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Effect of Educational Program of Self-Care Behaviors on Perceived Social Support among mother with Preeclampsia from Southeastern Iran, A clinical trial study

--Manuscript Draft--

Manuscript Number:	RESN-D-20-01355R1
Full Title:	Effect of Educational Program of Self-Care Behaviors on Perceived Social Support among mother with Preeclampsia from Southeastern Iran, A clinical trial study
Article Type:	Research note
Abstract:	Objective Preeclampsia in pregnancy causes severe perinatal complications. Self-care may play a role in improving health, quality of life and reducing health costs. The aim of this study was Effect of Educational Program of Self-Care Behaviors on Perceived Social Support among mother with Preeclampsia. Results Mean score of self-care, social support and its dimensions in the intervention group was significantly higher than the control group [p <0.05]. In the control group, the correlation between the score of self-care with social support and its dimensions was negative and significant [P <0.05]. In the intervention group, the correlation between self-care, perceived social support and its dimensions was no significant. The score of self-care and perceived social support increased significantly after intervention. However, the correlation between self-care score and social support in intervention group was not significant.
Response to Reviewers:	trial registration code is added.

Effect of Educational Program of Self-Care Behaviors on Perceived Social Support among mother with Preeclampsia from Southeastern Iran, A clinical trial study

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Abstract

Objective: Preeclampsia in pregnancy causes severe perinatal complications. Self-care may play a role in improving health, quality of life and reducing health costs. The aim of this study was Effect of Educational Program of Self-Care Behaviors on Perceived Social Support among mother with Preeclampsia.

Results: Mean score of self-care, social support and its dimensions in the intervention group was significantly higher than the control group [p <0.05]. In the control group, the correlation between the score of self-care with social support and its dimensions was negative and significant [P <0.05]. In the intervention group, the correlation between self-care, perceived social support and its dimensions was no significant. The score of self-care and perceived social support increased significantly after intervention. However, the correlation between self-care score and social support in intervention group was not significant.

Keywords: Self-care education, pregnancy, Preeclampsia, Perceived social support

Trial registration number: **IRCT20180127038526N1**
Registration date: **2018-05-01**

Introduction

Preeclampsia is defined as hypertension after the 20th week of pregnancy associated with proteinuria which is resolved after delivery [1]. Today, 88% of pregnancies are normal and 12% are high-risk cases [2]. This disease is the main cause of mortality and preterm delivery [3, 4]. About 1- 8% of Iranian women suffer from preeclampsia [5].

Preeclampsia is the second leading cause of maternal death in Iran and the third cause of maternal death in the world [6, 7] and it is reported that its prevalence in various societies ranges from 2 to 10 percent [8]. Multiple maternal and fetal complications caused by preeclampsia have been reported in the researches [9].

Social support is a mental feeling about being accepted, being interested and receive help in specific circumstances [10]. Some studies have been conducted on the protective effect of social protection on health dimensions [11]. One study has shown the relationship between stress and hypertension through social support [12-14]. Social support is a factor in social psychology and its absence is an important risk factor for health during pregnancy [15, 16].

Self-care is care programs that provides conditions leading to desirable clinical outcomes [17]. For effective prenatal self-care, pregnant women need information such as regular blood pressure control, healthy diet, not smoking and social supports [18, 19].

Self-care is an integral part of all levels of health care [20]. In studies on patients with hypertension, 30.1% of patients had weight control and 22% of subjects had low salt diet, and 2.5% of primiparous women had a good knowledge of self-care in gestational hypertension [21, 22]. The education of mother's self-care is an effective and new program that can cause the mother's empowerment [23].

