

Health-promoting behaviors and related factors among high school teachers in the city of Rasht, Iran

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Abstract

Background: Health Promoting Behaviors (HPB) are of great importance because of their potential benefits to prevent the progression of chronic diseases, reduce disease burden, improve quality of life, and reduce healthcare costs. The present study aimed to determine and compare HPB and related factors among high school teachers.

Methods: A cross-sectional study was conducted on 257 high school teachers (138 women and 119 men) having at least associate degree in Rasht city, Iran during 2015. Data collection tool was a researcher-made questionnaire including the personal, familial, and social factors and Health-Promoting Lifestyle Profile (HPLPII) standard questionnaire. Data were analyzed using IBM SPSS Statistics for Windows, Version 24.0. running descriptive and inferential statistics, including independent sample t-test, analysis of variance. P values less than 0.05 were considered as statistically significant.

Results: Among the participants 138 (53.7%) were female. The overall mean (SD) score of HPB among participants was 129.6 (22.64) and was undesirable. This score was significantly better among the women 130.6 (24.61) compared with men 128.5 (20.54) ($P=0.01$). The highest mean score of HPB was related to nutrition 26.8 (5.01), followed, respectively, by spiritual growth 22.6 (4.25) and interpersonal relations 21.7 (4.82). Physical activity with the mean (SD) score of 18.09 (4.14) had the lowest overall mean score of HPB. Female teachers had a significantly higher scores than men in all aspects ($P<0.05$), except for physical activity and stress management.

Conclusion: The overall mean score of HPB among participants was undesirable. Total HPB in female teachers were better than that in the male teachers. Female teachers had a better status than men in all aspects except for physical activity and stress management.

Keywords: Family Characteristics; Health Promotion; School Teachers; Teacher Training; Personality

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Introduction

According to the World Health Organization (WHO), health is one of the indicators of the development of

different countries (1). Therefore, public health maintenance and health promotion are the pillars of social development (2).

According to Pender et al., Health Promoting Behaviors (HPB) is suggestive of the human tendency to excellence that leads to optimal well-being, personal development, and a creative life. Moreover, it is a multi-dimensional model of cognitive voluntary actions that maintains and enhances health, self-actualization, and success (3).

The United States Department of Health, Education, and Welfare (HEW) showed that more than half of deaths each year in the United States were associated with unhealthy lifestyles (4). One of the major factors determining health status is HPB, which are identified as the underlying cause for lack of development of many known diseases. In addition, health promotion and disease prevention are associated with these behaviors (5).

HPB include any action performed for increasing or maintaining health and self-actualization of a person or group (6). The six important components of health-promoting lifestyles include health responsibility, physical activity, dietary habits, stress management, spiritual growth, and interpersonal relationships (5). Numerous other factors, such as level of education, agricultural and nutritional status, communication systems and means of communication, the condition of roads, and economic and social conditions are also involved in individuals' health (7). On the other hand, gender is one of the most important determinants of diseases and its role in inducing and preventing disease has been shown in many studies. Based on the results reported, men, compared to women, develop more diseases and their mortality rate is higher (8).

Students, as the next generation, are of the most importance to learn health-promoting lifestyles to build a healthy community, which tends to make a developed country. Also, teachers are considered as the role-model for students to teach and encourage this kind of behavior, which are useful to emphasize the necessity of providing education on health behaviors at schools. In

addition, to maintain health and avoid risky behaviors, positive and healthy models, which the public especially young people can imitate, are essential. In other words, imitating is an important factor in the educational process which leads to an increase or decrease in the impact of health messages (9). Therefore, teachers' health status should always be as an appropriate model and they should try to develop their positive behaviors as well as their knowledge about health issues (10). Thus, the increase in diseases incidence and health issues and the accumulation of gender inequalities necessitate examining the differences between women and men in HPB as a social issue. The present study aimed to determine and compare the HPB and its related factors in male and female high school teachers.

Methods

The present cross-sectional study was conducted in Rasht city, Iran, during 2015 school year. The study setting included all the high schools (private and public) in Rasht city and the study population included all male and female teachers with at least an associate degree who worked in the high schools during 2015 school year (899 teachers: 487 women and 412 men). According to the Cochran formula, sample size was calculated as 269 teachers:

$$n = \frac{Z^2 pqN}{d^2(N-1) + Z^2 pq} = 269$$

The proportional random stratified method was used for sampling. Rasht city has two educational regions. The list of the teachers was obtained from the Guilan State Office of Education, with each teacher having a number. In the 2015 school year, there were 389 (209 female and 189 male) and 501 (223 female and 278 male) high school teachers in the educational regions 1 and 2, respectively.

