

Perceptions of the causes of miscarriage among healthcare providers and women with a history of miscarriage in Kerman: A qualitative exploration

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Abstract

Background: Miscarriage is a common pregnancy outcome with emotional, psychological and social consequences for many women. Although several biomedical risk factors have been identified, many miscarriages remain unexplained. Perceptions of the causes of miscarriage are influenced by social, cultural and healthcare contexts; however, little is known about healthcare providers' and women's perceptions of the causes of miscarriage in the Iranian context. **Objectives:** To explore perceptions of the causes of miscarriage among healthcare providers and women with a history of miscarriage in south-eastern Iran. **Design:** A qualitative descriptive study informed by a feminist theoretical lens. **Methods:** Twenty-three participants, including six obstetricians–gynecologists, eleven midwives, and six women with history of miscarriage, were recruited using purposive sampling. Semi-structured interviews were conducted between August and October 2024 in Kerman, Iran. Data were analysed using reflexive thematic analysis supported by framework analysis. **Results:** Three themes were identified: (1) medical causes and risk factors, (2) lifestyle and environmental influences, and (3) emotional and psychological factors. Healthcare providers primarily attributed miscarriage to chromosomal abnormalities, chronic health conditions, and modifiable lifestyle risks. Women with a history of miscarriage also acknowledged biomedical explanations but described modifying their health behaviours and interpreted miscarriage through their personal experiences, emotional distress, and advice from family members and shared community beliefs. **Conclusion:** Healthcare providers and women with a history of miscarriage perceived its causes through different forms of knowledge and experience. While healthcare providers primarily emphasized biomedical explanations, women often interpreted miscarriage through their personal experiences and efforts to make sense of pregnancy loss. Both groups identified medical, lifestyle, environmental, and psychological factors as important perceived contributors, although some beliefs reflected cultural understandings rather than established scientific evidence. These findings highlight the importance of evidence-based, culturally sensitive communication and supportive miscarriage care that integrates clinical knowledge with women's lived experiences.

Plain language summary

Miscarriage can have significant emotional, psychological, and social effects on women and their families. Although medical and genetic factors may contribute to miscarriage, its cause is not always known. This study explored how healthcare

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providers and women with previous miscarriage understood its possible causes in Kerman, Iran. Interviews were conducted with 23 participants, including six obstetricians and gynecologists, 11 midwives, and six women with a history of miscarriage. Three main areas were identified: medical causes and risk factors, lifestyle and environmental influences, and emotional and psychological factors. Healthcare providers mainly emphasized medical explanations, including chromosomal abnormalities, chronic health conditions, and lifestyle-related risks. Women also recognized medical causes but often understood their miscarriage through personal experiences, emotional distress, efforts to improve their health, and advice from family and community members. Some explanations reflected cultural beliefs rather than established scientific evidence. The findings suggest that women and healthcare providers may understand miscarriage through different forms of knowledge and experience. Healthcare professionals should provide clear, evidence-based information while also recognizing women's experiences, emotional needs, and cultural context. Supportive and culturally sensitive communication may help women better understand miscarriage and receive compassionate care following pregnancy loss.

Keywords

Miscarriage, recurrent pregnancy loss, perceptions, qualitative research, maternal mental health, woman-centered care

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Introduction

Miscarriage is a common pregnancy outcome that can have physical, emotional, and social consequences, although individuals' experiences vary considerably.¹ Defined as the spontaneous loss of a pregnancy before fetal viability, miscarriage affects approximately 10–20% of clinically recognized pregnancies worldwide, with lifetime prevalence estimates among women reaching around one in four in some populations.^{2,3} In Iran, cohort studies have reported a lifetime prevalence of spontaneous miscarriage of approximately 19–25% among women, although estimates vary depending on the population and study design.^{4,5}

Many women find miscarriage deeply distressing, while others may interpret the experience differently depending on the circumstances of the pregnancy.⁶ For example, some women who miscarry following an unwanted pregnancy may feel a sense of relief rather than primarily experiencing the event as a loss. Such differing responses reflect the varied personal, social and cultural meanings associated with pregnancy loss.⁷

The definition of miscarriage varies internationally, with the World Health Organization defining it as pregnancy loss before 22 weeks' gestation, compared with 24 weeks in the UK and 20 weeks in the USA.^{8,9} Miscarriage has a multifactorial etiology, with chromosomal abnormalities accounting for approximately 50–60% of first-trimester losses.¹⁰ Other risk factors include parental chromosomal abnormalities, uterine anomalies, advanced parental age, obesity, smoking, alcohol use, and maternal or environmental factors; however, many miscarriages remain unexplained.^{3,11}

