

## Self-reported Health and Health-promoting Behaviors in Women of Reproductive Age

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### ABSTRACT

**BACKGROUND AND OBJECTIVE:** Self-reported health is a reliable indicator of health and a good indicator of mortality and morbidity, which is associated with several factors including demographic, socioeconomic, behavioral and psychological factors. This study aims to investigate self-reported health in women of reproductive age and its relationship with health-promoting behaviors and socio-demographic factors.

**METHODS:** This cross-sectional study was conducted among 330 women of reproductive age admitted to selected health care centers in Qom in spring 2016. The women were categorized in two groups of good and poor health based on the self-reported health question "how would you describe your general health?". The health-promoting lifestyle profile II (HPLP II) questionnaire was used to assess health-promoting behaviors with the total possible score ranging from 52 to 208.

**FINDINGS:** The mean age of the studied women was  $29.6 \pm 6.2$  years. T-test demonstrated that the mean scores of stress management ( $19.92 \pm 4.02$ ), spiritual growth ( $26.33 \pm 4.76$ ) and nutrition ( $25.92 \pm 4.66$ ) in the women with good health were significantly higher compared to women with poor health ( $18.65 \pm 4.61$ ,  $24.44 \pm 5.55$ ,  $24.35 \pm 4.89$ , respectively). In the final analysis based on the logistic regression model, only the factors of income adequacy for living expenses (CI=1.778-9.625, OR=4.136, P.V=0.001) and spiritual growth (CI=0.872-0.985, OR=0.926, P.V=0.04) remained as significant factors.

**CONCLUSION:** Considering the results of this study, income adequacy for living expenses and spiritual growth are the indicators associated with self-reported health in women of reproductive age.

**KEY WORDS:** Self-report health, Healthy lifestyle, Socio-demographic characteristics, Women, Reproductive age.

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## Introduction

Self-reported health is a simple yet reliable indicator of general health (1,2) and a proper indicator of mortality and morbidity (3,4), which is widely used in medical and epidemiologic researches (5). Researchers have proved that perception of health is often consistent with the physician's assessment (6). Self-reported health is associated with several factors including demographic, socioeconomic, behavioral, psychological, and other related factors (1,7,8). People have different self-reported health based on their socioeconomic condition. People with poor socioeconomic condition have weaker self-reported health (9).

Lately, international studies have considered lifestyle-related habits such as sleep and exercise (5). People with active lifestyle report a better perceived health (10,11). Several studies have reported the relationship between lifestyle behaviors and self-reported health, particularly in regard with physical activity (12–14) and healthy diet (15,16).

Lifestyle is a concept that includes behaviors, attitude and outlook on life and health behaviors include actions of lack of actions influence health directly or indirectly (17).

However, there are few studies that indicate whether health-promoting behaviors are associated with self-reported health (18). Understanding the factors related to self-reported health can help professional experts prioritize health promotion interventions and prevent diseases (16).

Considering the fact that women of reproductive age constitute the majority of the female population of Iran (19) and considering that reproductive age is highly important because it influences major changes and transitions in women's lives, choosing a lifestyle and the behaviors associated with that particular lifestyle plays a significant role in women's health and the outcomes affect their physical, psycho-mental and social performance and physical well-being (20). On the other hand, women's health in this period affects their long – term health as well as their family and their children's health (21).

Therefore, we may have healthier generations in the future. Ignoring women's health may have adverse effect on next generation (18). Considering the recent changes in patterns of health and disease, understanding the factors that affect the health of women of reproductive age is very important. According to the searches, there are limited studies about components of self-reported health in Iran.

Considering the importance of disease prevention and health in women of reproductive age, the present study aims to determine the status of self-reported health and its association with health-promoting behaviors (lifestyle) based on socio-demographic factors in women of reproductive age admitted to health care centers in Qom.

## Methods

After receiving permission from the ethics committee of Qom University of Medical Sciences (MUQ.REC.1394.161), this cross-sectional study was conducted among 330 women of reproductive age admitted to selected health care centers in Qom in spring 2016.

8 active medical centers having most patients were randomly selected from the north, south, east and west of Qom so that we could have the maximum diversity in socio-demographic variables. Sample size was chosen using the formula for comparing the two groups based on standard deviation of 4 (according to a pilot study) and standard difference of 2 in each group. Type I error was considered 0.05 and test power was considered 0.8.

