Spouse’s Participation in Perinatal Care: A Qualitative Study

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nahid mehran
shahid beheshti university of medical sciences
ORCiD: 0000-0002-2079-1802

Sepideh Hajian  s.hajian@sbmu.ac.ir
Corresponding Author
ORCiD: 0000-0002-3368-0036

Masoumeh simbar
Shahid Beheshti University of Medical Sciences

hamid alavi majd
Shahid Beheshti University of Medical Sciences

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Abstract

**Background:** Pregnancy is one of the most important and sensitive periods for any woman that in the case of the support of her relatives, especially her spouse, feels more ability to tolerate it’s difficulties and gives them good memory. However, there are very few studies about the participation of spouses/partners in perinatal period in Iran. Therefore, the present study aimed to explain the concept of spouses' participation in perinatal care.

**Methods:** This is a qualitative study that was carried out in Qom, Iran in 2018. Purposive sampling was done from pregnant or postpartum women, spouses, midwifery care providers and key informants according to study inclusion criteria. Semi-structured in-depth interviews were carried out until data saturation. Data analysis was done based on conventional content analysis approach according to Graneheim & Lundman steps and using MaxQDA software (v.10). To ensure the trustworthiness of data, the five Guba and Lincoln criteria were used. Also, COREQ checklist was used for reporting this qualitative research.

**Results:** fifty-three final codes were classified into 18 sub-categories, 7 main categories and 3 themes include of empathy (emotional understanding, cognitive understanding), accountability (supporting, position management, compassion) and consequences (help improve family function, improve maternal-neonatal health).

**Conclusion:** since, spouses’ participatory behaviors in perinatal period can lead to improve maternal and neonatal health and family function, it is necessary to be considered in family-based health promotion policies and programming based on these policies such as improving the public culture of spouse participation in the process of child-rearing.
Background

Pregnancy is one of the most important, critical, and glorious period of every woman’s life. Women who benefit from the support of close relatives, especially their spouse, during this period, feel more ability to tolerate and adapt to the stresses and difficulties of pregnancy and childbirth (1). Despite the undeniable role of spouses in women’s reproductive health, it has paid little attention to the role of spouses in this regard, historically, and mostly service providers and reproductive health researchers have paid more attention to the role of wives (2). The issue of spouses’ participation in women’s reproductive health considered in International Conference on Population and Development (ICPD) and the Fourth World Conference on Women (3, 4).

Father involvement in pregnancy and childbirth has positive outcomes such as reduced probability of preterm delivery and low birth weight and fetal growth restriction (5, 6, 7, 8). In addition, the men’s presence in maternal and child care provides a new opportunity for health care providers to educate future fathers, and assist them in their own health (9). Fathers who are not involved in birth process, often feel that they do not play an important role in the birth of child and these feelings and negative experiences cause problems such as improper compatibility with perinatal period, as well as decreasing the father’s supportive role after birth (10, 11, 12, 13). In addition to direct negative impacts, the lack of spouses’ involvement, indirectly, affects the educational, behavioral and developmental status of children through the reduction of father-child relationships and the reduction of social support and increased level of maternal stress hormones (14). In many cases, it has been observed that men are interested in engaging in pregnancy and childbirth, but lack of incentives and existence of restrictions and
obstacles prevent their active participation (15). Therefore, in order to increase the participation of men in perinatal care, it is necessary to strengthen the facilitator and remove the barriers as far as possible.

