

Examining the Challenges of Using Accompanying Midwife from the Perspective of Midwives and Pregnant Women Referring to Hospitals in Shahrekord

Maryam Torki Harchegani¹, Akram Karami Dehkordi¹, Zeinab Tavakol^{1*}

¹Community-Oriented Nursing Midwifery Research Center, Nursing and Midwifery School, Shahrekord University of Medical Sciences, Shahrekord, Iran.

Corresponding Author: Community-Oriented Nursing Midwifery Research Center, Nursing and Midwifery School, Shahrekord University of Medical Sciences, Shahrekord, Iran. Email: zeinab.tavakkol@gmail.com

Received 2024 January 08; Accepted 2024 January 29.

Abstract

Background: The presence of accompanying midwives (doulas) in the delivery room always entails many challenges. This study was carried out to determine the challenges of attendance with training from the point of view of midwives and expectant mothers in selected hospitals of Chaharmahal and Bakhtiari province, Iran.

Methods: The present study was a descriptive study on 70 midwives working in the delivery block, 120 pregnant mothers, and 20 trained attendants. The sampling of midwives and doulas was performed using the census method, and the sampling of pregnant mothers was conducted using the convenience method. The study tool included questionnaires made by the researcher about demographics and socioeconomics, therapeutics, and psychological challenges for the group of mothers and midwives. The face validity and content validity of the questionnaires were confirmed by midwifery professors and reproductive health specialists, and their reliability was confirmed by internal consistency. The data were analyzed using descriptive statistics with SPSS software (version 21).

Results: In this study, 70 midwives working in selected hospitals of Chaharmahal and Bakhtiari province, 120 pregnant mothers, and 20 trained attendants were examined. Most of the pregnant women (n = 39, 32.5%) mentioned that the most important motivation for requesting a doula during pregnancy and labor was to overcome the fear of childbirth. Most of them (n = 101, 84.9%) also stated that they used doula services at the right time. Meanwhile, 54 women (45%) were familiar with doula services during pregnancy, and most of them (n = 67, 56.3%) stated that doula services can be useful and effective in all three stages of pregnancy, labor, and delivery.

Conclusions: There are dissatisfactions and challenges regarding the support of doulas during pregnancy and childbirth. Therefore, it is recommended to provide the necessary training to healthcare providers, especially obstetricians, midwives, and mothers, regarding the importance and place of doula's supportive care in this era. Additionally, doula activities should be integrated and promoted in the care of the health team.

Keywords: Midwife; Doula; Pregnant; Delivery; Challenge

1. Background

Childbirth is a critical stage in human development, and women will remember it for the rest of their lives. This experience shapes their self-image as women and mothers and might be used to form positive relationships with other family members. Therefore, the quality of care that pregnant women receive during labor and delivery has an impact on the health of the entire family (1).

One of the factors that affect mother-infant outcomes

and the management of postpartum complications is the continuous emotional and psychological support of pregnant women by an accompanying midwife during childbirth (2). The term "support during childbirth", which has been extensively discussed in modern midwifery, refers to the continuous non-medical care of women during childbirth. In this type of care, the companion provides pregnant women with physical and emotional comfort and support to facilitate the delivery



process and communication with healthcare staff and helps them make informed decisions during the delivery process (2, 3). Although midwives are in charge of childbirth, the experiences of pregnant women show that midwives are not able to stay with pregnant women continuously as they have other responsibilities and are more focused on comprehensive medical care than supporting pregnant women (4). Continuous care during childbirth can be provided by hospital staff or an accompanying midwife who can be a spouse, a sister, a mother, or a friend (2).

The support of an accompanying midwife has its roots in the old tradition; however, since caring for pregnant women in industrialized countries has been shifted toward unnecessary medical interventions and families have moved away from each other, pregnant women receive less support during childbirth, and this highlights the need for the presence of an accompanying midwife during childbirth (5). An accompanying midwife or doula is a trained person who stays with the pregnant woman in the delivery room and provides continuous emotional support to the pregnant woman during perinatal, labor, and delivery periods. An accompanying midwife does not have the expertise of a medical professional and does not prescribe medication; nevertheless, she/he provides healthcare services alongside gynecologists and midwives (2, 6).

