Health Promoting Behaviors in a Population-Based Sample of Middle-Aged Women and Its Relevant Factors in Yazd, Iran

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ABSTRACT

Objectives: This study is carried out with the aim of describing the pattern of health-promoting behaviors (HPBs) among middle-aged women and its relevant factors in Iran as a Muslim developing country.

Methods: In a cross-sectional study, 483 middle-aged women were selected using cluster random sampling from Yazd city in Central Iran. An adjusted Persian version of Health Promoting Lifestyle Profile II was used for measuring HPBs. The demographic data were collected too.

Results: The average score of middle-aged women HPBs was 2.73 ± 0.36 (2.69 ± 2.76, %95). Spiritual growth and physical activity had the highest and the lowest score in HPBs' dimensions, respectively. HPBs had a positive significant correlation with age (p=0.02) and education level (p=0.001) and a negative significant correlation with number of children (p=0.005). HPBs had a higher level in retired women than employees and housewives.

Conclusions: In spite of a desirable level of HPBs in spiritual growth and interpersonal relationship dimensions among this group, their level of HPBs in physical activity and health responsibility dimensions was undesirable. It means that the feature of health among Iranian middle-aged women in a Muslim developing country is different from the industrialized developed and also the non-Muslim countries; hence, they need a different intervention programs.

Keywords: Health behavior, health promotion, HPLP II, Iran, middle-age, women

Original Article

INTRODUCTION

Health promotion is a basic challenge of health and that its goal is to enable people to increase control over, and to maintain or improve their health status.[1,2] According to the World Health Organization's request: "Health for All", many countries have adjusted health promotion on their healthcare system in addition to treatment of diseases.[3]

Health promotion has most emphasis on prevention of disease and development of adoption skills and ability of self care.[4] It is

as a ″multidimensional pattern of actions and perceptions to maintain or enhance the level of wellness, self-actualization and fulfillment of the individual″.[5] Pender (1996) categorizes health-promoting behaviors (HPBs) into six aspects: nutrition, physical activity, stress management, health responsibility, interpersonal relations and spiritual growth.[6]

Middle-aged women are part of the population and that their performance is remarkable in dynamics of economic and social aspects of the society.[7] They are the primary home care providers in most families,[8] particularly in Iranian families whose roles are traditionally defined; therefore, practicing HPBs are not only important for their own health status but also will influence the health of their families and communities.[9,10]

The middle-aged persons encounter various physiologic, physical, cognitive and social changes which will increase their vulnerability to chronic diseases.[11-13] For example, the risk of cardiovascular disease increases to 50% after menopause.[14] On the other hand, up to 80% of cardiovascular diseases, stroke, and type 2 diabetes and over a third of cancers could be prevented by changing lifestyle and eliminating risk factors, mainly tobacco use, unhealthy diet, physical inactivity and the harmful use of alcohol.[4] Therefore, HPBs with an emphasis on healthy lifestyle could result in improvement of health, quality of life and declining treatment costs.[15]

Lee *et al*., in assessing health-promoting lifestyle among Southeast Asian women in Taiwan showed that women were in moderate level of HPBs and highest score of participants was in spiritual growth dimension and lowest score was in physical activity.[3] Previous studies have reported, age, race, education level, gender, social class, socioeconomic status, environment, region, perceived health status, self esteem, self-efficacy, religious and cultural adaptation as factors affecting HPBs.[3,6,16-21] Morowatisharifabad *et al*., studied self-efficacy and HPBs of older adults in Iran. They concluded that interventions aimed at improving self-efficacy can improve HPBs of elderly people.[22]

Careno *et al*., studied the effects of a health promotion intervention in Adventist and non-Adventist women based on Pender's model and showed significant increase in the score of various HPBs' dimensions after intervention.[23] Women who begin HPBs successfully, probably will do these behaviors in the future. Unfortunately it looks that individual methods for decreasing risk factors in lifestyle do not exist in current lifestyle of middle-aged women. These women with unsuitable lifestyle and harmful behaviors will threat their health status in long time[24] and will enter into old age with a set of chronic disease and morbidity.