In Iran, common approaches to the care of pregnant women has considered and even in some health centers, eight-session classes for delivery preparation has been planned for pregnant women in which their spouses can attend in one to two sessions. Jamali et al. (2018) found that men who participate in childbirth classes, less likely, fear of childbirth and more prefer normal vaginal delivery than cesarean section for their wives (16). Mortazavi and colleagues (2014) in their semi experimental study, concluded that in the group of trained men, the average weight of women in the first postpartum visit, newborn cares and nutritional support from the lactating mothers were higher than the rest (17). However, there is limited number of these training centers and also, implementing and monitoring of them is not properly done. The results of the studies indicated that presence of obstacles such as job engagements, lack of awareness of women's care needs, embarrassment, social stigma, and femininity atmosphere of health centers and lack of accepting the presence of men in these centers has reduced the spouses’ participation in perinatal care in Iran (18, 9). However, qualitative studies those scrutinize the self-concept of spouse participation at maternal care, are few in Iran. On the other hand, in some societies, men consider their role in the protection of the family and wives as the breadwinner and monetization and working out of home, and in fact, men’s awareness of their supporting role of their wives during pregnancy is disrupted and other aspects of men’s participation has been ignored. Given the above, the present qualitative study was done to explain the concept of spouses’ participation in perinatal care. This is a study with a content analysis
approach, which has been conducted in Qom- Iran in 2017. Qom city is situated 170 kilometers of Tehran, Iran. In Qom and many other cities of Iran, there is limitation of presence of men in midwifery units, including birth room, postpartum, or ultrasound room in most public centers, however, in limited private or nonpublic centers, spouses are allowed in such circumstances, except for second stage of childbirth.

Methods

Study design

This qualitative research used a content analysis approach.

Settings, sample and recruitment

The participants were five women who were pregnant or had delivered recently, seven spouses and nine key informants (deputy health managers and policymakers) of Qom city. They were selected through purposive sampling. The inclusion criteria for pregnant or postpartum women and spouses were willingness to participate in this study, being Iranian, ability to understand and express their experiences into Persian. Having at least one years of working in midwifery-related units added to above criteria for care givers and key informants. Exclusion criteria was reluctance to take part in interview or withdrawal of continue participating in the study. No participants refused to interview. The demographic characteristics of the participants are shown in Table 1 and 2.

All interviews were conducted by the first author of this article (N.M) as a faculty member and Ph.D. student in reproductive health who has an experience of qualitative research. Her main work's experience is caring pregnant mothers in public health centers in Qom. All steps for data recording and data analysis were
conducted under the supervision of the corresponding author (S.H) as a faculty member and Ph.D. in reproductive health and the faculty member with several years of qualitative research.

**Data collection**

Data collection of this study was done between March and July 2018. At first, the needed permissions from the Deputy Chancellor of the Shahid Beheshti University of Medical Sciences and Deputy of Research of Qom University of Medical Sciences and voluntary verbal informed consent from participants were obtained and the participants were selected according to the inclusion criteria. Prior to study commencement, the researcher, expressed an explanation about the present study for participants and after ensuring their willingness to participate in the study, did face-to-face in-depth interviews, either individual or paired (depending on the desire of participants). Initially, one pilot interview was conducted, which was not analyzed, but it helped design the interview guide. The semi-structured questions of interview were formulated by reviewing the texts and based on the experience of the author. Interviews began with the open question, such as "What is

**Table1: The pregnant/postpartum women and spouses’ demographic characteristics**
| variable                              | pregnant/ postpartum woman | 34.7 |
|--------------------------------------|-----------------------------|------|
|                                     | spouse                      | 42.8 |
| Age range (years)                    | 29- 60                      |      |
| Age group < 35 years                 | 4 (33.3%)                   |      |
| Age group ≥ 35 years                 | 8 (66.6%)                   |      |
| Occupational status                  |                             |      |
| housewife                            | 1 (8.3%)                    |      |
| employee                             | 8 (66.6%)                   |      |
| Self-employment                      | 3 (25%)                     |      |
| Educational level                    |                             |      |
| Diploma or less                      | 3 (25%)                     |      |
| Bachelor's degree                    | 7 (58.3%)                   |      |
| Master's degree or higher            | 2 (16.6%)                   |      |
| Number of children 0                 | 4 (33.3%)                   |      |
| Number of children 1                 | 3 (25%)                     |      |
| Number of children 2                 | 2 (16.6%)                   |      |
| Number of children 3                 | 3 (25%)                     |      |

