

ORIGINAL ARTICLE

Does Spousal Support Can Increase the Women's Physical Activity?

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Received: 1 May 2016 **Revised:** 6 September 2016 **Accepted:** 17 September 2016

ABSTRACT

Background: Numerous benefits of physical activity are well-known for the prevention and treatment of various diseases such as diabetes, cardiovascular disease, obesity, and cancers. However, the status of physical activities among women remains noticeably less than the recommended level. Considering the importance of the spouses' participation in the promotion of women's health, this study examined the impact of spousal support on women's physical activity.

Methods: This semi--experimental study was done in February 2015 on 100 couples in reproductive age referred to health centers of Falavarjan city. The participants were randomly divided into intervention and control groups. The information related to women's physical activity in both groups was collected by a questionnaire in two steps, before and three months after the intervention. The spouses of women in the intervention group were trained in the field of the importance of physical activity in women's health in two sessions. The data were analyzed by the software SPSS21 and suitable statistical tests (Independent t, paired t, and Chi-square).

Results: The mean and standard deviation of women's age in the both groups were 28.76 ± 5.51 and 30.38 ± 5.31 , respectively. The prevalence of obesity and overweight in the women under the study was generally estimated 44%. Physical activities of women in the intervention group were significantly increased after the intervention ($P < 0.0001$). Also, the Body Mass Index in the intervention group was significantly decreased compared to before the intervention and control group ($P < 0.001$).

Conclusion: Spouses could encourage women to perform physical activities. It is recommended that the health care system should implement educational sessions for men to encourage women to exercise.

KEYWORDS: Education, Spousal support, Spouse, Physical activity, Body mass index

Please cite this article as: Rezaee H, Amidi Mazaheri M. Does Spousal Support Can Increase the Women's Physical Activity? IJCBNM. 2017;5(2):196-204.

INTRODUCTION

The benefits of physical activity are well-known to prevent and treat various diseases such as diabetes, cardiovascular disease, overweight and obesity, and some cancers in all age groups. However, levels of physical activity among women has remained noticeably less than the recommended level.¹ Furthermore, studies have demonstrated that a large number of women of reproductive age suffer from overweight and obesity.^{2,3}

World Health Organization (WHO) reports show that, in all the world, one billion and six hundred million people are overweight and four hundred million are obese.⁴

As other developing countries, Iran is experiencing global obesity epidemic and its side effects.⁵ The physical complications of obesity and overweight have been proven by different studies. Besides the adverse physical effects of obesity and overweight, studies have demonstrated that overweight and obesity can lead to body dissatisfaction, and lowered mood and self-esteem.⁴

One of the best ways of prevention and treatment of overweight and obesity and their resulting health problems is enough physical activity.⁴

The WHO recommends that adults should exercise each week at least 150 min of moderate-to-vigorous intensity aerobic physical activity (MVPA). Examples of MVPA contain fast walking, swimming, running, cycling, weightlifting, and competitive sports such as football.⁶

The project in Tehran, Iran entitled "the urban health equity assessment and response tool (Urban HEART 2011)" reports that only 20.5% of women exercise at least for the minimum time recommended by the guideline of physical activity. In this guideline, 150 min of moderate intensity exercise or 75 min of vigorous intensity exercise is considered as the minimum physical activity per week.⁷

Physical activity has useful effects on one's ability and increases one's practical capacity. It also increases the mind's efficiency, vitality,

and health and provides one's mental wellbeing by positive attitudes toward life. Women are more affected by the psychological factors of physical activity than men and good feelings in women increase more than in men.⁸

In spite of all the benefits, many people, particularly women, spend a little of their leisure time doing physical activity.⁹

In this regard, WHO reported that in the world, on average about 31% (28% of men and 34% of women) of adults over age 15 did not have desirable physical activities. Also, on average, about 35.7% of people (25.2% of men and 46.5% of women) did not have desirable physical activity in Iran in the same year.¹⁰

The studies conducted have shown that women encounter various obstacles in the way of doing physical activity. The following are among the most important ones:

Lack of time; incorrect knowledge; lack of motivation; health concerns; monetary cost of exercise facilities; and tiredness or fatigue; family responsibilities; and lack of social support.¹

Likewise, women in Iran encounter remarkable cultural, social and religious limitations, for instance disagreement with their father or spouse about their membership to social groups such as sport teams or going to the gyms, and forbidding women from biking or exercising outdoor. As women play a central role in the nurturing and upbringing of children, being physically active is recommended for their physical and mental health and could lead to having healthy future generations.⁷ As previously mentioned, lack of social support for physical activity was recognized as a main barrier by numerous studies.^{11,12} Social support, as a coping emotion-oriented method can prevent the occurrence of stressful situations to protect people or help them to evaluate stressful events in a way that they look less threatening. Social support can be provided as psychological and emotional support and informative support, but perceiving the provided support has special importance; in other words, it seems that people's understanding of the received

support is more important than the amount of the support which is provided.^{13,14}