Some studies show that many women have a high level of knowledge about pregnancy-induced hypertension but they have little knowledge about self-care [24, 25]. In Iran, there have been no studies on planned self-care education to show whether it can contribute the social support of patients with hypertension in pregnancy or not. Therefore, the present study aimed to investigate the effect of Educational Program of Self-Care Behaviors on Perceived Social Support among mother with Preeclampsia, A clinical trial study**.**

Main Text

Methods

This clinical trial investigated the effect of self-care education in pregnancy with perceived social support on 96 preeclampsia patients referring to Shooshtari, Hafez and Hazrat Zeinab hospitals of Shiraz in 2018 (Figure S1). Sample size was obtained based on similar articles [26] and opinions of statistics professors. The samples were assigned by randomly permuted blocks with a block size of three. The study inclusion criteria were Iranian nationality, women with preeclampsia, aged between 18 - 45, gestational age of 20 - 42 weeks, singleton pregnancy, no history of blood pressure before pregnancy, no history of neonatal death in previous pregnancies, with number of deliveries less than 4, absence of chronic diseases such as: diabetes, severe obesity, kidney disease, cardiovascular disease, anemia, mental illness and residence in Shiraz to attend educational classes. The study exclusion criteria were exacerbation of the disease and changing into eclampsia and death, not attending the two training sessions and not giving complete response to the questionnaires.

Intervention method

Sampling began after obtaining written permission from the research centers, receiving code from the clinical practice center and written consent from the mothers. The method of

conducting the research was based on the data of the demographic questionnaire of midwifery obtained from women who were eligible for inclusion criteria. 96 subjects were entered into the study after obtaining written consent by using available sampling method in randomly permuted blocks with a block size of three. 48 members assigned in to the intervention group and 48 people in o the control group.

Patients in the intervention group received self-care education for five sessions. The duration of each session was 45 minutes one week apart. Self-care education included a healthy diet, such as low-salt and low-fat diets, daily intake of vegetables, milk and calcium, active life, not smoking and not using alcohol, using blood pressure medications, regular blood pressure and weight control, avoiding mental and psychological pressures, and receiving regular prenatal care (Table S1). The intervention group was given an opportunity to use the educational materials for one month and then the self-care questionnaire and the perceived social protection questionnaire were completed by interview. Control group also completed the questionnaire after receiving routine prenatal cares. The research instrument included demographic and fertility questionnaire, researcher made self-care questionnaire, and a social support questionnaire.

The demographic questionnaire included two parts: first part consisted of questions such as age, pre-pregnancy weight, height, body mass index, employment status, level of education, family income and second part consisted questions such as midwifery data on the number of pregnancies, gestational age, history of abortion, preterm delivery, preeclampsia, hypertension in previous pregnancies, etc.

The researcher-made self-care questionnaire in pregnancy consisted of 13 questions started with a four-point likert scale of never (0 score) and ended with always (3 score). The minimum score was zero and the maximum was 39. To determine the validity of the questionnaire after making

questions, based on the content of the educational sessions the questionnaire was provided to ten experienced faculty members of Fatemeh (P.B.U.H) School of Nursing and Midwifery of Shiraz. Opinions and recommendations were proposed by the professors and content validity was determined. Subsequently, by preliminary examination, 30 knowledge assessment questionnaires were completed by pregnant women in a two week intervals and Cronbach's alpha coefficient was determined using SPSS software. Cronbach's alpha coefficient obtained in this study was α = 81% which considered as a good reliability coefficient for the present study.

The perceived social support questionnaire was designed by Sarason et al. and its internal consistency with the Cronbach's alpha coefficient was calculated as 0.97, it was translated to Farsi by Naseh et al. and its reliability and internal reliability were measured. Its internal consistency was calculated with Cronbach's alpha coefficient of 0.95. The questionnaire consisted 12 questions in the Likert scale started with "Completely Disagree"(zero score) and ended with “Completely Agree" (6 score). Its minimum score was zero and its maximum score was 72 [27, 28].

Statistical Analysis

SPSS software, version 23, was used to enter the data. Descriptive test was used to report frequency, percentage, mean and standard deviation. Analytical tests or its nonparametric equivalents (Mann-Whitney test) were used to compare the mean of a quantitative factor between the two groups. Pearson correlation test was used to investigate the correlation between the two factors slightly

was used for analyzing the analyzes for comparing the mean of a quantitative factor between the two groups of independent t test or its nonparametric equivalents (Mann-Whitney test) was used

to examine the correlation between the two quantitative factors. Pearson Correlation Test was used to examine the relationship between two qualitative factors.