Table 2: The key informants’ demographic characteristics

| variable                              | 38.3 |
|--------------------------------------|------|
| Age mean (years)                     |      |
| Age range (years)                    | 33- 44 years |
| Age group < 35 years                 | 2 (22.2%) |
| Age group ≥ 35 years                 | 7 (77.7%) |
| Educational level                    |      |
| Bachelor's degree                    | 5 (55.5%) |
| Master's degree                      | 3 (33.3%) |
| PhD                                  | 1 (11.1%) |
| Number of children 0                 | 4 (44.4%) |
| Number of children 1                 | 2 (22.2%) |
| Number of children 2                 | 3 (33.3%) |

your perception of spouse's participation in prenatal, childbirth and postnatal period? Please explain." Then, as the interviews went on, more detailed questions were asked, such as “Do you have any experience in this regard? If yes, how was this experience?”, “In your opinion, how much can spouse’s participation be
effective during pregnancy, birth process or postpartum?” and etc. (Table 3). To document the data, interviews were recorded using a tape recorder and then transcribed at the right time. During the interviews, observations and memos recorded in the field and non-verbal data such as tone and gestures was recorded. The interviews lasted for 30-90 minutes (average: 55 minutes) in hospital or any place where the participants feel more comfortable.

Key informants of this study were the deputy health managers at Qom University of Medical Sciences and policymakers from the Ministry of Health and Medical Education. The data collection of key informants was similar to that of other men and women. Such that they were semi-structurally interviewed deeply with the same open questions for 45-90 minutes (average: 60 minutes) in hospital, health centers or other places. The questions guide of interviews is shown at table 3. The interviews with the participants continued until data saturation occurred. Data saturation was obtained on the 15th interview. Nevertheless, six more interviews were conducted to ensuring. In addition, no interviews needed to be repeated.

Data analysis

The data was analyzed using the conventional content analysis method according to Graneheim & Lundman (2004). So that, at the end of each interview that were in Persian language, all notes, along with the audio file of the interviews, were word-by-word typed and handwritten. Then the typed texts were read several Table 3: Interview guide during the face-to-face interviews with participants.
Initial question of women and men:

1. What is the meaning of spouse's participation in prenatal period, in your mind?
2. What is the meaning of spouse's participation in childbirth period (since beginning the labor pain until discharge mind)?
3. What is the meaning of spouse's participation in postnatal period, in your mind?

Continue questions:

A. Continue questions related to pregnant/postpartum women:

1. Do you have any experience with your spouse in your past or current pregnancy or delivery?
2. In your opinion, how was this experience?
3. In your opinion, how much can your spouse's participation be effective during pregnancy, childbirth or after it?
4. In your opinion, what does your spouse need to increase his participation with you, during this period?
5. In your opinion, what are the current obstacles for your spouse's participation during perinatal period?
6. In your opinion, which factors can increase your spouse's participation during perinatal period?

B. Continue questions related to spouses:

1. Do you have any experience of participation with your wife in past or current pregnancy or delivery?
2. In your opinion, how was this experience?
3. In your opinion, how much can your participation be effective during pregnancy, birth process or postpartum?
4. In your opinion, what do you need to increase your participation during this period?
5. In your opinion, what are the current obstacles for husband's participation during this period?
6. In your opinion, which factors increase husband's participation in this period?

C. Continue questions related to key informants:

1. Do you have any experience with spouse’ participation in perinatal period?
2. In your opinion, how was this experience?
3. According to your job experiences, how much can spouse’s participation be effective during perinatal period?
4. According to your job experiences, what do husbands need to increase their participation with their wife during this period?
5. According to your job experiences, what are the current obstacles for spouses’ participation during this period?
6. According to your job experiences, which factors increase spouses’ participation in this period?

times to get an overview of their contents. Using the inductive method, semantic units and initial codes were determined, the similar codes were embedded in the more sub- categories, and the main categories were appeared (19). For better data management, MaxQDA v.10 was used simultaneously with each interview after recording on the paper.

**Rigor and trustworthiness**

To ensure the trustworthiness of data, the five Guba and Lincoln criteria were used
To increase the credibility of the data, "searching for disconfirming evidence" with maximum variation of educational level, occupation, age, number of pregnancies and deliveries and also independently reviewing the codes by other members of research team was done. In addition, prolonged engagement of the researcher was noticed.

To confirm the dependability of the data, the interviews were carefully recorded and came to the paper. Also, during writing the report, it is cited to participants’ conversations. In addition, the study was reviewed by the supervisors and experts, and Some interviews were randomly re-coded over the next two weeks to confirm coding consistency.