Patients with Iranian nationality, resident of Qom, age range of 15–49 years, the absence of known diseases as severe mental disability and psychiatric disorders (who lacked the ability to complete the questionnaires) and lack of pregnancy entered the study. Self-reported health was measured using one question on a Likert scale of 5 (1=excellent, 2=very good, 3=good, 4=average, 5=bad): “overall, how do you describe your health?”. For analysis, this variable was categorized into two groups of good health (combination of excellent, very good, good) and poor health (combination of average and bad). To study the variable of health promoting behaviors, Promoting Lifestyle Profile II (HPLP-II) was used, designed by Walker et al. in 1987 based on Pender's health promotion model. This questionnaire provides a multidimensional assessment of health promoting behaviors (22).

This self-report scale contains 52 behavior items with Likert scale of 4 in 6 dimensions of health responsibility, physical activity, nutrition, spiritual growth, stress management and interpersonal relations. Scores range from 1 (never) to 4 (always). Higher scores indicate more participation in health promoting behaviors. This scale has been used in several studies and its validity and reliability is confirmed by

Cronbach's alpha coefficients 0.87 (23). The 52 items include 9 items in health responsibility dimension, 8 items in physical activity dimension, 9 items in nutrition dimension, 9 items in spiritual growth dimension, 8 items in stress management dimension and 9 items in interpersonal relation dimension. Total score of HPLP-II is calculated using the mean score of 52 items. The participants were asked to score each item according to Likert response of 1=never, 2=sometimes, 3=often, 4=always.

The mean score was calculated for each dimension and for the whole scale. The total possible score of questionnaire is within the range of 52 to 208. To study the socio-demographic variables, the questionnaire designed by the team of researchers including age, ethnicity, education level, marital status, employment status, monthly income sufficiency for living expenses, household size number of rooms available (except for kitchen, bathroom and toilet) (to determine congestion index) was used. The number of rooms was divided by the number of family members and was classified into 3 levels: low (1 or lower), average (1 to 2) and high (more than 2) (24). Before the qualified participants enter the study, the goal of the study was explained to the participants and a written informed consent was obtained from them and they were reassured that they could exit the study

whenever they wish to and they were reassured about the fact that their information for data collection and analysis shall be kept confidential. After completing the questionnaire, the data were analyzed using SPSS Ver. 13 and descriptive and analytical indices. Chi-square test was used to study the relationship between socio-demographic variables, T-Test was used to study the relationship between health promoting behaviors in the two groups and in the final step, the variables entered the logistic regression model to control the effects of contextual factors (socio – demographic variables) and predict the effect of health promoting behaviors on self-reported health, while  $p < 0.05$  was considered significant.

## Results

Overall, 330 women of reproductive age (aged 15–49 years) with a mean age of  $29.6 \pm 6.2$  were studied. Most of them were married (92.1%), housewives (71.3%), had high school or university education (37%) and had Persian ethnic background (63.4%). The mean health-promoting lifestyle profile II was  $136.64 \pm 22.37$ . The highest and lowest score of the participant women were found in interpersonal relation dimension ( $26.43 \pm 4.21$ ) and physical activity dimension ( $14.66 \pm 4.62$ ), respectively (table 1).

**Table 1. The socio-demographic characteristics and health promoting behaviors (HPLP-II) of women of reproductive age**

| Socio – demographic characteristics | N(%)      | Socio-demographic characteristics          | N(%)           |
|-------------------------------------|-----------|--------------------------------------------|----------------|
| <b>Age group (years)</b>            |           | <b>Income adequacy for living expenses</b> |                |
| 15-25                               | 82(24.9)  | No                                         | 56(17.2)       |
| 26-35                               | 180(54.7) | Partly                                     | 162(50)        |
| 36-49                               | 67(20.4)  | Yes                                        | 107(32.8)      |
| <b>Marital status</b>               |           | <b>Congestion Index</b>                    |                |
| Married                             | 303(92.1) | low                                        | 55(15.1)       |
| Widow / divorced                    | 9(2.7)    | medium                                     | 148(47.3)      |
| Single                              | 17 (5.2)  | high                                       | 120(37.7)      |
| <b>Ethnicity</b>                    |           | <b>Dimension of family (person)</b>        |                |
| Persian                             | 201(63.4) | Less than 4                                | 161(50.3)      |
| Azeri                               | 63(19.9)  | 4–5                                        | 135(42.2)      |
| Other                               | 53(16.7)  | More than 5                                | 24(7.5)        |
| <b>Education status</b>             |           | <b>Health promoting behaviors</b>          | <b>Mean±SD</b> |
| Illiterate                          | 37(11.3)  | Nutrition                                  | 25.51±4.75     |
| Primary school                      | 43(13.1)  | Physical activity                          | 14.66±4.62     |
| High school                         | 124(37.9) | Health responsibility                      | 23.64±5.23     |
| University                          | 123(37.6) |                                            |                |
| <b>Job status</b>                   |           | Spiritual growth                           | 25.85±5.05     |
| Housewife                           | 226(71.3) | Interpersonal relations                    | 26.43±4.21     |
| Employee                            | 58(18.3)  | Stress management                          | 19.60±4.21     |
| Student                             | 33(10.4)  | Total score                                | 136.64±22.37   |

