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Effect of Self-Care Consulting on Nutrition and Physical Activity among Women Planning for Pregnancy in Karaj, 2016

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Abstract

Aim: This study aimed to evaluate the impact of self-care consultation on the nutrition and physical activity of women who are planning for pregnancy in Karaj, 2016.

Methods: In the present study, 40 women who were planning for pregnancy constituted the research sample who were selected by convenience sampling. Data collection tools included demographic questionnaire and self-care check list based on "CDC preconception health indicators, 2009". Consultation was done based on 5A (asses, advise, agree, assist and follow-up) model. Self-care score scope was measured before, one month and three months after consulting in the area of nutrition and physical activity (with 19 questions). This study was approved by the Ethics Committee of Alborz University of Medical Sciences. Also a clinical trial registry (IRCT2016042827557N2) was performed. Sampling was performed from April to December 2016. One and three months after counselling sessions, the follow-up was done. SPSS v22 and Friedman and Wilcoxon tests were used to analyze the data at the significance level of 0.05

Findings: The results showed that the self-care level of women planning for pregnancy in the area of nutrition has changed significantly one month (p=0/001) and three months (p=0/0001) after consultation. Also their physical activity increased significantly one month (p=0/001) and three months (p=0/0001) months after consultation.

Conclusion: Counselling based on self-care plays an important role in improving the nutrition and physical activity of women planning for pregnancy. Based on individual capabilities, focusing on self-care can promote their performance in the area of nutrition and physical activity before pregnancy.

Keywords: Self-care, Counselling, Nutritional status, Exercise, Preconception

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Introduction

Self-care is the first step in every individual's health. Self-care includes 65 to 85% of health-related activities [1]. It has been shown that 70% of medical visits are unnecessary, and self-care reduces medical costs [2]. Self-care includes all activities related to maintaining health, and preventing and treating illnesses by the individual. Self-care is a multidimensional structure, which is influenced by factors such as health beliefs, economic situations and the events of people's life. Designing a self-care program requires attention to all aspects of life including physical, psychological, emotional, social and spiritual [1]. In addition, there are barriers (such as costliness, time consuming and lack of knowledge) and facilitators (such as support of family and friends and Internet access) to self-care. Having a proper understanding of self-care barriers and facilitators can encourage individuals to take self-care more seriously [3].

Mothers often have the most important caring role among the family members [1]. According to the Center for Disease Control and Prevention (CDC), 30% of mothers in the United States have had at least one risk factor during pre-pregnancy. Disappointing outcomes in pregnancy have become one of the major concerns in the world. For this reason, the US Health Service has introduced prenatal care as an essential component. Preconception care involves taking care of women at the age of fertility before the first pregnancy or between pregnancies [4]. Preconception care is a set of preventive interventions or therapies aiming to identify and modify biomedical, behavioural and social hazards threatening maternal health or the outcome of pregnancy [5].

Diet and physical activity are two important health indicators in preconception care. Weight and diet status of women throughout life, especially before pregnancy can affect the fetal growth and maternal health in long term. Maternal obesity before pregnancy is associated with negative maternal outcomes such as increasing risk of abortion, gestational diabetes, hypertension, thromboembolism, induction of labour, caesarean mode, overweight at birth, and remaining overweight after childbirth. It is also associated with an increased risk of adverse neonatal outcomes, including foetal macrosomia, childhood obesity, and increased risk of diabetes throughout life [6]. On the other hand, long-term maternal weight loss can cause amenorrhea, and ultimately, reduce the chance of fertility. Also nutrient deficiency before pregnancy can reduce nutrient reserves and negatively affect the performance of physiological and biochemical processes affecting fertility [7]. Given the importance of maternal and neonatal outcomes, the preconception weight has been confirmed as a

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key variable in the US Weight Management Guidelines for 2009 [6].

Regular physical activity is a part of healthy life for all people. Usually, a woman who decides to have a pregnancy is advised to continue her normal activity, so counselling and education for physical activity are essential for prenatal care [8]. Women have little information about the effects of nutrition and physical activity during pre-pregnancy, so they must take preconception counselling to minimize the risks. In addition to improving health and doing medical cares, it is important to empower the women to maintain their health via training and counselling in preconception care. Accordingly, this study aimed to determine the effect of counselling based on self-care on the indices of nutrition and physical activity of women planning for pregnancy.

