

The Relationship Between Healthy Lifestyle Behaviors and Quality of Life in

Adolescents

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Abstract

Purpose: The foundation for healthy lifestyle behaviors in adulthood begins in childhood and adolescence. Unhealthy lifestyle behaviors are associated with the development of chronic diseases in later life. The purpose of this study was to assess the relationships between healthy lifestyle behaviors and health related quality of life (HRQOL) in adolescents.

Material and methods: A descriptive correlational design was used for this study. The Physical Therapy and Rehabilitation Department students from the Kırıkkale University were recruited to the study (N = 173). Socio-demographic variables were recorded. Participants completed the Turkish version of the Health Promotion Lifestyle Profile (HPLP) that assessed healthy lifestyle behaviors, and the Short form-36. Pearson's r correlations were conducted to test relationships among the study variables. The HPLP measures how frequently respondents engaged in 48 health promoting behaviors. The four-point response format to each item (1 = never and 4 = routinely) measures the respondent's self-reported health promoting behaviors with higher scores indicating more frequent performance of the health promoting behaviors. The lowest total score is 48 and the highest 192. The items are categorized into six subscales: self-actualization, health responsibility, exercise, nutrition, interpersonal support, stress management.

Results: We determined significant correlations existed between total Health Promotion Lifestyle Profile score and other subscale scores of Short Form-36, except for the bodily pain (p<0.05).

Discussion: The health-promoting behaviors have positive relationships with most of the HRQOL dimensions. So, interventions to promote positive lifestyle changes can have the potential to improve the HRQOL in adolescents.

Key Words

Adolescent, depression, anxiety, lifestyle, health, health related quality of life

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Introduction

According to the World Health Organization (WHO), health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity (1). WHO has reported that 60% of an individual's health-related quality of life depends on his/her lifestyle (2).

A health-promoting lifestyle is a multiof self-initiated dimensional pattern feelings and behaviors aiming at ensuring individual's health, self-actualization, and self-accomplishment (3) .Healthy lifestyle includes low-fat diet, regular physical activities, healthy body weight and avoiding smoking and stress will help to prevent many chronic diseases (4,5). The healthy lifestyle behaviors of adults begin in childhood and adolescence (6).Adolescence is the period of dynamic transition from childhood to adulthood and is associated with rapid changes in body, mind, and social relationships (7). At this period, there are some difficult life conditions and different lifestyles at the university life. Adolescents facing with different study style and different lifestyle may have unhealthy lifestyle behaviors. Several studies on healthy lifestyles indicate that majority of university students are minimally engaged in health-promoting behaviors and exhibit behavioral health risks, such as tobacco use, alcohol and substance abuse, and improper diet and activities (8, 9, 10. physical 11). Furthermore, unhealthy lifestyle behaviors associated with the development of chronic diseases such as diabetes mellitus. hypertension, cardiovascular disease, and some types of cancers. Therefore healthpromoting behavior among adolescents has become worldwide research area (12). The purpose of this study was to assess the relationships between healthy lifestyle behaviors and health related quality of life (HRQOL) in adolescents.

Material and methods

A descriptive correlational design was used for this study. Physical Therapy and Rehabilitation Department students from Kırıkkale University were recruited to the study (N = 197). 24 subjects were excluded from the study due to chronic diseases. So, total 173 subjects were assessed. The study was approved by the Ethics Committee of the Kırıkkale University. All participants signed a written informed consent. This study was performed in accordance with the Declaration of Helsinki. Sociodemographic variables including age. gender, body mass index (BMI), family monthly income, physical activity habituations, cigarettes and alcohol usage, any chronic disease (diabetes mellitus, cardiopulmonary and vascular, neurological and mental diseases) were recorded. The family monthly income of participants was categorized into three ranges: (low) less than 1200 Turkish Liras (TL); (medium) 1201-4000 TL; and (high) than 4001 TL. Participants greater completed the Turkish version of the Health Promotion Lifestyle Profile (HPLP) that assessed healthy lifestyle behaviors. HPLP items are categorized into six subscales: self-actualization (13 items), health responsibility (10 items), exercise (5 items), nutrition (6 items), interpersonal



support (7 items), and stress management (7 items).

Self-actualization measures attitudes and expectations from life: health responsibility assesses paying attention to and accepting responsibility for one's own health. Exercise measures regular exercise patterns; nutrition assesses meal patterns and food choices; interpersonal support is concerned with a sense of intimacy and close relationship and stress management quantifies ability to cope with stress. The HPLP how frequently measures engaged 48 health respondents in The promoting behaviors. four-point response format to each item (1 = never)and 4 = routinely) measures the self-reported respondent's health promoting behaviors with higher scores indicating more frequent performance of the health promoting behaviors. The lowest total score is 48, the highest 192.

