

Research Article

Impacts of Health-Promoting Lifestyle and Personality Traits on Quality of Life in University Students

Üniversite Öğrencilerinde Sağlığı Geliştirici Yaşam Biçimi Davranışları ve Kişilik Özelliklerinin Yaşam Kalitesine Etkileri

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ABSTRACT

Purpose: The aims of this study were (1) to examine the quality of life, health-promoting lifestyle, and personality traits, and (2) to determine the relationship between the quality of life, and these factors among university students. **Material and Methods:** The undergraduate students were invited in this cross-sectional survey. A total of 263 students responded to the online survey. Quality of life, health-promoting lifestyle, and personality traits were assessed using the Short Form 36, Health-Promoting Lifestyle Profile-II, and Eysenck personality questionnaire, respectively. **Results:** General health was weakly and positively associated with spiritual growth, stress management, but negatively associated with neuroticism ($p<0.001$). Role emotional and social function were weakly and negatively associated with neuroticism ($p<0.001$). Mental health was weakly and positively associated with physical activity behaviour, spiritual growth, interpersonal relationship, stress management while it was moderately and negatively associated with neuroticism ($p<0.001$). **Conclusion:** The results revealed that the general health, vitality and mental health parameters in quality of life had positive relationships with spiritual growth and stress management. Moreover, most parameters in quality of life were negatively related to neuroticism personality traits. Therefore, it is necessary to encourage spiritual growth, teach stress management and improve personality traits in university students

Keywords: Students; Quality of Life; Personality.

ÖZ

Amaç: Bu çalışmanın amaçları; (1) üniversite öğrencilerinde yaşam kalitesi, sağlıklı yaşam biçimi davranışları ve kişilik özelliklerini incelemek ve (2) yaşam kalitesi ile bu faktörler arasındaki ilişkiyi belirlemektir. **Gereç ve Yöntem:** Bu kesitsel ankete lisans öğrencileri davet edildi. Çevrimiçi anketi toplam 263 öğrenci yanıtladı. Yaşam kalitesi, sağlıklı yaşam biçimi davranışları ve kişilik özellikleri sırasıyla; Kısa Form 36, Sağlıklı Yaşam Biçimi Davranışları Ölçeği ve Eysenck Kişilik Anketi kullanılarak değerlendirildi. **Sonuçlar:** Yaşam kalitesindeki genel sağlık ruhsal gelişim ve stres yönetimi ile zayıf fakat pozitif yönlü ilişkiliyken, nevrotik kişilik özelliği ile negatif yönde ilişkiliydi ($p<0,001$). Yaşam kalitesindeki duygusal rol ve sosyal işlev de nevrotik kişilik özelliği ile negatif yönde ilişkiliydi ($p<0,001$). Yaşam kalitesindeki ruh sağlığı fiziksel aktivite davranışı, ruhsal gelişim, kişilerarası ilişki ve stres yönetimi ile zayıf fakat pozitif yönlü ilişkiliyken, nevrotik kişilik özelliği ile orta derecede negatif yönde ilişkiliydi ($p<0,001$). **Tartışma:** Sonuçlar, yaşam kalitesindeki genel sağlık, enerji ve ruh sağlığı parametrelerinin ruhsal gelişim ve stres yönetimi ile olumlu ilişkilere sahip olduğunu ortaya koydu. Dahası, yaşam kalitesindeki çoğu parametre nevrotik kişilik özellikleriyle olumsuz yönde ilişkiliydi. Bu nedenle üniversite öğrencilerinde ruhsal gelişimi teşvik etmek, stres yönetimini öğretmek ve kişilik özelliklerini geliştirmek gerekmektedir.

Anahtar Kelimeler: Öğrenciler; Yaşam Kalitesi; Kişilik.

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Lifestyle is defined as conventional daily activities that are accepted by people during their lives and these activities can affect the health of persons (Delaun and Ladner, 2002). By selecting a lifestyle, an individual tries to maintain and promote his/her health and having a proper diet, rest, exercising, controlling body weight, not smoking and drinking alcohol and immunizing body against diseases; this set of activities constitutes the lifestyle (Tol, Tavassoli, Shariferad et al., 2013). It is essential to promote and correct lifestyle in order to maintain and promote health. The adverse lifestyle factors account for a third of all-cause deaths in men, and almost 50% for all-cancer deaths (Thomas, Wang, Ho et al., 2014). Physical inactivity and unhealthy diet lead to a higher prevalence of obesity and chronic inflammation, increasing mortality by up to 8-fold (Ma, Flanders, Ward et al., 2011).

