An investigation into the health-promoting behaviors and their associated factors in 18-29 year-old youth of Khorramabad city in 2020

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Abstract

Health-promoting behaviors and healthy lifestyle are the main strategies to preserve people's health. Considering the importance of the youth's health in promoting the society's health, the present study was conducted to investigate the health-promoting behaviors and their associated factors in 18-29 year-old youth of Khorramabad city in 2020. In this cross-sectional study, 358 individuals aged 18 to 29 years living in Khorramabad city in the first half of 2020 were included. This research sample was selected using a stratified multistage random sampling method. First, Khorramabad city was divided into three regions: north, central, and south regions, based on the urban map. Then, two therapeutic health centers, two recreation centers, two educational centers, two business centers, and two religious cultural centers were randomly selected from each region. After that, the eligible samples were selected to enter the study by applying the convenience sampling method from each of these centers proportional to the calculated sample size. The sample size was estimated to be 358 people. The data was analyzed using SPSS software version 19.0. Descriptive statistical methods, such as mean, standard deviation and ratios, and frequency percentages were used to describe the terms. In addition, independent-t test, one-way Analysis Of Variance (ANOVA), and linear regression analysis were used to analyze data. The mean age of the study participants was 24.6±2.6 years. Of the total participants in the study, 217 (60.6%) were male and the rest were female. The total mean score of health-promoting behaviors in participants of the study was 122.6±16.13 (achievable range: 52-208). Overall, the status of health-promoting behaviors was undesirable in 12% of participants, moderate in 87.4%, and desirable in 0.6%. In univariate analysis, the difference in the total score of health-promoting behaviors was statistically significant between the subjects by gender (p=0.002), marital status (0.049), education level (0.001), occupation (<0.001) and history of regular smoking (<0.001). In linear regression analysis, gender, marital status, education level, and occupation were the most important predictors of health-promoting behaviors in the participants of this study. Considering the pivotal role of youth in society, proper planning seems necessary to improve their performance in the area of health promotion.

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Key words: Health-promoting behaviors; youth; lifestyle; Khorramabad; Iran

Acknowledgments: The researchers of this project would like to express their gratitude and appreciation to the respected supervisor and personnel of the health therapeutic centers of Khorramabad, who helped us in this research. This article is extracted from the dissertation of Mr. Amir Hossein Bagheri, student of medicine. As the dissertation is design-free, it did not have a source of financial support.

Conflict of interest: The authors declare no conflict of interest.

Availability of data and materials: All data generated or analyzed during this study are included in this published article.

Ethics approval and consent to participate: The Ethics Committee of Lorestan University of Medical Sciences, Khorramabad approved this study (IR.LUMS.REC.1399.053). The study is conformed with the Helsinki Declaration of 1964, as revised in 2013, concerning human and animal rights. All patients participating in this study signed a written informed consent form for participating in this study.

Informed consent: Written informed consent was obtained from a legally authorized representative(s) for anonymized patient information to be published in this article.

Received for publication: 5 March 2022.
Revision received: 1 June 2022.
Accepted for publication: 15 June 2022.

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Licensee PAGEPress, Italy
Journal of Biological Research 2022; 95:10445
doi:10.4081/jbr.2022.10445

Introduction

Nowadays, research has shown that the cause of many chronic diseases is human lifestyle and behavior.[1] Performing health-promoting behaviors and adopting a healthy lifestyle are among the best strategies by which people can preserve their health.[2] Disease prevention and health promotion have always received attention from the health system in Iran. This goal has also received attention worldwide such that in addition to putting emphasis on the goals of previous programs, the fourth ten-year plan (Healthy

