Iran Red Crescent Med J. 2018 November; 20(11):e64479. doi: 10.5812/ircmj.64479.

Published online 2018 October 15. **Research Article**

Factors Associated with Mental Health and Its Relation with Health-Promoting Lifestyle in Female Heads of Households: A Cross-Sectional Study

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Received 2017 November 26; **Revised** 2018 January 15; **Accepted** 2018 February 24.

Abstract

Background: Minority groups such as female heads of households are more vulnerable in terms of mental health than other groups due to accepting multiple responsibilities.
Objectives: This study aimed to determine the relationship between predictive factors of mental health and its relation to the health-promoting lifestyle in female heads of households in Zahedan, Iran.
Methods: This was a cross-sectional study conducted on 420 female heads of households from four regions of the north, south, east, and west of Zahedan selected using purposive sampling. The research tool included a demographic information form, a standard health-promoting lifestyle profile (HPLP-II), and a standard general health questionnaire (GHQ-28). Data analysis was performed using Spearman's correlation coefficient, Chi-Square, and logistic regression tests.
Results: Based on the results of the present study, a high percentage of the sample (72.4%) had mental health disorders. The most and the least impact on the prediction of health status were related to spiritual growth (OR = 0.196, CI = 0.106 - 0.360) and physical activity (OR = 0.757, CI = 0.384 - 1.491). Except for physical activity, all subscales of the health-promoting lifestyle were able to predict the mental health status ($P < 0.01$), but in the presence of economic and social factors, they could not predict the mental health status ($P < 0.05$).
Conclusions: Since mental health in female heads of households is influenced by a complex system other than health-promoting behaviors, empowering both women and community to cope with these problems and move toward health promotion seems essential. Moreover, the results of the current study might be used by authorities in evidence-based decision making to reduce health inequalities.

Keywords: Family Characteristics, Health-Promoting, Lifestyle; Mental Health, Minority Groups, Socioeconomic Factors

1. Background

Women, as an integral part of family and community, have a special role in providing and maintaining health and their health is considered as the underlying concept of development and socioeconomic well-being (1). They need to maintain and promote their health and well-being level in order to be able to perform their caring role effectively (2). However, women as socially vulnerable groups are more subjected to social discrimination and psychological pressures compared to other members of the families (3). Meanwhile, women responsible for the family due to reasons such as divorce, spouse's death, addiction, or disability, abandonment by an immigrant man or inconsiderateness are more vulnerable to harm (4). Statistical data in Iran indicate the increasing number and ratio of female-headed households during the last decade such that more than 2.5 million households out of 21 million Iranian households are headed by women, and the ratio of female-headed households in Iran increased from 9.5% in 2006 to 12.1% in 2011 (5). The sudden transition of family guardianship from male to female leads to a series of insecurities and doubled tasks resulting from the dual role (parenthood) for this group of women, causing a negative effect on their health and posing new psychological

issues to them (6). Psychologists believe that female heads of households have physical, psychological, and emotional difficulty, and experience more stress and anxiety than other women (7). Additionally, the impairment of self-esteem and isolationism can be more observed in these people (8). In recent years, health-promoting behaviors have been subjected to intense research as a key and challenging topic in the field of health (9). According to Walker et al. these behaviors contribute to preserving and promoting the level of well-being and evolution of individuals and include dimensions such as health responsibility, physical activity, nutrition, spiritual growth, interpersonal relationships, and stress management (10). In fact, lifestyle is considered a strong determining factor in all aspects of health (11). Research shows lifestyle has an effect on the mental and physical health (12). According to studies low physical health and social relations, as well as drowning in activities of daily living, reduce the mental health of female heads of households (13-15). Since female heads of household are at the arrowhead of inequalities in health, surveying their health is necessary (16, 17). Despite the fact that their population is growing and their health is a guarantee of family health, a few studies have been done about the health status and health-promoting lifestyle in this vulnerable group. Therefore, conducting research in this context is important. This study is one of the new studies that assessed mental health and its predictive factors in Iranian female heads of households.

2. Objectives

The current study aimed to determine the relationship between predictive factors of mental health and its relation with health-promoting lifestyle in female heads of households in Zahedan, Sistan and Baluchistan province, Iran.