The health promotion lifestyle is defined by Walker as follows: "a multi-dimensional pattern of perceptions and activities which are started by self-motivation and help in the persistence and promotion of their health and self-improvement (Preston, Green, and Irwin, 1990). A health-promoting lifestyle is an important determinant of general well-being and self-efficacy (Amiri, Raei, Sadeghi et al., 2023).

The significance of lifestyle is to a large extent because of its effect upon quality of life (QoL) (Potter, Perry, Hall et al., 2009). QoL is defined as an individual's perception of their position in life in the context of culture and value system where they are inserted, which also covers their aims, perspectives, standards and concerns (Karimi and Brazier, 2016). QoL of university students is affected because of their educational process, which is recognized as a high-stress period (Berlim and Fleck, 2003; Pekmezovic, Popovic, Tepavcevic et al., 2011). The emotions experienced in the academic environment such as anxiety and stress can lead to poor academic performance and illness (Austin, Saklofske and Mastoras, 2010; Saklofske, Austin, Mastoras et al., 2012). They are facing responsibility for their personal health, lifestyle and behavior for the first time. Young adults develop behaviors that may remain part of their lifestyles into adulthood, and many rapid changes occur in their bodies, minds, and social relationships during this process (Dahl, Allen, Wilbrecht et al., 2018; Lawrence, Mollborn and Hummer, 2017). At this stage, there are various difficult life conditions and different lifestyles in the university environment. With the changes in study style and unfamiliar life conditions, many students engage in a wide range of unhealthy habits, such as

inadequate nutritional intake, rest, and exercise (Association, 2007; Crovetto, 2018; Hawks, Madanat, Merrill et al., 2003; Nakamura, 2008; Werch., 2007). Also, personality traits may play a vital role in distress and health in general (Friedman and Kern, 2014). According to Eysenck, there are three basic personality traits: extroversion (tendency to be sociable, impulsive, assertive, energetic, seek excitement, and experience positive affect), neuroticism (tendency to be emotionally unstable, hostile, angry, anxious, self-conscious), and psychoticism (tendency to be tough-minded, non-conformist, aggressive, and impulsive) (Eysenck and Eysenck, 2013).

To gain a better understanding of quality of life in university students, it is important to explore factors that predict it. In this way, the factors necessary to develop a healthy lifestyle can be identified and areas that can be intervened can be determined. The aims of this study were (1) to examine the quality of life, health-promoting lifestyle, and personality traits, and (2) to determine the relationship between the quality of life, and these factors among university students.

MATERIAL AND METHODS

Ethical Aspect of the Research

The study protocol was approved by the Gazi University Ethics Commission. The undergraduate students at Gazi University were invited to this cross-sectional survey. The surveys were prepared using Google forms, and the relevant link was sent to all the students. The students read the informed consent form on the first page, and the volunteer students who agreed to participate in the study filled out the surveys. Students with chronic diseases were excluded.

Measurements

The survey consisted of four parts: demographic information, Short Form-36 (SF-36), Health-Promoting Lifestyle Profile-II (HPLP-II), and Eysenck Personality Questionnaire (EPQ), respectively.

Quality of life was assessed using the Short Form 36 (SF-36). The SF-36 questionnaire consists of eight domains: physical functioning, role-physical, bodily pain, general health, vitality, social functioning, role-emotional, and mental health. Each domain is scored between 0 (the worst health status) and 100 (the best health status).

The Health-Promoting Lifestyle Profile II (HPLP-II): The HPLP-II assesses behaviors associated with a healthy lifestyle. The HPLP II consists of six

subscales: health responsibility (nine items), spiritual growth (nine items), physical activity (eight items), interpersonal relationships (nine items), nutrition (nine items), and stress management (eight items). A total of 52 items are scored as never (1), sometimes (2), frequently (3), and regularly (4). A higher score indicates that the participant had more health-promoting behaviors.

Personality traits were assessed using by Eysenck Personality Questionnaire (EPQ). The EPQ consists of 24 items answered as yes and no to measure the three dimensions of personality traits including extraversion, neuroticism, and psychoticism. The score varies between 0 and 6 for each personality trait.

Statistical Analysis

The Shapiro-Wilk goodness-of-fit test was applied to Statistical analysis was performed by using the IBM Statistics SPSS v21.0. (IBM Corp. Armonk. NY. USA). The variables were determined by the measurement (histograms. Kolmogorov–Smirnov test) and expressed as the median and Interquartile Range (IQR) due to non-normal distribution. Categorical variables were expressed as a percentage. To decide on the factors associated with quality of life in participants, a Spearman correlation coefficient was performed. Bonferroni correction was performed to minimize the risk of increased type 1 error due to multiple correlations and the corrected significance level was set at $p < 0.001$ (Curtin and Schulz, 1998).

