

# Effects of Husband Involvement in Prenatal Care on Couples' Intimacy and Postpartum Blues in Primiparous Women

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## Research Article

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# Abstract

**Background:** Husband involvement in prenatal care is a relatively new concept in developing countries, including Iran. Considering the key role of men in the promotion of women's health, this study aimed to determine the effects of husband involvement in prenatal care on couples' intimacy and postpartum blues in primiparous pregnant women referring to selected comprehensive health centers in Rafsanjan in 2021.

**Methods:** This experimental study was performed on 69 primiparous pregnant women aged 15-45 years with a gestational age of 20-36 weeks. Participants in the intervention group were accompanied by their husbands and received routine prenatal care and virtual training. Participants in the control group received routine prenatal care without husband involvement. The Unidimensional Relationship Closeness Scale (URCS) was completed in two stages, before intervention and two weeks after delivery, and the Stein questionnaire was completed one week after delivery. Data was analyzed with T-test, Chi-square and Fisher exact tests.

**Results:** The results showed that the incidence of postpartum blues was significantly lower in the intervention group than in the control group ( $p < 0.001$ ). The mean score of couples' intimacy after intervention increased in the intervention group and decreased in the control group; however, the difference was not statistically significant ( $p = 0.08$ ).

**Conclusion:** Husband involvement in prenatal care and virtual training for couples may be effective in controlling postpartum blues and possibly in increasing couples' intimacy.

## Introduction

Husband involvement in prenatal care is a relatively new concept in developing countries, including Iran (1). Although there is no legal, religious, or moral prohibition on this practice in Iran, the presence of the husband during prenatal care in the private and public sectors is not common (2). The rate of male involvement in prenatal care varies between societies and countries and has been reported to be as low as 25% in Iran to as high as 90% in Guatemala (3–5).

Various factors can determine the degree of male involvement in prenatal care (3). Midwives' worries, cultural barriers (especially in small towns) (6), inappropriate working hours of health centers, inconsistency of health center working hours with men's free hours, unisex health centers, lack of sufficient space for counseling with men, and a lack of male counselors are known to prevent male involvement (4).

Male involvement in prenatal care is important because of the patriarchal culture, men's lack of knowledge in the field of reproductive health, the key role of men in the promotion of women's health, and the realization of social and gender justice (7). Men's knowledge has a positive effect on marital relationships and their parental role. In Iran, most studies have examined the role of male involvement in

family planning, but their participation in prenatal care programs has been less studied. Since male involvement is emphasized today in achieving the millennium development goals, realizing this aim definitely requires the implementation of educational programs for men (8). Raising children is one of the central roles of women, and increasing the attention of health officials to women's mental health through programs such as educating husbands to participate in prenatal care can improve the mental health of pregnant women (9).

Postpartum blues is a non-pathological disorder characterized by a set of psychological and psychosomatic symptoms that affect women for 10–15 days after delivery (10). This disorder is considered to be mild and self-limiting; however, it is a risk factor for postpartum depression or anxiety disorders (11). The exact cause of postpartum blues is unknown (12). The rate of postpartum blues in Iran is reported to be 22.3%, but the diagnosis of this disorder has been largely ignored. Therefore, early interventions to prevent and reduce symptoms are important and necessary (13, 14).

Distress and the loss of couples' intimacy after childbirth affect millions of people every year (15). One emotional need of couples is intimacy in relationships, which provides the basis for happiness as well as feelings of worth in life and marital satisfaction (16). Couples' intimacy was first studied in Europe, particularly in Scandinavia (17). Intimacy is considered one of the important features of a marital relationship and a successful marriage (18). Decreasing intimacy reduces a couple's ability and desire to solve problems, overcome obstacles, and stand up to fears and doubts (16). Various studies have shown that women's intimacy decreases after childbirth (19, 20). Because this issue has received little attention, the aim of the current study was to determine the effects of husband involvement in prenatal care on couples' intimacy and postpartum blues.

## Materials And Methods

The target population of this experimental study was primiparous pregnant women referring to 8 comprehensive health centers in Rafsanjan in 2021. The code of ethics for this study was obtained from the Ethics Committee of Rafsanjan University of Medical Sciences (IR.RUMS.REC.1399.205).

Inclusion criteria were age 15–45 years with a gestational age of 20–36 weeks, living with husband, having a smart phone, no history of serious psychiatric disorders (schizophrenia or other psychotic or mood disorders), and no use of psychiatric drugs before or during pregnancy by the couple. Exclusion criteria were an unwillingness to continue participation at any stage of the study, the presence of the husband in less than 3 prenatal care visits in the intervention group, and the occurrence of a traumatic event in a recent month (death of a close relative, divorce, separation, or marital dispute).