People 2020) has considered two new goals. These two goals include encouraging healthy behaviors and creating a healthy physico-social environment to promote the health of people and society.[3] As people's longevity increases, the importance of health-promoting behaviors becomes increasingly apparent with regard to maintaining people's function and independence and increasing their quality of life. Health-promoting behaviors are among major health determinant criteria that are known as an underlying factor for not getting many diseases. Tehrani *et al.* also showed in a study that health-promoting behaviors in youth do not have the same weight and value probably due to personal characteristics of each person.[4,5] Modification of health promoting behaviors is an important and significant strategy for prevention of non-communicable diseases during the 20th and 21st centuries.[6] About half of the country's population is made up of adolescents and youth.[7] They, taken together, form a considerable proportion of the country's population, but despite their significant role in forming the future generation and promoting the society's health, they are not considered a priority in collective and national efforts done toward health promotion all around the world as they are regarded to be in a relatively healthy stage of life.[8] Youth, on the other hand, often adopt behaviors that put them at risk for life-threatening diseases and accidents. Preventable high-risk behaviors, such as drug abuse, unprotected sex, unhealthy diet, poor physical activity patterns, driving without due care and attention to laws, and violent behaviors are significantly associated with morbidity and mortality in this age group.[9] On the other hand, youth are rarely interested in learning life and social skills to manage their health and often do not fulfill self-care responsibilities in the best way. Certainly, most of the healthy and unhealthy habits are formed during adolescence and youth and spread to later life stages.[10] Therefore, planning to preserve health behaviors or modify undesirable ones and create and keep health-promoting behaviors in youth is unavoidable. Results from studies conducted in different countries showed that youth are highly engaged in high-risk behaviors, such as alcohol use and smoking, low physical activity, poor diet, and insufficient sleep and rest.[11-13]

In a study by Danaei *et al.* on 560 medical, dental, and pharmacy students of Kerman University of Medical Sciences in 2016, the status of health promoting behaviors was estimated to be undesirable in students. A significant relationship was observed between the mean score of health-promoting behaviors, nutrition, spiritual growth, interpersonal relations and stress management dimensions, and field of study.[14] In a study conducted by Babak *et al.* entitled "The Situation of Health-Promoting Lifestyle among the Students Living in Dormitories of Tehran University of Medical Sciences, Iran" in 2012, in a sample consisting of 140 girls and 110 boys, the mean score of health promoting lifestyle was obtained to be 119±20.3 from the maximum achievable score of 208, indicating a moderate status of health promoting lifestyle.[15] They found a significant relationship between the promoting lifestyle and the variables of employment status, marital status, age, and grade point average.[15] In a study conducted by Motlagh *et al.* on 440 students of Yazd University of Medical Sciences, the highest and the lowest score acquired was 26.03±5.04 and 16.2±4.8 in the spiritual growth subgroup and physical activity subgroup, respectively.[16] In another study by Von Bothmer on a population of students in Sweden, it was found that female students had healthier eating habits but got further stressed compared to their male counterparts, while male students were less physically active and were more overweight and obese.[17] In Balali *et al.*'s study on health-promoting lifestyle, which was conducted with the participation of 476 female high school students in Kerman in 2015, the studied subjects acquired the highest and the lowest score on the sub-domain of interpersonal relations and the sub-domain of physical activity, respectively. The mean score of health-promoting lifestyle was significantly associated with different educational grades ($p<0.001$), father's occupation ($p=0.003$), father's education ($p=0.04$), and doing physical activity ($p<0.001$).[18] Considering the importance of the youth age group and the role they play in creating a productive society and increasing the socio-economic development index of societies, this study was designed to assess health-promoting behaviors and their related factors in 18-29 year-old youth in Khorramabad.

Materials and Methods

This is a cross sectional study. This research sample was selected using a stratified multistage random sampling method. First, Khorramabad city was divided into three regions: north, central, and south regions based on the urban map. Then, two therapeutic health centers, two recreation centers, two educational centers, two business centers, and two religious cultural centers were randomly selected from each region. After that, the eligible samples were selected to enter the study by applying the convenience sampling method from each of these centers proportional to the calculated sample size. According to the mean formula and considering the error of $\sigma=0.05$ and $\varepsilon=15.2$ (based on reference number 9) and an accuracy of $d=0.05$, the sample size was calculated to be 358 based on the following formula:

