

Effect of Home Care on Husband's Support During the Postpartum Period



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ABSTRACT

Introduction: The role of Fathers' involvement and support in the care of mother and child during postpartum is crucial. This support promotes the health of the mother and the family.

Objective: This study aimed to determine the effect of home care on the husband's support during the postpartum period.

Materials and Methods: This is a clinical trial conducted on 64 women given birth in one of the hospitals in Isfahan, Iran. They were randomly assigned into two groups of intervention and control. A researcher-made questionnaire was used for collecting data. The validity and reliability of the questionnaire were already evaluated. For analyzing the collected data, descriptive statistics, and independent t-test, Fisher's exact test, Chi-square test, and Mann-Whitney U test were used considering the significance level of $P \leq 0.05$.

Results: After receiving home care, the husband's support in the intervention group (96.74 ± 9.11) was significantly different ($P=0.001$) from the control group (81.17 ± 14.43). There was also a significant difference between the intervention and control groups in the areas of "confidence in wife", "listening to her", "attention to her care needs", "attention to her financial needs", "attention to her problems and trying to fix them", "buying necessary things for her", "buying gifts for her", "helping with housekeeping", and "helping with childcare" after the intervention ($P < 0.05$).

Conclusion: Home care program could desirably increase husband's support leading to a safe postpartum period. Providing home services requires careful planning and proper management by midwives.

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Highlights

- Most women experience at least one health problem during the postpartum period.
- Men's involvement in prenatal and postnatal care can affect the acceptance of and adaptation to paternal identity.
- The promising results of the home care program reflect the need of spouses and families for an educational program about supporting mothers in the postpartum period.
- The governing culture can affect paternal involvement and the quality of the husband's support in the postpartum period.
- The home care program was able to increase the husband's support during the postpartum period.

Plain Language Summary

Physiological conditions of the postpartum period make it a sensitive and effective period for both mother's and child's health. Family, and especially husband, are the most accessible and useful sources of providing support for women. Given the limited research on the effect of husband's support on women's health in the postpartum period, this study presented a clinical intervention for the woman who just gave birth. The intervention tried to increase their husbands' support in meeting their needs during this critical period. The midwifery team provided the training during three postpartum visits with fathers and other family members (32 families). At the same time, we examined the support and engagement level of fathers in other 32 families as the control group. The results in the pre-intervention phase indicated a poor level of husband's involvement and support. Fortunately, after receiving home care, the results showed the impact of the intervention on increasing fathers' support and engagement, especially in terms of basic needs. The results confirm the spouses and families' need for receiving training about supporting mothers in the postpartum period. The health care team should scientifically provide this training. Home-based training offers the opportunity to identify the specific needs of each family and detect problems in the early stages and takes appropriate action. It can also prevent future injuries and subsequent medical costs.

Introduction

The postpartum period is one of the most critical periods that affect women's health [1]. This period can be considered as one of the most sensitive stages of women's life because the complications of childbirth can disrupt their life process and eventually lowers their quality of life [1, 2]. Unfortunately, postpartum care has been neglected in most countries, and most of the needs of this period are overshadowed by pregnancy and childbirth [3]. The results of a study have shown that almost the majority of women have experienced at least one of the health problems, such as low back pain, breast ulcers, discomfort due to cesarean section or episiotomy wounds, constipation, hemorrhoids, changes in sleep patterns, chronic pain, perineal pain, abdominal pain, and sexual problems during postpartum period [4].

Regarding the recent therapeutic approaches to reduce postpartum hospitalization length, mothers are discharged shortly after delivery and spend the first days without direct care from the treatment team. Most mothers do not consult care providers about their problems and usually use self-treatment [5]. Providing postpartum services is one of the most important measures to prevent and detect early unintended consequences for mothers such as physical, psychological, and sexual complications during this sensitive period. Therefore, visiting mother and baby during this period is essential [6]. According to the National Association for Home Care and Hospice (NAHC), home care and examination are done to promote and maintain the health of individuals and its essential feature is that health care and necessary measures are taken at home and according to their needs [7].