Affective support may be known as the most important kind of support without considering the social network members who provide it. Affective support emphasizes empathetic relationships with social network members and includes verbal and care relations such as listening, empathizing and providing people with comfort, resulting in increasing knowledge and awareness and coping skills, rebuilding self-confidence and decreasing incompetence feeling and negative feelings and, as a result, increasing sense of control in people. This kind of support allows people to express their feelings so their tensions decrease causing improved relationship.¹⁵

Support from important people like spouse, as a coping emotion-oriented method, can protect people by preventing the occurrence of stressful situations.¹⁴

So in order to promote the physical activity in women, it is necessary to pay attention to social support and investigate its effects. Among different sources of social support, the spouse is really important because men's cooperation is one of the principles emphasized by WHO to promote and maintain the health of women during reproductive ages. The effects of spouses' social support to encourage women to adopt healthy behaviors have been investigated in various studies.¹⁶⁻¹⁸

Recently, a plan entitled Saba (saba stands for Iranian women's health in Persian) has been implemented in health-treatment centers and some subjects such as lifestyle, behavioral habits, physical activity, smoking and using addictive substances, immunization, allergy, and medication/j promotion of women's physical activity.

According to the researcher's studies, no study has been conducted so far on the effect of training men on promoting the physical activity of women. Considering the high prevalence of obesity and sedentariness in women and importance of spouses' participation in the promotion of women's health, this study examined the impact of

spousal support on women's physical activity.

MATERIALS AND METHODS

The present research is a semi-experimental study conducted on married women aged 20-45 in February 2015. The sampling is simple random using random numbers table. First, 190 women with active files referring to 12 health-treatment centers in Falavarjan were selected by simple random sampling and the questionnaires of the first step were completed. The sample size with the test statistical power of 80% and the error level of 5% for each group was considered 44 people. Counting sample attrition, the number of participants in the intervention and control groups was considered 50, separately.

$$N=(Z_1+Z_2)^2 (2 S^2)/d^2. \quad 19$$

Z_1 : reliability 95% which is 1.96

Z_2 : Power coefficient of 80% which is 0.84

S: Estimation of standard deviation score BMI in each group.¹⁹

D: The minimum difference in mean BMI between the two groups showed a significant difference and the 0.6 S was considered.¹⁹

Inclusion criteria in this study were age 20-45, living with the spouse, the spouse's willingness to participate in training programs. The exclusive criteria were suffering from physical diseases causing motion limitations in the women and the spouse's absence from one training session.

After obtaining approval from the Ethics Committee of Isfahan University of Medical Sciences, the study received the code of 393738.

First, after coordination with the manager of Falavarjan's health-treatment network, 190 families were selected as samples by their numbers existing in Falavarjan's 12 centers. After introducing herself, the researcher gave the participants the necessary Information about the study and the questionnaires along with the consent forms in the envelopes. The participants were asked to complete the questionnaires along with the consent forms and deliver them to their health centers.

Considering the inclusive and exclusive

criteria, out of those subjects, 100 eligible participants were selected and divided into two groups of intervention (50 people) and control (50 people), the sampling was simple random using random numbers table.

The information related to physical activity was collected using Saba questionnaire. Saba questionnaire is a valid and reliable tool used by the Ministry of Health in health centers. The validity of these questionnaires was calculated according to the panel of expert's method and its reliability was obtained by Cranach's alpha 0.76. It is used for recording important events related to the health of Iranian women aged 20-65 years, such as personal information, anthropometry, lifestyle, behavioral habits, physical activity, smoking and using addictive substances, immunization, allergy, and medication/job exposures. In this study, just the physical activity domain of Saba was chosen. In this part, the physical activity is evaluated in four domains of household activity, walking, doing activities while working, and sports. In this study, validity of physical activity domain of Saba was assessed by panel of expert's method; the initial copy of the questionnaire was sent to seven experts in the field of health education and promotion and they were requested to offer their remarks on the items. Their comments were applied to the scale. The reliability of this domain of Saba questionnaire was accepted by Cronbach's alpha. The coefficient of alpha Cronbach's was 0.89.