The Turkish version of the Medical Outcomes 36-Item Short Form Health Survey (SF-36) was used for the assessment of health related quality of life (HRQoL) of participants. The SF-36 includes eight multi-item scales containing two to 10 items each plus a single item to assess health transition 16. The scales of cover the dimensions physical functioning (PF), role physical (RP), bodily pain (P), general health (GH), vitality (V), social functioning (SF), role emotional (RE), and mental health (MH). The SF-36 allows scoring of the eight above-mentioned scales. The scores range from 0 (maximal symptom / maximal limitations / poor health) to 100 (no symptoms / no limitations / excellent health). It is the most widely used general health status instrument. (13,14).

Statistical analysis

All statistical analyses were carried out with software from the Statistical Package for the Social Sciences (IBM SPSS v. 21) for Windows. Data were presented as mean with standard deviation, and percentage. Pearson's r correlations were conducted to test relationships among the study variables. Correlation coefficients were interpreted as follows: very weak = .00 to 0.19; weak = 0.20 to 0.39; moderate = 0.40 to 0.59; strong = 0.60 to 0.79; very strong = 0.80 to 1.00). P values less than 0.05 were considered as significant (two-tailed) (15).

Results

The mean age of participants was $20.88 \pm$ 1.79 years. 96 (55.5 %) participants were women. Body mass index was 22.37 ± 3.19 kg/m2. The family income of the 58 (33.5%) participants was low, 93 (53.7%) medium and 22 (12.7%) high. 158 (91.3%) subjects had not smoked and 153 (89%) subjects were not using alcohol. 149 (86.1) subjects did not have any chronic diseases. Table 1 summarizes the sociodemographic characteristics of adolescents. Table 2 and 3 summarize HLPL, and SF-36 variables, respectively. Total HPLP score was 122.49±19.16. The highest score of SF-36 was taken at the physical functions subscale (88.18 ± 15.03). Vitality subscale score was the lowest (61.99 ± 16.31) . All of the HLPL items, except the health responsibility items, were



correlated with the vitality and mental health subscales of the SF-36. Significant correlations existed between total HPLP score and other subscale scores of SF-36, except for the bodily pain (p<0.05).

Table 1: Socio-Demographic Characteristics of Adolescents

Socio-demographic Features	Statistics
Age, years, X ± SD	20,88 ±1,79
VKI, kg/m ² , X \pm SD	22,37 ± 3,19
Gender, n (%)	
Women	96 (55.5)
Men	77 (44.5)
Family Income, n (%)	
Low	58 (33.5)
Middle	93 (53.7)
High	22 (12.7)
Cigarettes, n (%)	
Yes	15 (8.7)
No	158 (91.3)
Alcohol, n (%)	
Yes	19 (11)
No	153 (89)
Any chronic disease, n (%)	
Yes	0 (0.0)
No	173(100)
Physical Activity Level, n (%)	
Inactive	28 (16.2)
Minimal active	112 (64.2)
High active	33 (19.1)
Total Physical Activity (IPAQ-SF), MET-DK/ HAFTA,	2107.41 ± 1901.77
$X \pm SD$	



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Table 2. The Health Promotion Lifestyle Profile scores of Participants						
The Health Promotion Lifestyle Profile	$X \pm SD$					
(HPLP) Subscales						
Self-actualization	36.07 ± 6.33					
Health responsibility	22.38 ± 5.04					
Exercise	10.58 ± 3.04					
Nutrition	15.71 ± 3.49					
Interpersonal support	20.23 ± 3.57					
Stress management	17.70 ± 3.84					
Total HPLP scores	122.49 ±19.16					
Table 3 Health Related Quality of Life Scores of P	articinants					
Tuble 5. Health Related Quality of Life Beeres of F	articipants					
Health Related Quality of Life Domains	$X \pm SD$					
Health Related Quality of Life Domains Physical function	$\frac{X \pm SD}{88.18 \pm 15.03}$					
Health Related Quality of Life Domains Physical function Role-physical						
Health Related Quality of Life Domains Physical function Role-physical Bodily pain						
Health Related Quality of Life Domains Physical function Role-physical Bodily pain General health	$X \pm SD$ 88.18 ± 15.03 80.06 ± 32.90 75.69 ± 20.41 66.06 ± 17.81					
Health Related Quality of Life Domains Physical function Role-physical Bodily pain General health Vitality	$X \pm SD$ 88.18 ± 15.03 80.06 ± 32.90 75.69 ± 20.41 66.06 ± 17.81 61.99 ± 16.31					
Health Related Quality of Life Domains Physical function Role-physical Bodily pain General health Vitality Social function	$X \pm SD$ 88.18 ± 15.03 80.06 ± 32.90 75.69 ± 20.41 66.06 ± 17.81 61.99 ± 16.31 73.12 ± 22.11					
Health Related Quality of Life Domains Physical function Role-physical Bodily pain General health Vitality Social function Role-emotional	$X \pm SD$ 88.18 ± 15.03 80.06 ± 32.90 75.69 ± 20.41 66.06 ± 17.81 61.99 ± 16.31 73.12 ± 22.11 62.04 ± 40.56					