3. Methods

3.1. Study Design and Sampling Criteria

This is a cross-sectional study conducted from August 2016 to February 2017. Based on the geography, Zahedan was divided into four regions of the north, south, east, and west. Then, the centers such as schools, health centers, and hospitals were randomly selected from these areas and sampling was performed using a purposive sampling method. After explaining the objectives of the study, the questionnaires were completed by the subjects or the researcher in case of illiteracy of the participants.

3.1.1. Inclusion Criteria

The inclusion criteria of the research included having an Iranian nationality, being the head of the household at least for one year, and the absence of mental health problems, underlying medical conditions, and drug use.

3.1.2. Exclusion Criteria

The exclusion criteria included an unwillingness to continue with the study, a history of mental illness, drug use, treatment regimens, and not answering to more than 10% of the questionnaire items.

3.2. Sample Size

The sample size of the study was calculated as 420 using the Cochran formula for an unknown population (Equation 1), with a standard deviation of the score of 10 σ =10, the error value of 1 (d =1), type I error of $\alpha = 0.05 \Rightarrow z_{\alpha/2}$ =1.96 and taking into account a 10% drop-out.

$$n = \frac{z_{\frac{\alpha}{2}}{}^2 \sigma^2}{d^2} \quad (1)$$

3.3. Data Collection

Three questionnaires were used for data collection as follows: (i) demographic characteristics, (ii) the Health-promoting Lifestyle Profile II (HPLPII), and (iii) the General Health Questionnaire (GHQ-28).

3.3.1. Health-Promoting Lifestyle Profile II (HPLPII)

HPLPII is a modified version of HPLP that measures lifestyle by focusing on how much people do health-promoting behaviors (10). The questionnaire consists of 52 questions and has six subscales including nutrition, physical activity, health responsibility, stress management, interpersonal relations, and spiritual growth. The response scale included a four-point Likert scale (never = 1, sometimes = 2, often = 3, and always = 4). The scores of health-promoting lifestyle and its subscales were computed using the average responses to the 52 questions while for each subscale, the score was computed according to the number of the questions of that subscale. High scores in this questionnaire indicate a healthier lifestyle. This standard questionnaire has been used several times in Iran (18, 19). In addition, in this study, the Cronbach's alpha coefficient was used to determine the internal consistency of the questionnaire. The Cronbach's alpha for the whole questionnaire was 0.84 and for the subscales ranged between 0.72 and 0.88.

3.3.2. General Health Questionnaire (GHQ-28)

This questionnaire, which was proposed by Goldberg (1979), includes four subscales: physical symptoms, anxiety and sleep symptoms, social function disorder, and depression, each of which consisting of seven distinct questions (20). The questionnaire has the ability to distinguish healthy people from unhealthy ones (21). In this questionnaire, the questions are scored via a Likert method (0 - 3). The cut-off point of this test is six for each of the subscales and 23 in total (20). Reliability and validity of the Persian version of the questionnaire have been confirmed in several studies (22, 23). In the present research, its reliability was also determined using two dimensions of repeatability and intraclass correlation coefficient, which were approved with the value of 0.86 and 0.89, respectively.

3.4. Data Analysis

Data analysis was performed using IBM SPSS Statistics for Windows, version 21.0 (IBM Corp., Armonk, N.Y., USA). Descriptive statistics (frequencies, percentages, means, and standard deviations) were first calculated. The Chi-Square test was applied for comparison of the mean of demographic variables based on general health status. Spearman correlation between the health promotion lifestyle subscales and the overall mental health score was performed. Logistic regression analysis was conducted with GHQ status as dependent and health-promoting subscales as independent variables.

3.5. Ethical Consideration

The ethical considerations of the research included the confidentiality of information, written informed consent, the discretion to participate in the research, and the freedom to leave the research at any stage provided for all of the participants. The study was approved by the Research Ethics Committee of Shahid Beheshti University of Medical Sciences, Tehran, Iran (code number: 1395.497.IR-SBMU.PHNM).

4. Results

According to the results, the mean and standard deviation of the age of female heads of households, the number of dependent children, and the duration of heading were 34.47 ± 8.33 years, 2.56 ± 1.90, and 6.70 ± 4.32 years, respectively. The highest and the lowest frequencies were related to elementary education (36%) and university education (8.6%), respectively. Regarding the income level, most of the participants (69.3%) reported a monthly income of less than 5000000 IRR. In the job-related frequency, the majority of participants (76.2%) were housewives, and most of them (53.8%) were widows. The findings showed that in terms of mental health, out of 420 participants, 304 (72.4%) were sick and 116 (27.6%) were healthy. The results showed that there was a significant relationship between all individual, economic, and social variables and health status ($P < 0.01$). The highest frequency of health disorders was observed in the age group of 40 years or older (93.2%), widows (80.7%), housewives (79.4%), and illiterates or elementary educations (94.1%), women with an income of less than 5000000 IRR (86.9%), and the heading duration of 6 years or more (88.1%).