Although socio-demographic differences were observed in the two groups of good health and poor health, these differences were only significant in terms of income adequacy for living expenses ( $p=0.001$ ) and it was close to significance level in terms of education status ( $p=0.063$ ) (table 2). The dimensions related to self-reported health including stress management ( $p=0.021$ ), spiritual growth ( $p=0.004$ ) and nutrition ( $p=0.012$ ) had significant difference in the two groups of good and poor health (table 3). In the final analysis, after entering the variable of income adequacy for living expenses (significant factor in the initial

analysis) and these three dimensions of health promoting behaviors into logistic regression model, only the variables of income adequacy for living expenses and spiritual growth stayed significant. Results also demonstrated that women who answered “No” to the question “Does family income meet the living expenses of your family?” had at least four times poorer health than those who answered “Yes” ( $p=0.001$ ,  $OR=4.136$ ). Regarding the dimension of spiritual growth, for each one point increase in this dimension for women, about 8% less poor health was observed ( $p=0.04$ ,  $OR=0.926$ ) (table 4).

**Table 2. The socio-demographic characteristics of women in the two groups based on self-reported health**

| Self-reported health     | Good      | Poor     | P-value | Self-reported health                       | Good      | Poor     | P-value |
|--------------------------|-----------|----------|---------|--------------------------------------------|-----------|----------|---------|
| Variable                 | N(%)      | N(%)     |         | Variable                                   | N(%)      | N(%)     |         |
| <b>Age group (years)</b> |           |          |         | <b>Job status</b>                          |           |          |         |
| 15–25                    | 59(72.8)  | 22(27.2) | 0.25    | Housewife                                  | 165(73)   | 61(27)   | 0.81    |
| 26–35                    | 137(76.1) | 43(23.9) |         | Employee                                   | 42(72.4)  | 16(27.6) |         |
| 36–49                    | 44(65.7)  | 23(34.3) |         | Student                                    | 25(78.1)  | 7(21.9)  |         |
| <b>Marital status</b>    |           |          |         | <b>Income adequacy for living expenses</b> |           |          |         |
| Married                  | 220(73.3) | 80(26.7) | 0.88    | No                                         | 29(51.8)  | 27(48.2) | 0.001   |
| Widow/divorced           | 6(66.7)   | 3(33.3)  |         | Partly                                     | 121(74.7) | 41(25.3) |         |
| Single                   | 12(70.6)  | 5(29.4)  |         | Yes                                        | 87(81.3)  | 20(18.7) |         |
| <b>Ethnicity</b>         |           |          |         | <b>Congestion Index</b>                    |           |          |         |
| Persian                  | 149(74.1) | 52(25.9) | 0.87    | low                                        | 34(77.3)  | 10(22.7) | 0.83    |
| Azeri                    | 45(71.4)  | 18(28.6) |         | medium                                     | 101(73.2) | 37(26.8) |         |
| Other                    | 40(75.5)  | 13(24.5) |         | high                                       | 83(75.5)  | 27(24.5) |         |
| <b>Education status</b>  |           |          |         | <b>Dimension of family (person)</b>        |           |          |         |
| Illiterate               | 23(62.2)  | 14(37.8) | 0.063   | Less than 4                                | 120(74.5) | 41(25.5) | 0.78    |
| Primary school           | 29(67.4)  | 14(32.6) |         | 4–5                                        | 96(71.1)  | 39(28.9) |         |
| High school              | 88(71)    | 36(29)   |         | More than 5                                | 17(70.8)  | 7(29.2)  |         |
| University               | 99(81.1)  | 23(18.9) |         |                                            |           |          |         |

