

Health-Promoting Lifestyle among People Without Heart Disease in Isfahan

Abstract

Background: The present research conducted with aim to determine the health-promoting behaviors (HPBs) of public of Isfahan, and study the associations of HPBs with demographic characteristics. **Methods:** In a cross-sectional study conducted on 369 people without heart disease living in Isfahan, HPBs were assessed using a questionnaire which consists of two parts: personal information and Health-Promoting Lifestyle Profile II (HPLP-II). Data were analyzed by *t*-test and one-way analysis of variance. **Results:** The mean score for overall HPLP-II (158.30 ± 19.38) indicated the acceptable level of performing HPBs in Isfahan. Physical activity got the lowest score (16.36 ± 5.13), and the highest score was for interpersonal relations (53.16 ± 5.59). There were significant differences on physical activity and interpersonal relation dimensions between males and females ($P < 0.05$). The mean score of physical activity was highest in single participants ($P < 0.05$). Mean score of physical activity for people with college education was greater than others ($P < 0.05$). Overall HPLP-II and its domains mean scores for people that received education about prevention of cardiovascular disease were greater than others ($P < 0.05$). **Conclusions:** Results showed HPBs in people of Isfahan society is acceptable but physical activity is in the worst condition. The role of physical activity in preventing and controlling cardiovascular disease is well established. Therefore, it seems that providing information about physical activity can lead to an improvement of health-promoting lifestyle.

Keywords: Health promotion, healthy lifestyle, heart disease, Iran

Introduction

Cardiovascular diseases are the most important health problems^[1] and the most common reason of death and disability worldwide.^[2,3] Insufficient physical activity, high fat and low fiber diet, and inappropriate mental status are the major risk factors of ischemic heart disease.^[4] Evidences showed that risk of coronary heart disease events can be significantly reduced through modification of these risk factors.^[5,6] Dehkordi quoting from Lin wrote that more than 52 million adult people need lifestyle modification for prevention of cardiovascular disease.^[7] Hence, for modifying risk factors of cardiovascular disease, educational plan should be done;^[8] there is a need for access to diagnosis of modifiable risk factors in the society.^[6] Previous studies has shown that a significant number of modifiable cardiovascular disease risk factors exist in different areas of Iran such as Rasht, Qazvin, and Bushehr and Isfahan.^[9-12] Therefore, for avoiding cardiovascular disease, preventive

strategies should be used. Considering this fact that health-promoting lifestyle is a key issue in prevention of heart disease,^[13] it is essential to evaluate health-promoting behaviors (HPBs) among public. Since no research which investigates the HPBs of people without heart disease had been conducted in Isfahan, the present research conducted with aim to determine the HPBs of public and study the associations of HPBs with demographic characteristics. It is hoped that the findings of this research could be used as a guide for the development of heart disease prevention programs in Iran. The findings of this study specify unhealthy behavior related to lifestyle in people without heart disease and indicate which activities are needed for improving public health.

Methods

Study design and participants

This is a cross-sectional study which assesses the HPBs in people of Isfahan. This research was approved by the ethics committee of Isfahan University of Medical

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Sciences with number 293,330. Permission to carry out the study was obtained from vice chancellor of Isfahan University of medical science. Participants were informed about purpose of the study, they were free to participate in study, and they were assured on data confidentiality. The participants were people over 18 years of age, who were the residents at various areas covered by health centers of Isfahan, and who were willing to participate in the research. Isfahan includes 2 health centers and has a total population of 1,791,069 people. Sample size of the present research was considered 384 people. Stratified random sampling was employed and each center was considered as a stratum. After determining the sample size in each center, people were selected in each stratum randomly. Data were gathered using a questionnaire. At first, questionnaire was explained to the participants; then, data were collected by questionnaire through face to face interview; in some cases, participants preferred to fill the questionnaire themselves. From 384 selected people, 15 of them did not complete questionnaire. Finally, 369 people took part in the study.

Study instruments

Data collection was done through a two-section questionnaire. The first part included six demographic questions: age (years), gender (male/female), marital status (married, single, widow), educational level (under diploma, diploma, college education), family history of cardiovascular disease (yes/no), and education about prevention of cardiovascular disease (yes/no). In section two, Health-Promoting Lifestyle Profile II (HPLP-II) examine the health-promoting behaviors of individuals with 52 items in 6 domains of nutrition (9 question), physical activity (8 question), health responsibility (9 question), stress management (8 question), interpersonal relationships (9 question), and spiritual growth (9 question). Each question has four possible answers on a 4-point Likert type scale (never, sometimes, often, and routinely). Total score of questionnaire is between 52 and 208, and the score of each area is based on the highest score of that area. To calculate a mean score, the scores of items were summed and then divided by the numbers of items. Higher mean scores denoted positive health-promoting lifestyle or behaviors. The Persian version of this questionnaire was made valid and reliable by Zeidi *et al.*^[14] The alpha reliability coefficient was 0.82 for the total scale and ranged from 0.64 to 0.91 for the subscales.