Considering a 95% confidence level, 80% power, the standard deviation of 2.84 for the depression score according to Rabieipoor et al. (9), 2.5 units difference in the mean score of postpartum blues in the two groups, and an attrition rate of 20%, the minimum sample size was estimated to be 30 subjects in each group. To increase the study power, 72 primiparous pregnant women were ultimately selected.

By computerized randomization, 36 samples each were assigned to the intervention and control groups. The researcher invited participants to the study by making a telephone call and introducing herself. Groups were created on the social network WhatsApp for each study group, and invitation letters were sent to them. The invitation was repeated by the staff of the health centers who gave a paper invitation and written informed consent form to prospective participants in either group.

The husbands in the intervention group were invited to participate in 3 out of 6 prenatal care sessions for their wives in the second half of pregnancy. In these three sessions, only routine prenatal care was performed in the presence of the husband. All face-to face education plans for husbands were suspended because of the COVID-19 pandemic. Instead, the planned content regarding couples' intimacy and postpartum blues was sent to the intervention group through WhatsApp.

Educational content included a training program to increase the intimacy of couples based on Iranian indigenous culture according to a study by Kalantari et al. (21) and a training program to reduce and control postpartum blues. Samples in the control group received routine prenatal care without the presence of their husbands. Due to the study method, it was not possible to blind the main researcher, health center staffs, or participants.

Data collection tools in this study comprised a demographic characteristics checklist, the Unidimensional Relationship Closeness Scale (URCS), and the postpartum blues Stein questionnaire. The URCS is a 12-item self-report scale that assesses the closeness of individuals and social relationships (22). Pakpour et al. translated the URCS into Persian according to international standard guidelines (23). Accordingly, the reliability of the test-retest assay of the Persian URCS at 2-week intervals was 0.91 and Cronbach's correlation coefficient was 0.88. In addition, the one-dimensional structure of the URCS was confirmed.

The postpartum blues Stein questionnaire (24) was confirmed by the content validity method in Kariman et al.'s study. The reliability of this questionnaire in Kariman's study was 0.90% (25). The postpartum blues questionnaire consists of 13 questions; the first 8 questions are scored from 0–4, and in the last 5 questions, yes and no answers are scored 1 and 0 points, respectively. On a general scale with a score of 0–26, a score of 8 or higher usually indicates that significant mood swings have occurred (24).

In this study, the URCS was completed twice through interviews with participants, once during the first telephone call and then two weeks postpartum. The Stein questionnaire was completed just one week postpartum. Both questionnaires were completed by participants in the control and intervention groups by phone calls. Data were analyzed using SPSS software version 25 with the T-test, Chi-square, and Fisher exact tests.

## Results

In this study, 72 primiparous pregnant women entered; at the end of the study, 36 in the control group and 33 in the intervention group remained (two couples exited the study due to the husband's absence from routine prenatal care sessions and one non-response to follow-up call) (Fig. 1).

The demographic characteristics of couples in the intervention and control groups were not statistically different (Table 1).

The chi-square test showed that the distribution of delivery type, delivery satisfaction, and neonatal gender in the intervention and control groups was not statistically different (Table 2).

The T-test results of two independent samples showed that the mean score of couples' intimacy between the intervention and control groups before intervention ( $p = 0.88$ ) and after intervention ( $p = 0.08$ ) was not statistically significant. Paired t-test also showed that the mean score of couples' intimacy in the intervention group before and after intervention ( $p = 0.058$ ) and in the control group before and after intervention ( $p = 0.080$ ) was not statistically significant (Table 3).

The results also showed that the mean and standard deviation of changes (before and after) in couples' intimacy scores in the intervention and control groups were  $0.16 \pm 0.46$  and  $-0.14 \pm 0.46$ , respectively. Statistical tests of two independent samples showed that the mean changes (before and after) in couples' intimacy score were significantly higher in the intervention group than the control group ( $p = 0.01$ ). This indicates that the mean score for couples' intimacy increased after intervention in the intervention group, while in the control group, it showed a decrease.

The results showed that 5 participants (15.2%) in the intervention group and 26 participants (72.2%) in the control group suffered with postpartum blues (Fig. 2).

The chi-square test results showed that the rate of postpartum blues was significantly lower in the intervention group than in the control group ( $p < 0.001$ ).