The correlation coefficient was classified as negligible (0-0.10), weak (0.10-0.39), moderate (0.40-0.69), strong (0.70-0.89), and very strong (0.90-1.00).

RESULTS

In A total of 263 students participated in this survey, and the post-hoc power was 0.99 for a total of 263 participants using a two-tailed correlational test (alpha at 0.05) to detect a moderate effect size ($\rho = 0.3$). The demographic characteristics of all the participants are shown in Table 1.

Quality of life, health-promoting lifestyle and personality traits of students are showed in Table 2. The correlation analysis showed that the physical functioning, role-physical, bodily pain in SF-36 were not associated with health-promoting behaviors, and personality traits in this study ($p > 0.001$, Table 3). General health was weakly and positively associated with spiritual growth, stress management, but negatively associated with neuroticism ($p < 0.001$, Table 3). Role emotional and social function were

weakly and negatively associated with neuroticism ($p < 0.001$, Table 3). Vitality was weakly and positively associated with physical activity behavior, spiritual growth, stress management, but negatively associated with neuroticism ($p < 0.001$, Table 3). Mental health was weakly and positively associated with physical activity behavior, spiritual growth, interpersonal relationship, stress management while it was moderately and negatively associated with neuroticism ($p < 0.001$, Table 3).

Table 1. Demographic characteristics of participants

	Students (n:263)
Age (years)	21 (21-22)
Gender	
Female	198 (75.3%)
Male	65 (24.7%)
BMI (kg/m²)	21.96 (19.59-23.73)
Disease	
None	229 (87.1%)
Cardiovascular	4 (1.5%)
Neurological	3 (1.1%)
Orthopedic	4 (1.5%)
Other	23 (8.7%)
Smoking status	
Never smoker	210 (79.8%)
Ex-smoker	18 (6.8%)
Current smoker	34 (12.9%)

Table 2. Quality of life, health-promoting lifestyle and personality traits of students

		All students (n:263)
SF-36 (score)	Physical functioning	95 (85-100)
	Role-physical	100 (75-100)
	Bodily pain	77.5 (75-90)
	General health	65 (55-75)
	Role-emotional	33.33 (0-100)
	Vitality	55 (45-65)
	Mental health	64 (52-76)
	Social functioning	62.5 (50-87.5)
HPLP (score)	Health responsibility	21 (18-25)
	Physical activity	19 (16-22)
	Nutrition	20 (18-23)
	Spiritual growth	27 (23-31)
	Interpersonal relationships	24 (21-27)
	Stress management	20 (17-22)
	Total	132 (116-144)
EPQ (score)	Neuroticism	4 (2-5)
	Extraversion	4 (2-5)
	Psychoticism	2 (1-3)

Table 3. The relationship between quality of life, health-promoting lifestyle and personality traits

		Physical functioning	Role physical	Bodily pain	General health	Role emotional	Vitality	Mental health	Social functioning	
HPLP	Health responsibility	r	0.105	0.074	0.042	0.104	0.000	0.127	0.135	-0.007
		p	0.088	0.233	0.499	0.092	0.995	0.040	0.029	0.906
	Physical activity	r	0.168	0.038	0.039	0.129	0.065	0.232	0.209	0.043
		p	0.006	0.538	0.531	0.037	0.296	<0.001*	<0.001*	0.487
	Nutrition	r	0.021	0.017	0.013	0.158	0.011	0.088	0.164	-0.032
		p	0.738	0.779	0.832	0.010	0.863	0.155	0.008	0.611
	Spiritual growth	r	0.169	0.045	0.061	0.254	0.132	0.291	0.382	0.185
		p	0.006	0.466	0.327	<0.001*	0.032	<0.001*	<0.001*	0.003
	Interpersonal relationships	r	0.083	0.001	-0.044	0.192	-0.050	0.145	0.267	0.046
		p	0.178	0.986	0.481	0.002	0.423	0.019	<0.001*	0.456
Stress management	r	0.141	0.043	0.059	0.197	0.118	0.242	0.258	0.102	
	p	0.022	0.491	0.337	<0.001*	0.056	<0.001*	<0.001*	0.100	
Total score	r	0.168	0.051	0.042	0.222	0.054	0.269	0.325	0.081	
	p	0.006	0.413	0.502	<0.001*	0.382	<0.001*	<0.001*	0.192	
EPQ	Neuroticism	r	-0.144	-0.038	-0.062	-0.247	-0.313	-0.391	-0.560	-0.241
		p	0.019	0.544	0.320	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*
	Extraversion	r	0.004	-0.052	0.028	0.049	0.013	0.157	0.132	-0.132
		p	0.951	0.403	0.650	0.430	0.837	0.011	0.033	0.032
	Psychoticism	r	-0.043	0.000	-0.020	-0.098	0.023	0.031	-0.025	0.082
		p	0.491	0.997	0.753	0.115	0.715	0.622	0.691	0.185