Materials and Methods

This study is a quasi-experimental one-group pre-test and post-test design. The participants' inclusion criteria included: being at the age of fertility, having a pregnancy intention, not having known physical and psychological diseases, lack of history of infertility, lack of drug addiction, being Iranian, reading and writing literacy, and being fluent in Persian. The sampling was convenient among eligible women who had visited the Jahanshahr Women's Park in Karaj. According to the results of the studies, using the formula for estimating the sample size and comparing the two ratios with a loss of about 10%, the final sample size was 40 [9]. The instruments used in this research were demographic characteristics and a questionnaire based on preconception health indicators in the field of nutrition and physical activity with 19 questions (including: number of meals, type of diet, amount of daily drinks consumed, at least 5 times use of fruits and vegetables per day, nutritional disorders, physical activity and type of exercise, and the amount of time they spend per week).

After coordinating with and obtaining permission from the Ethics Committee of Alborz University of Medical Sciences, the study was registered in the Iranian Registry of Clinical Trials. IRCTN, and the necessary coordination with the Municipality of Karaj was done. Then the researcher attempted to make public announcements using flyers and other advertising materials at the level of Women's Park. After referral of qualified applicants, the purpose of the research was first described to them. After obtaining an informed consent from all of them and completing the questionnaires, consultation times were set for each individual. Content and also the number of counselling sessions were coordinated based on self-care counselling. The consultation was conducted by the

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researcher in the following five steps:

1. Investigating the self-care level
2. Guiding the client about the health risks and benefits of behavior change
3. Agreement with the client in realistic setting of objectives
4. Assistance in the development of practical program
5. Follow-up

One month and 3 months after the consultation sessions, the questionnaire was completed again by the participants. The self-care level of the research samples was measured in these indicators with the pre-consultation status.

The collected data were analysed using SPSS software. Mean, standard deviation and absolute frequency were used for descriptive tests, and Friedman and Wilcoxon tests were used for analytic tests.

Results

In the present study, 40 women planning for pregnancy, who had referred to Jahanshahr Women's Park of Karaj were examined to determine the effect of counselling based on self-care on their indices of nutrition and physical activity. The mean age of the participants in this study was 31.65±5.21 years, with the lowest and highest age of 21 and 42 years, respectively. Table 1 shows the frequency distribution of the research units according to the demographic characteristics.

Table 1: Frequency distribution of the research units according to the demographic characteristics

Variable		Number (percentage)
Educational level	Diploma and higher	39 (97.5)
	Below diploma	1 (2/5)
	Sum	40 (100)
Employment status	Housewife	25 (62.5)
	Employed	15 (37.5)
	Sum	40 (100)
Income level	Middle and higher	37 (92.5)
	Lower	3 (7/5)
	Sum	40 (100)
Experienced pregnancy	Yes	15 (37/5)
	No	25 (62.5)
	Sum	40 (100)
Unwanted pregnancy	Yes	4 (26.7)
	No	11 (73/3)
	Sum	15 (100)
Type of delivery	Caesarean	7 (70)
	NVD	3 (30)
	Sum	10 (100)
History of abortion	Yes	8 (53.4)
	No	7 (46/7)
	Sum	15 (100)
History of HPV and chlamydia	Yes	7 (17.5)
	No	33 (82/5)
	Sum	40 (100)

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The results showed that 17 (42%) people in the study consumed more than two glasses of tea per day. Seven (17.5%) people participating in the research consumed less than three meals a day. Twenty eight (70%) subjects did not have fruits and vegetables at least 5 times a day. Also 24 (60%) people participating in the study did not take milk at all. The frequency distribution of research units according to exercise, day, hour and type is shown in Table 2.

Table 2: Frequency distribution of the research units according to exercise, day, hour and type

Variable		Number	Percentage
Doing exercises	No	16	40
	Yes	24	60
	sum	40	100
Total hours of exercises per weak	Minute < 150	4	16.8
	Minute > 150	20	83.5
	sum	24	100
Type of exercise	Walking	11	45.8
	Salon sports	8	33.3
	Walking + salon sports	5	20.8
	Sum	24	100

Table 3 shows the mean and standard deviation of self-care scores in nutrition and physical activity indices before intervention, and one month and three months after intervention.

Table 3: Average and standard deviation of the three measurements of self-care variable scores in the areas of nutrition and physical activity

Variable	Pre-test (Before consultation)		Post-test (One month after consultation)		Post-test (Three months after consultation)	
	Mean	SD	Mean	SD	Mean	SD
Self-care in the area of nutrition and physical activity	77.91	17.04	85.00	14.02	91.66	11.32

The results of Friedman's two-way analysis of variance for nutrition and physical activity (Table 4) showed that the self-care level of women planning for pregnancy in the area of nutrition and physical activity ($p = 0.0001$) has changed significantly after counselling. In addition, comparison of the results of self-care mean in the mentioned fields indicated that the highest level of self-care is related to the three months after self-care counselling.