$$n = \frac{2\left(1-\frac{\sigma}{2}\right)^2\varepsilon^2}{d^2}$$

$$2\left(1-\frac{\sigma}{2}\right) = 1.96$$

$$15.2=\varepsilon\ ,\ d = 0.05\ ,n = 358$$

Inclusion criteria included being in the age range of 18 to 29 years and living in the city of Khorramabad. Exclusion criteria included having severe mental and physical illness, having a special diet, having an incurable disease, and unwillingness to participate in the study. The data collection instrument was a two-part questionnaire. The first part of this questionnaire includes items asking about demographic data, such as age, gender, education level, and marital status, as well as data about the socio-economic status of youth, life network, medical records of the individual or his first degree relatives, and history of regular smoking, drugs abuse, and alcohol. The second part of the questionnaire included 52 questions on Health promotion lifestyle profile-II (HPLP-II). The HPLPII Questionnaire is a modified version of HPLP developed by Walker *et al.* This questionnaire provides a multidimensional evaluation of health-promoting behaviors. It measures the use of health-promoting behaviors in 6 dimensions: health responsibility (9 items), physical activity (8 items), nutrition, spiritual growth (9 items), stress management (8 items), and interpersonal relations (9 items). There are four options per item, varying from 1 to 4 (never, sometimes, often, and routinely). The total score range of health-promoting behaviors is 52-208, and a separate score is calculated for each dimension. The validity and reliability of this questionnaire were examined by Mohammadi Zeidi *et al.*[19] in Iran in 2012 using an internal consistency assessment method. Cronbach's alpha coefficient was 0.82 for the whole instrument and from 0.64 to 0.91 for the sub-branches.[19] Questionnaires were collected completed face to face with the youth participating in the study. These interviews were conducted by three

trained medical students and all questions were asked directly to the participants. Other items of the questionnaire were also asked and completed by the researcher. The data was analyzed using SPSS software version 19.0. Descriptive statistical methods, such as mean, standard deviation and ratios, and frequency percentages were used to describe the terms. In addition, independent-t test, one-way ANOVA, and linear regression analysis were used to analyze data. Post huc test with Bonferroni correction was used for pairwise comparisons. Levene's test was used to determine the homogeneity of variances in intergroup comparisons. Kolmogornov-Smirnov test was used to determine the normality of the distribution of quantitative variables.

Results

In the present study, a total of 358 youth of 18-29 years old, who resided in Khorramabad and the suburb, were investigated in terms of health-promoting behaviors. The mean age of the study participants was 24.6±2.6 years; the youngest and the oldest participant was 18 and 29 years old, respectively. Of the total participants in the study, 217 (60.6%) were male and the rest were female (Table 1). About 51.5% of study participants were in the age range of 24-28 years and 48.5% in the age range of 25-29 years.

Most of study participants (68.7%) were single and the majority of them (89.1%) lived in the urban areas (Table 1). Considering education level, 70.7% of participants had university education, 24.3% had high school education and diploma, and 5% had junior secondary education and lower (Table 1). Regarding the employment status, 44.7% of the studied subjects were students, 8.4% were employees, 8.4% were freelance/self-employed, and 7.5% were housewives. Table 1 shows in detail the frequency distribution of other occupations of study participants.

About 14.8% of the studied subjects had a history of regular smoking, the history of severe chronic illness in first-degree relatives was positive in 29.1% of participants, and 8.7% of participants reported a history of chronic illness in themselves.

Table 2 shows in detail the frequency distribution of desirability level of health-promoting behaviors and their different dimensions based on the obtained percentage score of the total score. If one gains a score higher than 80% of the total score and on each dimension, the status of health promoting behaviors is classified to be desirable, if 50 -80% of the score is gained, the status is classified to be semi-desirable (moderate), and if one gains a score less than 50%, the status is classified to be undesirable. Overall, the status of health-promoting behaviors was undesirable in 12% of participants, moderate in 87.4%, and desirable in 0.6%. Considering the health responsibility dimension, the status was estimated to be undesirable in 42.5%, moderate in 56.7%, and desirable in 0.8%. Regarding physical activity dimension, the status was estimated to be undesirable in 43.6%, moderate in 52.2%, and desirable in 4.2%.

