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Investigation of Health Promoting Lifestyle and Social Support and Their Correlation Among Iranian Women With Multiple Sclerosis

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Abstract

Objectives: Evidence suggests that health-promoting behaviors can help improve the functional abilities of the patients with multiple sclerosis (MS). We examined the relation of health promoting lifestyle with social support among the women with MS.

Materials and Methods: This correlational study was conducted in 2017 among 250 Iranian women with MS in Tabriz city. The sampling was purposive, and frequency of health-promoting behaviors was obtained from the Health Promoting Lifestyle-II and modified Social Support Questionnaires. The relationship between health promoting lifestyle and social support was determined by the Pearson correlation test.

Results: The mean score of health promoting lifestyle was 2.40 (SD = 0.46) within the achievable range of 1 to 4. Women obtained the highest mean score on the sub-domain of interpersonal relationships (Mean = 2.63, SD = 0.54) and the lowest mean score on the sub-domain of physical activity (Mean = 1.81, SD = 0.60). The mean (SD) score of social support within the achievable range of 0 to 100 was 70.39 (SD = 25.60). A significant positive correlation was found between health promoting lifestyle and social support ($r = 0.19$, $P = 0.003$) and all its sub-domains ($r = 0.19$ to 0.42, $P < 0.05$).

Conclusions: Health promoting lifestyle is significantly associated with social support and it can be enhanced by social support among the women with MS along with other treatments.

Keywords: Health promotion, Life style, Social support, Women, Multiple sclerosis

Introduction

Multiple sclerosis (MS) is a chronic and often progressive condition with protean neurologic manifestations that disables persons. It is often diagnosed over the ages of 20 to 40 (1). Therefore, MS often affects people at their productive phase of life, who are worried about their family roles and responsibilities (2). There are 2.5 million people with MS in the world. Its incidence ranges from 1 to 5 per one million in the world. There are currently no accurate statistics about the incidence and prevalence of MS in Iran. However, prevalence of MS ranged from 5.3 to 74.28 per 100 000 and its incidence ranged from 0.68 to 9.1 per 100 000 with the higher incidence and prevalence among females (2-3 times more often among women than men) in Iran (3).

MS exerts dramatic physical, economic, psychological, and social effects on different issues concerning the everyday lives of individuals having it and their families (4). In addition to physical effects such as fatigue, pain, walking disorders, intestinal and bladder dysfunctions, sexual dysfunctions, vision problems, there are visible changes in emotional and cognitive functions (such as information processing, attention, memory, and mood) in most people with MS (5). This disease has threatened the individual's ability to contribute effectively in the family and community, propelling them to feel low self-worth and self-confidence (6). Evidence demonstrates that stress management and physical activity can help improve the functional status of the patients with MS (7). The importance of healthy lifestyle has been widely discussed because of its impress on health and wellness. Over the last few decades, there has been a great focus on lifestyle changes to prevent disability and death (8). Poor lifestyle patterns are associated with the current reasons of mortality and morbidity (9). In other words, one of the strategies to lead a better quality of life is healthy lifestyle (10). Longevity, improved quality of life, and minimization of health care costs were significantly affected by health-promoting behaviors (11). The most important element of health is social support, which may affect health-related behaviors (12).

Social support refers to the exchange of resources between at least two providers and recipients aimed at improving the health of recipients (13). Social support is regarded vital for health promotion because it can facilitate the fulfillment of physical and emotional needs;

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and enables individuals to protect themselves against the impact of stressful situations on their lives (14). When people perceive sufficient support from a social group, health promotion goals would most likely be achieved and also disease prevention would be performed. Individual health and well-being would be enhanced when social support is prepared for them. Conversely, poor social support leads to an increased risk of illnesses (15).

The current MS management strategies in Iran are based on medical treatment. The extended life expectancy with increased survival rate of women with MS highlights the importance of redirecting MS management towards women-centered care and health promoting lifestyle. Considering that there are no previous studies carried out in this regard on Iranian women with MS, this paper intended to evaluate the health-promoting behaviors status in women with MS and its relationship with social support.

Materials and Methods

Study Design and Participants

This correlational study was conducted among 250 women who were the member of Tabriz MS Association in 2017. The inclusion criteria were age range of 20-45 years old, Being Iranian, ability to understand and speak Persian, MS diagnosed by a neurologist, being aware of diagnosis (at least 1 year since disease diagnosis), and ability to communicate verbally and respond to questions during the interview, not feeling sick, and ability to participate in this study in terms of bodily condition. The type of MS and type of treatment were not among the criteria for selection of participants.