The clinical management of pregnant women's care by a trained midwife or companion can meet the needs of pregnant women at every stage of labor and delivery. It can also decrease anxiety and increase the confidence of pregnant women in staying at home when real labor begins while facilitating their decision at the time of planned admission and delivery (7). The evidence shows that the emotional and tactile support of an accompanying midwife during the delivery process helps a pregnant woman to give birth to an infant with a high Apgar score while reducing the infant's low birth weight, facilitating early breastfeeding, decreasing the need for medical interventions or painkillers, and providing a satisfactory childbirth experience (8). It also reduces the need for clinical interventions, the need for using oxytocin (31%), the need for painkillers (9%), and the need for delivery with forceps (4%) while lowering delivery complications, such as cesarean section (28%), duration of labor (25%), and negative experiences of childbirth (34%) (8, 9). The results of Rezaie et al.'s study indicated that the presence of a midwife companion during labor and delivery leads to an increase in the rate of vaginal delivery, an improvement in infant's outcomes, and a decrease in oxytocin use, labor pain, episiotomy and rupture of the birth canal (2).

The research shows that most midwives do not feel comfortable with the presence of an accompanying midwife during labor. An increase in the role of accompanying midwives in the continuous care of pregnant

women has caused some midwives to feel uncomfortable because they believe accompanying midwives might perform part of their caring role (10, 11). Midwives also believe that accompanying a midwife can cause disruption in the delivery process (14.3%), make referrals to healthcare personnel frequently (21%), and interfere with the implementation of medication orders (23.8%), physician's decisions (23.5%), and staff's responsibilities (21%), (12).

There is also a difference of opinion among gynecologists about accepting the role of accompanying midwife as an active member of the delivery team (13). Some midwives believe that accompanying midwives work beyond the scope of their practice and provide medical advice to pregnant women. On the other hand, accompanying midwives believe that they are ignored by midwives and their performance is always judged by them (14). While the provision of midwifery services has become a challenge, the evidence shows that the main concern of pregnant women is the lack of sufficient support from gynecologists and midwives in the delivery unit (8).

2. Objectives

Considering the importance of promoting vaginal delivery and the pregnant women's need to receive continuous support during the labor and delivery process, the request to employ accompanying midwives in maternity hospitals is increasing (15). As a result, identifying the challenges of using accompanying midwives can be an important step in meeting the needs of pregnant women. For this reason, the researchers in this study decided to identify the challenges of using accompanying midwives from the perspective of midwives and pregnant women referring to the selected hospitals of Chaharmahal and Bakhtiari province, Shahrekord in 2020.

3. Methods

3.1. Type of Study, Statistical Population, and Sampling

This descriptive cross-sectional study was conducted on 70 midwives working in the selected hospitals of Chaharmahal and Bakhtiari province (including Hajar (S), Seyed al-Shohda, and Imam Ali (AS) hospitals) and 120 pregnant women giving birth in these hospitals with the help of 20 accompanying midwives. The midwives and accompanying midwives (doulas) were selected by the census method after receiving the necessary explanation about the study method and objectives and providing informed consent to participate in the study. Moreover, the pregnant women were selected using the convenience method.

3.2. Inclusion and Exclusion Criteria

The criteria for entering the study for midwives included having at least 3 years of work experience as a midwife in the delivery unit, a bachelor's or master's degree in midwifery, and a certificate of preparation for physiological childbirth (PLC). The inclusion criteria for the pregnant women included having a vaginal delivery, a term pregnancy, participation in childbirth preparation classes (at least 3 sessions), age range of 18 - 40 years, literacy to complete the questionnaire, hospitalization in the delivery unit from the beginning of labor's active phase, spontaneous onset of contractions, a suitable pelvis, and accompanied by an accompanying midwife (doula) during labor and delivery. The exclusion criteria for the participants included the lack of consent to participate in the study and the unwillingness to continue with the study.

3.3. Data Collection

For data collection, we used a researcher-made questionnaire with two parts: demographic information and the economic, social, therapeutic, and psychological challenges of using accompanying midwives. This questionnaire was based on a five-point Likert scale (completely agree = 5, agree = 4, I have no opinion = 3, disagree = 2, and completely disagree = 1). The validity of this tool was assessed and confirmed by the midwifery and reproductive health faculty members, and its reliability was obtained by the internal consistency method, showing a correlation coefficient of 0.82 for the midwives' part of the questionnaire and 0.86 for the pregnant women's part of the questionnaire.

3.4. Study Implementation

After obtaining the code of ethics for the project and permission from the Research Deputy and officials of hospitals affiliated with Shahrekord University of Medical Sciences, Shahrekord, Iran, the researcher attended the study setting and began the sampling process. After obtaining written informed consent from the participants, they were asked to complete the questionnaires.