In the nutrition dimension, the status was estimated to be undesirable in 18.7% of the studied subjects, moderate in 79.6%, and desirable in 1.7%.

In the spiritual growth dimension, the status was estimated to be undesirable in 11.5% of the studied subjects, moderate in 81.8%, and desirable in 6.7%.

In the stress management dimension, the status was estimated to be undesirable in 48.6% of the studied subjects, moderate in 50.8%, and desirable in 0.6%.

In the interpersonal relations dimension, the status was esti-

Table 1. Frequency distribution of demographic characteristics of the subjects.

Characteristic type	Absolute frequency Number	Relative frequency Percent	Cumulative frequency Percent
Gender			
Male	217	60.6	60.6
Female	141	39.4	100
Age groups			
18-24	184	51.4	51.4
25-29	174	48.6	100
Marital status			
Married	98	27.4	27.4
Single	246	68.7	96.1
Others	14	3.9	100
Education level			
Junior secondary education and lower	18	5	5
High school education and diploma	87	24.3	29.3
University education	253	70.7	100
Place of residence			
Urban areas	319	89.1	89.1
Rural areas	39	10.9	100
Occupation			
Unemployed	24	6.7	6.7
Employee	30	8.4	15.1
Worker	19	5.3	20.4
Housewife	27	7.5	27.9
Freelance/self-employed	30	8.4	36.3
Farmer	23	6.4	42.7
Student	160	44.7	87.4
Others	45	12.6	100

mated to be undesirable in 10.3% of the studied subjects, moderate in 81.3%, and desirable in 8.4%.

Additionally, Table 2 and 3 shows in detail the mean score and standard deviation of health-promoting behaviors and their different dimensions in the studied subjects. The range of achievable and observed scores is mentioned in the table for comparison. The total mean of health-promoting behaviors in the studied subjects was 122.6±16.13 (the achievable score was 52-208).

The mean score and standard deviation of health-promoting behaviors and their different dimensions are compared in Table 3 by demographic characteristics of the studied subjects. Female participants significantly scored higher on health responsibility, stress management, and interpersonal relations than male participants. Male participants significantly scored higher on the physical activity dimension compared to their female counterparts (p=0.049). The mean score of health-promoting behaviors was 125.8 and 120.5 in female and male participants, respectively. This difference was statistically significant based on the independent t-test

Table 2. Mean and standard deviation of the score and frequency distribution of health-promoting behaviors (desirability level) and their different dimensions in the studied subjects.

Desirability level based on the acquiredjj score	Health-promoting behaviors and their different dimensions						
	Health responsibility Number (percent)	Physical activity Number (percent)	Nutrition Number (percent)	Spiritual growth Number (percent)	Stress management Number (percent)	Interpersonal relations Number (percent)	Total score Number (percent)
(Undesirable)	152 (42.5)	156 (43.6)	67 (18.7)	41 (11.5)	174 (48.6)	37 (10.3)	43 (12)
(moderate)	203 (56.7)	187 (52.2)	285 (79.6)	293 (81.8)	182 (50.8)	291 (81.3)	313 (87.4)
(desirable)	3 (0.8)	15 (4.2)	6 (1.7)	24 (6.7)	2 (0.6)	30 (8.4)	2 (0.6)
Total	358 (100)	358 (100)	358 (100)	358 (100)	358 (100)	358 (100)	358 (100)
Mean score and standard deviation	26.11±5.16	17.391±4.31	18.92±2.92	28.5±4.95	10.74±2.26	20.92±3.4	122.6±16.13
Achievable range of scores	12-48	8-32	8-32	11-44	5-20	8-32	52-208
Observed range of scores	12-48	8-32	8-32	11-44	5-20	9-30	53-206

Table 3. Mean score and standard deviation of health-promoting behaviors and their different dimensions in the studied subjects by demographic characteristics.

