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Factors Influencing Health Promoting Behaviours in Women of Reproductive Age in Iran: Based on Pender's Health Promotion Model

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Keywords: Health-promoting behaviours; HPLP II; Pender's health promotion model; Reproductive age

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Abstract

INTRODUCTION: Health promotion behaviours are considered as preventives of non-communicable diseases and key determinants of maintaining and improving the health status.

AIM: This study aimed to investigate and identify effective factors on health-promoting behaviours based on Pender model in women of reproductive age from February to April 2017, in Savojbolagh, Iran.

METHODS: This cross-sectional study is conducted on 240 women aged between 15 to 49 years in Savojbolagh, Iran, in 2017. The questionnaire consisted of several items, including socio-demographic characteristics, health-promoting lifestyle profile-II (HPLP-II), self-efficacy, social support and constructs of Pender's health promotion model. SPSS-18 software has been applied for statistical analysis.

RESULTS: The mean age of the women was 31.10 ± 7.29 years. Total HPLP-II score was 106.64 ± 11.93. The highest and the lowest mean in the subscales were belonged to nutrition and physical activity, respectively. According to the bivariate analysis, the total HPLP-II score is significantly related to prior health-related behaviour ($p = 0.000$). There was a statistically significant relationship between stress management and the variables including perceived benefits, perceived barriers, prior health-related behaviour, situational influences, commitment to a plan of action ($p < 0.05$). Also, health responsibility had a statistically significant relationship with self-efficacy ($p < 0.05$).

CONCLUSION: According to our results, it can be inferred that there is a problem with the HPBs of women. Considering that health-promoting behaviours like physical activity had a low score, it is a necessity to plan and perform interventions for improving health promotion behaviours.

Introduction

Health-promoting behaviours (HPBs) refer to general activities that improve self-realisation and a sense of well-being, that include acts that assist persons in maintaining and promoting healthy lifestyles [1]. HPBs are categorised in six dimensions based on Pender's health promotion model as follows: physical activity, nutrition, stress management, health responsibility, interpersonal relations and spiritual growth [2]. Furthermore, health promotion behaviours are considered as preventives of non-communicable diseases (NCDs) and key determinants of maintaining and improving the health status [3]. NCDs are known as the leading causes of morbidity and mortality in most low- and middle-income countries [4].

Currently, 63% of annual global deaths (over 36 million people) belongs to NCDs, which most of them are preventable [5]. The estimated worldwide cost of NCDs was $ 6.3 trillion (US dollars) for 2010, and it is projected to be increased to $ 13 trillion by 2030 [6]. It is anticipated that these diseases will be causing seventy per cent of deaths in developing countries by 2020 [7].

The majority of the Iranian female population are in their reproductive age [8]. Because of the health of women of reproductive age impacts their long-term health and that of their family members, particularly their children, it is necessary to promote women's health [9]. Nearly 80% of 18 to 55-year-old women had multiple lifestyle risk behaviours reported by Sanchez et al., [10]. Kontis et al. estimated the

effects of attaining targets for six risk factors (tobacco and alcohol use, salt intake, obesity, and raised blood pressure and glucose) on NCD mortality between 2010 and 2025. They concluded that the probability of dying from the four main NCDs in women of 30 to 70 years age group would be decreased by 19% between 2010 and 2025 if targets of risk factors are achieved [11].

There are as several factors affecting health-promoting behaviours reported by previous studies such as age, education level, gender, employment status, family income, perceived social support, self-esteem, self-efficacy, previous health-related behaviors, perceived benefit, health knowledge and marital status [9], [12], [13], [14], [15], [16]. In this study, Pender's health promotion model has been applied to identify effective factors on HPBs. According to Pender's health promotion model, HPBs can be influenced by following variables: individual characteristics and experiences; behaviour-specific cognitions (perceived benefits of action, perceived barriers of action, perceived self-efficacy, situational influences and social support); and adherence to specific plans of action [17].

Finally, this study aimed to investigate and identify effective factors on HPBs in women of reproductive age in Savojbolagh, Iran.

Material and Methods

This cross-sectional study is conducted in Savojbolagh, Iran, from February to April 2017. The study population included women aged 15 to 49 years. The ethics committee at Tehran University of Medical Sciences provided ethics approval for the study, which is part of a PhD thesis in the field of health education and promotion, with the code IR.TUMS.VCR.REC.1395.57. All women were informed about the objectives of the study, and written consent was obtained from them. To select the sample size, 240 applicants were determined by considering the 95% confidence interval, the power of 80% and a 10% attrition rate.