3.5. Data Analysis

Data analysis was performed with SPSS software (version 21) and using descriptive statistics.

3.6. Ethical Considerations

This study was approved by the Ethics Committee of Shahrekord University of Medical Sciences with the number IR.SKUMS.REC.1397.187.

4. Results

This study was conducted on 70 midwives (working in the selected hospitals of Chaharmahal and Bakhtiari province), 120 pregnant mothers, and 20 accompanying midwives (doulas). The demographic information of midwives and doulas showed that the mean age of midwives and doulas was 34.99 ± 8.08 and 37.50 ± 6.39 years, respectively. Most of the midwives ($n = 40$, 53.3%) were officially employed; however, most of the doulas ($n = 11$, 55%) were not employed by the government. Most midwives ($n = 61$, 85.9%) and doulas ($n = 17$, 85%) had bachelor's degrees. Additionally, 66 midwives (93%) and 12 doulas (60%) did not have an office. Most midwives ($n = 37$, 52.1%) had more than 10 years of work experience; nevertheless, most doulas ($n = 13$, 65%) had about 1-3 years of work experience. Moreover, 18 midwives (69.2%) and 12 doulas (66.7%) were satisfied with the doula's presence in the delivery unit.

The demographic information of pregnant women showed that their mean age was 28.35 ± 5.40 years; most of them ($n = 93$, 77.5%) were housewives and mostly had high school diplomas ($n = 46$, 38.3%). Furthermore, 39 women (32.5%) were introduced to doula services through friends, and 117 of them (97.5%) were satisfied with the quality of the doula's work. Meanwhile, 56 women (46.7%) found the doula to be very helpful during labor and delivery. Additionally, 27 women (22.5%) found the most important characteristic of doulas to be their good attitude, and 26 women (21.7%) found it to be their good companionship during labor and delivery. Most of the pregnant women ($n = 39$, 32.5%) mentioned that the most important motivation for requesting a doula during pregnancy and labor was to overcome the fear of childbirth. Most of them ($n = 101$, 84.9%) also stated that they used doula services at the right time. Meanwhile, 54 women (45%) were familiar with doula services during pregnancy, and most of them ($n = 67$, 56.3%) stated that doula services can be useful and effective in all three stages of pregnancy, labor, and delivery.

The most important challenges related to the presence of accompanying midwives, from the point of view of midwives, pregnant women, and accompanying midwives, are summarized in Table 1.

Table 1. The Most Important Challenges of Using an Accompanying Midwife from the Perspective of Pregnant Women, Midwives, and Accompanying Midwives (Doulas)

Challenge	Midwife	Pregnant Woman	Doula
Therapeutic challenge	<p>Some trained accompanying midwives use medicine/herbal medicines to shorten the stages of childbirth (33, 46.5%).</p> <p>The accompanying midwife intervenes with the treatment/care decisions of physicians and midwives (25, 35.2%).</p> <p>Due to the lack of midwives' consent, the presence of an accompanying midwife in the ward is not allowed (23, 32.4%).</p> <p>From the viewpoint of the treatment team, the accompanying midwife is an extra and ineffective member of the delivery team (22, 31%).</p> <p>Due to the lack of space and sufficient equipment in the department, the presence of an accompanying midwife is avoided (22, 31%).</p> <p>The presence of an accompanying midwife in the labor department violates the privacy of other mothers (21, 29.6%).</p> <p>The presence of an accompanying midwife causes congestion in the delivery and post-partum department and delays the timely medical care (19, 26.8%).</p> <p>The presence of an accompanying midwife in the labor department increases the possibility of complaints from other mothers (18, 25.4%).</p>	<p>My failure to perform a vaginal delivery was due to the negligence of my accompanying midwife (80, 66.7%).</p> <p>The accompanying midwife left me due to the long delivery time and did not continue caring for me (59, 49.2%).</p> <p>The midwives did not care about my requests to have an accompanying midwife by my side (53, 44.2%).</p> <p>Some trained accompanying midwives use medicine/herbal medicines to shorten the stages of childbirth (37, 30.8%).</p>	<p>Some mothers ask for guidance and help outside working hours (14, 70%).</p> <p>The real value of a trained accompanying midwife is not well understood by the treatment team (10, 50%).</p> <p>The care activities of a trained accompanying midwife are ignored by the treatment team (10, 50%).</p>
Economic and social challenges	<p>The intention of a trained doula is only to generate income (18, 25.4%).</p> <p>According to the treatment team, the doula is an extra and ineffective member of the delivery team (17, 23.9%).</p> <p>Employing an accompanying midwife for pregnant women was costly and expensive (16, 22.5%).</p>	<p>Due to not paying her fee in full, a well-accompanying midwife did not support me properly (75, 62.5%).</p> <p>They consider the use of a doula for pregnant women to be expensive and useless (52, 43.3%).</p>	<p>Based on the service provided, the fee charged by the accompanying midwife is reasonable (13, 65%).</p>
Psychological challenge	<p>Some midwives feel that the accompanying midwife takes the place of midwives (21, 29.6%).</p>	<p>The presence of an accompanying midwife at my bedside caused the doctor to treat me inappropriately (65, 54.2%).</p> <p>The presence of an accompanying midwife at my bedside caused other midwives to ignore me (31, 25.8%).</p>	