In community-based midwifery, the midwife can provide midwifery services tailored to the family and social

status of women, such as involving fathers in supporting the baby and mother [8]. Men's involvement in care before and after delivery can play a role in acceptance and adaptation to paternal identity. However, fathers, like their wives, do not seem to have sufficient skills to care for infants, and it is felt that fathers need to learn more about infant characteristics [9, 10]. The results of another study on men's involvement in childcare showed that the most involvement was related to playing with the child, while nearly half of parents did not participate in the care, bathing, and changing nappy or clothes of baby [11]. Furthermore, men's acceptance of the paternal role has beneficial effects not only for themselves but also for their wives and is also associated with children's psychosocial development [12].

There is still little information on the involvement of Iranian fathers during the postpartum period. Although early steps have been taken, these studies are limited to the men's involvement during the pregnancy period, and the benefits of postnatal care at home and their significant support of mothers and its impact on the quality of life of mothers have not been fully elucidated. Postpartum services are one of the essential health care services and play a crucial role in preventing unintended pregnancy complications and subsequently, improving mother and infant's health. Using supportive programs and proper implementation of maternal and childcare can reduce mortality rates of women and infants [13]. Besides, educational packages and appropriate supportive strategies can help reduce postpartum health problems [14]. In this regard, this study aimed to evaluate the effect of a home care program on paternal engagement/support in the postpartum period. The outcome of this study may help authorities and researchers to develop a maternal support protocol.

Materials and Methods

This study is a clinical trial using intervention and control groups conducted at three stages (days 1-3, 10-15, and 42-60 after delivery) and with multiple variables in an educational hospital in Isfahan City, Iran in 2016. The study population consisted of all women had given birth in this hospital. The sample size was determined 60 by considering $Z_1=1.96$, $Z_2=0.84$, $d=0.70 \times SD$ and performing a pilot study. Then, by considering a (10%) dropout rate, 64 women were recruited based on inclusion criteria. Next, based on their maternity entry code number, those with even number were assigned to the intervention group ($n=32$) and those with an odd number to the control group ($n=32$). The inclusion criteria were as follows: having consent to participate in the study; living

in Isfahan; lacking labor complications; giving birth to a healthy and full-term baby; having the appropriate condition of the mother, family, and home for home care; and presence of husband during the antenatal check.

The exclusion criteria were the lack of care in the postpartum period at least two times and the need for hospitalization of mother or baby. Only one mother from the control group was excluded because of her need for hospitalization. Since the drop in sample size had been considered, she was not replaced with another one.

The study data were collected using a two-part questionnaire; first part surveys demographic and obstetric characteristics of mothers (age, job, education, and income of the mother and her husband, length of the marriage, number of children, number of abortions, mother's height, weight, and pregnancy weight) by closed questions. The second part is a researcher-made questionnaire assessing husband's engagement/support at home during the postpartum period. It has 13 items surveying how husband expresses his love, his respect to wife, his confidence in her, listening to wife, his attention to her care needs, attention to her financial needs, and her problems and trying to fix them, his attention and trying to and address her concerns, his caring for her relationship with family/relatives, buying necessary things, buying gifts, helping with housekeeping, and helping with childcare.

The items were answered by mothers after delivery. The items are rated on a 5-point Likert scale from 0 (totally weak) to 4 (totally appropriate). The total score ranges from 0 to 52. Based on the percentage of the score, the obtained engagement/support level is categorized into three levels: low (0-60%) moderate (61-85%), and high (86-100%). The researcher-made questionnaire was evaluated by formal and content validity. After preparing the questionnaire by using reliable scientific sources, the questions were presented to 10 faculty members of the School of Nursing and Midwifery at Isfahan University of Medical Sciences, and their corrective comments were applied. The calculated Content Validity Ratio (CVR) of all questions was higher than 0.62 based on Lawshe Table, and the Content Validity Index (CVI) of 12 items was higher 0.79. The one item with low CVI was revised. To examine the internal consistency of the questionnaire, the Cronbach alpha coefficient was calculated. For all questions, it was reported 0.8.