To increase the transferability, a rich and detailed description of the research process was done so that readers of the report can understand the steps and interactions of the study.

The opinions of three experts in qualitative research and reproductive health were also sought to increase the confirmability of the data.

To increase the authenticity of the data, the researchers made effort to select the appropriate people for the study sample and to provide a rich and detailed description (21).

It is notable that COREQ checklist was used for reporting this qualitative research.

**Ethical considerations**

The Ethical approval of this research was received from the Ethics Committee of Shahid Beheshti University of Medical Sciences (ethical approval code: IR.SBMU.PHN.1394.284). Obtaining the voluntary verbal informed consent, anonymity, attention to the willingness of participants to choose the location and time of the interview, no imposing any fees on the participants, confidentiality and
the right of participants to leave the study at any time was preserved. These were approved by the abovementioned ethics committees.

Results

At the end of the interview and data saturation, 1856 initial codes were extracted. In the process of analysis and comparison of the data, after classifying codes and removing similar codes, 53 codes were classified in 18 sub-categories, 7 main categories and 3 themes. The final main themes were: "empathy", "accountability" and "consequences" (Table 4).

Table 4: Results of data analysis

| code                                      | Sub-category                      | category                  |
|-------------------------------------------|-----------------------------------|---------------------------|
| Understand the situation                  | Empathetic attention              | Emotional understanding   |
| Pay attention to the needs of the spouse and child |                                  |                           |
| Control of feelings and emotions          |                                   |                           |
| Follow up care                            |                                   |                           |
| Staying in empathic situations            | Encouraging and making hope       |                           |
| Receive the feelings of the wife          |                                   |                           |
| Displaying enthusiasm and proper feedback to the spouse |    |                           |
| Induction of faith                        |                                   |                           |
| Reassuring                                |                                   |                           |
| Compatibility with spouse position        | sacrifice                         |                           |
| Reduce expectations and demands           |                                   |                           |
| Resiliency Exercise                       |                                   |                           |
| Pre-pregnancy preparation                 | Readiness                         | Cognitive understanding   |
| Pregnancy Preparation                     |                                   |                           |
| Preparations during and after childbirth  |                                   |                           |
| Commitment                                | Responsibility                    |                           |
| Lack of deposit of responsibility to others |                                   |                           |
| Trying to eliminate negative beliefs      | Reforming Attitudes               |                           |
| Creating positive beliefs                 |                                   |                           |
| Participation in household chores         | Tangible support                 | supporting               |
| Participation in the care of children |  |
|-------------------------------------|--|
| Material support |  |
| Trying to get information related to the situation | Information support |
| Applying the correct information in related situations |  |
| Planning before pregnancy | Planning |
| Planning for birthday | Position management |
| Managing the exposure to unexpected situations | Management |
| Creating balance between indoors and outdoors |  |
| Tension management |  |
| Positive interventions in risky situations | Proper interaction |
| Action to reduce the spouse's suffering and worries | Compassion |
| Active participation in prenatal care | Dynamic presence |
| Accompany during childbirth |  |
| Active participation in postpartum care |  |
| Intellectual intimacy | Intimacy |
| Sexual intimacy | Help improve family function |
| Emotional intimacy |  |
| Timely intimacy |  |
| Spiritual intimacy |  |
| Psycho-emotional security | Security |
| Economic security |  |
| Communication security |  |
| flexibility | Solidarity |
| Correlation |  |
| Maintaining the dignity in the family | Respect |
| Maintaining the social position |  |
| Self-esteem |  |
| mental health | Maternal health |
| Physical health | Improve maternal-neonatal health |
| Social health |  |
| Secure attachment | Neonatal health |
| Desirable evolution |  |
| Desirable growth |  |

**Empathy**

*Men should understand their wife, either emotionally or cognitively. This theme*
contained 2 main categories and 6 sub-categories.

**Emotional understanding**
Most participants believed that spouses should pay attention to their wives and encourage them and make them hopeful to the future and, if necessary, show sacrifice. This category contained three sub-categories.

**Empathetic attention**
Some participants stated that a spouse should understand the new situation of his wife during pregnancy, childbirth and postpartum. He should be mindful of the needs and desires of his wife and children in order to be able to resolve them.