The inclusion criteria for this study were as follows: being willing to participate in the research; residing in Savojbolagh county; within the 15 to 49 year age group; not pregnant, and not having experienced unpleasant events during the past month (such as the death of a family member or divorce).

The following tools have been utilised to collect data:

Self-efficacy: A five-point scale, developed by Sherer and Maddux, is used to measure self-efficacy in general situations by seventeen items. Total possible scores ranged from 17 to 85, which higher scores imply a deeper belief in one's ability to succeed in performing duties [18]. Cronbach's α for the scale was 0.76 in this study.

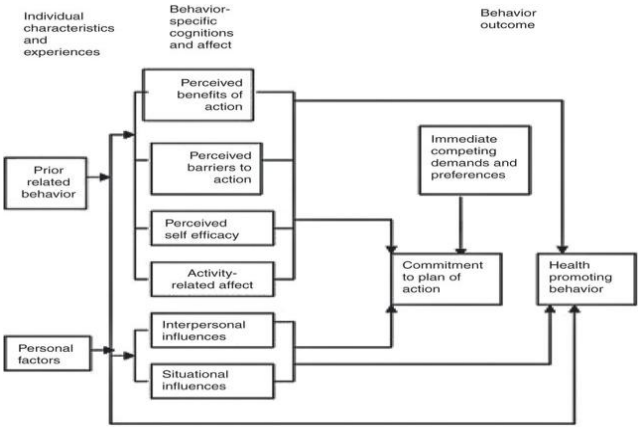

Figure 1: Pender's Health Promotion Model

Social support: This questionnaire is designed and developed by Vaux et al. in 1986. The questionnaire had 23 questions with three domains of family, friends and others for evaluation the social support. Family, friends and other people subscales have 8, 7 and 8 questions, respectively. A zero-one grading system is utilised for this study. Zero was minimum, and 23 was maximum grades for the participants, which higher grades indicate the larger scale of social support [19]. Cronbach's α for the scale was 0.82 in this study.

Health promotion lifestyle profile Scale-II: The HPLP-II, developed by Walker, Sechris, and Pender (1987), is applied for the purpose of determining the healthy lifestyle behaviours. The HPLP-II questionnaire consisted of 52 items with the six aspects of health-promoting behaviours including nutrition (9 items), physical activity (8 items), spiritual growth (9 items), health responsibility (9 items), stress management (8 items) and interpersonal relations (9 items). All items are scored from 1 to 4 using the Likert scale (1 = never, 2 = sometimes, 3 = often, 4 = routinely). The lowest and highest possible score for the entire scale were 52 and 208, respectively [2]. In this study, the alpha coefficient was 0.88 for the total scale and 0.67 to 0.90 for the subscales.

Constructs of Pender's health promotion model: The structures of Pender's health promotion model have been measured through questions including perceived benefits (6 items), perceived barriers (6 items), prior related behaviour (6 items), situational influences (6 items) and commitment to a plan of action (6 items). All the items are scored based on a five-point Likert-type scale. The content validity of the instrument was CVI = 0.86 and CVR = 0.80, with the Cronbach's alpha coefficient of 0.79 for the total scale and 0.74 to 0.86 for the subscales.

Data have been analysed with descriptive statistics (mean, standard deviation, frequency, percentage, etc.) and analytical tests (Pearson

correlation test, t-test and ANOVA) by using SPSS 18 software.

Results

The mean age of the women was 31.10 ± 7.29 years. Almost half of the women (51.7%) were aged between 25 and 34 years. The majority of women (91.2%) were married. 57.5 % of women were overweight. Table 1 presents the demographic characteristics of the studied participants.

