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A reproductive health-care program for surrogate mothers: A mixed methods study

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Abstract:

BACKGROUND: Surrogacy has become an alternative family formation option for women who are unable to carry a pregnancy. There is no comprehensive care program despite the different nature of this pregnancy. The present study aimed to develop a reproductive health-care program for surrogate mothers within the cultural and social context of Iran.

MATERIALS AND METHODS: In the present sequential exploratory mixed methods study, first through a qualitative approach surrogate mothers, care providers, and policy makers of reproductive health services were selected purposefully. Data were collected by using the in-depth semi-structured interviews and analyzed. A care program draft was designed by integrating results of the qualitative study and reviewing the literature and guidelines, then appropriateness of each proposed care was assessed by a two-Rounds Delphi technique (RAM), and the final reproductive health-care program for surrogate mothers was developed.

RESULTS: The surrogate mothers' reproductive health needs were summarized in four main categories: surrogate mothers' extra care, educational training, psychological support, and protecting against surrogacy`s social and familial consequences. The reproductive health-care program for surrogate mothers were developed in four sections: prepregnancy health screenings and legal counseling; special care during embryo transfer until pregnancy confirmation; psychological support and prenatal care of surrogacy until delivery and follow-up postpartum care.

CONCLUSION: Women face many challenges in surrogacy and need special care such as legal counseling, reproductive health care, and psychological support. Implementation of this care program seems to help improve the reproductive health of these mothers.

Keywords:

Care program, mixed methods research, qualitative study, reproductive health, surrogacy, surrogate mother

Introduction

Infertility is defined as failure to achieve a pregnancy after 12 months of regular and unprotected intercourse.[1] Ten to fifteen percent of couples experience infertility worldwide.[2]

With advances in infertility treatments, fertility by a third party is considered an option where conditions or illnesses cause disruption for gametes or make a woman unable to become pregnant. These options include embryo donation, surrogacy, gamete donation, or a combination of these approaches.[3]

In surrogacy, a third party is used as a pregnancy carrier who becomes pregnant for an intended couple.[4] This third party, who is the surrogate mother, becomes pregnant with the knowledge that she must delegate all parental rights to parents who own the fetus.[5] The most common indications of the surrogacy include the

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uterine absence, recurrent pregnancy loss, recurrent *in vitro* fertilization (IVF) failure, dangerous obstetric and medical conditions result in high-risk pregnancy.[6]

The first surrogacy was reported in the UK in 1985[7] and also started at some Iranian infertility clinics in 2001.[8] Despite increasing demand for surrogacy,[9,10] it is not fully addressed in standard obstetrics texts and there is little clinical guidance on their care.[11] Although the medical aspects of IVF and pregnancy are similar with the use of surrogacy, there are differences between other important aspects such as physical and psychological health screening, legal counseling, legal conflicts between surrogate mother and intended parents, the intended-surrogate mothers' interaction, prenatal care and the birth process, legal and psychological issues after birth and breastfeeding. Therefore, providing services to surrogate mothers requires the inter-professional interaction between reproductive health professionals, infertility clinics, facilitation agencies, psychological counselors, lawyers, surrogate mothers, and intended parents, obstetricians, midwives, and hospitals in which deliveries are performed.[12]

Furthermore, the surrogacy can affect all physical, psychological, and social aspects of the reproductive-sexual health of surrogate mothers; hence, it seems essential to pay attention to their reproductive health and provide these services based on the sociocultural context of countries. Given the Iranian infertile couples' willingness and acceptance of surrogacy, the Iranian women's tendency toward being surrogate mothers because of financial need, as well as setting up this method in most infertility centers in Iran, and lack of a comprehensive program to care for these mothers, the present study aimed to develop reproductive health-care program based on surrogate mothers' needs.

Materials and Methods

The present exploratory sequential mixed methods study with pragmatism paradigm in two phases was conducted with the aim of developing a care program for surrogate mothers. The reproductive health needs of Iranian surrogate mothers were initially identified in a qualitative study.

In the second phase of the study, the literature review was conducted using the Narrative Review through library references (reviewing reference books and theses) and searching electronic references over the past 10 years in both English and Persian keywords including surrogate mother, and surrogacy in databases (PubMed, ScienceDirect, Web of science, Cochrane library, Ovid, Scopus, ProQuest, Magiran, Embase, and SID Database). The results of studies related to the surrogate mothers' experiences and clinical guidelines were analyzed.