"Not to tell me, the others, or my wife wants to tell me to do it. I must understand myself that what is better to do." (key informant, group > 35 years).

Some participants believed that spouse should be able to control his feelings and emotions in this period and should not transfer them to his wife. He should be mindful of midwifery care of his wife during pregnancy, childbirth and postpartum, and follow up her care. He should occasionally attend in cares, meetings, classes, and maternity programs in order to better understanding of his wife.

**Encouraging and making hopeful**
Some participants believed that a spouse should show his empathetic attention to the wife by asking for her condition, whether through speaking in-person or by telephone or through a person accompanying his wife.

"When she is admitted to hospital, he should be in regular contact with her" (key informant, group > 35 years).

Spouses should be able to respond appropriately to the wife’s feelings and behaviors during this period, and encourage her and make her hopeful through showing his enthusiasm for the birth of the child. Some participants referred to the role of spouse in inducing the faith to wife through the spiritual conversations.
“Whenever I said to him: “I’m worried”, He said: “Trust in God”, and this his phrase pleased me” (Pregnant woman, group ≥ 35 years).

**Sacrifice**

Some participants believed that spouse should adapt himself to wife’s conditions until this period goes well and to keep a good memory in her mind. Also, he should not have the same expectations in pregnancy and even more importantly, in postpartum, as before. He should lower expectations and practice to raise his tolerance and tolerate the temporal changes of wife’s behaviors in this period.

**Cognitive understanding**

From the viewpoint of most participants, spouses should logically understand their wife and be responsible and have a positive attitude about pregnancy and afterward. This category contained three sub-categories of readiness, accountability and reforming Attitudes.

**Readiness**

Some participants believed that when a wife and her spouse decide to have a baby, the spouse needed to get ready to start fatherhood process. He should increase his information, get familiar with the signs of the risky situations and do the appropriate performances. At the end of pregnancy, he should, also, be prepare for birthing of new family member.

Some key informants stated that the responsibilities of spouses do not only end with beginning of childbirth process and hospitalization of their wives, but also, they should display their empathy through being at hospital and providing the needed actions for delivery and discharge of his wife and child from hospital.

"It is necessary to provide the necessary conditions for the return of his wife to home. Perhaps one of the things that worries the ladies to go back to the home is that when they return home, they face a cluttered house "(key informant, group ≥
Responsibility

Some participants said that a spouse should be familiar with his duties and responsibilities during this period. He should not expect others to take on his responsibilities.

“he should not take his responsibilities off to other women’s shoulder. It's possible that they were be tired because of making the meal or hosting the guests.”

(Pregnant woman, group ≥ 35 years).

Reforming Attitudes

Some participants acknowledged to have positive attitudes toward pregnancy, childbirth and postpartum as one of the responsibilities of spouses during this period, and believed that they should not think that pregnancy and childbirth are a female period and they do not have any role. If they have a positive attitude and be familiar with the problems of this period, they will not account their wives’ behavioral changes as spoiling. Also, they should try to correct the negative and false believes of the people around him.

“Even about the false words that people around tell her, for example, recommend a herbal medicine for curing newborn jaundice or colic, he should not let his wife apply that wrong herbal medicine”(key informant, group ≥ 35 years).

Accountability

Most participants believe that, during this period, in addition to emotional and cognitive understanding, spouses should support their wives and display their compassion through proper management and correct planning and taking the needed actions to reduce their wives’ discomfort and suitable action in dangers.

This theme contained 3 main categories and 6 sub-categories.
Supporting
Some participants believed that spouse should support his wife in home care, caring for new children and other children, and financially. He should also increase information and awareness and proper using of the information. This main category contained two sub-category of tool support and information support.

Tangible support
All participants believed that spouses should be involved in homework, especially those that are difficult to do for a pregnant woman. They said that participation of spouses in postpartum is more important than ever before because of adding the newborn cares to her previous activities.

"After childbirth, we should help in all aspects, especially in the first 30-40 days, which is very difficult." (spouse, group ≥ 35 years).

Some participants acknowledged the financially supporting of wife and children and meeting the living expenses and material needs as spouse’s duties.