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Table 4: Results of Friedman's Two-Way ANOVA

Variable	Average score		Chi-square	Freedom degree Error	Significance level
Self-care in the area of nutrition and physical activity	Before consultation	1.58	25.130	2	0.0001
	After one month	2.00			
	After three months	2.43			

Wilcoxon Test (Table 5) was used for pairwise comparison of the mean of self-care scores in the field of nutrition and physical activity. The findings indicated that there is a significant difference between the self-care scores in the mentioned fields before consultation and those one month and three months after counselling. Also there was a significant difference between the self-care scores in each area one month and three months after counselling.

Table 5: The results of Wilcoxon's test for pairwise comparison of self-care mean scores in the areas of nutrition and physical activity

Variable	Time		Significance level
Self-care in the area of nutrition and physical activity	Pre-test	Post-test one month after intervention	0.001
		Post-test three months after intervention	0.0001
	Post-test one month after intervention	Post-test three months after intervention	0.004

According to the ANOVA results, there was no significant statistical relationship between the mean increase of self-care score and the level of income (p = 0.63), occupation (p = 0.73) and education (p = 0.94) among the participants in the research.

Discussion

The findings showed that the rate of self-care in the area of nutrition and physical activity (p = 0.0001) in women planning for pregnancy has changed significantly after counselling. Comparing the results of the average self-care scores in each of the mentioned areas indicated that the highest self-care rate was related to the three months after self-care counselling sessions.

Hemmiche et al. (2007) implemented Taylor counselling on the lifestyle and preconception diet of couples (women aged 19-44 years and men aged 22-23 years). Taylor counselling is based on the ASE model, which is influenced by attitudes, social effects and self-efficacy of individuals. In this model, the goal is to move towards a healthy diet and lifestyle to improve fertility. According to the findings of this research, the general score of Rotterdam, which is related to lifestyle, showed a significant reduction after counselling in the couples ($p<0.05$). The results also showed that counselling in women caused a significant decrease in the alcohol intake ($p<0.01$). This

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finding is consistent with the results of the current study. The above study indicated that the total score of PDR (pre-pregnancy nutritional risk score system) was significantly reduced in both men and women 3 months after Taylor counselling ($p<0.05$). Physical activity in women was significantly increased by Rotterdam's scoring system ($p <0.001$). This finding is consistent with the results of present study [10]. Shabani et al. (2016) conducted preconception counselling to promote the health behaviors of women aged 18-40 years. The results showed that after the necessary training before the pregnancy, the average score of physical activity in the intervention group was significantly higher than in the control group, ($p<0.001$). This study is consistent with the present study [9]. Vahedian Shahroudi et al. (2016) conducted a five-step health education counselling based on the structure of changing stages on physical activity promotion in women with a mean age of 27.86±2.48 years. The results showed a significant increase in the level of physical activity and the stages of change in the intervention group after five-step consultation ($p<0.001$). This finding is consistent with the results of the present study [11]. Bahraminejad et al. (2008) conducted family-oriented or single-oriented training to reduce the participants' body mass index (BMI) and improve their lifestyle. The majority of the participants (89.8%) in the intervention group were single-oriented and 69% were family-oriented) in the age group of 35-55 years. The statistical results of this study showed that although the mean of BMI after intervention in both groups (single-oriented and family-oriented) was significantly decreased ($p<0.05$), but the mean of BMI in both groups was not significant ($p=0.52$) after intervention. This section of the study is not consistent with the present study. The mean of dairy and fruit consumption, and physical activity in both groups (single-oriented and family-oriented) increased significantly after intervention ($p<0.001$). This part of the study is consistent with the present study [12].

One major limitation of this study was that the statistical population was only women planning for pregnancy who were referred to the Women's Park in Karaj, Iran. Therefore, the results of the study cannot be categorically generalized to the entire women's community planning for pregnancy. Since this study was conducted as a semi-experimental research, it is suggested that intervention for preconception care be done experimentally using control group.

Conclusion

The research above results highlight the importance of self-care counselling as well as the importance of nutrition and physical

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activity in women's health at the time of pregnancy. Accordingly, the women had no adequate nutritional and physical activity prior to counselling. Consultation and practise of the necessary care can promote their performance in the area of nutrition and physical activity before pregnancy. This study also showed that the women did not have enough self-care. As a result, health care providers, especially midwives and midwifery counsellors should ensure the correct and complete implementation of pre-pregnancy counselling based on the women's needs.

Conflict of interest:

None has been declared.

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