5. Discussion

The present study was conducted to determine the challenges of using accompanying midwives from the

perspective of midwives and pregnant women referring to selected hospitals of Chaharmahal and Bakhtiari

province in 2020. The results of this study showed that the most important therapeutic challenge of using an accompanying midwife from the midwives' point of view was the fact that the accompanying midwife intervenes and uses chemical or herbal drugs to shorten the stages of childbirth. Meanwhile, the results of Toosi et al.'s study showed the satisfaction of pregnant women from the activities of accompanying midwife and their little involvement in the care of midwives and physicians (16), which are inconsistent with the results of the present study. The reason for this inconsistency might be the fact that the aforementioned study was a clinical trial conducted on primiparous women; nevertheless, the present study was conducted on both primiparous and multiparous women.

From the perspective of pregnant women in this study, the most important therapeutic challenge of using accompanying midwives was the failure of pregnant women to perform a vaginal delivery due to the underperformance of accompanying midwives and lack of information sharing by them. In Maputle's study, some pregnant women stated that the midwives gave them little training and delivery information during childbirth and did not empower them (17). The aforementioned results are in line with the findings of the present study, as the results of the current study also showed that midwives were neglecting their work during the childbirth process.

Regarding the economic and social challenge of using an accompanying midwife from the midwives' point of view, the results of the present study showed that most midwives believed that the accompanying midwives were working only to generate income. Sameizadeh Toosi et al., in their study, concluded that the presence of an accompanying midwife at the bedside was helpful for the emotional support of pregnant women (16, 18). On the other hand, research confirms that the presence of a doula can reduce mother's anxiety and lead to an increase in the rate of vaginal delivery, an improvement in infant's outcomes, and a decrease in the consumption of oxytocin and episiotomy and rupture of the birth canal (2). Therefore, all actions performed by accompanying midwives reduce the cost of maternity and the health-care system.

The most apparent economic and social challenge of using accompanying midwives from the perspective of pregnant women in the present study was the minimal support of accompanying midwives due to not getting paid in full. This is while the results of Sameizadeh Toosi et al.'s study showed that the presence of a doula leads to a significant reduction in a mother's anxiety during childbirth (16).

In the present study, the most important psychological challenge of using an accompanying midwife from the perspective of midwives was that some midwives felt that the doulas put themselves in the place of midwives during labor and took greater responsibility than their

role. This result is consistent with the findings of studies by Stevens et al., Kozhimannil et al., and Abushaikha and Massah. These researchers believe that the above-mentioned challenge results from insufficient knowledge and training of healthcare workers regarding the advantages of doulas (14, 15, 19).

Neel et al. showed in their study that most conflicts and negative interactions between doulas and medical staff result from clinical decisions. Some employees consider doulas to be an obstacle to the provision of medical care and one of the causes of faulty relationships between physicians and patients (20). Kozhimannil et al. considered the most important cause of this challenge to be inadequate midwifery care during childbirth and the weak relationship between mothers and midwifery personnel. From their point of view, these challenges create a conflict between midwives and doulas because taking care of the mother and newborn after delivery is one of the main duties of midwives in the maternity department; however, due to the presence of doulas, midwives are not performing this important task (21).