The selected sample numbers from each region were determined considering the population ratio in the regions and sex (male and female).

So, 142 teachers (77 women and 65 men) from region 1 and 128 teacher (61 women and 66 men) from the region 2 entered the study. To collect the data, the researchers visited the teachers in person. Then, after explaining the purpose of the research and assuring them that their information would remain confidential (participant's privacy), the questionnaires were administered.

The data collection tool used in the current study was a two-part questionnaire. The first part of the questionnaire (researcher-made) included personal factors (age, gender, education level, number of children, medical history, and medication use), family factors (marital status, spouse's job, family size, and type of housing), and social factors (use of cell phone, Internet, social networking, training classes, travel, and leisure). The experts' opinions were used in order to determine the face and content validity of the questionnaire. In this regard, the questionnaire was distributed among 15 faculty members in the School of Nursing and Midwifery at Tehran Medical Branch, Islamic Azad University, Iran. After collecting their opinions and applying proposed suggestions, the final questionnaire was developed. To determine the reliability of the related factors (individual, familial, and social), test-retest reliability method was used. The internal consistencies of all the items of the questionnaire were assessed and confirmed using Cronbach's alpha for personal ($\alpha=0.79$), familial ($\alpha=0.92$), and social ($\alpha=0.89$) factors. The total questionnaire had acceptable reliability, too ($\alpha=0.85$).

The second part of the questionnaire included the Persian version of Health-Promoting Lifestyle Profile (HPLPII) designed by Walker et al. (11). This questionnaire includes 52 questions and is scored based on a 4-point Likert scale (never=1, sometimes=2, often=3, and always=4). It includes the subscales of health responsibility, physical activity, nutrition, spiritual growth, interpersonal relationship, and stress management. The minimum and maximum total score of the

questionnaire is 52 and 208, respectively. A mean score of more than 130 was indicated as desirable and a mean score less than 130 was considered undesirable health-promoting lifestyle. Content validity of the Persian version of HPLP-II was approved by Norouzinia et al. (12) and the construct validity was confirmed by Hosseini et al. using confirmatory factor analysis (5). The reliability of the HPLP-II was assessed by Kheirjoo et al. (13). Re-test and intra-class correlation coefficient were used in order to assess the external reliability of the health-promoting lifestyle questionnaire. The reliability indices were found to be 0.86, 0.85, 0.80, 0.86, 0.87, and 0.79 for health responsibility, physical activity, nutrition, spiritual growth, interpersonal relationship, and stress management, respectively. The Cronbach's alpha coefficient for whole questionnaire was 0.94 (14).

The study was approved by the Ethical Committee of the Deputy for Research, Tehran Medical Branch, Islamic Azad University, Iran. Participants' identities and responses were kept confidential. Also, informed consent was obtained from the participants prior to taking part in the study. Once completed, the questionnaires were evaluated and the data were entered into IBM SPSS Statistics for Windows, Version 24.0. running descriptive and inferential statistics, including independent sample t-test and analysis of variance. The normality of data was approved using Kolmogorov-Smirnov test and the Levene's test showed the equality of variances.

Results

In the present study, 269 high school teachers participated among whom 257 individuals filled out the questionnaire (response rate=95.5%). Among the participants 138 (53.7%) were female. Table 1 shows the demographic data of the studied teachers. More than 80% of the teachers were natives. Among participants, 83.6% of the teachers did not smoke, and among the smokers, 34.4% were men and 3.6% were women.

Table 1. The demographic characteristics of the studied high school teachers in Rasht, Iran, in 2015 school year