A draft for reproductive health-care program in surrogate mothers was then designed by combining findings of qualitative study and reviewing the literature.[13] The appropriateness of each care in this program was then assessed using a modified two-round Delphi technique (RAM). The Delphi method had two rounds, first, each care was individually scored by the relevant professionals, and second, scoring was conducted in a face-to-face group discussion.[14] In the present study, a list of care recommendations was set up in a table by integrating the qualitative study data and literature review and was then given to 15 Delphi members (infertility specialists, psychiatrists, reproductive health professionals, psychologists, maternal health policy makers, and lawyers) for scoring. The researcher went to the Delphi members' workplace separately and described the scoring method for each recommendation from 1 to 9 according to professional experience and up-to-date articles and based on the cost–benefit ratio. They were also asked to optionally add their experiences and suggestions.

In the second round, the experts evaluated the content of reproductive health-care program for surrogate mothers by focusing on controversial issues in a group discussion session and finally developed a reproductive health-care program for surrogate mothers.

Characteristic of participants

Participants were purposively selected from mothers with full and successful surrogacy, health providers (physician, psychiatrist, psychologist, maternal health managers, reproductive health professionals, and midwives) who had at least 1-year experience in the field of surrogacy. Volunteer surrogate mothers with the maximum variation in terms of age, education, number of pregnancies, number of surrogacies, ethnicity, and interval after the surrogacy were participated in the study from Isfahan Infertility Treatment Center.

Data collection process

Data were collected through in-depth semi-structured interviews after explaining goals and obtaining informed consent from the participants. The time and place of the interviews were determined according to their willingness. To integrate the interview, an interview guide was developed by the research team. Interviews with surrogate mothers started with the question "What did you make decide to be a surrogacy volunteer?" and interviews with care providers begins with the question "What concerns did you have about providing services to surrogate mothers?" and interviews with maternal health policy makers with the question "How is the process of caring for surrogate mothers and following them in the formal structure of the health system?" and the

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interviews continued based on participants' responses; and exploratory questions were asked to gain a deeper understanding of their experiences.

Each participant was interviewed during one to two sessions with an average time of 40–60 min. At the beginning of the interviews, the researcher described the research objectives and gained the participants' trust. The verbal and written consent was then obtained to participate in the research, record the interviews, and for the possibility of subsequent interviews. The interviews were individually conducted in a quiet and private environment after acquiring participants' demographic characteristics; and notes were taken if they were unwilling to have interview recording. Purposive sampling continued until data saturation.

Data analysis

Data were analyzed using the conventional content analysis method proposed by Graneheim and Lundman. Each interview was immediately written; and the researcher gained an overview after reading the text repeatedly, and thus a meaning unit was created. Interviews were reviewed line by line, and key and relevant phrases related to the research topic were identified and encoded. The similar codes were then placed in subcategories. These categories constituted the subcategories. The main categories emerged from subcategories.[15]

Rigor and trustworthiness of qualitative data

The accuracy and trustworthiness of data were ensured by enhancing the creditability through ongoing engagement with the research data and data reviewing by the research team participants and colleagues. The conformability of data was performed based on the opinions of researchers who were out of this study. To increase the data dependability, the research steps were carefully reported to allow other researchers to follow-up. The results were presented to the similar individuals to the participants, who were not present in the study, and their comments were reviewed to increase the data transferability.

Ethical consideration

The present study was approved in the Ethics Committee of Isfahan University of Medical Sciences with a code (IR. MUI.RESEARCH.REC.1395.3.942).

Results

At first, findings of the qualitative study were showed, and then the reproductive health-care program for surrogate mothers were introduced. The qualitative study conducted with 26 participants (9 surrogate mothers, 12 care providers, and 5 maternal health policy makers). The age range of the surrogate mothers was 28–38 years, and in term of marital status, 5 were divorced and 4 were married [Table 1]. Qualitative data analysis resulted in the extraction of 1836 codes and 11 subcategories and 4 main categories as presented in Table 2.

