Relationship between Health Literacy and Life Style of Women in Khomeinishahr, Iran: A Cross-Sectional Study

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Abstract

Introduction: Health education and lifestyle are factors affecting health. This study seems necessary to assess health literacy, determine lifestyle (based on four dimensions of nutrition, physical activity, interpersonal relations, and mental health) as well as the relationship between lifestyle and health literacy of 30 to 59 years old women referred to health care centers in Khomeinishahr, Isfahan, Iran.

Materials & Methods: In this descriptive-analytical study, 420 women between 30 to 59 years old, of 11 health care centers, were selected randomly. In this study, a standardized three-part questionnaire was used the validity and reliability of which has already been approved. The questionnaire consisted of three parts including demographic information including age, marital status, education level, economic status and health situation; lifestyle questionnaire and Functional Health Literacy questionnaire for adults. Data analysis was down by using descriptive and analytical statistics (Pearson correlation and multiple regressions) through SPSS 16 Software.

Results: The mean age of participants was 39.69 ± 8.06 years old and 56.7% had an education level of under diploma. According to regression analysis, there was a statistically significant relationship between health literacy and dimensions of nutrition, physical activity, and mental health. There was no significant relationship between health literacy and interpersonal relationships. Regression analysis using Enter method showed that health literacy as predictor variable explains 31.2% of variance of lifestyle and its dimensions in women.

Conclusion: Nutrition, physical activity and mental situation were improved with increasing the level of health literacy. Therefore, education and interventions in this group of people is recommended to improve health literacy.

Key words: Life Style, Health Literacy, Women.

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Introduction

Undoubtedly, lifestyle is one of the most significant factors affecting health (1). According to a comprehensive approach, health protective behaviors, regarding risk elimination and prevention, and health promoting behaviors are considered as two complementary parts of a healthy lifestyle. According to scientific evidence, choices and lifestyle of individuals may effect on their health and longevity (2). The term "lifestyle" which was introduced by Alfred Adler the Austrian psychoanalysts and founder of individual psychology school, is an underlying concept that is usually used to describe life method of people reflecting a wide range of values, beliefs, and social activities that affect health (3).

According to statistics related to death reasons, 53% of mortality causes relate to lifestyle of individuals (4). World Health Organization believes that it is possible to cope with numerous risk factors that cause death by changing and correcting lifestyle (5). Unhealthy nutrition, sedentary lifestyle and smoking can be named as some of the risk factors in chronic diseases. Removal of these risk factors may prevent early heart diseases, heart attack and diabetes type 2 in up to 80%, as well as 40% of cancers (6). On the other hand, health literacy has been increasingly considered as an effective factor for improvement of health implications and reducing inequality in health during the recent decade (7). Health literacy is a new concept that is used by many experts in both education and health majors. Health literacy is based on the idea that both health and literacy plays a vital role in daily life (8).. Health literacy is based on a series of abilities encompassing a range from the communicational base to a critical form. Natbeam (2000) defined three certain levels of health literacy including basic or functional health literacy that consists of some skills such as reading and writing requiring for effective function in a field of health; communicational or interactional health literacy consisting of advanced social and literary skills that enable the person to participate in health care actions, extract data and infer the concept from different forms of communication and use information to change situations; of critical health in which, the ability of critical analysis and use of information for engagement that overcomes structural obstacles of health (9).

Health literacy, as a social health component, is not just a technical subject consisting of reading and calculation skills, but also is the implication of interactions between individuals, culture and the society they live in. Cultural resistance is considerable in approaches to health care and understanding them, listening skills, speaking and writing, familiarity with language and concepts related to health, information and subjects to achieve health literacy (10).