Table 1: Demographic characteristics of the participants (n = 240)

Demographic variables		Frequency	Percentage
Age	15-24	41	17.1
	25-34	124	51.7
	35 or older	75	31.2
Education	Primary School	29	12.1
	Guidance School	104	43.3
	High School	66	27.5
	Bachelor and higher	41	17.1
Marital status	Single	21	8.8
	Married	219	91.2
Occupation	Employed	41	17.1
	Housekeeper	199	82.9
BMI	less than 18.5	0	0
	18.5-24.9	37	15.4
	25-29.9	138	57.5
	30 and more	65	27.1

The mean total HPLP-II score of women was 106.64 ± 11.93. The highest and lowest mean in the subscales were for nutrition (19.29 ± 4.04) and physical activity (17.33 ± 3.89), respectively. The mean item score for each subscale is presented in Table 2.

Table 2: Mean and standard deviation for health promotion lifestyle profile

Scale/Subscale	Possible Range	Observed Range	Mean ± SD
HPLP II total	52-208	71-151	106.64 ± 11.93
Health responsibility	9-36	9-28	17.50 ± 3.49
Physical activity	8-32	9-29	17.33 ± 3.89
Nutrition	9-36	11-31	19.29 ± 4.04
Spiritual growth	9-36	10-28	17.67 ± 3.01
Interpersonal relationship	9-36	9-28	17.45 ± 3.37
Stress management	8-32	9-29	17.40 ± 3.68

Possible and observed ranges, mean and standard deviations for constructs of Pender's health promotion model among studied women are shown in Table 3. The mean score of perceived social support was 10.58 ± 1.56. Also, the mean score of self-efficacy was 45.38 ± 8.25.

Table 3: Mean and standard deviation for constructs of Pender's health promotion model

Constructs	Possible Range	Observed Range	Mean ± SD
Perceived Benefits	6-30	8-25	15.84 ± 2.50
Perceived Barriers	6-30	11-27	17.45 ± 2.66
Prior Related Behavior	6-30	8-25	16.91 ± 2.82
Situational influences	6-30	8-20	14.72 ± 2.10
Commitment to a plan of action	6-30	7-24	14.35 ± 2.52
Self-efficacy	17-85	28-69	45.38 ± 8.25
Social support	0-23	7-15	10.58 ± 1.56

According to bivariate analysis, the total HPLP-II score was significantly related to prior related behaviour (r = 0.242, p = 0.000). A statistically significant relationship is found between stress management and the variables such as perceived benefits, perceived barriers, the prior related behaviour, situational influences, commitment to a plan of action. There was also a statistically significant relationship between health responsibility and self-efficacy (Table 4).

Table 4: Relationships between studied variables and health-promoting behaviours

Variables	HPLP II total	Health responsibility	Physical activity	Nutrition	Spiritual growth	Interpersonal relationship	Stress management
Age	r = 0.096	r = - 0.002	r = 0.117	r = 0.123	r = 0.049	r = 0.008	r = 0.007
	p = 0.137	p = 0.979	p = 0.071	p = 0.056	p = 0.449	p = 0.907	p = 0.908
Education	F = 0.400	F = 1.346	F = 0.804	F = 0.569	F = 0.406	F = 2.940	F = 0.677
	p = 0.753	p = 0.260	p = 0.492	p = 0.636	p = 0.749	p = 0.034	p = 0.567
Marital status	t = -1.062	t = -0.092	t = -1.829	t = -1.137	t = -1.144	t = 0.510	t = 0.285
	p = 0.289	p = 0.927	p = 0.069	p = 0.257	p = 0.254	p = 0.611	p = 0.776
Occupation	t = -0.182	t = 0.949	t = -0.279	t = -0.849	t = -1.396	t = 0.885	t = 0.065
	p = 0.856	p = 0.344	p = 0.781	p = 0.397	p = 0.164	p = 0.377	p = 0.948
BMI	F = 0.174	F = 0.399	F = 0.135	F = 0.068	F = 0.958	F = 0.415	F = 1.217
	p = 0.840	p = 0.671	p = 0.874	p = 0.934	p = 0.385	p = 0.661	p = 0.298
Perceived Benefits	r = 0.122	r = -0.036	r = 0.044	r = 0.019	r = -0.010	r = -0.078	r = 0.581
	p = 0.058	p = 0.582	p = 0.500	p = 0.768	p = 0.879	p = 0.227	p = 0.000
Perceived Barriers	r = -0.065	r = 0.104	r = -0.053	r = -0.013	r = -0.083	r = 0.104	r = -0.266
	p = 0.315	p = 0.108	p = 0.412	p = 0.842	p = 0.198	p = 0.109	p = 0.000
Prior Related Behavior	r = 0.242	r = 0.052	r = 0.060	r = 0.050	r = 0.052	r = -0.007	r = 0.581
	p = 0.000	p = 0.424	p = 0.355	p = 0.437	p = 0.422	p = 0.919	p = 0.000
Situational influences	r = 0.036	r = -0.057	r = -0.013	r = -0.069	r = 0.053	r = 0.054	r = 0.166
	p = 0.581	p = 0.381	p = 0.840	p = 0.287	p = 0.411	p = 0.409	p = 0.010
Commitment to a plan of action	r = -0.008	r = -0.047	r = -0.022	r = -0.096	r = 0.036	r = -0.088	r = 0.199
	p = 0.903	p = 0.464	p = 0.735	p = 0.137	p = 0.575	p = 0.175	p = 0.002
Self-efficacy	r = 0.091	r = 0.198	r = 0.031	r = 0.016	r = -0.015	r = 0.074	r = 0.002
	p = 0.159	p = 0.002	p = 0.634	p = 0.811	p = 0.815	p = 0.253	p = 0.971
Social support	r = 0.027	r = -0.026	r = 0.021	r = 0.015	r = 0.055	r = 0.026	r = 0.007
	p = 0.672	p = 0.684	p = 0.747	p = 0.821	p = 0.395	p = 0.687	p = 0.920