Demographic characteristics	Score of health-promoting behaviors and their different dimensions						
	Health responsibility µ±SD	Physical activity µ±SD	Nutrition µ±SD	Spiritual growth µ±SD	Stress management µ±SD	Interpersonal relations µ±SD	Total score µ±SD
Gender							
Male	25.2±5.4	17.7±4.3	18.7±2.8	8.3±5.1	10.3±2.11	0.3±3.1	120.5±16.3
Female	27.5±4.5	16.8±4.3	19.2±3	228.8±4.7	1.4±2.4	221.9±3.6	125.8±15.3
P-value	<0.001	0.049	0.159	0.288	<0.001	<0.001	0.002
Marital status							
Married	27.1±5.0	16.6±4.3*	19.8±3.0	29.2±5.2	10.7±2.6	21.2±3.6	124.7±17.6
Single	25.8±5.2	17.7±4.4	18.6±2.8	28.4±4.8	10.8±2.2	20.9±3.3	122.3±15.6
Others	24.9±3.6	17.6±2.9	17.1±1.3*	25.3±3.9*	10.5±1.6	18.3±2.8*	113.7±9.9*
P-value	0.084	0.132	<0.001	0.021	0.846	0.01	0.049
Education level							
Junior secondary education and lower	21.4±3.6*	15.9±3.2*	19.1±3.6	25±4.5*	9.6±1.6	19.6±2.7	110.8±13.4*
High school education and diploma	25.2±5.5	16.4±4.5	19±3.1	27.9±5.4	10.6±2.4	20.9±4.2	120±19.5
University education	26.8±4.9	17.8±4.2	18.9±4.7	28.9±4.7	10.9±2.2	21±3.1	124.3±14.5
P-value	<0.001	0.01	0.867	0.003	0.061	0.225	0.001
Occupation							
Unemployed	22.9±6.5	16.6±5.4	18.7±4.2	23.4±6.3	9.5±2.0	18.1±4.4	109.3±19.0
Employee	28.8±4.9	19.9±4.2	19±2.9	29.5±5.3	11±1.7	20.8±3.2	129.1±16.6
Worker	22.7±4.2	13.9±3.6	18.8±2.8	26.2±5.6	9.7±1.6	19.9±3.8	111.4±13.9
Housewife	29±5.3	16.5±4.2	19.1±3.3	29.2±4.7	11.1±3.4	22.5±3.4	127.5±20.2
Freelance/self-employed	24.4±4.2	17.5±4.4	17.7±2.3	27.3±3.9	10.2±1.7	20.3±3.1	117.3±13.1
Farmer	25.2±5.2	16.6±3.8	21.4±1.9	28.2±4.3	10.7±2.8	21.3±2.5	123.3±15.5
Student	26.5±4.7	17.9±4.1	18.9±2.8	29.7±4.4	11±2.2	21.2±3	125.3±13.9
Others	25.9±4.8	16.5±3.9	18.5±2.5	27.7±4.6	10.9±2.1	21.3±3.7	120.8±15.7
p-value	<0.001	0.001	<0.001	<0.001	0.028	<0.001	<0.001

(p=0.002). The difference in the score of health-promoting behaviors and their different dimensions was not statistically significant between participants by age groups. Additionally, based on one-way ANOVA, the difference in the score of health-promoting behaviors between participants was statistically significant by marital status (p=0.049). Married participants significantly scored higher on nutrition (p<0.001), interpersonal relations (p=0.01), and spiritual growth (p=0.021) dimensions than their single counterparts and other persons. The difference in the score of health-promoting behaviors was statistically significant in the studied subjects by the level of education (p=0.001), and people with university education significantly scored higher on health-promoting behaviors than other participants. Moreover, people with university education significantly scored higher on health responsibility (p<0.001), physical activity (p=0.01), and spiritual growth (p=0.003) than other participants. Based on the results of one-way ANOVA, the total mean score of health-promoting behaviors was significantly higher in employees, housewives and students than other people and other occupations (p=0.001). The mean score obtained by housewives and employees for health responsibility dimension was significantly higher than other people (p<0.001), and this difference was statistically significant. The employees, students, and self-employed people scored higher on the physical activity dimension than other people and this difference was statistically significant (p≤0.001). In the nutrition dimension, the mean score gained by people working in the agricultural area, housewives, and employees was significantly higher than other participants (p=0.001). In the spiritual growth dimension, the students, employees, and housewives scored significantly higher than others (p<0.001). Regarding stress management dimension, the mean score gained by students, employees, and housewives was significantly higher than other participants in the study (p=0.028); and finally, the housewives, farmers, and students scored significantly higher on interpersonal relations dimension than other participants of the study (p<0.001).