Information support
Some participants emphasized the awareness of subjects related to pregnancy, childbirth and postpartum as spouse’s duties during this period. Also, they should be able to use this information in appropriate situations. In fact, this higher and desirable level of participation develops after cognitive understanding, so that the spouses learn at the cognitive understanding stage and utilize the learned information at this stage. "When wife’s labor pains start, her spouse can remind him the breathing techniques, because she has not focus on this issue."(key informant, group ≥ 35 years).

Position management
Proper planning for childhood and proper management to deal with the situations and challenges of this period was another statement of the participants. This
category contained 2 sub-categories: planning and management.

**Planning**

Some participants believed that spouses should plan before childhood. In other words, when they decide to have children, they identified the need to plan for birthing the new member of the family as one of the spouse’s responsibilities during this period.

**Management**

Some female participants said that spouse should be able to manage the unexpected situations, such as suddenly onset of labor pain or occurring the risk signs, and he should not cause the wife's discomfort. Almost all female participants believed that spouses should make balance between indoor and outdoor and not prefer their job to being with family.

"*This psychologically and culturally is needed to attention that “we work to live, not we live to work”*. Men must understand that the value of life is much more than money." *(Pregnant woman, group < 35 years).*

**Compassion**

Compassion is, in fact, an understanding of the problems and feeling of duty to help solve the problems of ourselves or others that is defined in components such as altruism, kindness and joy. Perhaps, in the general meaning, compassion is confused with empathy, while empathy is a stage prior to compassion (prerequisite) (22). This category contained two sub-categories of: proper interaction and dynamic presence.

**Proper interaction**

Some key informants believed that spouse should be able to take necessary actions in dangerous situations, including dialogue and interaction with health care providers, and get them the needed guidance to manage the situation, well.
"If she is high risk and need special care, for example, special dietary care or certain medication orders, her spouse can interact with her midwifery/doctor" (pregnant woman, group ≥ 35 years).

**Dynamic presence**

Some participants stated that spouse should actively participate in prenatal care. After attending her to the care centers, should go to the doctor/midwife, if possible, and listen to the recommendations and discuss with him/her about his wife and be aware of her condition to be better able to meet her needs. Also, in this case, he can enjoy of hearing the fetal heart.

"*When I was going to care, he was coming inside, wherever allowed, and was talking with my doctor.*" (key informant, group < 35 years).

Although there is no possibility for actively participating of spouses in childbirth process in many birth centers of our country, especially in governmental centers, most of the participants, while regretting this issue, stated that in the possibility of spouse’s presence in the labor room/operating room, the spouse should be with his wife and give her encouragement and comfort. If is not possible, spouse should be in contact with the person accompanying his wife or with her responsible midwife and be informed of his wife’s condition. Some participants suggest that center’s conditions should be in such a way that spouse was the first person that meet the wife after the childbirth. Also, some participants believed that spouses should also accompany their wife and newborn in postnatal care and play an active role.

"*After childbirth, he should carry his baby for screenings, such as thyroid screening.*" (key informant, group ≥ 35 years).

**Consequences**

From participants' point of view, men's participation in perinatal care has positive
outcomes such as helping improve family function and improving the maternal and neonatal health. This theme contained two main categories and six sub-categories.

**Help improve family function**

The participants referred to creating and enhancing of intimacy, sense of security, increasing of coherence and respect among family members as positive outcomes of spouse’s participation in this period. This category contained four sub-categories.

**Intimacy**

Intimacy is the ability to establish deep relationships in couples to resolve conflicts and to share the experiences that it requires to has in common and to the sense of internal security from other person.

Some participants believed that, in result of spouse participation, family members, especially couples, were more likely to interact with each other through exchanging of views and information and to be similar in attitudes and to respect for another opinion (intellectual intimacy), the spouse and wife become sexually closer (sexual intimacy), productive talks between couples is increasing and they feel well emotionally that these lead to their physical and mental health (emotional intimacy). In addition, spouse gives more time to his wife and children (time intimacy) and even, a sincerely spiritual relationship between couple is created (spiritual intimacy).

"When a woman shares her plan with her spouse, she has more energy, she can pay attention to her body and even is effective in the marital and sexual relationship. She is not tired." (key informant, group < 35 years).