Discussion

In this study, the total score of health behaviours was 106.64 ± 11.93, which was lower value in comparison with other studies conducted on urban Chinese women (20), middle-aged women in Iran [21] and pregnant women in Turkey [22]. In our study, the highest mean score was observed in the nutrition subgroup scale, which was inconsistent with previous studies [23], [24], [25]. However, it should be noted that other studies did not report the same results [15], [16], [26]. The high score of nutrition's sub-scale is obtained because of several parameters such as environmental characteristics of the Savojbolagh county and convenient accessibility to inexpensive fruits, vegetables and dairy products.

Women scored the lowest value for physical activity. Inactivity in these women caused overweight or obesity (mean BMI = 28.53). Our results were in agreement with most studies in different age groups [9], [13], [15], [26], [27], [28], [29]. As mentioned in these studies, an inactive lifestyle was a challenge for most countries as a major risk factor for most non-communicable diseases. Regarding the undeniable impact of exercise on peoples' health, it is required to study the reasons for the low physical activity in women by conducting qualitative studies.

In this study, HPBs were meaningfully and positively associated with prior health-related behaviours. This result was in line with that of previous researches [12], [30]. Pender proposed that

prior related behaviour had direct and indirect influences on existing HPBs as they could lead to changes in present health-related behaviours and inspire habitual participation in HPBs, even without attention to individual behaviours [1].

There was not any statistically significant relationship between health-promoting behaviours and variables including age, marital status, occupation, education and BMI (P > 0.05). In our study, a statistically significant relationship is observed between self-efficacy and health responsibility. Self-efficacy, defined as an individual's belief that he or she can successfully execute a given behaviour, is required to produce the desired outcome. Self-efficacy influences the adoption of HPBs, the cessation of unhealthy behaviors, and the maintenance of behavior modification when faced with difficulty [31]. It is worth mentioning that participants with a higher value of perceived self-efficacy applied greater exertion in practising healthy behaviours to improve their health, and they were more likely to accomplish health-promoting behaviour [32]. Lee et al. stated that self-efficacy positively correlated with health behaviours in mothers with infants and toddlers [33]. Also, Shin et al. showed that perceived self-efficacy had direct effects on HPBs in elderly Korean women [30].

The method of self-report for collecting data in this study, as a study limitation, possibly effected the tendency of participants to over or underestimate their health promotion behaviours. Another limitation was the fact that the study was cross-sectional. Therefore, the relationships observed between the HPBs and the related factors cannot be interpreted as causal. It is recommended that the importance of HPBs and their evaluation in other age groups should be considered. Finally, it is also necessary to conduct further and qualitative researches on the effect of other factors to explain women's opinion and experience of HPBs.

In our study, the HPBs have been evaluated for Iranian women in reproductive age in Savojbolagh County. According to our results, it can be inferred that there is a problem with the HPBs of women. Considering that health-promoting behaviours like physical activity had a low score, it is a necessity to plan and perform interventions for improving health promotion behaviours.

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