According to studies conducted in recent decades, health literacy is a better predictor for health status compared to education, socio-economic situation, job, and race or gender (11). Health literacy enables individuals to have appropriate performance using advanced cognitive-social skills in new and unknown situations related to health (12). Previous studies conducted in centers that provide services showed that patients with inadequate health literacy participate less in screening processes and less following of drug prescriptions and also have weaker health implications (13). Results obtained from the study conducted by Ford et al. indicated a lower percent of adults who had healthy life style in USA during 1996-2007 (14). Results obtained from a study of Tamakoshi et al. showed a reverse relationship between 6 factors of healthy lifestyle (no-smoking, no alcohol use, one hour daily walking, enough sleep about 6.5-7.4 hours, daily intake of vegetables, and normal body mass index), and mortality due to any reason, in men and women, so that these factors could reduce mortality up to 49% (15). Tokuda et al. conducted a study and showed a weak relationship between health literacy and physical-mental health status (16).

According to the mentioned points about the importance of lifestyle and health literacy as two significant factors affecting health, as well as the important role of women, who are vulnerable population, in health of society and family, it is essential to be aware of the health literacy level and lifestyle situation to plan and perform effective interventions in order to improve health. Therefore, this study aimed at evaluating health literacy and life style situation based on four dimensions of nutrition, physical activity, interpersonal relationships, and mental health as well as determining the relationship between lifestyle and health literacy in women referring to healthcare centers in Khomeinishahr, Iran during 2016.

Materials and Methods

Study Design and Population

This descriptive-analytical study was conducted through cross-sectional method on 30-59 years old women referring to healthcare centers in Khomeinishahr during 2016. Random sampling method was performed in 11 healthcare centers.

Inclusion & Exclusion Criteria

Inclusion criteria consisted of age range of 30-59, voluntary participation, conscious consent, and minimum literacy of writing and reading; exclusion criteria consisted of lack of cooperation to fill out the questionnaire.

Ethical Considerations

Research aims were explained to participators precisely and they were ensured about confidentiality of their information. Sample members entered into the study after announcing their consent on paper.

Instrument & Scoring

To collect data, questionnaire was used in this research; this questionnaire consisted of three parts including 1- demographic data (age, marital status, education level, economic status, and health status), 2- questionnaire of adulthood lifestyle considering 4 lifestyle dimensions, and 3- questionnaire of functional health literacy of adults. The questionnaire of adulthood lifestyle has been designed

by Mehdipoor and its validity and reliability have been confirmed. This questionnaire was designed based on 4 dimensions of lifestyle including nutrition, physical activity, mental health, and interpersonal relationships and each of them consist of 10 questions based on a 4-point Likert Scale; the allocated scores are variable at range of 0-3 in which, option "always" is given score 3, "sometimes" score 2, "rarely" score 1, "never" score 0. Scores are calculated based on 120 after obtaining results (17). To examine health literacy of patients the short version of functional health literacy of adults' questionnaire was used. This questionnaire had been localized in previous studies and its validity and reliability had been confirmed; reliability of this questionnaire was reported as 0.69 for the calculation part and 0.78 for the comprehension part using Cronbach's alpha (18). This instrument is one of the most reliable health literacy questionnaires around the world. Validity and reliability of this questionnaire was also confirmed in the study of Baker; its reliability obtained as 0.68 and 0.97 for calculations and reading comprehension, respectively using Cronbach's alpha (19). Functional Health Literacy in Adults Questionnaire consists of 40 questions as well as two parts of reading comprehension and calculation. Ability of participants to read and understand two texts was examined in the reading comprehension part that consisted of 36 questions and each question had 2 scores; total score was calculated between 0 and 72. In the calculation part, the ability of understanding and performing based on practitioners' recommendations requiring calculations was examined. This part consisted of 4 health orders and 4 questions that were given 1 score and total score was obtained in a 0-4 range. Of total score obtained from these two parts, total score of health literacy obtained was a score between 0 and 100 so that functional health literacy of participants was divided into three parts of inadequate health literacy (0-53), border line (54-66), and adequate health literacy (67-100). Questionnaires were filled out through interview with patients considering a 20-40 minutes session for participants.

Data Analysis

Ultimately, data obtained from questionnaires was entered into SPSS 16 Software then analyzed using descriptive statistics and tests including Pearson correlation, independent t test, Spearman correlation, and multiple regression analysis.