As most of the studies regarding HPBs were carried out in industrialized-developed countries and there aren't enough evidences available for the future of HPBs and its risk factors in developing countries, this study was carried out with the aim of describing the pattern of HPBs among a sample of middle-aged women and its relevant factors in Yazd (Iran), which is a Muslim developing country.

The healthy life expectancy was reported in women in this country is 59 years whereas the life expectancy is found to be 73 years, almost about 15 years of living with the disease, while for women of its neighboring countries such as Oman, Qatar, Russia, Saudi Arabia, Syria, Turkey and the United Arab Emirates is reported to be between 63 and 65 and those of countries such as Ireland, Norway and Sweden to be between 73 and 75 years.[25]

METHODS

Design and sample

In a cross-sectional design that was done in Spring 2010 on middle-aged women in Yazd (Iran), a cluster random sampling was used to recruit total number of 483 women in the range of 40–60 years. At the first stage, 10 of 21 regions of Yazd city were chosen randomly as study clusters, and then 50 middle-aged women were selected in each region randomly. From

500 selected women, 15 of them refused to participate in the study and 2 questionnaires were not complete. Finally, 483 participants took part in the study.

Data was collected by questionnaire via face to face interview. All 40–60-year-old women who were voluntary to participate in the study were eligible except those who had a mental disorder or speaking problem.

Measures

Demographic questionnaire: Demographic information included age, education level, marital status, job, number of children, weight and height, health insurance coverage and history of chronic disease. History of chronic diseases was based on previous medical diagnosis. Body weight and height were transformed into the BMI (kg/m^2).

Health promoting behaviors: The Health-Promoting Lifestyle Profile II (HPLP-II) was developed by Walker, Sechrist and Pender in 1987.[5] It is a scale to measure HPBs; summation of 52-items behavior rating scale employs a four-point response format to measure the frequency of self-reported HPBs in the domains of health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations and stress management. There is a four-point Likert type scale for each item, ranging from 1 ("never") to 4 ("routinely"). Higher scores indicate greater participation in HPBs. The scale has been used by researchers in several studies[17,22,26-34] and has confirmed its validity and reliability.

The Persian version HPLP-II, which was used in this study is an instrument that has been validated by Morowatisharifabad *et al*. They reported an acceptable content validity for the instrument and a Cronbach α=0.8744 for internal reliability.[22] In this study, alpha coefficient was 0.92 for total scale and 0.67 to 0.90 for the subscales.

Analytic strategy

The SPSS-16.0 software was used for descriptive statistical analyses, including means and standard deviations. The associations between HPBs scores and demographic factors were assessed using Pearson and Spearman correlation test, Student T test and one-way ANOVA.

RESULTS

The demographic characteristics of the participants are presented in Table 1. 31.2% of participants were obese (BMI ≥ 30). 67.7% of participants reported that they were suffering from at least one chronic disease. The reported diseases were arthritis 28%, hypertension 23%, dyslipidemia 19.7%, diabetes 14.7% and osteoporosis 10%.

Table 1. Demographic characteristics of selected Iranian middle-aged women (N = 483)

Variables	Indices
Age*	48.51 ± 6.04, 40–60
Educational level *	6.74 ± 4.88, 0–22
Illiterate (n, %)	(69, 14.3)
Primary (n, %)	(287, 59.4)
Diploma (n, %)	(76, 15.7)
Academic (n, %)	(51, 10.6)
Number of children*	4.02 ± 1.93 , 0–12
Weight*	71.41 ± 10.55 , 40.5–108
BMI *	28.32 ± 4.40 , 14.52–43.82
Marital status	
Married (n, %)	(449, 93)
Single (n, %)	(34, 7)
Employment	
Employee (n, %)	(40, 8.3)
Housewife (n, %)	(411, 85.1)
Retired (n, %)	(32, 6.6)
Menopausal status	
Yes (n, %)	(183, 37.9)
No (n,%)	(300, 72.1)
Health insurance coverage	
Yes (n, %)	(452, 93.6)
No (n, %)	(31, 6.4)