Nevertheless, Sameizadeh Toosi et al., in their study, believed that most midwives were satisfied with the presence of a doula in the delivery unit and considered it necessary for the emotional support of mother and infant (18). In another study, the presence of a doula not only had no effect on the ward's activities but also most midwives believed that the presence of a doula was helpful and effective (16). The results of the above-mentioned studies are not consistent with the findings of the present study. Probably, the reason for this inconsistency is that in the above-mentioned studies, the doulas were the pregnant women's relatives or friends; nevertheless, in the present study, the doula was a trained midwife. It seems that it is important to pay attention to the fact that when a doula has midwifery education and is aware of all midwifery procedures, there is a possibility that she might interfere with some of the midwives' duties or place herself in the position of midwives.

In this study, the psychological challenge of using an accompanying midwife from the perspective of pregnant women indicated that the presence of a doula at a patient's bedside could cause the treating physician to treat pregnant women inappropriately. Additionally, the delivery room staff considered the doula to be an inefficient and auxiliary team member. The results of the present study are not consistent with the results of the study by Kozhimannil et al. (21) because their results show that midwives consider doulas to be helpers and facilitators of midwifery work. The midwifery personnel usually have to take care of several newborns at the same time and do not have enough time to provide comprehensive support to pregnant women during labor.

Additionally, doulas have the ability to create an atmosphere of trust between healthcare workers and pregnant women, and by creating a sense of interaction and communication between them, they can increase the

women's satisfaction with the care and services they receive (14). On the other hand, midwives can also rely on the support of doulas in the emotional care of women in labor. However, this task is difficult to delegate because taking care of women in labor is the main responsibility of midwives and many midwives feel very strongly about this role (20). However, there are obstacles and challenges that do not allow this process to be carried out optimally.

5.1. Conclusions

Regarding the challenges of using the accompanying midwife's support during different stages of labor and delivery from the perspective of pregnant women and midwives, it seems that providing training on the importance and benefits of accompanying midwives' services in supporting mothers during labor and delivery can have a significant impact on the women's delivery experience and the midwives' workload. Therefore, with proper training of employees, especially specialists, midwives, and pregnant women, it is possible to clearly define the supportive care of accompanying midwives in prenatal, natal, and postnatal care and improve the quality of care delivered to pregnant women.

Acknowledgments

This study was approved by Shahrekord University of Medical Sciences (grant no. 3742). The authors hereby express their gratitude to the honorable Deputies of Medicine and Research, Community-Oriented Nursing Midwifery Research Center, and the officials and midwifery personnel of hospitals affiliated with the Shahrekord University of Medical Sciences.

Authors' contributions

Maryam Torki Harchegani planned the study and analyzed the data. Maryam Torki Harchegani and Zeinab Tavakol interpreted the results and prepared the manuscript. Zeinab Tavakol preformed manuscript for submission and was responsible for submitting and its followings up. All authors have read and approved the final version of the manuscript

Conflict of Interest

The authors declare that they have no competing interests.

Funding/Support

This research was supported by Shahrekord University of Medical Sciences (Grant no. 3742).