Findings

Results of this study showed mean age of studied women at range of 39.96±06 (30-59); 45.7% had under-diploma degree and 12.4% had academic education. In terms of economic status, 58.8% were middle class, 26.4% were poor, and 0.5% were rich; 95% were married and 2.8% were widow or divorced (Table 1 - next page). Mean score of lifestyle among participants obtained was 67.76±11.09; according to the obtained scores in different lifestyle scopes, nutrition was at an average level with mean of 19.68±3.21, physical activity was at lower-average level with mean of 6.60±5.54; mental health was at higher-average level with mean of 20.93±4.85, and interpersonal relationships was at a higher-average level with mean of 20.62±5.17. Average level of total health literacy of women obtained was 63.89. Mean score of health literacy among participants obtained was 21.97±7.34 and 2.67±0.92 for reading comprehension and computation parts, respectively.

As can be seen in Table 2, there is a significant correlation between lifestyle and dimensions of physical activity, nutrition and health literacy of women in general and significant correlation between lifestyle and each of the dimensions of reading comprehension and calculations; while Pearson correlation coefficient did not indicate any significant relation between interpersonal relationships, total health literacy, reading comprehension, and calculations.

Findings in Table 3 were obtained from regression analysis using Enter method. Health literacy is a predictor variable that explains 31.2% of variance of lifestyle and its dimensions in women; therefore, the observed F is significant at level of P-Value<0.05; hence, regression can be generalized to statistical population.

According to the findings, health literacy has a direct effect on lifestyle dimensions including nutrition, physical activity, and mental health with coefficients of 0.058, 0.20, 0.074, respectively so that these values have been statistically significant (P. value<0.05); while health literacy of women had a minor effect on interpersonal relationships with affecting coefficient of 0.009 (P. value>0.05). In other words, health literacy can be the best predictor of some lifestyle dimensions including nutrition, physical activity, and mental dimension (Table 4).

Discussion

This study was conducted to determine the relationship between lifestyle and health literacy. Lifestyle status of studied women obtained mean of 67.76±11.09. Mehdipoor et al. conducted a study in which, lifestyle of middle-aged women had been assessed at the beginning of intervention so that the majority of participants had an average lifestyle (17).

The most common diet among women in this study consisted of breakfast, bread, rice, macaroni, and minimum fish consumption; hence, they did not use extra salt in their diet. Mean score of lifestyle related to nutritional habits were at lower-average level with coefficient of 19.68±3.21 and this result was not in line with the result obtained by Sajjadi et al. (20) because of the different age of participants and studied place; young rural women were studied in the mentioned research; such a result is logical since rural women do not use prepared and canned food.

Physical activity of women had the lower level with coefficient of 6.60±5.54 and majority of participants had the minimum level of physical activity so that some activities such as moving table, using vacuum cleaner and simple home chores had the highest frequency among other items of questionnaire. Tensile, aerobic, and physical activities during leisure time obtained lowest coefficients. In general, various studies have indicated low level of physical activities among Iranian women (21, 22).

Table 1: Frequency distribution of demographic features of participants

Variable		Frequency	Percent
Age	<30	43	10.2
	30-35	116	27.6
	35-40	86	20.5
	40-45	78	18.6
Marital status	single	5	1.2
	married	399	95.0
	divorced	7	1.7
	widow	9	2.1
First marriage age	>45	97	23.1
	<20	339	80.7
	20-30	67	16.0
	30-40	8	1.9
Education level	uneducated	22	5.2
	reading and writing	58	13.8
	elementary and secondary	136	32.4
	high school	22	5.2
	diploma	130	31.0
	associate degree and BA	52	12.4
Education level of husband	uneducated	40	9.5
	reading and writing	53	12.6
	elementary and secondary	156	37.1
	high school	15	3.6
	diploma	109	26.0
	associate degree and BA	39	9.3
Number of pregnancies	0	10	2.4
	1 & 2	36	36.4
	3 & 4	117	44.0
	>4	130	17.1
Number of children	0	19	4.5
	1 & 2	170	40.5
	3 & 4	174	41.4
	>4	57	13.6
Economic status	rich	62	14.8
	middle	247	58.8
	poor	111	26.4
Residential status	private house	291	69.2
	rental house	99	23.6
	house of relatives	30	7.1