First category: Extra care for surrogate mothers

Data analysis indicated that surrogate mothers needed extra care, including "Special surrogacy health care," "Need for caregiver at home," and "Care for inhibition of lactation."

Special surrogacy health care

Analysis of participants' descriptions indicated that, in addition to routine pregnancy care before, during, and after pregnancy, surrogate mothers need special care, such as comprehensive physical-mental health screenings, psychological readiness assessment for surrogacy acceptance, and ensuring the confidentiality of information about surrogacy. Furthermore, some providers emphasized the surrogacy is a high-risk situation and need to increase the frequency of care and mothers' round-the-clock access to services. In this regard, a midwife working at the infertility center said:

"A woman who is going to have a surrogacy should have a complete health assessment. In terms of overall health; and all aspects of her health should be confirmed" (p19).

Most surrogate mothers did not attend to public health centers and childbirth preparation classes because they

Table 1: Surrogate mother's demographic characteristics

Participant's codes	Education level	Ovule/embryo donation history	Number of surrogacies	Number of children
P1	High school	1	1	2
P2	Diploma	0	1	1
P3	Elementary school	0	1	1
P4	High school	3	2	1
P5	Elementary school	1	1	2
P6	Elementary school	1	1	2
P7	Secondary school	1	1	1
P8	University student	0	1	1
P9	Elementary school	0	1	3

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Table 2: Categories of the analysis of participant's description of surrogate mother's health-care needs

Subcategories	Main categories
Special surrogacy health care	Extra care for surrogate mothers
Need for caregiver at home	
Care for inhibition of lactation	
Legal and health consideration of surrogacy	Educational training
How introducing surrogacy to their children	
Improving communication skills with intended mothers	
Promotion of surrogate mother's mental health	Psychological support
Support surrogate mothers in fetal attachment concerns	
Strengthening their resiliency for overcoming surrogacy difficulties	
Judgment and stigma of surrogacy	Protecting against surrogacy's social and familial consequences
Family disturbances	

have to hide their surrogacy and were under pressure for cesarean from care providers and intended parents; hence, they expressed different needs for cesarean delivery and aftercare.

"I had vaginal deliveries for my first two children, but they now said that I have to go for cesarean section! It is very difficult for me to have surgery; I do not have anyone to take care me after surgery. Also I have to take care of my two children by myself!" (p6)

Need for caregiver at home

Most surrogate mothers had to rest and restrict activity for a variety of reasons, such as anxiety and tenderness for maintaining the pregnancy, the intended's parents' insistence, and care providers' recommendations. On the other hand, they did not receive any support from family and friends because of pregnancy concealment; hence, they needed a caregiver at home during and after pregnancy. A surrogate mother said: "I had both bleeding and hyperemesis in early pregnancy. They (intended parents) didn't come to help me at all. My family didn't know about my pregnancy. I needed someone to take care of me and do the housework" (p8).

In addition, these mothers were unaccompanied if they needed to be hospitalized because their families were unaware of their pregnancy; hence, they needed an educated companion in the case of hospitalization.

Care for inhibition of lactation

One of the different care needs of surrogate mothers was to inhibition of lactation. Based on the agreement between the surrogate mother and the intended parents, and the health providers' emphasis, the infant was separated from the surrogate mother immediately after delivery. Therefore, mothers needed to receive adequate care and education about how inhibition of lactation.

A reproductive health expert said: "Surrogate mother are forced to immediately separate from the baby and stop breastfeeding. These mothers experience severe and prolonged breast engorgement and pain during inhibition of lactation. Therefore, a decision on inhibition of lactation should be taken at the end of pregnancy and surrogate mothers should be prepared for it. Also after child birth, sufficient care should be given in this subject" (p28).

Second main categories: Educational training

All participants emphasized the importance of educating surrogate mothers about the legal and health consideration of surrogacy, introducing surrogacy to their children, and improving communication skills between intended mothers and surrogate mothers.

Legal and health consideration of surrogacy

Surrogacy candidates stated that they had poor and ambiguous information about surrogacy and suggested receiving the adequate education about legal and health aspects before the surrogacy.

A surrogate mother said: "The 1st day I came (to infertility clinic), they (care providers) asked me to sign the contract. It was written in a way that I didn't understand, but I signed. I wish they had explained the terms and articles of the contract" (p1).