*(mean ± SD, range)

Possible and observed ranges, Mean and SDs of HPBs among studied women are shown in Table 2. Spirituality growth dimension got the highest score (3.60 ± 0.42), and the lowest score was for physical activity (1.70 ± 0.47) dimension.

Table 2. Possible and observed ranges, Mean and SDs of HPBs among Iranian middle-aged women

HPLP and subscales	Possible range	Observed range	Mean (SD)
Nutrition	1–4	1.44–4	2.82 (0.51)
Physical activity	1–4	1–3.75	1.70 (0.47)
Spiritual growth	1–4	1.83–4	3.60 (0.42)
Health responsibility	1–4	1–3.86	2.14 (0.68)
Stress management	1–4	1.17–4	2.99 (0.61)
Interpersonal relationship	1–4	1.43–4	3.23 (0.53)
Total HPLP score	1–4	1.62–3.71	2.73 (0.36)

Table 3 illustrates mean and SDs of HPBs by some demographic variables. Pearson correlation coefficient showed a positive significant correlation of HPBs with age and education level (P<0.016, P< 0.001) and a negative significant correlation with number of children (p<0.02). According to ANOVA with a Tukey Post Hoc test, there was significant difference on HPBs by women's job with a higher level of HPBs on retired women than those who were housewife or employee. However age in retired women was significantly higher than that in others. Therefore, to avoid the influence of age on HPBs, we used age as a covariate and compared parameters at HPBs using covariance analysis. HPBs in retired women were significantly higher than others even after adjusting for age. There was not any other significant correlation or difference.

Table 3. Distributions of total HPBs by demographic characteristics

	Mean ± SD	Significances	Post Hoc	P (After adjusting for age)
Age				
40–44 years	2.69 ± 0.32	r = 0.096		
45–49	2.72 ± 0.37	P = 0.03		
50–54	2.74 ± 0.36			
55-60	2.76 ± 0.39			
Educational level				
Illiterate	2.61 ± 0.32	F=0.148		
Primary	2.73 ± 0.37	P = 0.001		
Diploma	2.81 ± 0.36			
Academic	2.74 ± 0.31			
N of children				
0	2.86 ± 0.45	r = -0.128		
1–3	2.75 ± 0.35	P = 0.005		
≥ 4	2.70 ± 0.36			
BMI				
Underweight	2.66 ± 0.42	NS		
Normal weight	2.74 ± 0.37			
Overweight	2.75 ± 0.37			
Obese	2.74 ± 0.34			
Excessive obese	2.65 ± 0.33			
Marital status				
Married	2.74 ± 0.40	NS		
Single	2.72 ± 0.35			
Employment status				
Housewife	2.71 ± 0.3	F= 4.93	Retired>	P=0.02
Employee	2.75 ± 0.35	P= 0.008	Housewife	
Retired	2.91 ± 0.42		& Employee	
Menopausal status		NS		
Yes	2.76 ± 0.37			
No	2.70 ± 0.34			
Health insurance coverage				
Yes	2.73 ± 0.36	NS		
No	2.62 ± 0.33			

DISCUSION

The majority of participants in this study were in the moderate level for HPBs. Mean of total HPBs score (2.73 ± 0.36)of Iranian middle-aged women was similar to Mexican–American female workers (2.7);[30] however, they were better than registered nurses in a tertiary hospital in the United States (2.6),[35] Korean middle-aged women (2.50),[36] Jordanian women (2.50),[17] homeless women (2.49),[37] Turkish worker (2.45, 70% female)[28] and Southeast Asian women in Taiwan (2.01).[3]