According to the results of independent t-test, the difference in the total score of health-promoting behaviors was not statistically significant between the study participants by place of residence (p=0.368). The difference between the people residing in urban areas and those residing in rural areas was not statistically significant in the health responsibility (p=0.086), spiritual growth (p=0.689), stress management (p=0.205), and interpersonal relations (p=0.914) dimensions. People residing in urban areas scored significantly higher on the physical dimension than those residing in rural areas (p=0.023). In the nutrition dimension, the mean score gained by people residing in urban areas was significantly higher than those residing in rural areas (p=0.001). The difference in the total score of health-promoting behaviors in the studied subjects was statistically significant by the history of regular smoking. The mean score of smokers was significantly lower than non-smokers (p<0.001). Furthermore, the mean score of non-smokers was significantly higher than that of smokers in health responsibility (p<0.001), nutrition (p<0.009), spiritual growth (p<0.001), stress management (p<0.001) and interpersonal relations (p<0.001) dimensions. The difference in the score of physical activity between people with a history of regular smoking and non-smokers was not statistically significant (p=0.2). According to the results of independent t-test, the difference in the total score of health-promoting behaviors and their different dimensions was not statistically significant by the history of chronic disease in the first-degree relatives. Additionally, the difference in the total mean score of health-promoting behaviors and their different dimensions was not statistically significant between the studied subjects based on the history of a chronic disease in the person (Table 4).

In linear regression analysis, all variables whose relationship with health-promoting behaviors was significant in univariate analysis were entered in the regression model to determine the predictors of health-promoting behaviors in the studied youth. Considering the standard coefficients B in linear regression analysis, gender (p=0.043), marital status (p=0.021), education level (p=0.006), and history of regular smoking (p<0.001) were among predictors of health-promoting behaviors in the studied subjects. The relationship between occupation and performing health-promoting behaviors was not statistically significant in multivariate analysis (p=0.134) (Table 5).

Table 4. Linear regression analysis of predictors of health-promoting behaviors in the studied subjects.

Coefficients[a] Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	93.682	6.093		15.376	0.000
	sex	3.445	1.696	0.104	2.031	0.043
	marriage	-3.823	1.654	-0.120	-2.312	0.021
	education	4.138	1.496	0.147	2.766	0.006
	job	0.595	0.396	0.080	1.503	0.134
	smoking	8.928	2.442	0.197	3.656	0.000

[a]Dependent Variable: total.

Table 5. Model summary.

Model Summary Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.353[a]	0.125	0.112	15.20231

[a]Predictors: (Constant), smoking, marriage, gender, level of education, job.