References

1. Yuenyong S, Jirapaet V, O'Brien BA. Support from a close female relative in labour: the ideal maternity nursing intervention in Thailand. *J Med Assoc Thai*. 2008;91(2):253-60. [PubMed ID:18389993].
2. Rezaie M, Dakhesh S, Parpuchi SF. [Evaluation of the Relationship between the Attendance of a Companion Midwife and Maternal and Neonatal Consequences]. *Sci J Nurs Midwifery Param Fac*. 2021;6(3):88-96. Persian.
3. Khavandizadhadghdam S. [The Effect of the Continuous Labor Support from a Supportive Companion on the Process and Outcomes of Labor in Primigravida]. *J Ardabil Univ Med Sci*. 2005;6(4):368-73. Persian.
4. Byrom S, Downe S. 'She sort of shines': midwives' accounts of 'good' midwifery and 'good' leadership. *Midwifery*. 2010;26(1):126-37. [PubMed ID:18375025]. <https://doi.org/10.1016/j.midw.2008.01.011>.
5. Abdella A, Teshome M, Kumbi S. Partureints' need of continous labor support in labor wards. *Ethiop J Health Dev*. 2007;21(1):35-9. <https://doi.org/10.4314/ejhd.v21i1.10029>.
6. Campbell DA, Lake MF, Falk M, Backstrand JR. A randomized control trial of continuous support in labor by a lay doula. *J Obstet Gynecol Neonatal Nurs*. 2006;35(4):456-64. [PubMed ID:16881989]. <https://doi.org/10.1111/j.1552-6909.2006.00067.x>.
7. Sarah Beake R, Chang YS, Helen Cheyne R, Spiby H, RM JS, Bick D. Experiences of early labour management from perspectives of women, labour companions and health professionals: A systematic review of qualitative evidence. *Midwifery*. 2018;57:69-84. [PubMed ID:29223042]. <https://doi.org/10.1016/j.midw.2017.11.002>.
8. Bohren MA, Hofmeyr GJ, Sakala C, Fukuzawa RK, Cuthbert A. Continuous support for women during childbirth. *Cochrane Database Syst Rev*. 2017;7(7):CD003766. [PubMed ID:28681500]. [PubMed Central ID:6483123]. <https://doi.org/10.1002/14651858.CD003766.pub6>.
9. Arnold JA. Social support by doulas during labor and the early postpartum period. *Hosp Phys*. 2001;57:65.
10. Bogossian FE. Social support: proposing a conceptual model for application to midwifery practice. *Women Birth*. 2007;20(4):169-73. [PubMed ID:17931991]. <https://doi.org/10.1016/j.wombi.2007.08.003>.
11. Papagni K, Buckner E. Doula Support and Attitudes of Intrapartum Nurses: A Qualitative Study from the Patient's Perspective. *J Perinat Educ*. 2006;15(1):11-8. [PubMed ID:17322940]. [PubMed Central ID:1595283]. <https://doi.org/10.1624/105812406X92949>.
12. Weindling AM. The confidential enquiry into maternal and child health (CEMACH). *Arch Dis Child*. 2003;88(12):1034-7. [PubMed ID:14670760]. [PubMed Central ID:1719387]. <https://doi.org/10.1136/adc.88.12.1034>.
13. Ballen LE, Fulcher AJ. Nurses and doulas: complementary roles to provide optimal maternity care. *J Obstet Gynecol Neonatal Nurs*. 2006;35(2):304-11. [PubMed ID:16620259]. <https://doi.org/10.1111/j.1552-6909.2006.00041.x>.
14. Kozhimannil KB, Vogelsang CA, Hardeman RR, Prasad S. Disrupting the Pathways of Social Determinants of Health: Doula Support during Pregnancy and Childbirth. *J Am Board Fam Med*. 2016;29(3):308-17. [PubMed ID:27170788]. [PubMed Central ID:5544529]. <https://doi.org/10.3122/jabfm.2016.03.150300>.
15. Abushaikha L, Massah R. Perceptions of barriers to paternal presence and contribution during childbirth: an exploratory study from Syria. *Birth*. 2013;40(1):61-6. [PubMed ID:24635426]. <https://doi.org/10.1111/birt.12030>.
16. Sameei Zadeh Toosi T, Mohammadinia N, Sereshti M. Effect of companionship during labor on level of anxiety of primiparous mothers and midwives points of view in Iranshahr, 2010. *J Mazandaran Univ Med Sci*. 2013;22(96):41-8.
17. Maputle MS. Support provided by midwives to women during labour in a public hospital, Limpopo Province, South Africa: a participant observation study. *BMC Pregnancy Childbirth*. 2018;18(1):210. [PubMed ID:29871607]. [PubMed Central ID:5989402]. <https://doi.org/10.1186/s12884-018-1860-8>.
18. Sameizadeh Toosi T, Sereshti M, Dashipur A, Mohammadinia N, Arzani A. The effect of supportive companionship on Length of labor and desire to breastfeed in primiparous Women. *J Urmia Nurs Midwifery Fac*. 2011;9(4).
19. Stevens J, Dahlen H, Peters K, Jackson D. Midwives' and doulas' perspectives of the role of the doula in Australia: a qualitative study. *Midwifery*. 2011;27(4):509-16. [PubMed ID:20889246]. <https://doi.org/10.1016/j.midw.2010.04.002>.
20. Neel K, Goldman R, Marte D, Bello G, Nothnagle MB. Hospital-based maternity care practitioners' perceptions of doulas. *Birth*. 2019;46(2):355-61. [PubMed ID:30734958]. <https://doi.org/10.1111/birt.12420>.
21. Kozhimannil KB, Hardeman RR, Attanasio LB, Blauer-Peterson C, O'Brien M. Doula care, birth outcomes, and costs among Medicaid beneficiaries. *Am J Public Health*. 2013;103(4):e113-21. [PubMed ID:23409910]. [PubMed Central ID:3617571]. <https://doi.org/10.2105/AJPH.2012.301201>.