Also Chi-square test was used to investigate the relationship between classification factors [qualitative] with each other. In examination of the normality of each qualitative factor, Kolmogorov-Smirnov test was used in each group separately. $P<0.05$ was considered significant.

Results

96 individuals participated in this study. 48 individuals were in the intervention group and 48 were in the control group. The age of the samples was 19 - 43 years old with a mean of 29.31 ± 7.3 (mean ± SD). The demographic and clinical data of individuals in the intervention and control group were presented (Table 1).

The results showed that the two intervention and control groups were homogeneous in terms of demographic characteristics and fertility [Table 2]. Also the mean of the scores of self-care, specific social support, social support of friends, family social support and overall score of perceived social support in the intervention group was significantly higher than that of the control group ($p <0.001$) (Table 2).

Based on Pearson correlation test, the correlation between score of self-care score, specific social support, social support of friends, family social support and total social support was not significant in the intervention group. But in the control group, the correlation between score of self-care, perceived social support and its dimensions was negative and significant ($P> 0.05$). This meant that with the increase of self-care score, the score of social support of a special individual, social support of friends, social support of family, and total social support was significantly reduced (Table 3).

Discussion

Results of the present study showed that the mean of self-care score, score of social support and score of perceived social support and its dimensions in the intervention group were significantly higher than that of control group ($p < 0.001$). In Shabiri et al. study, after education in preeclamptic patients, an increase in self-care score in the intervention group was observed, which was consistent with the present study. Self-care education also caused a significant difference in intervention and control groups in Apgar score of infants after birth [29]. Another study showed that after self-care education in patients with high blood pressure, the mean of self-care score in the intervention group was 66.4 ± 4.6 which was consistent with the present study [30]. Shahbedaghi et al study also showed a significant decrease in diastolic blood pressure of patient by implementing the self-care program. The most effective and cost-effective way of developing human health is the participation of individuals in health care programs, increasing the awareness of patients about their illness and methods of controlling it [31, 32].

Among other results of the present study was that correlation between factors of self-care, social support and its dimensions in intervention group was not significant. The study of Seifzadeh revealed that there was no correlation between perceived social support and physical health level [33]. Considering the fact that in this study self-care education performed to reduce the complications of preeclampsia, this study was consistent with the study of Seifzadeh. On the other hand, the study by Naghizadeh et al. showed a correlation between self-care educations in perceived social support [34], which was not consistent with the results of this study. The reason for this difference can be the lack of consideration of the impact of chronic diseases such as preeclampsia in their study.

n another study, there was a correlation between perceived social support with self-care and nutritional habits [33], which was not consistent with this study. Also, various studies indicated

positive effects of social support on self-care aspects [35, 36]. Although the correlation between self-care and perceived social support in the intervention group was not significant in the present study; differences in the findings of the study can be due to the effect of factors such as depression and anxiety in pregnancy on the amount of social support that did not considered in this study [37]. The constant reinforcement of awareness of self-care skills in pregnancy-related hypertension was a requirement for prenatal education.

There was no significant relationship between the level of education of mothers participating in the present study with self-care and perceived social support, which was consistent with Shabiri study [29]. However, in some studies, increasing maternal education level increases the self-care behaviors or causes the receiving of higher social support [38]. Preventive interventions for preeclampsia can reduce its severity and affect the level of mortality and pre-natal complications. Among the strengths of this study was face to face education as the most effective educational methods.

Conclusion

The mean score of self-care, perceived social support and its dimensions in the intervention group had a significant increase. The correlation between factors of self-care, perceived social support and its dimensions in the intervention group was not significantly correlated. It is recommended that a well-written educational program to be conducted in high risk mothers for prenatal cares.

Limitations

One of the limitations of this study was the lack of standard self-care questionnaire in pregnancy. Regarding the fact that after education, the self-care programs were performed by people at

home and they were not directly observed by the researcher, so this could affect the outcomes of the study, which was beyond control.

Abbreviations

Not available.

Declarations

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Availability of data and materials

Data are available upon request form corresponding author.

Authors' contribution

MA and FA are prepared the first draft of the manuscript and **MA** made critical revisions to the paper and respond to reviewers. **AA** Helped the Surge Articles**,** and Center for Development of Clinical Research of Nemazee Hospital were supervision in The data analysis. All authors approved the study.