Discussion

Generally, the mean score of health-promoting behaviors in the present study was 122.6 out of a total score of 208. According to the qualitative classification, most of the studied youth showed a moderate performance with regard to adopting health-promoting behaviors. In Khazaie *et al.*'s study on the factors affecting health-promoting behaviors in students of Birjand University of Medical Sciences, students' performance was moderate.[20] In addition, the results of the present study with regard to health-promoting behaviors were consistent with those from Rastegar *et al.* study;[21] in their study on health-promoting lifestyle and its related factors among health volunteers in Mashhad, the score of health-promoting lifestyle was 129.9 out of 208, which was in agreement with the results of the present study indicating the moderate performance of health volunteers in adopting health behaviors.[21] In addition, according to the range of achievable scores, the lowest score was observed in the stress management and physical activity dimensions and the highest score was reported in the spiritual growth dimension. Gaining the high score on spiritual dimension and the low score on physical dimension was also reported in the study by Rastegar *et al.*[21] In a study by Kalroozi *et al.* on health-promoting behaviors and related factors among nurses in selected military hospitals, the highest and the lowest mean score was related to the spiritual growth and physical activity dimensions, respectively.[22] Also, in the studies by Wittayapun *et al.*,[23] Asgarshahi *et al.*,[24] and Modanloo *et al.*,[25] the lowest score was obtained on the physical activity dimension. Not getting enough physical activity seems to be one of the consequences of today's generation who are regularly busy with computers and electronic devices, such as mobile phones and are less willing to do exercise and physical activity. In the present study, 52.2% of youth had moderate performance in physical activity and 43.6% had weak performance. Additionally, the high score gained on the spiritual growth dimension in the present study can be attributed to the culture and religious beliefs of the Iranian society such that most people find peace by performing religious ceremonies and vows and appealing to God, the Prophet, and all the Imams, and their spiritual health is provided to a large extent.

As in the study of Nowruzinia *et al.* in Iran, the strongest correlation was observed between health-promoting behaviors with the index of spiritual growth and the dimension of interpersonal communication.[26] In the study of Can *et al.*, which was conducted to investigate the health-promoting lifestyle of nursing and non-nursing students in Istanbul, Turkey, similar results were observed.[8] According to the results of this study, stress management behaviors were estimated to be moderate and weak in 50.8% and 48.6% of youth, respectively. This finding indicates that the youth lack the adequate and efficient coping skills to control stressful factors. The results of a study by Tol *et al.* on a group of students showed a statistically significant relationship between stress management and their gender so that the stress management score in female students was significantly higher than male students.[2] In a study by Wei *et al.* in Japan, which was designed to determine the health-promoting lifestyle of students, the difference in stress management scores between male and female students was not statistically significant.[10] In the nutritional behaviors dimension, 79.6% of the studied youth showed moderate performance. This finding is in agreement with findings of the studies by Raiyat *et al.*,[27] and Fathi *et al.*[28] What is certain is that several factors affect the dietary patterns and nutritional behaviors of youth, among them are family characteristics, parental dietary pattern, dietary pattern of friends, as well as socioeconomic status and advertising. It seems that one of the ways to promote health in young people is to promote a healthy diet and adherence to healthy eating patterns such as vegetarianism and the Mediterranean diet. According to nutritional epidemiological studies, the incidence of chronic diseases in people living near the Mediterranean Sea is low and their life expectancy has increased to an acceptable level.[29] Adherence to this diet reduces the risk of cardiovascular disease and stroke. Other beneficial effects of this diet include improving fat metabolism, blood pressure, body mass index, anti-inflammatory and anticoagulant indices, as well as increasing plasma antioxidant capacity.[30] In a cross-sectional study in Spain, the Mediterranean diet was associated with a lower risk of depression and anxiety.[31]