How introducing surrogacy to their children

The findings indicated that most surrogate mothers did not disclose the true nature of surrogacy for their children and told their children that the pregnancy belonged to themselves, and after childbirth, told their children that the baby had died. The majority of surrogate mothers were unaware of the proper way to inform their children about surrogacy and expected that counselors would assist them in managing information and the way to introduce this challenge to their children.

A surrogate mother said: "I told my 14-year-old son that I was pregnant and she (the fetus) was his sister, but (after childbirth) I told him that she died, he became so upset. It would be better if counselors told these issues to mothers before starting the surrogacy" (p2).

Improving communication skills with intended mothers

During pregnancy, the surrogate and intended mothers had great interaction with each other on financial, social, emotional, and health issues, but they were often unable to meet each other's expectations due to lack of communication skills; hence, strengthening the communication skills was a need of surrogate and intended mothers.

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A surrogate mother said: "I liked intended mother come to see me, asking about my status and her child, but she did not come. I became upset and it bothered me. I liked she came and saw her fetus growth" (p 9).

Third main categories: Psychological support

Participants emphasized on psychological support which divided into three subcategories: promotion of surrogate mothers' mental health; support surrogate mothers in fetal attachment concerns; and strengthening their resiliency for overcoming surrogacy difficulties.

Promotion of surrogate mothers' mental health

All care providers emphasized on frequent assessment and promotion of surrogate mothers' mental health before surrogacy to after childbirth. All surrogate mothers also expressed need for mental health counseling.

An obstetrician said: "A psychiatrist and psychologist should verify volunteers' mental health before surrogacy, so that they will not regret after the embryo transfer and during the pregnancy. Furthermore, any mother should be visited during pregnancy and after childbirth according to her mental health concerns" (p4).

Support surrogate mothers in fetal attachment concerns

Attachment to the fetus and infant was a main concern of surrogate mothers. Despite the fact that all mothers knew that they had to separate from the baby after birth, they were worried about their attachment to the fetus and sad about the prospect of separation. They needed to talk to their counselor repeatedly about their feelings and get guidance on how to manage their emotions. A surrogate mother said:

"When I was pregnant, I knew that the baby was not mine, but I had a motherly feeling. I talked to baby at night. I had chosen a name for her and called her name. I told her that you should go, and I shouldn't love you, but my heart was full of sadness and I cried" (p9).

Strengthening their resiliency for overcoming surrogacy difficulties

In the present study, all surrogate mothers had surrogacy for financial reasons; hence, strengthening their resiliency for overcoming difficulties of this period, adapting to complications of pregnancy, and reinforcing altruistic motivations were necessary.

A psychiatrist said: "All surrogate mothers hope to get a good wage. It seems that this period would be easier to tolerate if the surrogate mother's motivations are altruistic" (p10).

Most surrogate mothers did not attend public health centers and childbirth preparation classes, which could help them adapt to pregnancy, because of concealment, and on the other hand, care providers and intended parents put pressure on mothers for elective cesarean section and immediate separation from the baby, making pregnancy difficult full of tension fur these mothers.

For most surrogate mothers, this pregnancy was a frustrating experience; hence, some of them were reluctant to repeat surrogacy.

A surrogate mother said, "I promised myself this would be my last time. I accepted surrogacy with hope of 20 million tomans, but they gave it gradually and it was not clear what the money was spent on. I had to cut all communications due to concealing my pregnancy. I didn't dare go to the clinic to ask a question or take care of myself. They forced me to have a cesarean section and then they gave up me after birth" (p7).

Fourth category: Protection against surrogacy`s social and familial consequences

Many surrogate mothers were exposed to social and familial consequences, such as judgments and stigma of surrogacy and family disturbances.

Judgment and stigma of surrogacy

The analysis of participants' description indicated that surrogacy was a social stigma which causes surrogate mothers to hide the true nature of their pregnancy and limit their social relationships. Divorced mothers were more exposed to blame and taboos for their surrogacy.

A surrogate mother said, "In my husband's family, they would dishonor me if they knew that I was carried a pregnancy for another woman. They said that I made a mistake for money and how heartless her husband was, so I said that it was my pregnancy and my baby, but I was very worried about revealing the secret. I didn't know what to do. I went to have cesarean section delivery alone and said that the baby died!" (p7).