Recurrent miscarriage, commonly defined as the loss of two or more pregnancies, may have greater psychological and social consequences and may lead to different experiences and perceptions than a single miscarriage. Repeated pregnancy loss may have cumulative psychological and social consequences, highlighting the importance of understanding women's perceptions of its causes.^{3,12}

Although most women conceive successfully after miscarriage, subsequent pregnancies carry increased risks of obstetric complications, and miscarriage is associated with long-term physical and psychological consequences, including cardiovascular disease, anxiety, depression, post-traumatic stress disorder, and suicidal thoughts.^{13,14} Furthermore, societal and cultural factors may influence how women perceive and cope with pregnancy loss.¹⁵

In Iran, the prevalence of miscarriage is not precisely reported in national statistics; however, studies estimate that 19–25% of women experience spontaneous pregnancy loss during their lifetime, while registry data indicate that approximately 7–8% of registered pregnancies end in miscarriage each year.⁵ Beyond its clinical burden, miscarriage is shaped by cultural norms, religious beliefs, legal regulations, and family expectations, which influence perceptions of its causes and underscore the importance of exploring these perspectives in the Iranian context.⁴

Furthermore, gendered expectations surrounding motherhood, and the stigma associated with infertility or pregnancy loss, may influence how women understand and cope with miscarriage, potentially contributing to silence and emotional distress.¹⁶ However, evidence on perceptions and lived experiences of miscarriage in Iran remains limited. Although previous research has primarily focused on its biomedical causes, little is known about how women who have experienced miscarriage and healthcare providers perceive its risk factors. Qualitative exploration of these perspectives may provide a more nuanced understanding of the psychological, social, and cultural dimensions of miscarriage.^{16,17}

This qualitative descriptive study explored how miscarriage is understood and experienced in Iran from the perspectives of women who have experienced miscarriage and healthcare providers, including obstetricians and midwives. Including these diverse participant groups strengthened the analysis by capturing both professional and lived interpretations of miscarriage in Iran. This was a qualitative descriptive study rather than a comparative one. The aim was not to compare participant groups but to explore the phenomenon from multiple perspectives, identifying both shared and differing perceptions to achieve a more comprehensive understanding.

The study sought to identify shared and differing perceptions of the causes and contributing factors of miscarriage within social and clinical contexts. By bringing together lived and professional perspectives, it contributes to the limited Iranian literature by providing a context-specific understanding of the emotional, social, cultural, and clinical dimensions of miscarriage, with implications for more holistic approaches to care and management.

Methods

This qualitative descriptive study was informed by Sandelowski's (2000) methodology, a pragmatic, low-inference approach that describes participants' experiences in their own terms while remaining close to the data. This approach was appropriate for exploring participants' perspectives without imposing extensive philosophical interpretation. The analysis incorporated thematic analysis and a matrix-based approach, complemented by an interpretive theoretical lens to enhance contextual understanding.

This study was informed by a feminist theoretical lens and principles of reproductive justice. Drawing on feminist scholarship on reproduction and motherhood^{18,19} and reproductive justice theory,^{20,21} the framework recognises that experiences and perceptions of miscarriage are shaped by gendered expectations and broader social, cultural, legal, and healthcare contexts. It guided interpretation of the findings within the Iranian context, including pronatalist norms, gendered expectations, and patriarchal power relations.¹⁶

This methodological approach and theoretical lens ensure that women's voices remain central, producing a descriptive yet critically informed analysis that is both accessible and theoretically grounded. This study was reported in accordance with the Standards for Reporting Qualitative Research (SRQR) guidelines.²²

Ethics

Participants were recruited from seven hospitals that provide 24-hour emergency obstetric services: Afzalipour Hospital, Prophet Mohammad Hospital, Fatemeh Al-Zahra Hospital, Seyed Al-Shohada Hospital, Mehrigan Hospital, Arjomand Hospital, and Mid-Sha'ban Hospital. The study was conducted in accordance with the Declaration of Helsinki. All participants were informed about the study objectives, voluntary participation, and their right to withdraw at any time without consequences, and written informed consent was obtained before data collection. Participant confidentiality and anonymity were maintained through identification codes, secure data storage, and restricted access to the research team.

The first author conducted the interviews with support from two research team members. None of the interviewers were employed at the participating hospitals or involved in participants' clinical care, supervision, or professional evaluation. Before each interview, participants were informed that participation was voluntary and that they could withdraw at any time without consequences or impact on their healthcare, employment, or professional relationships.