The status of physical activity was recorded as desirable and undesirable (according to the intensity and duration of activity). The items' scoring range was 0 to 1. (0: undesirable; 1: Desirable) Household activity means vacuum cleaning, mopping, washing the yard or car. Walking includes daily commuting, spending free time, exercising, and using treadmill. Activities while working denotes having physical activity at work or job, containing physical activity (farmers, workers). Playing sports includes swimming, mountain climbing, bike riding, playing volleyball or

basketball and other sports in order to play sports or have entertainments during a week.

To identify the activity intensity, the Talk Test method while exercising was used. The participant was asked whether she could talk while doing physical activity or not. If she could talk easily or sing, the activity intensity was low; if she gasped and could not sing, the activity intensity was moderate; and if she could not talk, the physical activity intensity was high. According to the instructions of Saba physical activity questionnaire, in order to determine the desirability or otherwise of the physical activity amount, if the participant did physical activity with moderate or high intensity, regularly and constantly, three times a week and at least for 30 minutes a day, a check mark was put in "Desirable box"; otherwise, the "Undesirable box" got the Check mark. Each desirable level gets the score of 1 and each undesirable one is given the score of 0.²⁰

To train the spouses in the intervention group, we divided them into groups containing 15 subjects. Training was provided through lectures, group discussions, and questioning and answering in two one-hour sessions in the conference hall of the health network on two shifts, a morning and an afternoon on holidays.

Considering that the spouses were busy and did not have enough time to take part in the training session, the intervention was performed in two intensive sessions. Some gifts were given in each session for invitation to participate, and all the fifteen-member groups of spouses took part in the training classes.

The importance of physical activity was discussed in the first session. The role of spouses' support and encouraging women to play sports were explained in detail using group discussions, lectures, and questioning and answering in the second session.

The men were asked to encourage their wives to play sports. At the end of the meeting, the educational materials of the previous session were summed up.

Three months after holding the training classes, the questionnaires were given again

to the women in both groups and they were asked to complete and deliver them to their health centers. During this interval, once every two weeks, some short messages were sent to the spouses by the researcher in order to remind them of educational materials about the role of the spouses' support and encouraging the wives to play sports.

Considering the small size of the sample, the undelivered questionnaires to the health centers were completed by the researcher on the phone. Thus, there was no attrition in this study.

The information was analyzed using the software SPSS21 and appropriate statistical tests. Independent t-test and Chi-square test were used to compare the demographic variables in the two groups. Chi-square test was used to compare the physical activity and Independent t-test and Pair t-test were used to compare the BMI.

RESULTS

With respect to the inclusive criteria of the study, the prevalence of obesity and overweight in the women under the study was generally estimated 44% and before the intervention the two groups

did not show statistically significant differences. Three months after the intervention, the general prevalence of obesity and overweight in the women was estimated 40%. Also, the general prevalence of physical activity, according to desirability, was estimated 35%, but three months after the intervention its amount reached 59%.

The mean and standard deviation of women's age in the intervention and control groups were, respectively, 28.76±5.51 and 30.38±5.31 (P=0.13) and the mean and standard deviation of the men's age in the intervention and control groups were respectively 33.36±5.66 and 35.58±5.84 (P=0.06). No statistically significant difference was observed between the mean age of the men and women in the two groups.

The information about the demographic variables is shown in Table 1, the physical activity in Table 2 and BMI in Table 3.

DISCUSSION

At the beginning of the study, the results revealed that the physical activity status among the majority of women in both groups was undesirable, which was similar to previous

Table 1: Comparison of demographic information of participants in the intervention and control groups

| Variable | Sub-variables | Intervention group N=50 | | Control group N=50 | | P value |
|---------------------------|--------------------------------|-------------------------|---------|--------------------|---------|---------|
| | | Number | Percent | Number | Percent | |
| Women's educational level | Lower than high school diploma | 10 | 20 | 12 | 24 | 0.62 |
| | High school diploma and higher | 40 | 80 | 38 | 76 | |
| Men's educational level | Lower than diploma | 17 | 34 | 23 | 46 | 0.22 |
| | High school diploma and higher | 33 | 66 | 27 | 54 | |
| Women's jobs | Housewife | 40 | 80 | 43 | 86 | 0.42 |
| | Employee | 10 | 20 | 7 | 14 | |
| Men's jobs | Worker | 14 | 28 | 24 | 48 | 0.08 |
| | Self-employed | 29 | 58 | 22 | 44 | |
| | Office worker | 7 | 14 | 3 | 6 | |
| | Unemployed | 0 | 0 | 1 | 2 | |
| Family's income level | Less than 800 dollars | 15 | 30 | 23 | 46 | 0.17 |
| | 800-1000 dollars | 25 | 50 | 22 | 44 | |
| | More than 1000 dollars | 10 | 20 | 5 | 10 | |

The result showed that the demographic variable of women in the two groups had no statistically significant difference.