Family disturbances

Surrogacy affected marital relationships and childbearing planning. Most surrogate mothers avoided sexual intercourse during surrogacy because of concerns about the possibility of harm to the fetus. A surrogate mother said: "During pregnancy, I was afraid of intercourse (for fetal health). My husband accepted it, but he was frustrated and angry" (p3).

Most surrogate mothers had 1 or 2 children of their own and were planning to have another child/children of their own after the surrogacy, but complications and consequences of surrogacy damaged their childbearing planning. A surrogate mother said:

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"After surrogacy, I haven't been able to get pregnant for a few years. I had cesarean delivery in my first birth, and then for surrogacy. Now I want to have a baby myself, I'm worried that my cesarean number will increase" (p4).

For developing reproductive health‑care program, research and guidelines were analyzed thematically. These findings were integrated with results of the qualitative study; and the draft of the surrogate mother reproductive health‑care program was designed; then appropriateness of each proposed care was assessed by a two‑rounds Delphi technique RAND Appropriateness Method (RAM). Furthermore, the surrogate mother reproductive health‑care program was developed in four sections, prepregnancy health screenings and legal counseling; dedicated care from embryo transfer to pregnancy confirmation; psychological support; prenatal care until delivery; and follow‑up postpartum care. This program offered the inter‑professional teamwork with obstetrician, midwife, reproductive health specialist, psychologist, psychiatrist, and legal consultant who were qualified in the field of surrogacy in addition to professional skills. Midwives/reproductive health professionals can coordinate the team with the ability to play Multi‑professional roles.

The first part of the care program included health screening, volunteer legal counseling, and preconception care. First, an early interview was conducted with a surrogacy volunteer to examine her conditions and motivation then her physical, mental, and social readiness for pregnancy were assessed and she was screened for chronic illness, high‑risk behaviors, sexually transmitted diseases, and psychological disorders. After that, psychological and legal surrogacy counseling was performed in women.

In the second part of the care program, the surrogate mother was prepared to transfer the embryo and the home caregiver was introduced to her. If the embryo transfer was successful and pregnancy was confirmed, the third part of the care program was provided with psychological support, specialized prenatal care, and planning for delivery. Psychological counseling and care were provided to enhance resilience, respond to children's curiosity about surrogacy, fetal attachment concerns, and manage interaction with the intended parents.

The fourth part of this care program included the postpartum follow‑up care that included the routine care, help surrogate mother for inhibition of lactation, and supporting them after leaving the baby through psychological counseling. Mental health screening and planning follow‑up counseling were necessary. Family planning counseling and sexual function improvement were performed. Two months after delivery, screening was performed for hypertension, diabetes, mental health, and other surrogacy consequences; and the care program would end and they referred to health center for continuing routine reproductive health care.

Discussion

For the first time in Iran, the present study tries to develop a comprehensive care program by explaining the reproductive health needs of surrogate mothers.

Findings of the present study indicated that surrogate mothers made greater efforts to increase their chances of successful pregnancy and took better care of themselves and the fetus because of their sense of trust and greater responsibility toward the fetus as well as earning a full pay. Sadeghi *et al*. examined the surrogate mothers' experience and concluded that the mothers had more self‑care during surrogacy and were concerned about their health during pregnancy.[16] Therefore, in this care program, a comprehensive team‑based care was also recommended for surrogate mothers, especially during the pregnancy.

Findings indicated that surrogate mothers did not receive care and support from their families because of concealing pregnancy; hence, it was regulated in the care program that the surrogate mothers could ask domestic help based on their physical, medical, familial and social needs during or after pregnancy to help at home or care for children after approval by an obstetrician and coordination with the intended parents to cover costs.

In Iran, according to the contract between the surrogate mothers and intended parents, the surrogate has to relinquish the baby to intended parents immediately after birth, and the breastfeeding is thus not performed by the surrogate mothers.[17] Results of the present study also indicated that surrogate mothers were forced to stop breastfeeding after childbirth by intended parents and staff, and thus, they needed support and care to inhibition of lactation. This reproductive health‑care program included education, care, and follow‑up for inhibition of lactation.