The findings showed that the highest and the lowest median for health-promoting lifestyle subscales were related to the health responsibility (22) and stress management (7), and in total, the median for health-promoting lifestyle was 86.

The normality of data was evaluated by the Kolmogorov-Smirnov test. According to the results of this test, it was found that the distribution of health-promoting lifestyle data was non-normal ($P < 0.05$) and hence, we used the Spearman test for correlation evaluation. The results showed that there was a significant positive correlation between the health-promoting lifestyle subscales. In all cases, except for physical activity ($r = 0.043$, $P = 0.348$), there was a significant inverse correlation between the health-promoting lifestyle subscales and the mental health status, but this correlation was weak.

According to the results of logistic regression analysis, in Model 1, it can be said that all health-promoting subscales, except physical activity, can predict the health status and their ability to predict at an error level of less than 0.01 is significant. In this model, the most and the least impact on the prediction of health status were related to spiritual growth (OR = 0.196, CI = 0.106 - 0.360) and physical activity (OR = 0.757, CI = 0.384 - 1.491). In model 2, it can be said that health-promoting behaviors in the presence of social and economic factors are not able to predict health status changes ($P = 0.05$), and according to the results of model 3, spiritual growth, health responsibility, stress management, and nutrition subscales can predict mental health changes ($P < 0.05$) while interpersonal relations and physical activity under the influence of individual factors are not able to predict the changes in health status ($P > 0.05$). In this model, spiritual growth influenced by individual factors had the greatest impact (OR = 0.196, CI = 0.106 - 0.360) on the health status and disease reduction.

Table 1. Distribution of Female Heads of Households According to General Health Status (N = 420)

Variable	General Health		P Value[a]
	Healthy, No. (%)	Patient, No. (%)	
Age, y			< 0.001
20 - 29	76 (55.1)	62 (44.9)	
30 - 39	31 (20.7)	119 (79.3)	
≥ 40	9 (6.8)	123 (93.2)	
Total	116 (27.6)	304 (72.4)	
Marital status			< 0.001
Widow	44 (19.3)	184 (80.7)	
Divorced	7 (25)	21 (75)	
Married	65 (39.6)	99 (60.4)	
Total	116 (27.6)	304 (72.4)	
Education			< 0.001
Illiterate or elementary	10 (5.9)	159 (94.1)	
Secondary	32 (29.4)	77 (70.6)	
Middle	41 (38.7)	65 (61.3)	
High school	33 (91.7)	3 (8.3)	
Total	116 (27.6)	304 (72.4)	
Employment status			< 0.001
Housewives	66 (20.6)	254 (79.4)	
Employees	32 (72.7)	12 (27.3)	
Self-employed	18 (32.1)	38 (67.9)	
Total	116 (27.6)	304 (72.4)	
Children under 18 in the household			0.002[b]
0	16 (37.2)	27 (62.8)	
1 - 2	14 (14)	86 (86)	
3 - 4	83 (31.3)	182 (68.7)	
> 4	3 (25)	9 (75)	
Total	116 (27.6)	304 (72.4)	
Monthly household income			< 0.001
Less than 5000000 IRR	38 (13.1)	253 (86.9)	
5000000 to 15000000 IRR	29 (39.7)	44 (60.3)	
More than 15000000 IRR	49 (87.5)	7 (12.5)	
Total	116 (27.6)	304 (72.4)	
Heading duration, y			< 0.001
1 - 3	73 (49.7)	74 (50.3)	
3 - 6	21 (23.9)	67 (76.1)	
> 6	22 (11.9)	163 (88.1)	
Total	116 (27.6)	304 (72.4)	

[a] Derived from Chi-Square test.
[b] P < 0.01.