## Discussion

Results of this study showed that women who receive routine prenatal care and virtual training accompanied by their husbands had non-statistically significant postpartum couples' intimacy scores compared to women who received routine prenatal care alone. Comparison of the mean couples' intimacy score (before and after intervention) showed that this mean score increased in the intervention group, while it decreased in the control group. Although the difference in mean postpartum score of couples' intimacy between the control and intervention groups was not statistically significant, the mean postpartum score of couples' intimacy in the intervention group increased after compared to before delivery and decreased in the control group compared to before delivery.

Behzadipour et al. (19) compared women's sexual satisfaction and intimacy during pregnancy and after delivery. The results showed that women have lower sexual satisfaction and intimacy issues (emotional, sexual, and physical) in the postpartum period than during pregnancy. Data from a large cohort study on pregnancy by Woolhouse et al. (20) also showed that emotional satisfaction in intimate relationships decreases after the birth of the first child and does not return to the level of pregnancy at any stage in the first 4 years after delivery. Although in the present study, the mean changes in the intimacy score of the

intervention group was positive, it seems that husband involvement in prenatal care and virtual education could increase couples' intimacy.

Eddy and Fife (26) reported that the active participation of the husband during pregnancy strengthened the couple's relationship after childbirth. The findings of a qualitative study by Comrie-Thomson et al. (27) also showed key ways in which male involvement interventions can improve couples' emotional relationships.

The findings of the present study showed that the incidence of postpartum blues was significantly lower in the intervention group than the control group. A previous study showed that a significant correlation exists between husband involvement in prenatal care and promotion of women's mental health, reduction of postpartum depression, and better use of health services (9). Armini et al. (28) also showed that more support from the husband is significantly associated with a reduction in postpartum depression. Their study also suggested optimizing the role of the husband as a supportive source to prevent postpartum depression.

The results of a systematic review and meta-analysis (29) also showed male involvement to be significantly associated with a reduced chance of postpartum depression as well as better use of maternal health services. The results of Renata and Agus (30) revealed a significant relationship between husband support and the prevalence of postpartum blues. Women who had a low level of support from their husbands were 2.331 times more likely to experience postpartum blues than women who had good support. It seems that male involvement may allow couples to talk openly about issues and problems during pregnancy and after childbirth. In a situation such as Iran where men are rarely exposed to the recommendations of healthcare professionals, this intervention may provide an opportunity to increase men's information and awareness.

The present study was limited by the difficulty of coordinating with couples to participate in routine prenatal care sessions due to the coronavirus pandemic and the interference of health center hours with men's free hours. Considering that the discussion of husband involvement in matters related to pregnancy and women's health is a relatively new and challenging topic in Iran, it is suggested that future experimental studies compare and evaluate the effectiveness of different methods for increasing husband involvement during pregnancy on increasing couples' intimacy and reducing postpartum blues.

## **Conclusion**

The results of the present study showed that husband involvement in prenatal care may increase couples' intimacy. Moreover, husband involvement in prenatal care seems to be able to reduce the incidence of postpartum blues, which can affect family health.

## **Declarations**

### **Ethics approval and consent to participate**

The code of ethics for this study was obtained from the Ethics Committee of Rafsanjan University of Medical Sciences (IR.RUMS.REC.1399.205). All couples signed a written consent form at the first prenatal care session after recruitment. We confirm that all methods were carried out in accordance with relevant guidelines and regulations.

## **Consent for publication**

Not applicable

## **Availability of data and materials**

The data that support the findings of this study are available from Mahmood Sheikh Fathollahi but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of Mahmood Sheikh Fathollahi.

## **competing interests**

The authors declare that they have no competing interests

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## **Authors' contribution**

Participation of authors: Zohreh Ghorashi has designed this study according to recent studies. Maryam Dehshiri collected data and managed data sampling. Zohreh Ghorashi supervised data sampling. Maryam Dehshiri drafted and Zohreh Ghorashi and Seyedeh Maryam Lotfipour reviewed the manuscript. All authors read and approved the final manuscript.

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## Tables

Table 1. Comparison of couples' demographic characteristics in intervention and control groups

Group	Intervention	Control	<i>p</i> -value
Variable	(n=33)	(n=36)	
<b>Female age (years)</b>	27.76±5.72	26.97±4.57	0.529
<b>Marriage age (years)</b>	23.79±5.01	23.69±5.05	0.939
<b>Level of Education</b>			0.286
Under Diploma	3(9.1)	2(5.6)	
Diploma	8(24.2)	15(41.7)	
Higher than diploma	22(66.7)	19(52.8)	
<b>Occupation</b>			0.558
Housewife	25(75.8)	25(69.4)	
Employed	8(24.2)	11(30.6)	
<b>History of infertility</b>	6(18.2)	6(16.7)	0.868
<b>History of abortion</b>	5(15.2)	6(16.7)	0.864
<b>History of remarriage</b>	3(9.1)	2(5.6)	0.665
<b>Male age (years)</b>	33.30±5.73	32.36±5.07	0.471
<b>Marriage age (years)</b>	29.33±5.09	29.08±6.02	0.853
<b>Level of Education</b>			0.405
Under Diploma	3(9.1)	2(5.6)	
Diploma	7(21.2)	13(36.1)	
Higher than diploma	23(69.7)	21(58.3)	
<b>Occupation</b>			0.792
Employee	12(36.4)	12(33.3)	
self-employed	21(63.6)	24(66.7)	
<b>History of remarriage</b>	1(3.0)	1(2.8)	0.999