Findings of the present study indicated that the surrogacy volunteers had an urgent need to obtain comprehensive and sufficient information on legal, health, and financial aspects of the surrogacy. Shojaee *et al*. studied the individuals' knowledge about surrogacy in Tehran and concluded that 61% of participants had poor knowledge about the surrogacy, 23% had moderate knowledge, and only 14% had good knowledge.[18] Despite the growing acceptance of surrogacy by Canadians, there are little knowledge about this phenomenon, which is associated

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with poor knowledge about surrogacy, social stigma of infertility, and legal uncertainty about this type of pregnancy.[19]

Research results indicated that surrogate mothers needed to know how to inform their children about this pregnancy. Most of them concealed the nature of surrogacy from their own children and called the baby as their children's sister or brother and announced the baby death after birth, which may cause them distress. In a study by Sadeghi *et al*., most participants told their children after birth that their sister or brother had died and leading to serious psychological damage to their children.[16]

Surrogate mothers also entered into complicated relationships with the intended parents. Therefore, they needed training to strengthen the communication with intended parents to spend this time more calmly and less stressed. Sadeghi *et al*. found that the primary relationship between the surrogate mother and intended parents was a financial contractual relationship, but there was the possibility of emotional, spiritual, and even familial relationships between them. The relationships between participants in the study ranged from very intimate relationships within a few years after birth to the severance of the relationship was absolute and the distortion of the relationship varied.[16]

The results indicated that surrogate mothers suffered from difficulty and stress during this pregnancy, arising from financial problems, pregnancy concealment, and attachment concerns, and separation from the baby after birth, forced cesarean delivery, inhibition of lactation, intended parent interaction, and marital disturbance. In this care program, it was considered that the surrogate candidates should undergo mental health screening before surrogacy and their ability to adapt this situation should be confirmed. During and after pregnancy, psychological counseling and support should continue to strengthen the altruism, resilience, attachment, and coping with surrogacy stressors. Pizitz's study also indicated that surrogacy candidates should undergo psychological screening and initial evaluation to confirm their eligibility to accept the role of surrogate mother. These mothers should be prepared to separate from the baby after birth, and they should receive the psychological and emotional support from care providers during and after pregnancy.[20]

This care program emphasized on screening of surrogacy candidates about psychological disorder and mental health problems. Furthermore, several psychological counseling sessions are recommended to assess the fetal attachment status. The American Society of Reproductive Medicine also suggested that surrogacy candidates should be screened by standard psychological tests.[21] In addition to assessing the surrogate mothers' physical health, they should be assessed during pregnancy. The most important aspects, which should be considered in surrogate mothers' counseling, included surrogate mothers' previous experiences, adaptation strategies, the likelihood of attachment to growing fetus, personal motivations, general experiences during pregnancy and childbirth, possible depression, and the way to communicate with the intended parents and baby.[12]

Findings of the present study indicated that surrogate mothers were exposed to familial consequences such as marital disturbance, spouse job injury following a surrogacy, or surrogacy interference with their own childbirth planning. The developed care program considered the couples' counseling before the surrogacy until postpartum, and the follow-up postpartum care was emphasized, especially family planning counseling and sexual function improvement up to 2 months after the birth. Tashi *et al*. also found that most of surrogate mothers were concerned about their sexual relationship during the pregnancy.[22]

Conclusion

Results of the qualitative study indicated that surrogate mothers needed extra care than other pregnancies and were in urgent need of education about legal, financial, and health issues of surrogacy. Furthermore, there is needed to psychological support for fetal attachment concerns and coping with surrogacy difficulties. They are also exposed to social and familial consequences of surrogacy and should be protected from harm. The reproductive health-care program was developed based on their needs in 4 sections, prepregnancy health screenings and legal counseling; special care from embryo transfer to pregnancy confirmation; psychological support; prenatal care until childbirth and follow-up postpartum care.

Reproductive health services in this care program are provided by an inter-professionally team, including obstetricians, midwives, psychologist, psychiatrists, and legal consultant, who are qualified in caring for surrogate mothers. The midwife can be the leader of this team because of her clinical qualifications for multiple roles.

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Conflicts of interest

There are no conflicts of interest.

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