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Original Article

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

Authors: Ceren Gezer¹⁻⁰⁰⁰⁰⁻⁰⁰⁰²⁻¹³⁹²⁻⁷⁴⁰⁹, Uğur Bakirezen¹⁻⁰⁰⁰⁰⁻⁰⁰⁰¹⁻⁷⁴⁶⁶⁻²¹³⁶, Mesut Yalvaç²⁻⁰⁰⁰⁰⁻⁰⁰⁰¹⁻⁹⁴⁶³⁻⁴⁴⁵⁸

Institutions:

¹Department of Nutrition and Dietetics, Eastern Mediterranean University Faculty of Health Sciences, Famagusta, Cyprus

²Department of Nursing, Cyprus Science University Faculty of Health Sciences, Kyrenia, Cyprus

Corresponding Author: Ceren Gezer

E-mail: ceren.gezer@emu.edu.tr

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ABSTRACT

Background/Aims: The aim of this study is evaluate health sciences students' health-related quality of life and the factors that affect it.

Material and Methods: It was conducted with 293 faculty of health sciences students selected using stratified sampling by department. A questionnaire about their demographic characteristics and the Short Form (SF)-36 were administered in face-to-face interviews, and some anthropometric measurements were made according to techniques.

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 students 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 waist/height ratio had higher vitality scores ($p<0.05$).

Conclusion: To conclude gender, smoking, department and anthropometric measurements affect quality of life. In order to determine the factors that affect quality of life, it may be useful to conduct more studies with larger samples.

Keywords: health; lifestyle; quality of life; young adult; student

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SAĞLIK BİLİMLERİ ÖĞRENCİLERİNDE SAĞLIKLA İLGİLİ YAŞAM KALİTESİNİ ETKİLEYEN FAKTÖRLERİN BELİRLENMESİ

Özet

Amaç: Bu çalışmanın amacı sağlık bilimleri öğrencilerinin sağlıkla ilgili yaşam kalitelerinin ve bunu etkileyen faktörlerin belirlenmesidir.

Yöntemler: Bu çalışma, bölümlere göre tabakalı örnekleme yöntemine göre belirlenmiş 293 sağlık bilimleri fakültesi öğrencisi ile yürütülmüştür. Demografik özellikler ve Kısa Form (KF)-36'dan oluşan anket formu yüz-yüze görüşme tekniği ile uygulanmış olup bazı antropometrik ölçümler tekniklerine uygun olarak yapılmıştır.

Bulgular: Erkeklerin KF-36 alt gruplarından sosyal fonksiyon, ağrı ve genel sağlık algısı puan ortalamaları kadınlara kıyasla daha yüksektir ($p<0.05$). Sigara içmeyenlerin KF-36 alt gruplarından fiziksel rol kısıtlaması, duygusal rol kısıtlaması, vitalite, mental sağlık ve ağrı puan ortalamaları içenlere kıyasla daha yüksektir ($p<0.05$). Spor bilimleri öğrencilerinin KF-36 alt gruplarından vitalite, mental sağlık, ağrı ve genel sağlık algısı puanları en yüksektir ($p<0.05$). Bel/boy oranına göre kardiyovasküler hastalık riski düşük olan öğrencilerin vitalite puanları daha yüksektir ($p<0.05$).

Sonuç: Sonuç olarak cinsiyet, sigara, bölüm ve antropometrik ölçümler yaşam kalitesini etkilemektedir. Yaşam kalitesini etkileyen faktörlerin belirlenmesi için daha geniş örneklem büyüklüğüne sahip çalışmaların yapılması yararlı olabilir.

Anahtar kelimeler: sağlık; yaşam tarzı; yaşam kalitesi; genç yetişkin; öğrenci

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Introduction

Health concerns individuals' lifestyles. 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 lifestyle consists 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 change 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 that 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, thus related with lower quality of life (5). As a result, health sciences students differ from other individuals in university in terms of their anxieties, burdens and worries. This study evaluates health sciences students' health-related quality of life and the factors that affect it.

Materials and Method

This study is a cross-sectional survey that evaluates the quality of life of health sciences students at the Eastern Mediterranean University. The study was approved by the Ethical Board of

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Scientific Research and Publication of Eastern Mediterranean University dated 14.03.2016 and numbered ETK00-2016-0021. 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 of the students and the Short Form (SF)-36 were administered in face-to-face interviews.

Study Population and Sample

The study population is consisted of 1293 students who attended the Eastern Mediterranean University's Faculty of Health Sciences in the 2015-2016 academic year. 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, Sport Sciences). The sample included 293 students who all participated voluntarily from each department (Table 1).

