

# Evaluation of Health Promotion Behavior Factors in Women Referring to Suburban Health Centers in Yazd City

Sakineh Gerayllo<sup>1</sup> , Fatemeh Heidari<sup>2</sup>, Reza Sadeghi<sup>3</sup>, Farahnaz Khabiri<sup>4</sup>, Zohreh Karimiankakolaki<sup>5\*</sup> 

<sup>1</sup>Student Research Committee, Golestan University of Medical Sciences, Gorgan, Iran

<sup>2</sup>Department of Critical Care Nursing, School of Nursing, Gerash University of Medical Science, Gerash, Iran

<sup>3</sup>Student Research Committee, Sirjan School of Medical Sciences, Sirjan, Iran

<sup>4</sup>Department of Health Education & Promotion, School of Public Health, Shahid Sadoughi University of Medical Sciences, Yazd, Iran

<sup>5</sup>Social Determinants of Health Research Center, ShK.C., Islamic Azad University, Shahrekord, Iran

\*Corresponding Author: Zohreh Karimiankakolaki, Email: [Zohrehkarimian68@gmail.com](mailto:Zohrehkarimian68@gmail.com)

## Abstract

**Background:** Health promotion measures are among the most crucial health strategies. Considering the important effect of maternal health on the family's well-being, this paper aimed to evaluate the health promotion factors of women referring to suburban health centers in Yazd city, Iran.

**Methods:** This descriptive cross-sectional study included 250 randomly selected women referred to different health centers affiliated with Yazd University of Medical Sciences. Information was collected using a two-part questionnaire, including participants' background demographic information and health promotion lifestyle questions (52 items). Data were analyzed using descriptive statistics and the Mann-Whitney, Kruskal-Wallis, and Spearman tests.

**Results:** The participants' mean age was  $32.01 \pm 9.14$  years, and their overall lifestyle mean score was below the average. The individuals' marital status and age had a significant relationship with nutrition. Also, a positive and significant correlation was observed between health promotion behavior and its themes.

**Conclusion:** The mean scores for the participants' health promotion behavior were below the average. Therefore, more attention should be given to improving these activities, especially physical activity, stress management, and responsibility. Due to the importance of the maternal role and the mother's relationship with all family members, the feeling of health responsibility should be reinforced in women.

**Keywords:** Health behavior, Lifestyle, Women, Health information, Suburban area

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## Introduction

As the primary need of human beings, health is the basis for optimum performance in society (1). The World Health Organization (WHO) considers health an index of development (2). In past decades, WHO instructions indicated that the focus of health services should be changed from treating diseases and morbidities to disease prevention and health improvement (3). In this regard, health experts, who used to focus on disease treatment, are now dealing with disease prevention, addressing health concerns through lifestyle promotion, and eliminating factors with adverse effects on human health (4). Studies on health improvement started in the 1960s, when health behavior improvement was considered a real scientific trend, and self-empowerment and self-awareness were defined in health (5). Within the same period, taking

responsibility for one's health has dramatically improved in developed countries. Access to health-related data and health and disease information are considered important and determining factors in health. Therefore, individuals are expected to use this information to improve their health status (6).

Lifestyle modification, as a strategy to prevent non-infectious diseases, became popular in the 20<sup>th</sup> century (7). Lifestyle and health promotion activities are among the main strategies for staying healthy (8,9). Lifestyle is also a main determining factor for health and plays an important role in disease prevention (10). According to the WHO, 60% of health and quality of life is related to the individuals' lifestyles (11), defined as daily measures taken by ordinary people capable of affecting their health (4).

According to Pender, these behaviors include all



actions adopted towards increasing or maintaining one's health and individual or group self-actualization (9). Furthermore, the importance of quality of life lies in its effect on health enhancement (12).

Health-promoting lifestyle (HPL) is a multidimensional pattern consisting of voluntary actions (13), including behaviors such as nutrition, physical activity, responsibility for health, stress management, interpersonal relationships, and spiritual growth. These behaviors are effective in reducing the risk of lifestyle-related disorders (14).

Performing health-promoting behaviors is one of the most effective ways that people can maintain and control their health. Health-promoting behaviors encompass actions through which an individual engages in proper nutrition, regular exercise, avoidance of harmful behaviors and substances, protection against accidents, timely recognition of disease symptoms in the physical aspect, emotional regulation and management of thoughts and feelings and coping with stress and challenges in the psychological dimension, as well as fostering independence and adaptability and improving interpersonal relationships (2). According to a previous study, lack of HPL adoption and unhealthy behaviors account for 50% of health expenditures (15). According to the WHO, approximately 51% of the morbidity of common chronic diseases (cancer, cardiovascular diseases, chronic respiratory diseases, and diabetes) is related to unhealthy lifestyle (12), and studies show that health promotion behaviors can reduce the incidence and morbidity of these diseases (11).