Table 2. The Scores of the Health Promoting Lifestyle and Subscales in Female Heads of Households (N = 420)

Score Range	Min - Max	Median (Q1 - Q3)	Subscale
6 - 24	6 - 21	7 (6 - 8)	Stress management
8 - 32	8 - 25	8 (8 - 9)	Physical activity
6 - 24	9 - 24	13 (11 - 15)	Nutrition
8 - 32	8 - 32	16 (9 - 16)	Interpersonal support
11 - 44	11 - 36	17 (13 - 19)	Spiritual growth
13 - 52	13 - 37	23 (17 - 24)	Health responsibility
52 - 208	57 - 167	86 (72 - 92)	HPLP II total

5. Discussion

The present study was conducted to determine the health-promoting lifestyle and predictive factors of the mental health of female heads of households. The findings showed that a high percentage of women (72.4%) were suspected of having a mental health disorder. Based on the results of this study, among the subscales of health-promoting lifestyle, health responsibility, and spiritual growth obtained the highest average scores. This finding was consistent with the study of Walker et al. (24) and Abedi and Jorfi (25). Inasmuch as women of reproductive age are able to identify the factors affecting their health and thus control the risks, their health responsibility score is high. On the other hand, spiritual growth is the coordinator of the relationship between man and himself, God, society, and the environment. The high score of spiritual growth, in fact, reflects the impact of religion and community culture on improving health-promoting behaviors (25). In the present study, stress management and physical activity scored the lowest average score among the health-promoting subscales. These results were consistent with the study of Mirghafourvand et al. (26), Enjezab et al. (27), and Quintiliani et al. (28). Physical inactivity is posed as a challenge in all countries, and women have lower physical activity than men (29). Since female heads of households have different roles, they consider making their decisions based on facilities, constraints, economic, and social conditions, which in many cases results in a lack of attention to their own health (5). By assessing the scores of the health-promoting lifestyle subscales and the mental health score, it was found that there is a significant reverse relationship between the subscales of lifestyle and the mental health. The theory of the role of pressure expresses that multiple roles have a negative effect on an individual's health and health behaviors (30). In this study, the negative effects of the multiple roles of women heads of households on health-promoting behaviors and the resulting adverse health status are quite evident. However, an amazing finding of this study is the bold and important role of individual, economic, and social variables in health-promoting behaviors and as a result, their impact on mental health. The findings of the study indicate the effect of age increases in the development of health disorders. The problems and physical illness increase with increasing age, and the female heads of households are no exception to this rule. The findings of the study showed the health status of women with higher education is better than that of less educated women. In this regard, it can be argued that with increasing levels of education, awareness, and ability of individuals to use effective strategies to deal with problems would increase, and as a result, compliance with the environment and conditions will be better and thus, increased physical and mental health would occur (31). Other results showed that married women had better mental health than the single women did. According to Joutsenniemi et al. and Landero Hernandez et al., the rate of health disorders is higher in women who live alone than in married women (32, 33). One of the dominant cultural beliefs is an easy sexual access to divorced or widowed women. The existence of such risks, however, would reduce social relations and affect their health. According to the results of the study, female heads of households who are employees had a more favorable health than those who are housewives. These results correspond with the study of Sam Aram and Amini Yakhdani (3) and Noorbala et al. (34). Employment leads to improved livelihoods and the economic empowerment of women and raises their self-esteem (35), in addition to resolving their financial needs by interacting with people at work. According to studies, female heads of households who are in good condition in terms of personal, economic, and social characteristics and do not face financial problems, despite giving priority to children and other life issues, have enough resources to do health-promoting behaviors and have a better control over their health (16). Accordingly, it can be said that the poor economic situation does not provide sufficient time and cost to address the health situation, as a result of the power of management to reduce individual health. Therefore, it is necessary to pay attention to the family's internal conditions posed to female heads of households. The power index of the social system is the promotion of health in society, and female-headed households require special attention due to their special circumstances. For this reason, the empowerment of female headship, the equitable distribution of resources, and assistance from governmental and non-governmental organizations can change their living conditions and improve their health. One of the strengths of this study was the investigation of the HPLP among the female heads of households, which is an important issue. The limitations of this study can be pointed out

Table 3. Spearman Correlation Between Health-Promoting Lifestyle Subscales and Mental Health in Female Heads of Households

	Spiritual Growth	Health Responsibility	Interpersonal Relations	Stress Management	Physical Activity	Nutrition	Mental Health
Spiritual growth	1						
Health responsibility	0.750	1					
Interpersonal relations	0.767[a]	0.725[a]	1				
Stress management	0.486[a]	0.394[a]	0.481[a]	1			
Physical activity	0.317[a]	0.239[a]	0.314[a]	0.477[a]	1		
Nutrition	0.558[a]	0.564[a]	0.503[a]	0.350[a]	0.196[a]	1	
Mental health	-0.279[a]	-0.262[a]	-0.195[a]	-0.113[b]	-0.043	-0.202[a]	1

[a] P < 0.001.
[b] P < 0.05.