Prior to the intervention during the two briefing sessions, the study method and objectives were fully determined for the researchers, and the necessary coordi-

nation was made. It was mandated that two midwives from the research team be present at all intervention sessions. Then, the appropriate arrangements were made with the subjects' families and the necessary equipment and facilities for the examination of mothers and infants were taken to their homes by the research team. The intervention group received home care in three sessions (each session 45-90 minutes) after delivery by two trained midwives. To control the confounding variables, home care was provided on specific days. In this regard, the second home care session was provided 10 to 15 days after delivery, and the third session 42 to 60 days after delivery. The questionnaire was completed by both groups before the intervention and in three postpartum periods, 1-3, 10-15, and 42-60 days after delivery. In the third postpartum period, the questionnaires were completed by the researchers through the telephone interview with mothers.

The home care program included filing of mothers' records, reviewing their records and getting familiar with the mothers' conditions, mother's description of herself and her baby concerning postpartum care and research goals, physical examination of mother and baby, administration of dietary supplements, training and counseling on postnatal care for mother and her baby and healthy fertility counseling. Their living environment was also investigated, and necessary education was provided for mother and baby about their particular needs in the postpartum period and the importance of supporting mothers by their husbands, and how to provide mothers' support in various aspects, including emotional, economic, and knowledge. These instructions were given to the mothers and their husbands in each session.

The mother and her female companion (if present) were taught about postpartum care and breastfeeding (simulated). To ensure that subjects had learned enough, the feedback from the training sessions was obtained from the mothers. In the end, the phone number of the researchers were given to the subjects to contact if they had any health problems or questions about their health and their children.

For the control group, routine postpartum care and training on proper breastfeeding and suture care were given on days 1-3 in the hospital. Other postpartum cares for the control group was based on the routine procedures and protocols of hospitals and health centers. To complete the questionnaires, the mothers' phone numbers were taken, and the questionnaire was completed on the phone 40 to 60 days after delivery.

The researchers also answered any questions that the mother might have had. To get the mothers' trust, the researchers first conducted phone calls with them and their families to arrange home care sessions, and before entering their houses, ID card and a letter of introduction obtained from Isfahan University of Medical Sciences were presented to them.

The collected data were analyzed in SPSS V. 18 using descriptive (frequency, mean and standard deviation) and inferential statistics (Independent t-test, Fisher's exact test, Chi-square test, and Mann-Whitney U test). The significance level was set as $P < 0.05$. The Smirnov-Kolmogorov test was used for analyzing the normality of data distribution, whose results showed that the distribution was normal.

Results

The Mean \pm SD ages of the mothers and their husbands in the intervention group were 29.45 \pm 5.99 and 33.37 \pm 6.38 year, respectively. And in the control group, they were 29.69 \pm 4.94 and 34.68 \pm 5.52 year, respectively. Most participants were housewives (95.2%) with high school education (33.3%), and their husbands were self-employed (90.5%) and with high school education (38.1%). Their economic status was reported moderate to low.

The independent t-test results showed no significant difference between the intervention and control groups in terms of duration of the marriage, the number of children, history of abortion, mothers' height, mothers' weight, pregnancy weight, and body mass index (Table 1). In terms of mother's job (using Fisher's exact test), husband's job (using Chi-square test), educational level of the mother and her husband (using Mann-Whitney U test) and type of delivery (using Chi-square test) no significant difference between the two groups was observed. Moreover, the independent t-test showed that before home care, the total score of husband engagement/support at home was not significantly different between the intervention (80.07 \pm 11.6) and control (81.22 \pm 13.32) groups; after home care, the difference between the intervention (96.74 \pm 9.11) and control (81.17 \pm 14.43) groups became significant ($P = 0.001$), and the obtained score was significantly higher in the intervention group.