Study Design

This study employed Braun and Clarke's (2006, 2021) six-phase reflexive thematic analysis, and Ritchie & Spencer's, (2002) framework analysis for organizing and interpreting data through a matrix-based approach. Semi-structured interviews were conducted between August and October 2024 in public and private hospitals in Kerman province, Iran, to explore obstetricians', midwives', and women with a history of miscarriage' understandings and experiences of miscarriage.

The semi-structured interview questionnaire used for data collection is provided as [Supplemental File 1](#). The questionnaire was developed in line with the study objectives and relevant literature. Before data collection, the interview guide was pilot tested with three participants who were representative of the target population. The pilot testing assessed the clarity, relevance, and comprehensibility of the questions. Based on the feedback received, minor modifications were made to the wording and sequence of some questions before the final version was used in the study.

All interviews were conducted in the participants' native language, to facilitate open and authentic communication. Interviews were audio-recorded, transcribed verbatim, and analysed in Persian to preserve participants' meanings and cultural nuances. Quotations included in this manuscript were translated into English by the bilingual research team and collaboratively reviewed to ensure conceptual equivalence, accuracy, and preservation of participants' intended meanings.

Data analysis involved familiarization with the data, generation of initial codes, development and refinement of themes, and production of the final analytic narrative.

Participants and Sampling

The study included 23 participants: 6 obstetrician-gynecologists, 11 midwives, and 6 women with a history of recurrent miscarriage. Participants were recruited to provide complementary professional and lived perspectives on the perceived causes of miscarriage, enabling a broader understanding of the phenomenon.

Participants were recruited purposively between August and October 2024. Women with a history of two or more miscarriages were recruited in obstetric and gynecological outpatient and prenatal care clinics in hospitals, through brief advertisements that described the eligibility criteria and provided the research team's contact information. Women provided written informed consent before participation. Obstetricians and midwives were recruited through announcements distributed via the participating hospital's internal communication system. Interested providers were screened for eligibility and provided written informed consent before participation.

Women with a history of two or more miscarriages were eligible because recurrent pregnancy loss represents a distinct clinical and experiential context in which questions about the causes of miscarriage may become particularly relevant. For example, when recurrent miscarriages occur without a clear medical explanation, women may seek further investigation and continue to reflect on possible reasons for their losses. Previous research suggests that how recurrent miscarriage is defined can influence access to clinical investigation, support and care, highlighting the importance of exploring the perceptions of women who have experienced repeated pregnancy loss.²³

Women with known infertility were excluded because infertility may influence perceptions of pregnancy loss through distinct reproductive experiences and clinical pathways, which were beyond the scope of the present study. Obstetricians and midwives were eligible if they had at least five years of clinical experience in maternity care, ensuring substantial exposure to miscarriage care and enabling them to provide insights grounded in professional practice (Table 1).

Participation was entirely voluntary. No eligible individuals who agreed to participate subsequently declined. During screening, five women and four healthcare providers were excluded because they did not meet the study requirements for providing sufficiently rich and relevant information to address the research question.

During data collection, the interview guide was used flexibly to explore emerging issues and clarify participants' experiences. Minor adjustments to the sequencing and wording of questions were made after the initial interviews to facilitate the flow of subsequent interviews and elicit richer accounts. The interview guide was not substantively altered during data collection.

Semi-structured interviews were conducted in private hospital rooms. Interviews were transcribed and analysed iteratively, allowing emerging concepts to inform subsequent data collection. Data collection continued until saturation was reached after 23 interviews, in accordance with established qualitative research guidance.²⁴

Each interview lasted 20–30 minutes and was audio-recorded, with supplementary field notes. Interviews were conducted by the first author, a maternal and child health graduate and obstetrician experienced in qualitative research and person-centered communication. Verbatim transcripts were prepared by an independent transcriber and cross-checked against the audio recordings to ensure accuracy.

Reflexivity and Positionality

Reflexivity and positionality were considered throughout the research process to acknowledge how researchers' assumptions, identities, and professional experiences could influence the study.^{25,26} The research team comprised members with clinical and academic expertise in midwifery, maternal health, qualitative research, and epidemiology. The first author, a practising midwife with 22 years of clinical experience, was supported by a qualitative health researcher, a midwife with postgraduate training in maternal health, and an epidemiologist with expertise in study design and data interpretation.

Table 1. Inclusion and Exclusion Criteria.