Variable		N (%)	Variable		N (%)
Age (year)	20-29	59 (22.96)	Hours of daily watching television	<2	54 (21.01)
	30-39	84 (32.68)		2-4	62 (24.13)
	40-49	85 (33.07)		4-6	112 (43.58)
	50-59	28 (10.89)		>6	29 (11.28)
	>60	1 (0.40)		Do not use	0 (0.00)
Education	Associate	31 (12.06)	Type of employment	Formal	145 (56.42)
	Bachelor	168 (65.37)		Semi-formal	82 (31.91)
	Master or higher	58 (22.57)		Contract	30 (11.67)
Body Mass Index	<20	23 (8.95)	Housing type	Private	173 (67.32)
	20-25	121 (47.08)		Rental	56 (21.79)
	25-30	78 (30.35)		Organizational	8 (3.11)
	> 30	35 (13.62)		Relatives	20 (7.78)
Marital status	Single	62 (24.13)	Hours of daily using internet	<2	84 (32.68)
	Married	176 (68.48)		2-4	109 (42.41)
	Divorced or Widow	19 (7.39)		4-6	34 (13.23)
Passing health training course	Yes	192 (74.71)	>6	16 (6.23)	
	No	65 (25.29)	Do not use	14 (5.45)	
Hours of daily using mobile phone	<2	132 (51.36)	Hours of daily playing video games	<2	12 (4.67)
	2-4	55 (21.40)		2-4	41 (15.96)
	4-6	39 (15.18)		4-6	32 (12.45)
	> 6	31 (12.06)		>6	8 (3.11)
	Do not use	0 (0.00)		Do not use	164 (63.81)
Number of travels per year	1	148 (57.59)	Spouse's education level	Undergraduate	12 (4.67)
	2	75 (29.18)		Diploma	56 (21.79)
	3	23 (8.95)		Associate	48 (18.68)
	>3	11 (4.28)		Bachelor or higher	60 (23.33)

The highest percentage of the smokers (45.2%) smoked 5 to 10 cigarettes a day and the lowest (9.5%) smoked more than a pack (20 cigarettes) per day. Most of the teachers (44.6%) had 1-2 children and 0.51% of them had more than 5 children. Among the teachers, 62.2% were somewhat satisfied with their job and 5.05% were relatively dissatisfied. Furthermore, 73.55% of the teachers did not have a history of genetic disease or inherited predisposition. In addition, 20.2% of the participants had a history of hereditary or genetic disease

among their first-degree relatives (parents and siblings). Most teachers (73.5%) had no history of chronic disease. As for medication use, 29.5% of the teachers used medications regularly. In addition, 63.3% of the teachers had a driving license and 96.9% of those who had a driving license, drove a vehicle. Among those who drove a vehicle, 94.9% always used a seat belt while driving and 5.09% often used a seat belt. As for observance of traffic laws, 54.7% often obeyed traffic laws and 45.2% always obeyed traffic laws.

Table 2. Mean. Standard deviation and confidence interval of promotion behaviors scores among male and female teachers (Independent two-sample t-test)

Dimension	Sex	Mean±SD	t	P	CI 95 %	
					Lower	Upper
Health responsibility	Male	20.8±3.30	-1.95	0.03	20.40	21.20
	Female	22.1±4.93			22.34	22.45
Physical activity	Male	18.6±3.07	-1.97	0.04	18.23	18.98
	Female	17.6±4.24			17.14	18.15
Nutrition	Male	26.6±4.41	1.52	0.01	26.08	27.12
	Female	27.0±5.24			26.45	27.69
Spiritual growth	Male	21.7±2.70	-1.93	0.049	21.40	22.08
	Female	23.4±2.40			23.18	23.69
Interpersonal relationship	Male	21±4.44	-1.98	0.048	21.15	21.69
	Female	22.3±5.50			22.29	22.41
Stress management	Male	19.6±2.43	-2.13	0.02	19.66	19.71
	Female	18±3.32			17.61	18.40

Among the participants, 59.9% used their own car for transportation, 33.8% used public transport, 4.6% walked, and 1.55% used bicycles.

The overall mean (SD) score of HPB among participants was 129.6 (22.64) and was undesirable. Mean (SD) scores of HPB among men and women were 128.5 (20.54) and 130.6 (24.61), respectively. There was a significant difference in the HPB between male and female teachers ($t=1.57$, $P=0.01$). In other words, HPB in female teachers were better than that in the male teachers. The mean scores and standard deviations of dimensions for HPB are given in Table 2. In all dimensions, there was a significant difference between male and female teachers ($P<0.05$). In the current study, the highest mean score of HPB was related to nutrition (26.8±5.01), followed, respectively, by spiritual growth (22.6±4.25) and interpersonal relations (21.7±4.82). Physical activity with the mean (SD) score of 18.09 (4.14) had the lowest overall mean score of HPB.

Discussion

In the present study, the mean total HPB scores in male and female teachers were undesirable. In the study conducted by Rezaei et al., the total mean score of HPB was (129.46±17.69), which is the same with the results found in the present study (15). In the study by Ortabag et al., the total mean score of HPB was lower than that in the present study. This could be due to cultural heterogeneity in different cultures (16).