**Table 3. Comparing the dimensions of women's health promoting behaviors in the two groups based on self-reported health**

| Self-reported health    | Good       | Poor       | P-value |
|-------------------------|------------|------------|---------|
| Variable                | Mean±SD    | Mean±SD    |         |
| Interpersonal relations | 26.40±4.18 | 26.48±4.35 | 0.895   |
| Stress management       | 19.92±4.02 | 18.65±4.61 | 0.021   |
| Spiritual growth        | 26.33±4.76 | 24.44±5.55 | 0.004   |
| nutrition               | 25.92±4.66 | 24.35±4.89 | 0.012   |
| Physical activity       | 14.86±4.44 | 14.11±5.13 | 0.225   |
| Health responsibility   | 23.78±5.23 | 23.26±5.27 | 0.444   |

**Table 4. Multivariate logistic regression; the relationship between health promoting behaviors and socio-demographic variables**

| Predictive variable                        | Self-reported health |                    |              |
|--------------------------------------------|----------------------|--------------------|--------------|
|                                            | OR                   | CI-95 %            | p-value      |
| <b>Income adequacy for living expenses</b> |                      |                    |              |
| yes                                        | -                    | -                  | -            |
| partly                                     | 1.422                | 0.735–2.749        | 0.296        |
| no                                         | 4.136                | 1.778–9.625        | 0.001        |
| <b>Stress management *</b>                 | <b>1.035</b>         | <b>0.933–1.147</b> | <b>0.516</b> |
| Spiritual growth *                         | 0.926                | 0.872–0.985        | 0.04         |
| <b>Nutrition *</b>                         | <b>0.984</b>         | <b>0.910–1.064</b> | <b>0.690</b> |
| <b>*Quantitative variables</b>             |                      |                    |              |

## Discussion

In the present study, most participants (73.1%) were in the group with good self – reported health, which was consistent with the studies about the population of Tehran (25) and Malia (16). In our study, self – reported health among single and married women was not significantly different. In other studies though, health status was significantly better in married women (26, 27). The effect of marital status is different based on cultural background. Married women in Iran suffer from limitations in physical activity, poor nutrition and lack of attention to personal health because of high responsibility in carrying out housekeeping tasks (28). Results of a study by D'Souza et al. indicated that married women in Indian society first play the role of a wife, mother and take care of the family and finally think about their own health (29). Regarding education level, self – reported health increased with higher level of education; this level was higher in women with academic education and was close to significance level. A study among Swedish men and women demonstrated that self-reported health was significantly related to level of education in men, however, it was not related in women (30). In other studies, academic education was found to be an effective factor for women's health (31,32). Regarding job status, the women who were university students benefited from better self-reported health; however, there was no significant relationship between job status and self – reported health.

Results of this study are consistent with the results of previous studies conducted in Iran (33, 34). Although job is an effective factor on women's health and their job status is expected to have positive effects on their ability and thus their health, this lack of statistical difference between the health of employed women and housewives may be due to weighing of positive and negative job – related factors such as self-

confidence and increased stress. Women with highly active and stressful jobs report more health problems (35). Regarding the variable of income adequacy for living expenses, self-reported health was significantly related to income adequacy for living expenses; that is, self – reported health in women with positive answer to this question was significantly better than women who gave negative answer. Other studies also showed a significant relationship between health and the property of individuals (27, 31). Low income makes people more vulnerable to stressors such as poor living conditions and the economic pressure, which make them prone to psychological problems and providing mental health services may be helpful (26). The mean score of women's health promoting behaviors was 136.64 in our study, which is similar to a study conducted in Tehran among women of reproductive age and is higher than 18 – 64 years old women in Turkey (36) and China's urban women (18).

Highest score was found in intrapersonal relation dimension and spiritual growth and the lowest score was in physical activity, which was similar to other studies (23,37). Considering the main purpose of the study based on final analysis of the data in logistic regression model, of all socio – demographic factors and health promoting behaviors, only income and spiritual growth dimension were significantly related to self – reported health. A study among Chinese women demonstrated that spiritual growth and stress management is essential for maintaining good health, which may be due to the relationship between stress and diseases such as high blood pressure, heart disease, insulin resistance and immune system disorders. Spiritual growth reflects people's ability to get things done. A study have noted the relationship between low spiritual growth and anxiety (18). A qualitative study among Iranian women showed that improving spiritual growth directly affected their health (38). Results of

this study demonstrated that spiritual growth and income level is related to self-reported health in women of reproductive health. Considering the result of the present study, health promotion policymakers should pay attention to the influence of spiritual growth on self – reported health as an important health – related index, particularly in low income societies, and design targeted interventions to increase health in people.

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