As proper nutritional behaviors in youth are regarded as a basic and particular need, educational programs are thus required to put emphasis on modifying these behaviors given the above issues. In the present study, the difference in physical activity dimension was statistically significant between men and women and the male youth scored significantly higher on the physical activity than their female counterparts. In a study by Quintiliani *et al.*, unhealthy behaviors in the physical activity domain were found to be significantly associated with being a female participant.[32] Less physical activity among women than men can be attributed to the inherent differences between the two genders and the higher mobility of men compared to women, as well as the cultural context of society and more limited participation of women in some activities. This finding is consistent with that of Moeini *et al.*'s study[33] and other studies, such as Allahverdipour *et al.*[34] and Hakim *et al.*[35] In addition, the more men's participation in social activities can to some extent justify greater physical activity in men. In Abdolkarimy *et al.*'s study on health-promoting behaviors in health workers, there was a significant relationship between gender and health-promoting behaviors.[36] The difference in health-promoting behaviors between the male and female participants may also be due to the level of education, availability of appropriate conditions for men's activities, and culture governing the society. The results of the study also showed that the mean score gained on the interpersonal relations dimension was significantly higher in women than men. In Khazaie *et al.*'s study[20] and a study conducted in Hong Kong, the score of interpersonal relations in women was reported to be higher than men.[37] In the present study, women scored higher on the health responsibility dimension than men. In a study in India, men had a greater responsibility,[6] but in Larouche *et al.*'s study, the women's responsibility for health and adopting health behaviors was significantly higher than men.[38] Additionally, women scored higher on stress management than men, indicating that women are more likely to follow stress management and relaxation techniques and self-care behaviors. In this study, there was no significant statistical relationship between age and adoption of a health promoting lifestyle. In Rategar *et al.* study, no significant relationship was also observed between age and health-promoting behaviors. Of course, in our study, the age range was not very wide (18-29 years), and the age composition of the studied population seems to affect this issue. An inverse relationship between age and health-promoting lifestyle was reported in a study by Al-Kandari.[39] As aforementioned, the reason for this difference may be attributed to the difference in the studied population in different studies.

Among other results of this study was the relationship between marital status and the score of health-promoting behaviors such that the score of married youth in most dimensions of

health-promoting behaviors was significantly higher than single individuals and other youth participated in the study. In Lim *et al.* study on Korean women, there was also a significant relationship between marital status and health-promoting lifestyle.[40] In investigating the relationship between health-promoting behaviors and level of education, the results revealed a statistically significant relationship between participants' level of education and their performance in adopting health behaviors. Mostly, a higher level of education makes the importance of health clear to people more than before and persuades them to perform health-promoting behaviors. The results from Norouzinia *et al.* study on health promotion behaviors in students of Alborz University of Medical Sciences indicate that the level of education is one of the factors affecting health behaviors. The results also showed that the mean score of students in higher education levels was significantly higher than other students.[26] In a study on Taiwanese adolescents, Chang showed that the likelihood to perform health-promoting behavior rises as the level of education increases.[41] The relationship between the level of education and the score of health-promoting lifestyle was also reported to be significant in Rastegar *et al.* study.[21] In the present study, a significant relationship was observed between employment status and the individuals' type of occupation, and the adoption of health-promoting behaviors. The score gained by housewives and employees was significantly higher than those with other occupations, which may be due to having enough time in housewives or higher level of education in employees. A significant relationship was also observed between the type of occupation and adherence to a health-promoting lifestyle in Torche's study.[42] Health-promoting behaviors in youth and adults[43,44] are very effective in improving the quality of health systems.[45, 46]One of the limitations of this study was the impossibility of studying the youth living in the villages around Khorramabad. If the young population living in the villages of this city was used, the generalizability of the results would increase. And the selection bias was reduced to a minimum.

Conclusions

Generally, it can be said that the status of lifestyle among youth of Khorramabad was estimated to be semi-desirable and undesirable with regard to adopting health-promoting behaviors; and considering the pivotal role of youth in society, proper planning seems necessary to improve their performance in the area of health promotion. Macro-policymakers and community health authorities fundamentally affect people's lifestyles, their relationships, and capacity building in societies toward sustainable development. A healthy lifestyle promotion is an extension of a continuous movement towards individual and social empowerment with regard to providing, preserving, and promoting health. Therefore, by formulating educational programs, steps should be taken to enhance health-promoting behaviors. Besides the provision of the required infrastructure in the society, many purposeful educational program scan be very useful and improve the level of physical, mental, and social health of youth. Using questionnaires and self-reporting was one of the limitations of this study. Among other limitations of this study we can refer to the scant similar research on youth that restricted the possibility of comparing the findings of this study with similar studies. On the other hand, due to the cross-sectional nature of this research, the relationships shown between health-promoting behaviors and individual characteristics do not necessarily indicate a causal relationship.

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