Statistical analysis

The data were analyzed using SPSS version 16 (SPSS Corp, Chicago, IL, United States). Descriptive statistics was employed to calculate frequency (percentage) for qualitative and mean (standard deviation) for quantitative variables. Independent Student's *t*-test or analysis of variance (ANOVA) was used for comparing the mean of HPLP across the different categories of demographic characteristics.

Results

This study was conducted on 169 males and 195 females with the mean age 36.42 ± 12.04 years (rang 18–77 years), that more than half of them were married (62.1%). Educational level of participants was as follows: 16.2% of people did not have a high school diploma, 27.4% had a high school diploma, and 56.4% of participants had college education. About 65.1% of the study participants were employed, 52.3% of them had family history of heart disease, and 41% of participants were educated about prevention of heart disease [Table 1].

Table 2 shows the mean score of overall HPLP-II and its domain. The mean score of HPLP II (158.30) indicated that people of Isfahan participated in health-promoting life behaviors.

Comparison of overall mean score of HPLP-II and its domains-based personal characteristics of participants showed significant differences about physical activity and interpersonal relations between males and females. The result of *t*-test showed that females were significantly less involved in physical activities than males ($P < 0.05$) but participation in interpersonal relations in female was more than male ($P < 0.05$). The result of one-way ANOVA revealed a significant difference on physical activities subscale by marital status of participants, and single participants more involved in physical activities than others ($P < 0.05$). One-way ANOVA also indicated a significant difference on spiritual growth subscale by educational level. Finding showed mean score of physical activity for people with college education was greater than others ($P < 0.05$), but there was no significant difference on HPLP and its subscales by age ($P > 0.05$). The result of *t*-test indicated that overall HPLP-II and its subscales mean scores in people who received education about prevention of cardiovascular disease were higher than others ($P < 0.05$). However, no statistically significant difference was found on HPLP and its subscales by family history of cardiovascular disease ($P > 0.05$) [Table 3].

Discussion

Findings of the present study showed that the overall mean scores of HPBs in the population of Isfahan are above average (158.30 ± 19.38); the reported scores in previous studies were moderate.^[13,15,16] Physical activity as a subscale of HPBs is in the worst condition. Poor physical activity is not special to Isfahan; similar results were reported in other studies.^[16-18] Interpersonal relation as another dimension had the highest score. This was in line with previous studies.^[15,16]

The results of the present research showed that age had no effect on health-promoting behaviors. Similar results were reported in other studies.^[17,19,20] However, Harooni *et al.* reported a negative significant relationship between age and HPBs.^[15] The possible explanation for this could

Table 1: Sociodemographic data of participants at the study

Sociodemographic data	n (%)
Age (36.42±12.04)	
18-37	222 (62.2)
38-57	118 (33.1)
58-77	17 (4.7)
Gender	
Male	169 (46.4)
Female	195 (53.6)
Marital status	
Single	111 (30.5)
Married	226 (62.1)
Widow	27 (7.4)
Educational level	
Under diploma	59 (16.2)
Diploma	100 (27.4)
University	206 (56.4)
Employment status	
Unemployed	125 (34.9)
Employed	233 (65.1)
Family history of cardiovascular disease	
Yes	191 (52.3)
No	174 (47.7)
Education about prevention of cardiovascular disease	
Yes	150 (41)
No	216 (59)

Table 2: Mean and standard deviation of health-promoting lifestyle profile subscales

Health-promoting lifestyle profile	Mean score±SD
Overall HPLP-II	158.30±19.38
Health responsibility	22.04±5.28
Spiritual growth	25.34±5.13
Physical activity	16.36±5.13
Interpersonal relations	53.16±5.59
Nutrition	23.12±4.34
Stress management	18.30±3.61

HPLP=Health-Promoting Lifestyle Profile, SD: Standard deviation

be that these studies were done in people of different place with different culture and knowledge.

In this research, physical activity was higher in male, and interpersonal relation was higher in females. Our results for the comparison between male and female participants were similar to the results of Wei *et al.*'s study.^[17] However, the results of Harooni *et al.*'s study demonstrated that the mean score for stress management, physical activity, and social relations in men was more than women.^[15] In the present study, mean score of physical activity was highest in unmarried participants. Conversely, El Mokadem reported that HPBs was not correlated to marital status.^[20] However, the majority of participants in both of these studies were married; the different findings may be related to the gender of

participants because EL Mokadem assessed only the HPBs of women at high risk for cardiovascular diseases.