DISCUSSION

The goals of this study were (1) to examine the quality of life, health-promoting lifestyle, and personality traits, and (2) to determine the relationship between the quality of life, and these factors among university students.

To the best of our knowledge, this is the first study determine the relationship between the quality of life, health-promoting lifestyle, and personality traits in university students in detail.

Mental health was weakly and positively associated with interpersonal relationships. "Interpersonal relationship" mean an individual's status concerning establishing and sustaining the relationships which provide social support and intimacy. This aspect is considered a strong predictive factor for the quality of life. Social support and interpersonal relations are among the most stable indicators of health in different studies (Adler, Kwon, 2002; Ruvalcaba-Romero and Fernández-Berrocal, 2017).

We found a negative relationship between neuroticism and mental health. We know that people with higher levels of neuroticism have an increased risk of mental disorder (Gale, Hagenars, Davies et al., 2016). Also, neuroticism is a robust correlate and predictor of many different mental and physical disorders, and the frequency of mental health service use (Lahey, 2009). The result we found in our study supports the results of this study.

There was a negative correlation between neuroticism and physical functioning, but not significant ($p > 0.001$). In a study by Jaconelli et al. In

the elderly population, they found a significant negative relationship between neuroticism and physical functions (Jaconelli, Stephan, Canada, et al., 2013). The reason for the difference in meaning may be that we are working with the young population.

Physical activity in HPL was positively associated with vitality. Although previous studies have consistently found a positive impact of physical activity on vitality, the current study shows that it is more productive to focus not only on physical activity but also on meaning in life, in order to vitalize persons (Ju, 2017).

Stress management was positively associated with mental health. There are various difficult life conditions and different lifestyles in university life (Aceijas and Waldshausl, 2017). Stress management is important to maintain mental health during university life. Cognitive-behavioral programs to enhance students' stress management resources could recommend.

Interpersonal relationships were positively associated with mental health. School ethos has an impact on aspects of mental health such as morale and social competence, as well as on academic achievement (Weare, 2000). Bad relationships in the university are a risk factor for poor mental health, especially depression and anxiety in later life (Olweus, 1995). So, good interpersonal relationship in university life can positively affect mental and general health. Also, universities have been the object of a wide range of intervention studies, and some of these have aimed to improve interpersonal

relationships between university students, between staff and university students. Some of these interventions can succeed in improving the mental health of students in the universities.

Physical activity was positively associated with mental health. We know that an active lifestyle reduces symptoms of depression and anxiety (Piotrowski, Lunsford and Gaynes, 2021) improved self-concept (Fernández-Bustos and Contreras, 2019). University administrators should consider these benefits of physical activity and should work to add physical activity into students' lifestyle.

This study has some limitations. First, this cross-sectional study was carried out at Gazi University in Turkey. Thus, it may not reflect the overall student profile worldwide. Second, most of the participants were from the faculty of health sciences. They may have more knowledge about exercise benefits. Third, all assessments were made based on participant declaration through questionnaires, and so these assessments were not sufficiently objective.

The results reveal that the general health, vitality and mental health parameters in quality of life have positive relationships with spiritual growth and stress management. Therefore, it is necessary to encourage spiritual growth and teach stress management in university students. Moreover, most parameters in quality of life were negatively related to neuroticism personality traits. Thus, the university students who are prone to neurotic personality traits should be supported to improve their personality traits that negatively affect their quality of life.

University administrators should plan the curriculum to include activities that encourage university students to participate in health-promoting lifestyles. Future studies are needed to investigate the barriers that prevent students from practicing health-promoting lifestyle behavior. It is hoped that the results of this study will provide information to university administrators and teachers for general education program awareness, and help students to adopt a healthy lifestyle, thus promoting the health of individuals and the population of Turkish.

Ethical Approval

The study was approved by the Gazi University Ethics Commission (registration number 2023/959) and conducted in consideration of Helsinki's Declaration principles.

Authors' Contribution

Determination of the topic, literature review, data collection, analysis and writing of the article.

Conflicts of Interest Statement

None.

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