Short From (SF)-36

SF-36 is a frequently used measure of health-related quality of life and 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). The increased scores of dimensions related with increased quality of life. SF-36 firstly developed in 1992 which have cronbach alpha coefficients between 0.62-0.94 for each eight dimensions. Then in 1999 has been validated in Turkish which have cronbach alpha coefficients between 0.73-0.76 for each eight dimensions. (6, 7). In this study

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chronbach alpha coefficients have been calculated as between 0.72-0.79 for each 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 the wall. Body mass index (BMI) was calculated by dividing body weight in kilograms by square meters (kg/m^2). The World Health Organisation rates adults with a BMI of <18.5 as underweight, $18.5-24.9 \text{ kg}/\text{m}^2$ as normal, $25-29.9 \text{ kg}/\text{m}^2$ as overweight, and $\geq 30 \text{ kg}/\text{m}^2$ 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 circumference of ≥ 94 cm for men and ≥ 80 cm for women is considered a risk, and ≥ 102 for men and ≥ 88 cm for women is considered a 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 Evaluation

The data obtained from the questionnaire was processed with Statistical Package for the Social Sciences (SPSS) 21 software. 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, the Q-Q plot and skewness-kurtosis values,
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and the variance of the data set was homogeneous as a result of the normal distribution and Levene tests. 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. P values less than 0.05 were taken to be statistically different.

Results

The students' mean age was 20.9 ± 2.22 (18-31) years. They got the highest mean score on the SF-36 subscale of PF ($91.7 \pm 11-32$) and the lowest mean score on the VT subscale ($63.8 \pm 17-75$). 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 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 health management 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 waist/height ratio had higher VT scores ($p < 0.05$). On the other hand, SF-36 subscale scores were not statistically different by BMI classification (Table 3).

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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 mental health. 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 SF-36 subscale 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 subscale (65.9 ± 38.51), MH (65.6 ± 15.74) and GHP (68.0 ± 18.15) (Table 2). However, these values are higher than those of 429 health sciences students in Turkey. This study determined that the SF-36 subscale scores were low (<50 points), and that this was related to mental health (12). A study conducted with 527 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 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 ($p < 0.05$) (Table 2). A study conducted with 256 university nursing students in Brazil found that the males had higher PF, VT, SF, ERL, MH and PA scores than the females (15). A study with 1,751 university students in Turkey found that the males had higher GHP

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scores than the females (16). A study with 286 university students in Saudi Arabia found that the females scored higher on FS and PA, and that the 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 the females had lower levels of physical activity and unhealthy lifestyles than the males (19). These results indicate that women's quality of life is lower than that of men. The problem 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 the students who smoked ($p < 0.05$). There were no statistically significant differences in SF-36 subscale scores by age group or alcohol use ($p > 0.05$) (Table 2). Similar results were found by a study conducted with 1,751 university students in Turkey, according to which 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 the 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 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

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practical courses are based on exercise. Studies have shown that increased physical activity is related to increased quality of life (21, 22).

The students who had a high waist/hip ratio had a higher ERL score than 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 $>30 \text{ kg/m}^2$ had lower quality of life than those with BMIs of $<25 \text{ kg/m}^2$ (23). On the other hand, a study conducted with university students in Turkey determined that higher BMI increased mental health scores related to quality of life by a factor of 1.4 (16).

In conclusion the quality of life of the females was lower than males. Besides gender, smoking, department and anthropometric measurements affect quality of life contents. In order to determine the factors that affect quality of life, it may be useful to conduct more studies with larger samples and statistical analyses.

MAIN TOPICS

- Gender, smoking, department and anthropometric measurements affect quality of life.
- The quality of life of the females was lower than males.
- The sports science students had the highest quality of life.

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TABLES

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	1293	100,00	293

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

		PF $\bar{x}\pm SS$	PRL $\bar{x}\pm SS$	ERL $\bar{x}\pm SS$	VT $\bar{x}\pm SS$	MH $\bar{x}\pm SS$	SF $\bar{x}\pm SS$	PA $\bar{x}\pm SS$	GHP $\bar{x}\pm SS$
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
	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

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Department	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±29.73 ^d	56.4±12.77
	HM	80.5±18.84 ^a	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±16.43 ^b	72.1±13.54 ^c	82.0±21.15	82.2±21.75	78.9±18.56 ^e
	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

a, b, c, d, e, *: p<0.05

a, b, c, d, e: statistically different from the others

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

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	PRL	ERL	VT	MH	SF	PA	GHP
		$\bar{x}\pm SD$	$\bar{x}\pm SS$	$\bar{x}\pm SS$	$\bar{x}\pm SS$	$\bar{x}\pm SS$	$\bar{x}\pm SS$	$\bar{x}\pm SS$	$\bar{x}\pm SS$
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
	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

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	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

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

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