Table 2: Comparison of physical activity levels of women in the intervention and control groups before and three months after the intervention

| Physical activity | | Intervention group N=50 | | Control group N=50 | | The result of Chi-square test |
|---------------------------------|-------------|-------------------------|---------|--------------------|---------|-------------------------------|
| | | Number | Percent | Number | Percent | |
| Before intervention | Desirable | 19 | 38 | 16 | 32 | 0.60 |
| | Undesirable | 31 | 62 | 34 | 68 | |
| Three months after intervention | Desirable | 39 | 78 | 20 | 40 | <0.001 |
| | Undesirable | 11 | 22 | 30 | 60 | |

The result showed that before the intervention the physical activity levels of was 0.00. Men in the two groups had no statistically significant difference ($P=0.60$); 3 months after the intervention, the physical activity levels of women in the intervention group increased significantly ($P<0.001$)

Table 3: Comparison of BMI levels in the intervention and control groups and comparison of BMI levels before and after the intervention in each group

| | | Intervention group n=50 | Control group n=50 | The result of independent t test |
|--------------------|---------------------------------|-------------------------|--------------------|----------------------------------|
| | | Mean±SD | Mean±SD | |
| BMI | Before intervention | 24.55±3.72 | 25.95±5.24 | 0.12 |
| | Three months after intervention | 24.05±3.73 | 25.78±4.65 | |
| Pair t test result | | <0.001 | 0.47 | |

studies.²¹⁻²⁵

The findings after the intervention showed that there was a significant increase in the amount of women's physical activity in the intervention group in comparison with the control group which can be attributed to the effect of support recommended in educational intervention. Aligned with the results of this study, the effect of social support on the promotion of women's physical activity level has been observed in some researches.²⁶ Social support, as an adjuster variable, can affect stressful stimulators, decrease their effects, and cause women to participate more in sports affairs.²⁶ The studies showed that people feel capable to do physical activity if their families supported them²³ and this fact has been confirmed by various internal.^{27,28} and external studies.²⁹ In other words, the nature of social support affects health behaviors including physical activity.²³

The study showed that the girls who had more mutual relationships with their families and received more support from them did more physical activity.²⁹

The findings of the studies conducted on Taiwanese teenagers suggested that in spite of emphasis on the family, the effect of support from friends was stronger than the

families and this factor could be because of the existence of cultural differences. It means that Taiwanese teens spend more time with their friends doing physical activity.³⁰

Also, the findings of the present study revealed that after the intervention the status of desirable physical activity of women in the intervention group was significantly better than before the intervention and the control group; that is, the spouses had been able to encourage their wives to do more physical activity, and as an educational connector, they could transfer the materials they had learned to their wives and support them to show useful behaviors.¹⁶⁻¹⁸

Promoting men's participation as the principle emphasized by WHO for promoting women's health during reproductive ages is possible through education. According to the findings of this study, men, as educational connectors, could encourage women well to do physical activity. Thus, running special training courses for men in the health and treatment system and paying attention to men's particular problems in relation to participation in training courses are recommended to implement Saba Plan much better.

It is claimed that people's weight and consequently their BMI decrease by increasing

physical activity.³¹ The results of this study showed that there was a statistically significant difference between the amount of physical activity and BMI after the intervention in both groups.

The studies showed that the role of social support from the family and coevals in teenagers related to BMI and the behaviors to control unhealthy weight confirmed that those people who had difficult relationships with their families and received limited social support more likely showed behaviors to control unhealthy weight³² and this result was consistent with those of the present study about the spouse's supportive role.

The present study had some limitations including the small size of the sample, retrospective completion of questionnaires, completing the questionnaires undelivered to the health center by phone, some unmeasured anthropometric indices such as the size of the waist, waist to hip ratio, and waist to height ratio for controlling the weight of the people. Another limitation of the present study was that the physical activity was measured by means of Saba and qualitatively. It is suggested that physical activity should be measured with appropriate tools like IPAQ (International Physical Activity Questionnaire) in future studies.

CONCLUSION

The results indicated that teaching men to support and encourage their wives to do physical activity had a significant effect on increasing physical activity and reducing BMI among women. Accordingly, it is recommended that the health care system should implement educational sessions for men to encourage and support their wife to do more physical activity. Also, to better understand the role of spousal support in women's physical activity, we need further studies to be conducted with qualitative method

ACKNOWLEDGEMENT

This article is extracted from MA thesis (Hajar

Rezaee) approved by Isfahan University of Medical Sciences (393738). Authors would like to thank the honorable personnel of healthcare centers of Falavarjan city and respectable couples who participated in this study.

Conflict of Interest: None declared.

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