Sample size was calculated by using of the historical data from the following studies: (*a*) a study by Stuifbergen and Beker on spiritual growth subscale of health promoting lifestyle (16) (M = 41.03, SD = 7.15, study precision (d)=0.05, two sided α = 0.05) and (*b*) a study performed by Aghaei et al regarding social support variable (17) (M = 65.6, SD = 23.1, d = 0.05 and two-sided α = 0.05). A sample of 191 was obtained of the variable of social support as it was given a higher sample size with the power of 90% and type I error of 5%. Assuming a 25% attrition rate required, a minimum sample size of 250 was considered for the study.

Sampling

The sampling method in this study was purposive. In fact, the researcher visited Tabriz MS association with 3000 members, 70% of whom were women. The names of all eligible women covered by the MS association were extracted together with their phone numbers and addresses. The researcher's assistant visited the house of each woman. After explaining the goals and procedures of the research, they were informed that participation was voluntary. Moreover, the participants were reassured about confidentiality. If women wished to participate in the research, they filled out a written consent form as well as the self-reported questionnaires on the socio-demographic, health promoting lifestyle and modified social support.

Data Collection Instruments

The data collection tools comprised a questionnaire on socio-demographic characteristics, health promoting lifestyle profile-II and modified social support tools.

The socio-demographic characteristics included age, marital status, occupation, education level, education level and occupation of spouse and income adequacy.

The Health Promoting Lifestyle Profile-II (HPLP-II) is a self-report survey used to measure health-promotion behaviors. It was based on Pender's Original Health Promotion Lifestyle Profile. The HPLP-II is a 52-item 4-point questionnaire containing statements about an individual's way of life and personal habits. Its six subscales are: (*a*) nutrition, (*b*) physical activity, (*c*) spiritual growth, (*d*) health responsibility, (*e*) stress management, and (*f*) interpersonal relations. Responses are scaled from 1, never, to routinely (18). There is Persian version of this questionnaire which is culturally adapted to Iran. The validity and reliability of health promoting lifestyle profile II in the Iranian population was confirmed (19). This questionnaire was also used in several studies in Iran (20-22).

The modified social support questionnaire included 18 items based on the psychometric analysis on modified social support scale constructed in a longitudinal study on the patients with persistent chronic diseases. The tool has four domains of social support: (*a*) tangible support, (*b*) emotional informational support, (*c*) affectionate support, and (*d*) positive social interaction (23). High reliability of the tool for all items was obtained by Sherbourne et al in 1992. The Consortium of Multiple Sclerosis employed this tool in the Multiple Sclerosis Quality of Life Inventory by selecting 18 items based on the psychometric analysis on modified social support scale. Its Cronbach α was 0.97 for the overall tool and 0.87 to 0.95 for each individual dimension. All items of the modified social support tool were scored on the Likert scale ranged from 1 to 5 (1 = never, 2 = rarely, 3=sometimes, 4 = often, 5 = always). Each dimension is scored separately and a total score is obtained for all dimensions. This questionnaire contained tangible support (4 items), emotional/informational support (8 items), affectionate support (3 items), and positive social interaction (3 item) (4).

The validity of the socio-demographic characteristics questionnaire was evaluated by content and face validity. The reliability of HPLP-II and modified social support questionnaires were evaluated by internal consistency (Cronbach α) on 20 women with MS. Cronbach α was 0.97 and 0.95 for HPLP-II and modified social support questionnaires, respectively.

Data Analysis

Statitical analyses were conducted by SPSS version 21.0. Descriptive statistics were used to describe the socio-demographic characteristics, health promoting lifestyle, and social support through frequency (percentage) and mean (standard deviation). The normality of quantitative data was measured based on kurtosis and skewness, all of which were normal. To explore the relationship between health promoting lifestyle, its sub-domains and modified social support, the Pearson correlation test was used. All the statistical tests were two-sided, using a significance level of $P < 0.05$.

Results

The mean age of women was 35.80 (SD = 5.86). The majority of women were married (86.4%). The literacy level of the majority of women was high-school diploma (40.8%). The occupation of most women was housekeeping (78.8%). More than three quarters of women declared that their monthly income was to some extent sufficient for living expenses. Three women were smokers (1.2%). Two women consumed hookah (0.8%) (Table 1).

The HPLP-II total score was 2.40 (SD = 0.46) ranged from 1 to 3.78. Subscale scores showed that higher scores were reported for interpersonal relationships (M = 2.63, SD = 0.54) and nutrition (M = 2.60, SD = 0.50). Lower scores were reported for physical activity (M = 1.81, SD = 0.60) and stress management (M = 2.33, SD= 0.54). Table 2 shows the means and standard deviation of overall HPLP-II and 6 subscales. The mean total score of social support within the achievable range of 0 to 100 was 70.39 (SD = 25.60). Women achieved the highest mean score in the sub-domain of tangible support (M= 73.03, SD = 27.36), while achieving the lowest mean score in the sub-domain of positive social interaction (M = 66.87, SD = 28.34). The mean scores of emotional/informational support and affectionate support were 71.93 (SD = 29.02) and 69.75 (SD = 25.73), respectively (Table 2).