Spiritual health is considered as one of the most important aspects of human health. Spirituality is having meaning and direction in life. It provides harmonious and integrated relationship between the internal forces and is distinguished with characteristics of stability in life, peace, coordination and feeling close relationship with self, God, society and environment.[38,39] Women of our study earned the highest score in spiritual growth dimension. Comparing other studies, Iranian middle-aged women had the higher level of spiritual growth.[3,28,35,36,40] Spiritual growth score was 3.1 among Mexican–American female workers and 2.74 for Turkish workers;[28,30] this must be due to the important role of religion in Iran.

Similar to other previous studies,[3,28,30,36] the mean score of physical activity among Iranian middle-aged women was 1.7 indicating a low level of physical activity among them. Despite the fact that a numerous studies have shown that physical activity have positive effects on menopausal symptoms and prevention of arthritis, osteoporosis and cardiovascular disease,[41-45] inactivity in these women resulted in overweight, obesity (mean BMI=28.53) and creation of desire background for diabetes, hypertension, dyslipidemia and arthritis. The level of physical activity among Iranian middle-aged women was even less than homeless women in the Central North Carolina;[37] however, it was similar to the study of Shin *et al*.,[36] who showed that the least behaviors of Korean middle-aged women was physical activity.

Comparing other studies,[3,17,27,28,30,35,36] Iranian middle-aged women showed a lower level of health responsibility while diabetes, cardiovascular disease and breast cancer in women of Yazd has the most prevalence as compared with other Iranian women.[46-48] It is another behavior that results in improvement of the health status and also prevention of disease. Also the level of health responsibility among Iranian middle-aged women was less than homeless women in Central North Carolina.[37] Only Southeast Asian women in Taiwan[3] had a more undesired behavior level which probably is due to immigration and its related economic problems and also language and environmental differences.

A significant positive correlation was seen between age and HPBs, which is consistent with the results of Lee *et al* study.[3] Younger people believe that they are in good health condition and this will lead to an invulnerability feeling and then a lower level of HPBs. Also there was a significant positive correlation between education level and HPBs, which is consistent with a previous study in Iran by Morowatisharifabad *et al*.,[22] and also some other previous studies.[3,17,27,28]

Also there was a negative significant correlation between HPBs and number of children in this study. Women with more children than others have less time and possibly less opportunity to take of care themselves. Retired women had more desirable behaviors than housewives and occupied women even after age adjustment, and this must be because of the fact that by retirement the women's responsibility for family and society decreases, which is a good opportunity for more attention to themselves. There was not a significant correlation between HPBs and history of chronic disease. It means that Iranian middle-aged women in this study are not sensitive to their health even with a chronic disease. Marital status did not show any correlation with HPBs; this may be due to fewer numbers of single women in this study, which is not consistent

with the study among Jordanian women who reported a higher level of HPBs among married women.[17]

In general, Iranian middle-aged women were desirable in mental health dimensions of HPBs such as stress management, interpersonal relations and spiritual growth but unfortunately their behaviors in physical health dimensions (physical activity, health responsibility and somewhat nutrition) were very undesirable and these threaten their physical health in late middle-aged and elderly. In order to have a successful aging they must start to improve their lifestyle in early middle age. Moreover, it seems critical that health professionals should be aware of the special needs of middle-aged women to help them promote healthy lifestyles in their cultural context. Encouraging HPBs in middle-aged women should be a priority for healthcare professionals. At the same time, culturally appropriate materials such as brochures, movie and instructive pamphlets should be developed to increase knowledge of middle-aged women in this area. Moreover, the feature of HPBs among Iranian middle-aged women as a developing country is different from industrialized developed and also non-Muslim countries, so they need a different intervention programs. A qualitative study is recommended in order to explore barriers and facilitators of HPBs in this age group.

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