Furthermore, Mann-Whitney U test results indicated that the score of husbands in the intervention group was significantly higher in the following areas: confidence in the wife ($P = 0.03$), listening to the wife ($P = 0.04$),

Table 1. Demographic and obstetric characteristics of the participants in both study groups

Variables	Mean±SD		Sig.*
	Intervention	Control	
Duration of marriage (y)	6.89±4.82	6.85±3.56	0.98
Number of children	1.71±0.9	1.9±0.79	0.37
History of abortion	0.06±0.25	0.13±0.34	0.39
Mothers' height (cm)	160.41±6.69	159.44±8.02	0.69
Mothers' weight (kg)	62.52±11.23	61.18±9.83	0.67
Pregnancy weight (kg)	76.2±11.71	74.56±10.93	0.61
Body mass index (kg/m ²)	23.84±3.62	25.38±4.35	0.28

*The independent t-test

attention to the wife's care needs ($P=0.04$), caring the wife's financial needs ($P=0.03$), attending to the wife's problems and trying to fix them ($P=0.03$), buying necessary things ($P=0.003$), buying gifts ($P=0.04$), helping with housekeeping ($P=0.01$), and helping with childcare ($P=0.03$). However, the increase in scores in this group was not significant in the areas of "expressing love", "presenting respect to the wife", "paying attention and trying to address the wife's concerns", and "caring for the wife's relationship with family/relatives" (Table 2).

Discussion

According to this study, husbands' involvement in postpartum care at home in the intervention and control groups was at a moderate level before the intervention. The results of a study in Iran showed the non-contribution of husbands after childbirth are due to reasons such as not knowing women's caring needs, being busy at work, and believing that men should not interfere in women's affairs [15]. After receiving home care, a significant increase in husbands' engagement/support after delivery was reported in the intervention group. This finding indicates that wives and their families need an educational program about supporting mothers in the postpartum period.

Similarly, the results of the study showed that providing postpartum care at home increased parental performance in childcare [1]. Redshaw and Henderson showed that paternal engagement was higher in fathers who took paternity leave, had good financial status, and had wanted pregnancy [16]. Their involvement in playing, bathing, and helping with feeding the baby, as well as nappy changing, was also high. Results of another

study indicate that any intervention that incorporates a parental empowerment strategy can help facilitate the acceptance of the parental role and subsequent greater participation in home affairs [17].

Contrary to the findings of Faghihzadeh, our results show an unacceptable level of husband's support and involvement after the transition to fatherhood [18]. It seems that the governing culture can affect the paternal function and the quality of the husband's help in the postpartum period. The difference in scores of husband's engagement/support scale in the areas of "confidence in wife", "listening to wife", "attention to the wife's care needs", "attention to the wife's financial needs", "attention to the wife's problems and trying to fix them", "buying necessary things", "buying gifts", "helping with housekeeping", and "helping with childcare" was significant; but home care program could not affect four areas of "expressing love", "having respect to wife", "paying attention and trying to address the wife's concerns", and "caring for the wife's relationship with family/relatives". Therefore, further studies are recommended to pay more attention to these four subscales, which are of great importance for creating intimacy between family members, especially couples.

The increased scores in the areas of attention to the partners' financial needs and problems and trying to fix them as well as buying necessary things for them indicate the potential of men in these areas and relation to the basic needs of women in the postpartum period. Physiological and security needs are the basic needs of people. The way of expressing love, paying respect to the wife, paying attention and trying to address the wife's concerns, and caring for the wife's relationship

Table 2. Comparing the scores of responses to the questions for both group

Variables	%												Sig.
	Very Poor		Poor		Moderate		Good		Very Good		Control	Intervention	
	Intervention	Control	Intervention	Control	Intervention	Control	Intervention	Control	Intervention	Control			
Expressing love to the wife	3.2	0	4.8	0.0	10.9	4.8	41.9	32.6	45.2	56.5	0.13		
Having respect for the wife	0.0	0.0	1.6	2.2	8.7	8.1	51.6	30.4	38.7	58.7	0.05		
Having confidence in wife	0.0	0.0	0.0	2.2	6.7	9.7	41.9	22.2	48.4	68.9	0.03		
Listening to the wife	3.2	2.2	6.5	0.0	15.2	17.7	37.1	30.4	35.5	52.2	0.04		
Attention to the wife's care needs	0.0	0.0	3.2	0.0	4.4	9.7	50.0	44.4	37.1	51.1	0.04		
Attention to the wife's financial needs	0.0	0.0	3.2	0.0	17.4	17.7	50.0	28.3	29.0	54.3	0.03		
Attention to the wife's problems and trying to fix them	1.6	0.0	1.6	0.0	10.9	16.1	45.2	32.6	35.5	56.5	0.03		
Attention and trying to address the wife's concerns	1.6	2.2	3.2	2.2	15.2	17.7	45.2	28.3	32.3	52.2	0.05		
Caring for the wife's relationship with family/relatives	1.6	0.0	9.7	0.0	21.7	8.1	43.5	23.9	37.1	54.3	0.8		
Buying necessary things for the wife	0.0	2.2	6.5	0.0	15.2	16.1	53.2	23.9	24.2	58.7	0.003		
Buying gifts for the wife	25.8	19.6	11.3	8.7	19.6	22.6	19.4	8.7	21.0	43.5	0.04		
Helping with housekeeping	8.1	2.2	8.1	0.0	32.6	25.8	35.5	17.4	22.6	47.8	0.01		
Helping with childcare	6.7	4.3	10.0	0.0	30.4	31.7	26.7	19.6	25.0	45.7	0.03		

