.30	78.9±19.44	67.5±17.57
	ND	92.2±10.19	86.3±27.06	66.3±38.86	61.8±18.35	63.6±16.86	74.1±20.07	79.0±20.81	67.8±16.99
	N	94.2±5.49	80.3±34.22	66.6±43.36	62.8±14.10	65.1±15.24	75.0±20.21	61.6±29.73ᵈ	56.4±12.77
	HM	80.5±18.84ª	85.0±30.77	60.0±38.38	61.0±21.12	58.8±17.98	81.2±18.36	70.1±24.08	60.5±20.70
	SS	95.9±6.64	83.7±22.21	72.0±33.80	72.8±16.43ᵇ	72.1±13.54ᶜ	82.0±21.15	82.2±21.75	78.9±18.56ᵉ
	p	**0.00**	0.90	0.82	**0.02**	**0.02**	0.07	**0.01**	**0.00**
Year of study	First	94.1±8.89	84.2±27.48	60.2±40.31	64.9±17.27	67.3±15.45	79.4±17.60	79.4±22.41	69.5±18.65
	Second	89.7±12.21	86.0±26.43	63.2±37.69	64.4±17.80	64.1±15.34	73.3±21.10	75.1±22.14	67.6±18.16
	Third	90.7±12.51	91.8±20.77	72.1±35.05	63.8±19.11	65.4±15.73	81.7±17.61	79.8±18.18	67.5±19.42
	Fourth	92.3±11.17	82.9±31.64	69.1±39.81	62.3±17.27	65.5±16.48	80.7±20.14	77.9±22.00	67.4±16.96
	p	0.09	0.25	0.25	0.81	0.66	0.39	0.53	0.88
	Total	91.7±11.32	85.9±27.29	65.9±38.51	63.8±17.74	65.6±15.74	78.7±19.48	77.9±21.38	68.0±18.15

p<0.05, a,b,c,d,e: Statistically different from the others, SD: Standard deviation, PF: Physical function, PRL: Physical role limitation, ERL: Emotional role limitation, VT: Vitality, MH: Mental health, SF: Social functioning, PA: Pain, GHP: General health perception, M: Male, F: Female, PR: Physiotherapy and rehabilitation, ND: Nutrition and dietetics, N: Nursing, HM: Health management, SS: Sport sciences.

Table 3. SF-36 scores by the students' anthropometric measurements (n=293)

		PF, x̄ ± SD	PRL, x̄ ± SD	ERL, x̄ ± SD	VT, x̄ ± SD	MH, x̄ ± SD	SF, x̄ ± SD	PA, x̄ ± SD	GHP, x̄ ± SD
BMI (kg/m²)	≤18.49	94.6±6.58	83.3±28.23	65.2±39.90	58.9±19.50	65.5±19.23	74.4±18.97	71.2±24.58	64.17±16.06
Classification	18.5-24.9	91.4±11.78	87.0±26.19	67.3±38.25	64.2±16.14	66.2±14.68	78.9±19.33	78.2±21.22	67.99±17.90
	25.0-29.9	92.4±10.88	83.6±29.74	62.4±38.52	63.00±22.21	63.0±18.05	80.68±19.22	79.00±20.75	69.8±18.66
	≥30.0	87.00±14.40	75.00±43.30	53.3±50.55	80.00±10.61	70.4±15.13	67.5±30.10	89.00±15.47	69.00±33.05
	p	0.42	0.62	0.74	0.10	0.53	0.34	0.28	0.65
Waist Circumference (Cm)	M: <94 F: <80	92.0±11.08	86.2±26.48	67.1±38.33	63.9±17.39	66.0±15.52	79.2±19.00	77.8±21.35	68.4±17.95
	M: 94-102 F: 80-88	90.9±14.0	90.3±23.53	64.1±36.42	67.5±16.07	65.2±15.16	78.8±22.84	82.3±21.91	68.2±17.37
	M: >102 F: >88	87.0±9.64	68.7±44.11	44.4±43.4	54.1±25.48	58.0±20.57	67.7±20.26	71.4±20.73	58.7±22.97
	p	0.30	0.06	0.13	0.09	0.22	0.13	0.33	0.19
Waist/hip	M: <1.0 F: <0.85	92.0±11.47	85.9±27.03	67.0±37.82	63.9±17.42	65.6±15.48	79.3±19.26	78.1±21.47	68.3±17.83
	M: ≥1.0 F: ≥0.85	88.0±8.43	85.7±31.19	52.3±45.42	61.9±21.93	65.3±19.23	70.2±20.71	76.4±20.62	63.8±22.01
	p	0.33	0.76	**0.03***	0.12	0.32	0.88	0.70	0.23
Waist/height	<0.5	92.1±11.00	86.4±26.36	67.3±38.46	63.8±16.66	66.0±15.48	79.0±19.30	77.7±21.41	68.2±17.76
	≥0.5	90.1±12.72	83.3±31.49	59.4±38.47	63.6±22.36	63.5±16.90	77.2±20.41	78.9±21.41	67.0±20.07
	p	0.70	0.20	0.97	**0.01***	0.62	0.50	0.56	0.26