**Security**

Some female participants referred to the feelings of reliance on spouse, peace of mind of wife and children, financially because of spouse’s efforts to meet the
financial needs of his family and also better communication of family members, especially the relationship between the father and his children as some consequence of spouse participation.

"If a spouse has empathy and cooperation, then the woman has a warm back for herself." (spouse, group ≥ 35 years).

**Solidarity**

Solidarity is the feeling of correlation, bondage and emotional commitment that members of a family have toward one another (23). Some participants emphasized the spouse’s participation as a factor for causing the greater solidarity among family members. They believed that participating spouses had more flexibility in their behaviors.

"for my second baby, I was going to bring her to Valiasr Hospital for birthing, but she said that I want to go Izadi Hospital. I'm not agree, however, I went her to Izadi." (spouse, group ≥ 35 years).

**Respect**

Some men participants stated that if a spouse be involved with his wife, she feels that she has a good situation and dignity in life. In addition, it would preserve and enhance the social status of children in the future. Some participants believed that the participation of men helps maintain and increase the confidence of his wife and children.

"if you sometimes hand up the back of your wife’s neck, your children's self-esteem will rise. In general, the child's personality is formed from house." (spouse, group ≥ 35 years).

**Improve maternal-neonatal health**

The participation of spouses, in addition to improve the function of the family, help
promote the maternal and infant health.

**Maternal health**

Some participants stated that the participation of spouse improved the physical and mental health. In addition, having the peace of mind and the feeling of not being alone and having a secure and reliable support in the face of social problems improves the wife’s social health.

"If spouse participates at home, his wife will rest further and will become healthy earlier and her stitches will get better sooner." (spouse, group ≥ 35 years).

"When a woman sees her spouse at her side and he does everything to ensure her comfort, she will surely feel peace and convenience. She feels that she has a backing and there is someone in difficult circumstances that can help her and she is not alone." (key informant, group ≥ 35 years).

**Neonatal health**

Some participants stated that spouse participation creates a deeper emotional relationship between mother and baby and makes a secure attachment. Even, it has a positive effect on the child’s developmental process especially on psychological and emotional development.

"If the father is involved in the care of his or her child ... it certainly will affect the psychological development of the children." (Key informant, group ≥ 35 years).

**Discussion**

The present qualitative study was done to determine the concept of spouse’s participation in perinatal care. According to the results of the study, the most important aspects of male participation in perinatal care were empathy, accountability and consequences. As a general result of the findings of this study,
the concept of spouse’s participation in prenatal care, childbirth and postpartum is defined in a set of empathic and accountable behaviors based on emotional and cognitive responses, position management, support, and compassion to their wives that can lead to favorable consequences such as improving the family function and mother and baby health.

The participants believed that a spouse should be empathize with her wife and understand her during perinatal period, emotionally and cognitively. In several study, the necessity of loving and empathetic attention mentioned as the most important aspect of spouse’s participation in perinatal care (24, 25, 26). Empathy that is described as ability to supportively communicate a sensitive awareness and confirming of another person’s feelings and the unique meanings attached to them, helps development of mutual trust and shared understandings and in doing so is a fundamental quality in any helping relationship (27). Men and women have realized that spouses are the best providers of their wife’s emotional needs in perinatal period (28). Ergo’s study demonstrated that spouse’s emotional support was the most influential factor in decreasing of postpartum depression (29).