(Independent two-sample t test-Chi-square test-Fisher exact test)

Table 2. Comparison of delivery type frequency, delivery satisfaction, and neonatal gender in intervention and control groups

Group Variable	Intervention (n=33)	Control (n=36)	<i>p</i> -value
Type of delivery nvd c/s	10(30.3) 23(69.7)	12(33.3) 24(66.7)	0.787
Delivery satisfaction	27(81.8)	28(77.8)	0.677
Neonatal gender			0.512
Girl	13(39.4)	17(47.2)	
Boy	20(60.6)	19(52.8)	

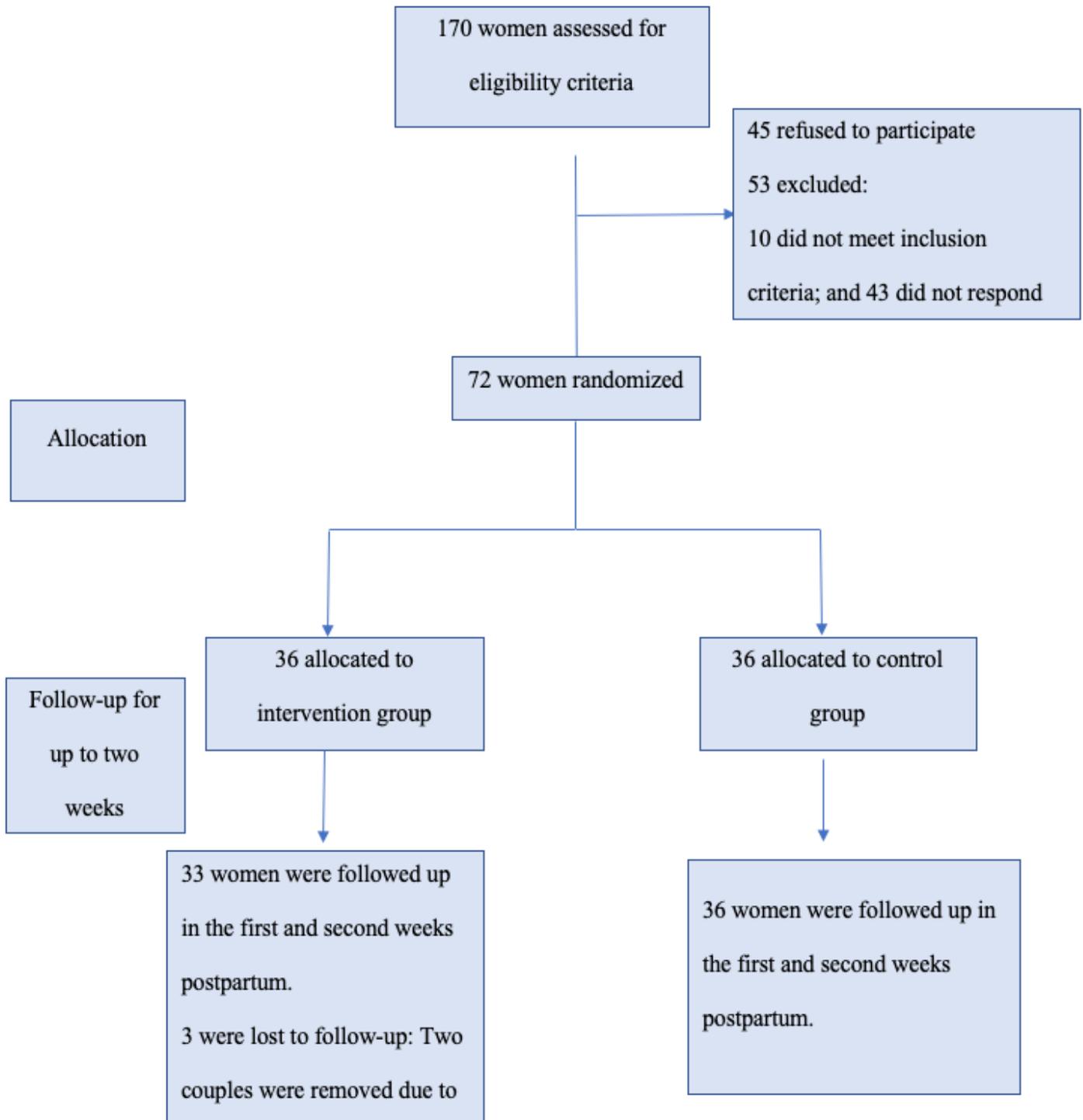
Chi-square test)