A significantly positive correlation was found between total score of health promoting lifestyle and total score of social support based on the Pearson (r = 0.19, $P = 0.003$) and all its sub-domains based on Pearson correlation test (r = 0.19 to 0.42, $P < 0.05$). Significant relationships were found between all sub-domains of social support and total score of health promoting lifestyle and all its sub-domains (r = 0.14 to 0.42, $P < 0.05$) (Table 3).

Discussion

This study was the first effort made in Iran to examine the health promoting lifestyle and its relationship with social support among women covered by Tabriz MS Association. The mean overall score of health promoting lifestyle was moderate. The participating women achieved higher score in the subscale of interpersonal relationships, while achieving lower score in the subscale of physical activity compared to other subscales. Significant relationships

Table 1. Socio-demographic Characteristics of Participants (n = 250)

Characteristics	
Age (year), mean (SD)	35.80 (5.86)
Marital status, No. (%)	
Single	7 (2.8)
Married	216 (86.4)
Divorced	23 (9.2)
Widowed	3 (1.2)
Education of women, No. (%)	
Illiterate	7 (2.8)
Elementary school	20 (8.0)
Secondary school	33 (13.2)
High school	22 (8.8)
Diploma	102 (40.8)
University	66 (26.4)
Occupation of women, No. (%)	
Employed	29 (11.6)
Housewife	197 (78.8)
Student	8 (3.2)
Sufficiency of income for expense, No. (%)	
Completely	19 (7.6)
To some extent	170 (68.0)
Absolutely not	59 (23.6)
Cigarette smoking, No. (%)	3 (1.2)
Using of water pipe, No. (%)	2 (0.8)
Body mass index, mean (SD)	25.11 (4.74)
Duration of disease, No. (%)	7.26 (4.74)
Spouse's education, No. (%)	
Illiterate	6 (2.4)
Elementary school	28 (11.2)
Secondary school	43 (17.2)
High school	23 (9.2)
Diploma	74 (29.6)
University	60 (24)
Spouse's occupation, No. (%)	
Unemployed	17 (6.8)
Worker	76 (30.4)
Employee	50 (20)
Shopkeeper	34 (13.6)
Retired	14 (5.6)
Other	42 (16.8)
Primary support source, No. (%)	
Mother	26 (10.4)
Father	18 (7.2)
Parents	44 (17.6)
Spouse	140 (56.0)
Friend	4 (1.6)
Relatives	2 (0.8)
Other	14 (5.6)
Ethnicity, No. (%)	
Persian	13 (5.2)
Azari	234 (93.6)
Other	2 (0.8)

Table 2. The Status of Health Promoting Lifestyle, Social Support and Their Sub-domains in Participants (n = 250)

Variable	Mean (Standard Deviation)	Obtainable Range	Obtained Practical Range
Total score of health promoting lifestyle	2.40 (0.46)	1-4	1-3.78
Nutrition	2.60 (0.50)	1-4	1-4
Physical activity	1.81 (0.60)	1-4	0.88-3.63
Stress management	2.33 (0.54)	1-4	1-4
Health responsibility	2.41 (0.61)	1-4	1-4
Spiritual growth	2.57 (0.63)	1-4	1-4
Interpersonal relationship	2.63 (0.54)	1-4	1-3.78
Total score of social support	70.39 (25.60)	0-100	0-100
Tangible support	73.03 (27.36)	0-100	0-100
Emotional/Informational support	69.75 (25.73)	0-100	0-100
Affectionate support	71.93 (29.02)	0-100	0-100
Positive social interaction	66.87 (28.34)	0-100	0-100

Table 3. The Relationship Between Health Promoting Lifestyle and Social Support (n = 250)