*: p<0.05, SD: Standard deviation, PF: Physical function, PRL: Physical role limitation, ERL: Emotional role limitation, VT: Vitality, MH: Mental health, SF: Social functioning, PA: Pain, GHP: General health perception, BMI: Body mass index.

medical school students in the Philippines found the highest scores on the PF subscale and the lowest scores on the VT and ERL subscales, and that depression and stress were related to low quality of life.[13] A study conducted with medical faculty students found that females, students

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with depression markers and third-year students had the lowest health-related quality of life.[14] Thus, gender differences can affect quality of life along with other factors.

The males' mean scores on the SF, PA and GHP subscales of SF-36 were higher than those of the females in our study (p<0.05) (Table 2). A study conducted with 256 university nursing students in Brazil found that males had higher PF, VT, SF, ERL, MH and PA scores than females.[15] A study with 1,751 university students in Türkiye found that males had higher GHP scores than females.[16] A study with 286 university students in Saudi Arabia found that females scored higher on FS and PA, and that males scored higher on the other subscales.[17] A study with 119 nursing students in Jordan found that the males' PF subscale scores were higher than those of the females.[11] A similar study conducted with 468 university students in the UK determined that the physical activity levels of the females were lower.[18] Another study with 3,646 university students in Spain determined that females had lower levels of physical activity and less healthy lifestyles than males.[19] These results indicate that women's quality of life is lower than that of men. The problems of women's rights may be considered an important reason for this.

The non-smokers had higher mean scores on the PRL, ERL, VT, MH and PA subscales than those students who smoked (p<0.05). There were no statistically significant differences in the SF-36 subscale scores by age group or alcohol use (p>0.05) (Table 2). Similar results were found in a study conducted with 1,751 university students in Türkiye. According to that study, non-smokers had higher PRL and VT subscale scores than smokers, but there were no statistically significant differences in SF-36 subscale scores by age group or alcohol use.[16] A study conducted with 282 university students in Lebanon found that smokers' VT and MH scores were lower by factors of 9.7 and 6.9, respectively. A study conducted with 364 university students in Iran found that smoking was associated with lower scores on SF-36 physical assessments.[20] These results indicate that smoking is also an important factor in university students' quality of life.

The fact that students in the department of sport sciences had the highest quality of life in this study may be related to the fact that the majority of students in this department are male and that the practical courses are based on exercise. Studies have shown that increased physical activity is related to increased quality of life.[21,22]

Those students who had a high waist/hip ratio also had a higher ERL score compared to those with a low ratio (p<0.05). The students with low risk of cardiovascular disease according to waist/height ratio had higher VT scores (p<0.05). On the other hand, SF-36 subscale scores did not vary statistically by BMI classification (Table 3). The SF-36 scores of university students in Lebanon also did not vary by BMI.[21] However, a study conducted in Romania found that students with BMIs of >30 kg/m^2 had lower quality of life than those with BMIs of <25 kg/m^2.[23] On the other hand, a study conducted with university students in Türkiye determined that higher BMI increased the MH scores related to quality of life by a factor of 1.4.[16]

CONCLUSION

In conclusion the quality of life of the females who participated in our study was lower than the males. In addition to the students' gender, their smoking status, their department and their anthropometric measurements also affected their quality of life contents. In order to determine the factors which affect quality of life, it may be useful to conduct more studies with larger samples and statistical analyses.

MAIN POINTS

- Gender, smoking, department and anthropometric measurements affect quality of life.

- The quality of life of the female health science students was lower than the males.

- The sports science students had the highest quality of life.

ETHICS

Authorship Contributions

DISCLOSURES

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