Table 3. Mean score of couples' intimacy before and after intervention according to the studied groups

Group Variable	Intervention (n=33)	Control (n=36)	<i>p</i> -value
Mean score of couples' intimacy before intervention	6.30±0.75	6.33±0.58	0.88
Mean score of couples' intimacy after intervention	6.46±0.53	6.19±0.75	0.08
<i>p</i> -value	0.058	0.080	

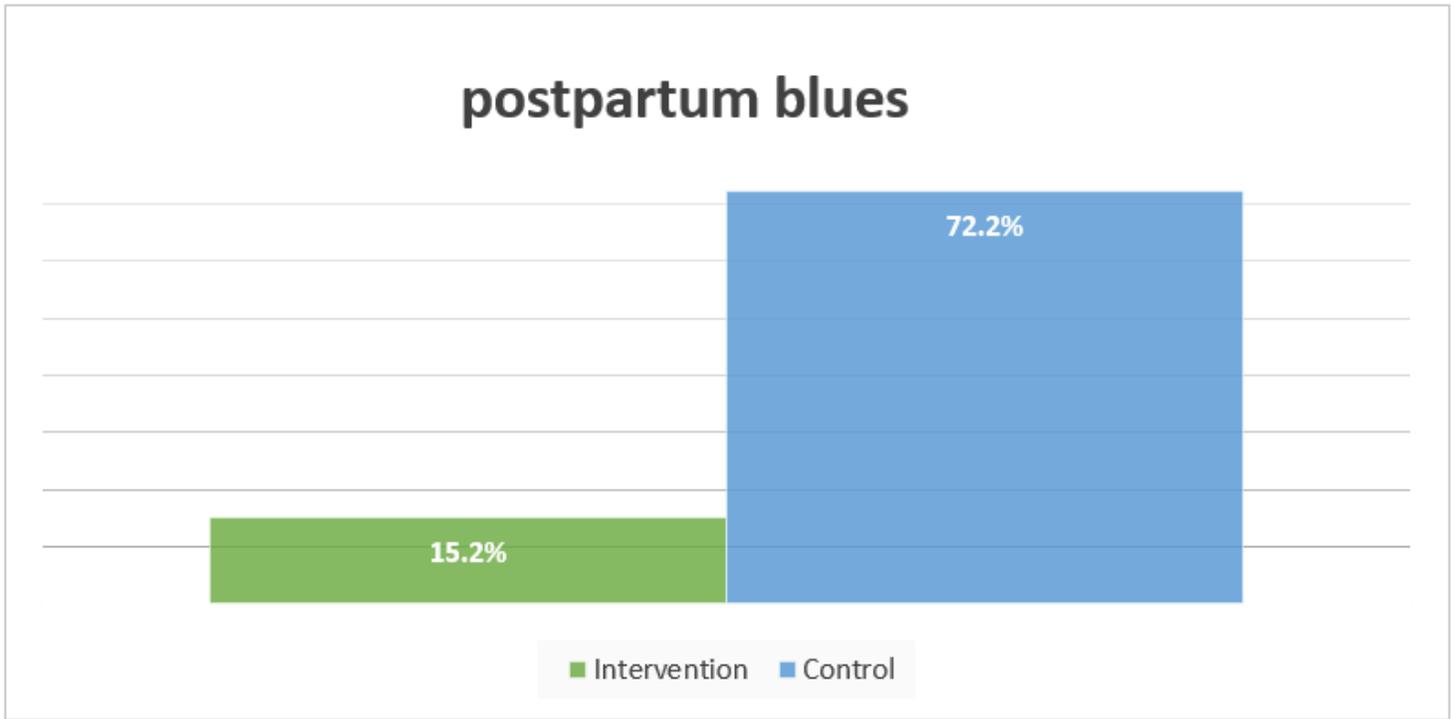
(Independent two-sample t test-paired t test)

## Figures



**Figure 1**

CONSORT diagram



**Figure 2**

Figure shows a decrease in postpartum blues in the intervention group after intervention compared to the control group.