According to the literature, women's health promotion behaviors differ in various countries according to cultural and social factors (8). Several studies have been conducted in this regard on different groups in Yazd city, including women of reproductive age (16), middle-aged women (17), and students (18). As culture and ethnicity are among the factors affecting health and family, social and cultural factors are vital in forming attitudes and beliefs and affect interpersonal relationship (19). In this paper, the important role of mothers was investigated concerning their own and their family's health. Considering the limited number of studies in health centers in suburban areas, this research was conducted to evaluate the factors affecting the HPL of women referring to suburban health centers in Yazd, Iran.

## Methods

This descriptive and cross-sectional study was conducted on women referring to Yazd suburban health centers. The two-stage cluster sampling method was used in this study. In categorizing healthcare centers, five centers were placed in suburban areas. The participants were selected among women referring to healthcare centers in the suburbs of Yazd (Azadsahr and Emamshahr healthcare centers). Sampling was done by randomly recruiting candidates

based on their households' file numbers.

After approval of the research project and authorization from the research council, the necessary coordination was made with the central health center of the city, which provided the researchers with a referral letter, which was presented to the health centers. Later, the research plan was explained to the participants, and if they provided consent, they were included in the study. Inclusion criteria were being 18–60 years of age and reading and writing literacy in order to answer the questions. Individuals with psycho-cognitive disorders were not included in the research. The self-reported questionnaires were distributed and filled out by people referring to health centers.

Participants' personal and social information was collected in part A of the questionnaire, and HPL data were collected in part B.

The 52-item HPLP II uses a 4-point Likert scale, including never (1 point), sometimes (2 points), often (3 points), and always (4 points). The HPLPII investigates six subscales of health responsibility (9 items, with scores ranging from 9 to 36), physical activity (8 items, with scores ranging from 8 to 32), nutrition (9 items, with scores ranging from 9 to 36), spiritual growth (9 items, with scores ranging from 9 to 36), interpersonal relations (9 items, with scores ranging from 9 to 36), and stress management (8 items, with scores ranging from 8 to 32). The total score ranges from 52 to 208 (20). The validity and reliability of this questionnaire were assessed by Mohammadi Zeidi et al. in Iran, and a Cronbach's alpha of 0.82 was calculated for this questionnaire (21). In the current study, Cronbach's alpha was 0.89.

Data were analyzed using SPSS version 18. Descriptive statistics, indicators of central tendency, dispersion (mean and standard deviation), and frequency were used to describe the participants' characteristics. The Kolmogorov-Smirnov and Shapiro-Wilk test were used to investigate the normality of the data, and due to the non-normality of the data, the objectives of the study were investigated using the Mann-Whitney, Kruskal-Wallis, and Spearman tests.

## Results

According to the collected data, the mean age of participants was  $32.01 \pm 9.14$  years, and most were married (88.8%). Regarding educational level and occupation, most participants had university degrees (51.2%,  $n = 128$ ) and were homemakers (64%,  $n = 160$ ). Most women reported average economic status (64.4%,  $n = 161$ ) (Table 1).

According to the results, the overall mean score of health promotion behaviors was  $127.06 \pm 21.48$ , with the highest score in the spiritual growth domain and the lowest in the physical activity domain. The scores for the health promotion domains were as follows: interpersonal communication  $23.32 \pm 4.3$ , nutrition  $22.77 \pm 4.71$ , health

**Table 1.** Frequency distribution of participants' demographic information

Demographic characteristics	Number	Valid percent
<b>Age</b>		
18–30	129	52.2
31–45	99	40.1
46–60	19	7.7
<b>Marital status</b>		
Single	28	11.2
Married	222	88.8
<b>Education</b>		
Illiterate & under high-school diploma	42	17.0
High-school diploma	77	31.2
College	128	51.8
<b>Job</b>		
Homemaker	160	66.1
Government employee	82	33.9
<b>Economic Status</b>		
Poor	21	8.6
Medium	161	66.0
Good	62	25.4

responsibility  $21.52 \pm 4.32$ , physical activity  $16 \pm 4.44$ , stress management  $18.92 \pm 4.16$ , and spiritual growth  $24.62 \pm 4.78$  (Table 2).

The results showed that only nutritional status was significantly better in married women than in single women ( $P=0.019$ ), and no significant relationship was observed concerning occupation (Table 2).