Variable	Total Score of Social Support	Tangible Support Subscale	Emotional/Informational Support Subscale	Affectionate Support Subscale	Positive Social Support Subscale
	r (*P*)	r (*P*)	r (*P*)	r (*P*)	r (*P*)
Health promoting lifestyle	0.35 (<0.001)	0.32 (<0.001)	0.34 (<0.001)	0.32 (<0.001)	0.33 (<0.001)
Nutrition	0.19 (0.003)	0.21 (<0.001)	0.18 (0.004)	0.15 (0.018)	0.14 (0.033)
Physical activity	0.19 (0.003)	0.18 (0.005)	0.16 (0.011)	0.18 (0.005)	0.16 (0.012)
Stress management	0.25 (<0.001)	0.23 (<0.001)	0.26 (<0.001)	0.22 (<0.001)	0.26 (<0.001)
Health responsibility	0.24 (<0.001)	0.22 (<0.001)	0.25 (<0.001)	0.21 (<0.001)	0.23 (<0.001)
Spiritual growth	0.39 (<0.001)	0.34 (<0.001)	0.38 (<0.001)	0.37 (<0.001)	0.39 (<0.001)
Interpersonal relationship	0.42 (<0.001)	0.39 (<001)	0.42 (<0.001)	0.37 (<0.001)	0.40 (<0.001)

were found between social support and its sub-domains with overall score of health promoting lifestyle and all its sub-domains.

In this study, the mean overall score of health-promoting behaviors was moderate (M = 2.40), which was equal with the study conducted on infertile women (M = 2.40) in Tabriz, Iran (24). However, it was lower in comparison to the studies conducted on women in reproductive age in Tehran, Iran (21), adolescent girls in Sanandaj, Iran (25), postmenopausal women in Tabriz, Iran (22) and it was higher compared with a study on women with polycystic ovarian syndrome in Urmia, Iran (26). The discrepancy in health-promoting behaviors between this study and previous ones conducted in other cities of Iran could be associated with the effect of disease and the characteristics of the subjects, culture, physical environment, social structure, and promotional activities (27,28). It is important to modify lifestyle of the patients with MS to enhance their quality of life and feeling healthy.

The results showed that interpersonal relationships indicated the highest mean score among 6 domains of health promoting behaviors. Similar to this finding, studies conducted on women in reproductive age in Iran (29) and those with disabilities (30), a high score was reported for interpersonal relationships dimension that may be affected by Iranian culture, reflecting the fact that Iranian family members have intimate relations through their efficient social network inside and among groups. Interpersonal relationships constitute one of the prerequisites for communication (9). Interpersonal relationships can enhance the physical and emotional health of individuals (31). Moreover, social communication is basically an important component in social health (30). It should be argued that women would achieve a good level of health when they live in a family and society with good relationships. In fact, family and society are supposed to meet the needs of the members through providing care, accountable people and community services (32).

Participants in this survey achieved low score (1.81) in physical activity, which was similar to the findings of Stuifbergen et al on individuals with disabilities (7) as well as other studies on health-promoting behaviors in other groups in different countries (13,33-38) and with relevant studies conducted in Iran (39,40). Physical inactivity is a growing public health problem which can enhance the risk of heart disease, high blood pressure,

diabetes, obesity, colon cancer, osteoporosis, anxiety and depression (41,42). The CDC has proposed that physical education programs for women should provide training and experiences, which would enhance women's self-esteem to participate in physical activities. Furthermore, women need opportunities to participate in physical activities, and there should be social spaces supporting the participation of women in physical activities (43). Physical activity can be beneficial not only for the patients with MS, but also for mitigating fatigue and strengthening abilities, endurance and quality of life (44-46).

In this study, participants obtained a high social support mean score (70.30 from the score range of 0-100), which is in accordance with the results obtained by Jaracz et al on the patients with MS including 150 women and 60 men (47) and Aghaei et al on 46 Iranian patients with MS (17). In addition, the findings showed a statistically significant relationship between social support and health-promoting behaviors and its sub-domains. In practice, greater levels of social support can improve behaviors that promote health. Other studies have also demonstrated the positive effect of social support on health-promoting behaviors (11,14,16,48,49). It is crucial to enhance the extent of social support (whether financial, emotional or informational) for the women with MS given the significance of social support in health promotion and given the fact that this vulnerable community may face numerous problems, including financial problems for purchasing medicine (50) and emotional problems (51).

One of the limitations of this research was possibly its design. Correlational design demonstrates association not causality. Another limitation was low number of participants, which could reduce the generalizability of findings. The findings may be used to improve available programs and interventions that promote health for the women with MS in order to alter their lifestyles and prevent the adverse effects caused by it.

Conclusions

Considering that the mean total score of the health promoting lifestyle and all of its subscales were in the middle of the range of possible scores and considering this fact that not only health-promoting behaviors is not affected by individual factors, but also it is significantly affected by social support, it is critical to enhance health promoting lifestyle along with other treatments and it is necessary that health providers expand financial, emotional and informational support for the women with MS.

Conflict of Interests

Authors declare that they have no conflict of interests.

Ethical Issues

This research was approved by Shahid Beheshti University of Medical Sciences (Ethics code: SBMU2.REC.1394.142).

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