Table 2: Correlation between health literacy and lifestyle

	Lifestyle	*Physical activity*	*Nutrition*	*Mental health*	*Interpersonal relationships*
Health literacy	r=0.162** p=0.001	r=0.264** p<0.001	r=-0.128* P=0.011	r=0.110* p=0.027	r=-0.013 p=0.798
Reading	r=0.180** P<0.001	r=0.306** p=0.001	r=-0.148** p=0.003	r=0.122* p=0.014	r=-0.029 p=0.551
Calculation	r=-0.122* p=0.018	r=-0.219** p<0.001	r=0.118* p=0.019	r=-0.108* p=0.03	r=0.57 p=0.247

Table 3. Multiple correlation coefficient between health literacy & lifestyle

Criterion-predictor variable	Multiple correlation coefficient (R)	Squared multiple correlation coefficient (R^2)	F coefficient	Sig level
lifestyle and its dimensions-heath literacy	0.312	0.097	11.105	<0.001

Table 4: Results obtained from regression analysis of the effect of health literacy on lifestyle

Criterion variable	Predictor variable	non-standard beta coefficient		standard beta coefficient	t value	Sig
		beta	standard error			
Nutrition	health literacy	0.058	0.023	0.128	2.562	0.01
Physical activity	health literacy	0.20	0.037	0.264	5.516	<0.001
Mental dimension	health literacy	0.074	0.033	0.11	2.213	0.027
Interpersonal relationships	health literacy	0.009	0.035	0.013	0.257	0.798
Total lifestyle	health literacy	0.254	0.08	0.162	3.198	0.001

Mental health dimension of lifestyle obtained mean of 20.93±4.85 so that the majority of studied women were able to control stress and had suitable mental health in coping with daily challenges; this result was matched with result obtained by Sajjadi et al. (20).

Mean of functional health literacy obtained at 63.89±14.96 was in line with results obtained by Javadzadeh and Sajjadi et al. According to a study conducted by Javadi, although the score of total health literacy was higher than average level, there was a highest level of challenge in computational health literacy (20, 23) so that 20% of participants could calculate the correct time of drug usage. Since correct drug-therapy is one of the initial principles for successful therapy, weakness in computing time of drug usage may make risk in therapy process; hence, computational literacy of individuals should be improved. There was a significant relationship between health literacy and nutrition in this research so that increased health literacy led to better nutritional status; this result was in line with results obtained from studies conducted by Wagner et al. (24). According to studies conducted in this field, people with higher health literacy are adherent to health behaviors (25).

In addition, there was a positive relationship between physical activity and mental health; this result was in line with results obtained by Kim et al. (26). Seemingly, individuals with higher health literacy are more able in reading and comprehension of scientific references to solve problems related to health; according to other studies, the mentioned individuals have high-level lifestyle (20).

There was a reverse insignificant relationship between health literacy and interpersonal relationships; this result was not in line with results obtained by Sajjadi, Schillinger et al. (20, 27) so that individuals with higher health literacy had no better interpersonal communications; the reason for such difference was related to questions and target group. In this regard, the most important communicational problem between practitioner and diabetes patients in a study of Schillinger was related to medical terms; in contrast, the relationship between patient and practitioner consisted of some issues such as referral, communication type, and satisfaction with communication since health women were studied in this research. In other words, health literacy is the best predictor of some dimensions of women's lifestyle such as nutrition, physical activity, and mental dimension.

Conclusion

Since health literacy was considered in this research as a suitable predictor for lifestyle of women considering dimensions of nutrition, physical activity, and mental health, it is recommended to design and implement interventions in order to promote health literacy of women. As possible as, it is required to evaluate skills of individuals in receiving data from various communicational channels besides determining health literacy level and lifestyle status of them as well as providing training compatible with health literacy levels and lifestyle status before providing health data and implementing educational interventions; this action should be done considering some other factors such as age, communicational skills, and cognitive abilities in data providing at the time of making relationship and providing patients with teachings besides education level of individuals and educational references.

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