Table 4.	The	Relationship	between	The	Health	Promotion	Lifestyle	Profile	scores	and	The	Health	Related
Quality o	f Lif	e Scores											

Pearson	Self- actualiza tion	Health responsibilit y	Exercise	Nutrition	Interper- sonal support	Stress managemen t	Total scores
Physical	r=.325**	r=.097	r=.309**	r=.150*	r=.209**	r=.226**	r=.292**
function	p=.000	p=.204	p= .000	p= .049	p= .006	p= .003	р= .000
Role-	r=.315**	r=.078	r= .254**	r=.194*	r=.210**	r=.126	r=.254**
physical	p= .000	p=.308	p= .001	p= .010	p= .006	p= .099	p= .001
Bodily pain	r=.070	r=027	r=001	r=.006	r=069	r= .085	r=004
	p=.359	p=.723	p=.991	p=.934	p=.369	p=.268	p=.957
General	r=.489**	r=.125	r= .227**	r=.184*	r=.282**	r= .265**	r=.359**
health	p= .000	p=.102	p= .003	p= .016	р= .000	р= .000	р= .000
	r=.468**	r=.264**	r= .391**	r=.228**	r=.322**	r=.351**	r= .449**
Vitality	p= .000	р= .000	p= .000	p= .003	p= .000	p= .000	p= .000
Social	r=.313**	r=.014	r= .087	r=.044	r=.198**	r=.143	r=.170*
function	p= .000	p=.853	p=.257	p=.568	p= .009	p=.061	p= .026
Role-	r=.000**	r=.149	r= .267**	r=.127	r=.128	r=.177*	r=.240**
emotional	p= .002	p=.051	p= .000	p=.095	p=.094	p= .020	p=.002
Mental	r=.537**	r=.207**	r=.276**	r=.255**	r=.451**	r=.364**	r=.462**
health	p= .000	p= .006	p= .000	p= .001	p= .000	p= .000	p= .000



Discussion

The health-promoting behaviors have positive relationships with most of the HRQOL dimensions. The average of HLPL total score was 122.49±19.16 in the present study. The mean of total HLPL score in the other studies which had assessed university students in Turkey were 116.1 - 134.4. (16, 17, 18, 19, 20) Ünalan et al. compared the students of health and social programs and indicated significant correlation in the exercise habit, self-realization, nutrition, and HLPL mean HPLP scores. total score was 118.46 ± 21.38 in the students of health programs, whereas it was determined as 125.34±23.95 in the students of social programs (21).

In our study, the university students' highest mean score among the six healthpromoting lifestyles was for selfactualization. The lowest score was for exercise. Physical Activity decline was evident during the transition into early adulthood, with the steepest decline occurring at the time of entering a university (22). A sedentary lifestyle is a common and serious problem among university students. Compared to young adults in general, the pressure of study is so severe for university students that much of their time and energy is likely to be occupied with their studies. On the other hand, the popularization of computers and the Internet may provide more choices of entertainment and reduce interest in exercise. Lack of exercise facilities is also a major reason why university students do not participate actively in exercise. Similarly Kırıkkale city is not enough

exercise opportunities for students. The students of the Kırıkkale University have a sedentary lifestyle as they spend much time by using various technological devices such as computers, smart phones, and tablets. Moreover, they do not do physical activity and exercise due to the absence of activity areas. This result is similar to those obtained in other studies (23, 24).

In all aspects of healthy lifestyle, the Uiversity students in the health science faculty can be better than students in the other faculty of the university, which may be because training of medical curriculums makes the health sciences students pay more attention to adopt healthy lifestyle. It was also reported in the study by Can et al. (25) that the nursing students had more positive health-promoting lifestyles than those of the non-nursing students. The physiotherapy students involved in this study also had positive health promotion lifestyle. The result also suggests the importance of health education for university students which aims to promote healthy lifestyle.

Health responsibility is defined as person actively feels responsibility for his own well-being. Taking care about his own health contains obtaining information about health and applying on professional help, if required. The students did not smoke and did not use alcohol and these are also several parameters which indicate positive lifestyle. Detailed physical activity levels and nutritional habits were not examined as specifying the factors affecting healthy lifestyle was not an aim of the study. Further research should



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assess these habits and determine its relationship with healthy lifestyle.

Pain subscale had no relationship with the quality of life and it could be explained as the students were young and they had no chronic disease. Bottorf et al. used the HLPL scale improved by Walker and examined the roles of cognitive perceptions on health promotion behaviors. They revealed that weak correlations were found among health control, self-efficacy, and health status (26). Bagwell found perception of health to be positively related to HLPL scores (27). Interventions to promote positive lifestyle changes can have the potential to improve HRQOL in adolescents.

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