Furthermore, participants mentioned accountability as another aspect of spouse’s participation. Accountability is defined as being accountable to a person for the expected performance. It differs with responsibility that is an intrinsic obligation and commitment of the individual to perform all the activities assigned to him/her that originate from within the individual (30). The participants believed that spouse should be accountable for his behaviors with wife during this period. He should have proper interaction and dynamic presence, support her wife, plan and manage the hazardous and non-hazardous situations. Participants in a study by Firouzan et al also emphasized the comprehensive participation of spouses in married life such as
housework, cooking, care of the children and in all decision-making during perinatal period, which is in line with the present study. This could be due to increasing the female awareness about their rights in married life and also their employment and contribution in household economy (26). Moreover, the participants believed that spouses should be prepared for a safe delivery and unexpected events in perinatal period. He, along with his wife, should plan for the place of delivery, transport her to the hospital on time and accompany her, stay in delivery room or, if not allowed, in the hospital until birthing the child. The most participants would like to spouses’ physical presence in delivery room as the results of Kaye et al and Simbar et al (25, 31). This is while, despite of clear Islamic recommendations to emphasize on the spouse task in support of his wife, because of some cultural beliefs, negative attitudes of staffs, inadequate personnel, along with heavy workload, and management structures of the most hospitals, especially in public centers, do not allow men to be present in delivery room. This issue has bold the lack of spouses’ participation in delivery period in the participants’ minds of this study. Fortunately, according to the Ministry of Health and Medical Education recommendations on the presence of spouse during labor in mother-friendly hospitals in recent years, most hospitals are moving towards modifying the delivery units’ structures for this aim. However, these facilities are not provided in all health centers.

Helping improve the family function and maternal-neonatal health as consequences of participating of spouses were another area that the most women and men of this study referred to it in line with results of study of Simbar et al. and Davis et al (25, 32). Spouse’s participation is essential for a healthy pregnancy and childbearing. The spouse’s physical support, attendance and encouragement of healthy lifestyle and of receiving perinatal care will improve the health of the mother and the child
Also, most studies have acknowledged the role of fathers’ participation in perinatal care and during the important and sensitive postpartum period on the early onset of breastfeeding and exclusive breastfeeding (33, 34) and developing a stronger father-child relationship that associated with positive cognitive, developmental and social behavior of children (32, 35, 36). As a general result of the findings of this study, the concept of spouse’s participation in prenatal care, childbirth and postpartum is defined in a set of empathic and accountable behaviors based on emotional and cognitive responses, position management, support, and compassion to their wives that can lead to favorable consequences such as improving the family function and mother and baby health.

Strengths and limitations

Despite the diversity of participants in this study, considering its qualitative approach, it’s generalization to other places and cultures is one limitation to this study. However, it’s results may be useful those who are willing to use the results while considering the limitations. Since the presence of spouses in midwifery cares, plays an important role in increasing their participation in the perinatal period, it is recommended that health care providers, if women wish, allow their spouses to attend and participate in their perinatal cares. Obviously, this needs to changing the attitude of health managers and staffs towards the presence of men and improving the physical structure of health centers.

Also, due to the lack of awareness of some spouses about how to participate in the perinatal period, despite the desire to do that, it is suggested that health centers provide the training classes in this regard, with at least cost, especially on holidays,
so that spouses with taking part in these classes, could more effectively participate with their wives and helping to improve the health of their wives and child and consequently, to promote the health of the whole family.

Conclusion

Since, spouses’ participatory behaviors in perinatal period can lead to improve maternal and neonatal health and family function, it is necessary to be considered in family-based health promotion policies and programming based on these policies such as improving the public culture of spouse participation in the process of child-rearing through different ways as public media and generally education. It is obvious that strengthening the facilitators such as individual, family, economic and institutional incentives, and eliminating the barriers such as authoritarian gender-based attitudes and individual, organizational, and socioeconomic and legislative constraints are very helpful.

Declarations

Ethics approval and consent to participate

The Ethics Committee of the Shahid Beheshti University of Medical Sciences in Tehran, Iran approved the protocol of this study (code number: IR.SBMU.PHN.1394.284). Voluntary verbal informed consent is obtained from each participant of this study after explaining the procedures by researcher. This verbal consent was witnessed by a supervisor. Procedures for obtaining informed consent were approved by the abovementioned ethics committees.

Consent for publication

Not applicable.
Availability of data
The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests
The authors declare that they have no competing interests.

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Authors’ contributions
All authors participated in various stages of study design and implementation and also in writing the manuscript. NM drafted the first and final version of the manuscript and included the COREQ checklist for reporting this qualitative research. SH read, revised and approved the final manuscript. In addition, MS and HAM revised the manuscript. All authors approved the final version.

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Author details
1Student of PhD in Reproductive Health, School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, 2 PhD, Associate Professor, Midwifery and Reproductive Health Research Center, School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, 3 PhD, Professor, Midwifery and
Abbreviations
ICPD: International Conference on Population and Development

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