*Mann-Whitney U test

with family/relatives are related to the highest levels of Maslow's hierarchy of needs, i.e. need for love, respect, and self-actualization [19].

Further studies and interventions are necessary to obtain significant results in these areas. The results of another study showed that adaptation and the way of communication between husband's are effective factors in the development of postpartum depression [20]. Therefore, the husband's support during the postpartum period in the form of empathizing, hugging, and helping with housekeeping can play a crucial role in preventing postpartum mental disorders in women [21]. Another study showed that young fathers' engagement in home chores, discourse, and empathy with the mother by receiving adequate and appropriate information were more effective in pre-pregnancy and during pregnancy periods than in postpartum period [22].

Results of Mirzaee et al. and Mokhtari et al. studies show that postpartum care at home improves the mother's level of awareness and mental health, and although the cost of home care is higher than that of care provided in health centers, it is a cost-effective measure [13, 23].

According to the results of this study, the provision of home care to mothers could desirably increase their husbands' support level, leading to a safe postpartum period. Therefore, it seems that providing postpartum care services can improve access to services, shorten the waiting times, and lower family costs. Because of this type of care becomes routine, some staff at health centers will be assigned for providing these services, and hence, there will be no additional cost to the individual or community. It also offers an opportunity for better involvement of family members, especially husbands of women who have recently given birth. In addition, home care enables service staff to provide mothers and their husbands with adequate education by understanding the environmental and living conditions and the specific needs of each family.

Thus, health authorities are recommended to use this method. Of course, this method requires the proper management of midwifery experts and careful planning, and given that home care is a new method in the country, further studies are needed in this area despite limitations in their conduct. In future studies, it is suggested to emphasize the community culture build-up in providing home care.

One of the limitations of the present study was the lack of cooperation of some pregnant women due to the novelty of this method and their lack of confidence in midwives, although these problems were partially solved by fully explaining the research objectives and reassuring them and their husbands. Moreover, since it was difficult to enter the participants' homes, the control group questionnaires were completed through telephone interviews. This may affect the quality of the collected data.

Ethical Considerations

Compliance with ethical guidelines

This is a registered clinical trial (Code: IRCT2016121431416N1). Its ethical clearance was obtained from the Research Ethics Committee of Isfahan University of Medical Sciences. Before collecting data, the research objectives and procedure were explained to the participants, and they were assured of the confidentiality of their information and allowance to leave the study at any time. After that, they signed a consent form. All services needed for maternal and infant health, which were within the scope of midwives' duties, were provided by the researchers for them. If the mother or her child needed higher-level services, this would also be provided by the researchers.

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Authors contributions

Concepts, design, data analysis, manuscript preparation, and editing: Fatemeh Mokhtari, Parvin Bahadoran, and Zahra Bagehersad; Definition of intellectual content, data acquisition, literature review, and statistical analysis: Fatemeh Mokhtari and Zahra Bagehersad; Clinical and experimental studies: Fatemeh Mokhtari and Parvin Bahadoran; Manuscript review: Fatemeh Mokhtari.

Conflict of interest

The authors declared no conflict of interests.

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