The analysis of the total HPL score among participants showed a statistically significant relationship concerning nutrition. The nutrition status was better among 46–60-year-old women than other age groups (Table 2).

According to the correlation results, a positive and significant association exists between the health promotion domains and overall health promotion behavior ( $P<0.001$ ; Table 3).

## Discussion

According to the results, the highest scores belonged to spiritual growth, whereas the lowest scores were attributed to physical activity. This finding is consistent with the results of health promotion activities reported by Gokyildiz et al (22), Gharaibeh et al (23), McElligott et al (24), Tol et al (4), and Norouzinia et al (2). In contrast to the present study, Lin et al (25) and Chahardah-Cherik et al (26) found that the highest scores belonged to stress management and nutrition dimensions, respectively. The participants' high scores in the spiritual growth dimension can be due to the cultural and religious beliefs of the study population. Individuals attain spiritual comfort by saying prayers and grow by leaning into God's endless power. Considering that inactivity is a risk factor for diseases (5,27), different factors, such as attitude, can explain

women's low scores in the physical activity area (1).

Moreover, this study was conducted on married women, who have less time for physical activity in their daily routines. In this regard, women should pay attention to the recommendations provided by health experts to have regular physical activity and weight control. Moreover, identifying women's psychosocial beliefs about physical activities can be important in designing educational programs.

In this study, the scores for the nutrition domain among married individuals were significantly higher than those of single women. Health responsibility was also greater among married individuals, although this difference was not statistically significant. This may be attributed to the responsibilities that women have within the family, the importance they place on nutrition, and their balanced lifestyle concerning themselves and their families. Previous studies reported that marriage and being supported by other family members results in happiness as well as physical and spiritual health.

According to the findings, the nutrition dimension had a better condition in the 46–60 age group; in this period, nutrition is important in terms of age-related health issues as diseases can be best prevented by intake of required calories. Considering the prevalence of some chronic diseases, such as osteoporosis, diabetes, and hypertension, regular physical activity is essential in the 45–67 age group; however, this age group had lower scores in the physical activity dimension, which is consistent with the study by Kalroozi et al (28); this becomes more important with the increase in age in terms of chronic diseases, including osteoporosis, diabetes, hypertension, etc. Therefore, the recommendation for the elderly to increase regular physical activity seems crucial. No other significant relationship was observed within other dimensions studied in this research, which is consistent with Ma and colleagues' study on the physical activity of adults in Taiwan (29).

In terms of educational level, although overall, HPL was higher in the high-school diploma group, this difference was insignificant. In addition, women with elementary education had higher scores in interpersonal relationships than those with university degrees. This result may be because individuals with university degrees usually have less free time to socialize. Considering all the above-mentioned results, university authorities are recommended to provide related training in this regard.

Regarding occupation, homemakers attained the highest average overall scores, probably due to more free time, although the difference between the groups was not significant. However, this finding is inconsistent with other studies, which showed that working women had better lifestyles.

The mean overall HPL score was  $127.06 \pm 21.48$ , consistent with the study by Gokyildiz et al (22). Moreover,

**Table 2.** Mean and standard deviation of health promotion behavior scores with demographic information of participants