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Ethics approval and consent to participate

The study is approved by ethics committee of Shiraz University of Medical Sciences. All participants signed a written consent (IR.SUMS.REC.1396.144)

Consent for publication

Not applicable.

Conflicts of interest

There are no conflicts of interest among the authors of the study.

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Table 1: Demographic and clinical data of subjects in two groups of control and intervention

Factors	Category	Group		Total	Statistical index	p-[value[sig
		Control N=48	Intervention N=48	M±SD		
		M±SD	M±SD			
Age		79.29±7 .7	83.28±9 .6	29.3±7.3	[0.64[T	52.0
Gravid		65.2±25 .0	15.2±19.0	2.39±0.16	[T] 1.58	12.0
		[N[%	[N[%			
Occupation	Housewife	31.3]30]	31.3]30]	5.62]60]	[0[X^2	1
	Employed	18.8]18]	18.8]18]	5.37]36]		
Education	Uneducated	4.2]4]	2.1]2]	3.6]6]	[X^2] 0.14	54.0
	Under the diploma	15]15.6]	7.14]14]	2.30]29]		
	Diploma	13]13.5]	19]19.8]	3.33]32]		
	Academic	16]16.7]	13]13.5]	2.30]29]		
Income	below 1 million	32]31.3]	33]32.3]	6.65]63]	[0.05[X^2	83.0
	Above 1 million	[17[17.7	[16[16.7	[33[34.4		
Satisfaction	Yes	45.8]44]	46]45.9]	92.7]89]	[0.15[X^2	69.0

with the relationship with the husband	**No**	4.2]4]	3.1]3]	7.3]7]		
husband Education	Uneducated	3.1]3]	1]1]	4.2]4]	[2.88[X^2	0.41
	Under the diploma	19.8]19]	24]23]	43.8]42]		
	Diploma	13]13.5]	16]16.7]	30]29.2]		
	Academic	13]13.5]	8]8.3]	21]21.9]		
Abortion history	Yes	10.4]10]	7]7.3]	17]17.7]	[0.64[X^2	0.42
	No	39.6]38]	42.7]41]	82.3]79]		

T= Independent t-test

X^2 = chi-square test

Table 2: Comparison of mean scores of self-care factors and perceived social support between two groups of control and intervention

Factors	Group	Mean	Std.Deviation	Statistical index	P-value
Self care	**Intervention**	45.89	3.16	20.94*	P<0.001
	Control	30.12	4.15		
Specific person's Social support	**Intervention**	22.04	4.51	515**	P<0.001
	control	16.13	6.006		
Friends Social support	**Intervention**	19.45	5.79	805.5**	0.011
	control	15.95	6.38		
Family social support	**Intervention**	25.23	8.3	761**	0.004
	control	20.58	6.89		
Total social support	**Intervention**	61.83	13.67	634.5**	P<0.001
	control	48.79	16.57		

*= Independent t-test **= Mann-whitney

Table 3: Correlation between the scores of self-care factors and perceived social support in two groups of intervention and control

Group	Factors	Self care	Specific person's Social support	Friends Social support	Family social support	Total social support
Intervention	**Self care**	-				
	Specific person's Social support	r= -0.025 p=0.87	-			
	Friends Social support	r=0.036 p=0.81	r= -0.027 p=0.86	-		
	Family social support	r=0.02 p=0.89	r=0.092 p<0.001	r=0.13 p=0.39	-	
	Total social support	r=0.011 p=0.94	r=0.89 p<0.001	r=0.38 p=0.007	r=0.96 p<0.001	-
Control	**Self-care**	-				
	Specific person's Social support	r=-0.36 p=0.01	-			
	Friends Social support	r= -0.38 p=0.008	r=0.87 p<0.001	-		
	Family social support	r=-0.39 p=0.007	r=0.8 p<0.001	r=0.78 p<0.001	-	
	Total	r= -0.39	r=0.95	r=0.93	r=0.93	-

	social support	p=0.005	p<0.001	p<0.001	p<0.001	

r=pearson correlation ， p= p-value