Table 4. The Relationship Between Mental Health and Health-Promoting Lifestyle Subscales in Female Heads of Households Based on the Logistic Regression Test[a]

Variable	R^2	B	S.E	OR	95% CI	P Value
Model 1						
Spiritual growth	-	-1.631	0.311	0.196	0.106 - 0.360	< 0.001
Health responsibility	-	-1.348	0.312	0.260	0.141 - 0.479	< 0.001
Interpersonal relations	-	-0.651	0.205	0.521	0.349 - 0.780	0.002[b]
Stress management	-	-0.639	0.233	0.528	0.335 - 0.833	0.006[b]
Physical activity	-	-0.279	0.346	0.757	0.384 - 1.491	0.421
Nutrition	-	-1.628	0.359	0.208	0.097 - 0.397	< 0.001
Model 2						
Spiritual growth	0.490	-0.412	0.415	0.663	0.294 - 1.494	0.321
Health responsibility	0.448	-0.418	0.392	0.678	0.305 - 1.421	0.287
Interpersonal relations	0.411	-0.132	0.272	0.876	0.514 - 1.492	0.627
Stress management	0.411	-0.064	0.422	0.907	0.567 - 2.006	0.842
Physical activity	0.490	-0.515	0.476	0.937	0.684 - 3.894	0.259
Nutrition	0.488	-0.216	0.455	0.806	0.317 - 2.044	0.649
Model 3						
Spiritual growth	0.339	-1.488	0.346	0.226	0.115 - 0.445	< 0.001
Health responsibility	0.344	-1.197	0.350	0.302	0.125 - 0.600	0.045[c]
Interpersonal relations	0.299	-0.442	0.237	0.643	0.403 - 1.023	0.062
Stress management	0.314	-0.612	0.267	0.542	0.321 - 0.916	0.022[c]
Physical activity	0.290	-0.204	0.398	0.815	0.374 - 1.778	0.608
Nutrition	0.323	-1.419	0.417	0.242	0.107 - 0.548	0.001[b]

[a] OR, Odd Ratio; CI, Confidence Interval; S.E, Standard Error; R^2, Coefficient of Determination; Model 1, Unadjusted; Model 2, Adjusted for education, Employment status, and household income; Model 3, Adjusted for women's age, marital status, Number of dependent children, and Heading duration.
[b] P < 0.01.
[c] P < 0.05.

as 1) A limited number of work done in the field of women's health-promoting lifestyle and 2) The lack of documentation of the economic status of female-headed households.

5.1. Conclusions

Although most of the health problems are affected by unhealthy behaviors and inappropriate lifestyle, in female

heads of households, other variables have a more significant impact on their health status rather than their health promotion behaviors. Therefore, their empowerment, especially in the economic and social aspects, is necessary to overcome these problems. This study provided some evidence on promoting the health status of vulnerable groups like women heads of households to receive specific health attention. Hence, the obtained results might be used by authorities in evidence-based decision making to decrease health inequalities.

Acknowledgments

This study is taken from a Ph.D. thesis of reproductive health approved by the Research Council of Shahid Beheshti University of Medical Sciences. The authors express their thanks for the cooperation and assistance of the authorities of the faculty of Shahid Beheshti University of Medical Sciences, Tehran, Iran, and all the organizations and people who helped us with this study.

Footnotes

Authors' Contribution: Somayyeh Khazaeian, study concept and design, acquisition of data, analysis and interpretation of data, critical revision of the manuscript for important intellectual content; Nourossadat Kariman, drafting of the manuscript, study concept and design, analysis and interpretation of data, critical revision of the manuscript for important intellectual content, administrative, technical, and material support, study supervision; Abbas Ebadi, study concept and design, analysis and interpretation of data, study supervision; Malihe Nasiri, statistical analysis, analysis and interpretation of data, critical revision of the manuscript for important intellectual content.

Funding/Support: This study received no specific grant from any funding agency.

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