Variable	Interpersonal communication		Nutrition		Health responsibility		Physical activity		Stress management		Spiritual growth		Health promotion behaviors	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Total	23.32	4.30	22.77	4.71	21.52	4.32	16.00	4.44	18.92	4.16	24.62	4.78	127.06	21.48
Marital status														
Single	23.42	3.38	20.96	4.45	20.82	4.02	16.92	4.61	19.10	3.88	24.28	4.29	125.44	20.48
Married	23.30	4.41	23.00	4.70	21.62	4.36	15.88	4.41	18.90	4.20	24.67	4.85	127.27	21.64
Mann-Witney test	P=0.784		P=0.019		P=0.467		P=0.173		P=0.690		P=0.737		P=0.644	
Age														
18–30	23.28	3.94	22.01	4.29	21.08	3.75	16.25	4.07	18.84	3.95	24.30	4.53	125.45	19.81
31–45	23.22	4.71	23.54	5.30	21.85	4.70	16.01	4.77	18.92	4.43	24.92	4.96	128.62	23.60
46–60	24.36	4.65	24.10	3.33	23.10	5.52	14.73	5.30	20.21	3.96	25.89	5.39	132.42	20.95
Kruskal-Wallis test	P=0.563		P=0.015		P=0.306		P=0.165		P=0.424		P=0.250		P=0.274	
Education														
Illiterate & under high-school diploma	22.87	4.69	23.48	4.19	22.00	4.28	15.94	4.02	19.25	3.85	25.18	4.74	129.36	20.65
High-school diploma	23.69	4.38	22.55	4.90	21.95	4.55	16.93	4.83	19.24	4.23	24.30	4.85	128.75	22.96
College	23.19	4.30	22.63	4.55	21.05	4.15	15.40	4.24	18.52	4.15	24.57	4.77	124.87	20.62
Kruskal-Wallis test	P=0.730		P=0.529		P=0.279		P=0.084		P=0.262		P=0.676		P=0.271	
Job														
Homemaker	23.41	4.23	23.03	4.94	21.70	4.30	16.24	4.41	19.09	4.17	24.68	4.73	128.05	21.52
Government employee	23.18	4.53	22.37	4.39	21.41	4.39	15.82	4.52	18.70	4.27	24.59	4.94	126.09	21.74
Mann-Witney test	P=0.859		P=0.319		P=0.449		P=0.388		P=0.375		P=0.874		P=0.514	
Economic status														
Poor	23.90	3.87	22.95	5.50	22.47	5.29	16.52	5.08	19.71	5.05	21.71	5.48	130.28	26.30
Medium	23.03	4.36	22.60	4.46	21.42	4.20	15.60	4.21	18.60	3.90	24.49	4.81	125.51	20.11
Good	24.01	4.35	23.11	5.24	21.52	4.47	16.70	4.86	19.50	4.61	25.11	4.65	129.98	23.70
Kruskal-Wallis test	P=0.482		P=0.963		P=0.740		P=0.399		P=0.519		P=0.709		P=0.663	

**Table 3.** Means, SDs, and correlation coefficient of statements of health promotion behaviors in participants' lifestyle

Variables	Interpersonal communication	Nutrition	Health responsibility	Physical activity	Stress management	Spiritual growth
Interpersonal communication	1					
Nutrition	0.597 $P<0.001$	1				
Health responsibility	0.632 $P<0.001$	0.618 $P<0.001$	1			
Physical activity	0.301 $P<0.001$	0.361 $P<0.001$	0.455 $P<0.001$	1		
stress management	0.665 $P<0.001$	0.552 $P<0.001$	0.642 $P<0.001$	0.585 $P<0.001$	1	
Spiritual growth	0.787 $P<0.001$	0.580 $P<0.001$	0.629 $P<0.001$	0.288 $P<0.001$	.705 $P<0.001$	1

according to the results of this research, all dimensions of HPL had a positive correlation, which is consistent with the study by Al-Kandari et al (30). Promoting a healthy lifestyle is a valuable strategy to reduce stressful factors and improve quality of life. It significantly reduces health costs, increases individuals' lifespan, and improves their quality of life (31). Considering that women usually face more health problems, the authorities must pay more

attention to this issue and provide necessary training on matters such as improving nutrition, nutritional value, and physical activity. In this regard, educational programs and disseminating health messages can improve health-promoting behaviors.

Considering the study limitations, this research was cross-sectional and only included women. Therefore, generalizing the results to the whole society is not possible.



Therefore, a large-scale intervention study should be conducted on both genders to promote women's lifestyles.

## Conclusion

In this study, the mean HPL score of women was below the average. Consequently, further evaluations of practical factors are required in all dimensions, especially physical activity, tension management, and health responsibility. As the role of mothers in the family is stronger and they communicate more efficiently with family members and have a more supportive role, in addition to strengthening the sense of responsibility, educational programs are necessary to improve self-efficacy and change their attitude towards behaviors. Health promotion should be carried out, and women should be followed up to check the effect of the training. Changing women's attitudes and beliefs can change the family's and society's beliefs.

## Authors' Contribution

**Conceptualization:** Sakineh Gerayllo, Zohreh Karimiankakolaki, Fatemeh Heidari.

**Data curation:** Farahnaz Khabiri.

**Formal analysis:** Zohreh Karimiankakolaki.

**Investigation:** Sakineh Gerayllo.

**Methodology:** Sakineh Gerayllo, Reza Sadeghi.

**Project administration:** Sakineh Gerayllo.

**Supervision:** Sakineh Gerayllo.

**Validation:** Sakineh Gerayllo, Zohreh Karimiankakolaki.

**Writing—original draft:** Zohreh Karimiankakolaki, Fatemeh Heidari.

**Writing—review & editing:** Sakineh Gerayllo, Reza Sadeghi.

## Competing Interests

The authors of this study have no conflict of interest.

## Ethical Approval

The current study was approved by the Research Ethics Committee of the Shahid Sadoughi University of Medical Science (IR.SSU.SPH.REC.1395.78).

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