By increasing the level of education, physical activity would increase. Result of Mirghafourvand *et al.*'s study showed that by increasing educational level, the total score of health-promoting lifestyle and the score of all dimensions were improved.^[16]

Finding showed that the mean score of overall HPLP-II and its domains in people who received education about prevention of cardiovascular disease were higher than others. The current study results are consistent with other studies;^[21-23] the finding of other studies showed educational program increase HPBs. Also Dehkordi reported that received information about high cholesterol improve preventing behaviors of cardiovascular diseases.^[8] In this study, there was not significant relationship between family history of cardiovascular diseases and HPBs and its subscales.

Conclusions

Although the results of the present research showed HPBs in people of Isfahan society is above average, it significantly related with received education about prevention of cardiovascular disease in people. Hence, health-care providers must be educated about the behaviors reducing the risk factors of heart disease, and promoting cardiovascular health in public. Physical activity as a subscale of HPBs is in the worst condition. The role of physical activity in preventing and controlling cardiovascular disease is well established. Prevention of cardiovascular diseases in society requires developing educational interventions, based on community needs. Therefore, it seems that providing information about physical activity can lead to an improvement of health-promoting lifestyle. Sex significantly associated with health-promoting interpersonal relations. Therefore, conducting health education programs with emphasis on interpersonal relations in male is necessary.

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Conflicts of interest

There are no conflicts of interest.

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Table 3: Comparison of mean health-promoting lifestyle profile subscales across the different categories of demographic characteristics

Demographic characteristics	Health-promoting lifestyle profile						
	Overall HPLP-II	Health responsibility	Spiritual growth	Physical activity	Interpersonal relations	Nutrition	Stress management
Age (36.42±12.04)							
18-37	158.29±19.51	21.96±5.90	25.50±5.06	16.60±5.23	53.36±5.90	22.86±4.48	18.00±3.47
38-57	157.56±19.37	21.83±5.26	25.19±5.22	15.64±4.93	52.93±5.26	23.22±4.16	18.87±3.72
58-77	159.88±19.86	23.18±4.76	24.41±4.86	16.41±4.88	52.82±4.76	24.18±3.62	18.88±4.04
<i>P*</i>	0.88	0.62	0.64	0.26	0.77	0.42	0.15
Gender							
Male	158.68±21.18	21.80±5.42	25.65±5.44	17.33±5.38	52.42±7.13	22.77±4.44	18.72±3.82
Female	158.07±17.61	22.19±5.15	25.10±4.82	15.49±4.83	53.85±3.70	23.45±4.23	17.98±3.40
<i>P**</i>	0.76	0.48	0.30	0.001***	0.015***	0.13	0.056
Marital status							
Single	158.24±20.19	21.35±5.56	25.50±5.20	17.39±5.44	53.78±4.05	22.21±4.71	18.02±3.72
Married	158.62±19.14	22.37±5.03	25.41±5.07	16.07±4.99	52.74±6.39	23.56±4.15	18.46±3.56
single parent	155.63±19.54	21.89±5.95	24.22±5.48	14.52±4.72	53.74±3.93	23.04±4.07	18.22±3.85
<i>P*</i>	0.75	0.24	0.49	0.014***	0.23	0.02***	0.57
Educational level							
Under diploma	156.03±20.01	21.75±5.80	24.19±5.24	15.39±5.00	53.08±6.53	22.98±4.41	18.64±3.77
Diploma	156.41±19.81	21.78±5.02	24.94±5.14	15.49±5.10	52.83±5.04	22.90±4.33	18.47±3.94
College education	159.57±18.89	22.15±5.26	25.82±5.06	16.96±5.09	53.35±5.63	23.21±4.32	18.08±3.35
<i>P*</i>	0.27	0.79	0.06	0.021***	0.74	0.82	0.46
Family history of cardiovascular disease							
Yes	158.85±19.23	22.43±5.16	25.35±4.96	16.38±5.21	53.15±5.45	23.31±4.36	18.23±3.63
No	157.74±19.67	21.53±5.40	25.27±5.29	16.37±5.10	53.20±5.81	22.91±4.34	18.45±3.61
<i>P**</i>	0.58	0.10	0.88	0.98	0.94	0.38	0.55
Education about prevention of cardiovascular disease							
Yes	164.31±17.42	23.71±4.78	26.16±4.74	17.51±5.01	54.17±4.05	23.81±4.33	18.95±3.43
No	154.15±19.64	20.82±5.30	24.75±5.29	15.57±5.09	52.49±6.39	22.63±4.30	17.88±3.68
<i>P**</i>	<0.0001***	<0.0001***	0.009***	<0.0001***	0.005***	0.01***	0.005***

*ANOVA, ***t*-test, ***It is significant at $P<0.05$. HPLP=Health-Promoting Lifestyle Profile

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