Moreover, in the present study, the total HPB score in female teachers was higher than that in male teachers and was considered as desirable. In line with the findings of the current study, Norouzinia et al. found a significant relationship between HPB and gender (12). In a study conducted by Can et al., girls' lifestyle in health responsibility, nutrition, interpersonal relations, and stress management was better than those of boys (17). This could be due to the society's expectations of women that are evident in women's doing household chores especially maintaining a strong relationship between family members,

caring and attending to the family, cooking, and organizing household activities.

The results showed that nutrition was more satisfactory in women than in men. Raiyat et al. reported that the mean score of nutrition was significantly higher in boys than in girls (2). This was not in agreement with the results of the present study.

There was a significant relationship between male and female teachers regarding spiritual growth and this dimension was more desirable in women than in men. In line with the present study, Norouzinia et al. showed that there was a significant relationship between the dimension of spiritual growth and gender and this growth was more common in women (12).

Health responsibility in women was more satisfactory than in men and Aghamolaei et al. reported higher mean scores regarding health responsibility in girls than in boys (10).

In the present study, the dimension of interpersonal relations was better in women than in men. In the study by Motlagh et al., similar to the present study, the mean score of interpersonal relations in female students was higher than in male students, but the difference was not statistically significant (18).

Physical activities in men were more desirable than in women. In line with this research, Norouzinia et al. showed that the mean score of physical activity for girls was lower than that in boys and there was a significant statistical difference between the two genders (12). Dabrowska- Gals et al. (19) reported that female medical students, due to their high workload and low leisure time, had less physical activity. Also, exercise is not a routine in the lives of people in the community, sports centers are not accessible easily, it is difficult to exercise on the streets, and increasing costs and fees to enroll in gyms and doing heavy homework can be among possible reasons. Regular physical activity is one of the most important aspects of healthy lifestyle. The American Heart Association and the World

Health Organization have recommended doing physical activity with a moderate intensity for 30 minutes five days a week, or with a severe intensity for 20 minutes three days a week for everyone (20).

In the current study, the highest mean score of HPB was related to nutrition, followed, respectively, by spiritual growth and interpersonal relations. Also physical activity had the lowest overall mean score of HPB. However, in a study by Nowruzinia et al., it was reported that the spiritual growth index had the highest score, followed by interpersonal relationship, and physical activity index had the lowest score (12).

The low level of physical activity, especially in women, indicates that exercise is not integrated into their daily lives and this may be due to high workload or cultural and social conditions. Therefore, to promote physical activity among teachers, a sports complex should be established and dedicated to teachers. Moreover, men have a lower sense of responsibility toward their own health. This may be because women tend to pay more attention to their hygiene and health compared with men, and since women pay more attention to their appearance, they try to increase their information about health and hygiene (21). People's sense of responsibility toward their health can play an important role in promoting public health (22). The key to developing healthy communities with healthy people is to promote the appropriate lifestyle. A deep understanding of the interpersonal relationships of individuals in their social context provides the development of effective health promotion approaches. Major policy-making across the country has a fundamental impact on people's lifestyles, their relationships, and the capacity of building communities to empower individuals and communities in the provision, maintenance, and promotion of health. Educational managers and school principals should be involved in planning health programs, preparation of educational packages

(such as educational issues on nutrition, smoking, physical activity, stress management, relaxation methods, and life skills), providing educational and counseling services, and creating a safe and supportive environment.

Despite several strengths, the present study has a number of limitations. Our study was conducted on high school teachers, and obviously there were some differences in the elementary school teachers. Cultural, economic, and social differences of each setting can affect HPB, so one should be cautious in generalizing the results. Furthermore, the current study was conducted only in one city and the results cannot be generalized to the whole country. The overall mean score of HPB among participants was undesirable. Total HPB in female teachers were better than that in the male teachers. Female teachers had a better status than men in all aspects except for physical activity and stress management. Apart from the biological differences between women and men, inequalities in socio-economic conditions also cause different and unfair consequent health-related behaviors among men and women. In other words, socio-economic variables can moderate the effect of gender on health promotion life style. Policy makers should be concerned about grounded variables such as gender and socio-economic status, which affect the main determinants of health promotion of lifestyles, such as self-efficacy. Therefore, welfare policies focusing on equal health promotion for men and women should emphasize equal opportunity and economic resources (especially those related to education and careers) and also consider specific needs and different behaviors of men and women.

Conflict of interest

Authors declare no conflict of interests.

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