Inclusion criteria	Exclusion criteria
• Midwives & obstetricians: Minimum of five years of experience in maternal healthcare. • Women: History of recurrent miscarriage (≥ 2 losses) with no known infertility issues.	• Participants unwilling to provide consent. • Women who had experienced single miscarriage or had no direct experience with miscarriage.

To enhance reflexivity and minimize bias, several strategies were implemented throughout the research process. Peer debriefing was conducted regularly with senior team members who were not involved in data collection, helping to refine coding decisions and challenge early interpretations.^{27,28} Analytic memos were maintained after each interview and during coding to document emerging insights and reflect on how the research team's professional positions might shape meaning-making.^{29,30} The research team also engaged in ongoing discussions, acknowledging the team's dissonant and congruent interpretive understandings about miscarriage.²⁶ These strategies contributed to a more transparent analytic trail and supported the development of credible, well-grounded themes resulting in trustworthy findings and conclusions.

Data analysis

Data were analysed using an inductive and abductive approach, with themes developed iteratively through engagement with the data.^{31,32} MAXQDA 2020 (VERBI GmbH, Berlin, Germany) was used to organise and retrieve the data and to support the coding process. Initially, the data were analysed inductively, with themes developed through iterative coding and reflexive engagement with the data rather than predetermined by existing theories.³³ As analysis progressed, abductive reasoning facilitated movement between the data and emerging explanations. A framework analysis approach based on Ritchie and Spencer was also used to organise and interpret the data systematically through a matrix-based framework.³⁴ A feminist theoretical lens was subsequently applied to refine the interpretation of the findings.

This matrix-based approach helped identify key domains, including medical risk factors, lifestyle and environmental influences, and emotional and psychological factors. The inductive and abductive approaches maintained the analysis close to participants' narratives while enhancing its focus and rigour.³⁵

As the thematic analysis progressed, the feminist lens deepened and contextualised the findings and informed the subsequent discussion. It illuminated gendered dynamics and power relations in participants' experiences without altering the themes derived inductively and abductively. As the thematic analysis progressed, the feminist lens deepened and contextualised the findings and informed the subsequent discussion. It illuminated gendered dynamics and power relations in participants' experiences without altering the themes derived inductively and abductively.³²

Table 2. Sociodemographic Characteristics of Healthcare Providers and Women with a History of Miscarriage.

Participant	Age (years)	Training/Education	Work experience (years)	Work Place	Marital status	Obstetric History (G, P, M)
1	40	OB/GYN Specialist	8	Public	-	-
2	39	OB/GYN Specialist	10	Private	-	-
3	36	OB/GYN Specialist	13	Public	-	-
4	36	Midwife	16	Public	-	-
5	33	Midwife	15	Private	-	-
6	30	Midwife	11	Private	-	-
7	32	Midwife	10	Public	-	-
8	36	OB/GYN Specialist	10	Private	-	-
9	38	OB/GYN Specialist	16	Public	-	-
10	40	Midwife	26	Public	-	-
11	32	Midwife	11	Private	-	-
12	36	Midwife	18	Public	-	-
13	38	OB/GYN Specialist	8	Private	-	-
14	39	Midwife	11	Private	-	-
15	37	Midwife	10	Public	-	-
16	35	Midwife	18	Public	-	-
17	36	Midwife	27	Private	-	-
18	25	Diploma	-	-	Married	G2P0M2
19	30	University	-	-	Married	G3P0M3
20	29	Diploma	-	-	Married	G3P1M2
21	35	Diploma	-	-	Married	G4P0M4
22	31	University	-	-	Married	G4P2M2
23	28	Diploma	-	-	Married	G3P0M3

G: Gravity, number of pregnancies; P: Parity, number of births; M: number of miscarriages.

Results

Table 2 provides an overview of the characteristics of the participants. A total of 23 participants were included in the study, comprising 6 women with a history of miscarriage (26.1%), 11 midwives (47.8%), and 6 obstetricians-gynecologists (26.1%). Most of the specialists and midwives were between 30 and 40 years old, and all women were between 25 and 35 years old. Three women had experienced two miscarriages. Two women had experienced three miscarriages, and one woman had suffered four miscarriages.

Three main themes were discovered through reflexive thematic analysis of the interview (see Figure 1): medical causes and risk factors, lifestyle and environmental influences, and emotional or psychological influences.

Across these themes, notable differences were identified between clinicians' perspectives and the experiential and emotional interpretations of women with a history of miscarriage. During the framework analysis, 15 subthemes were identified to further refine and organise the findings within the three overarching themes (Table 3).

Theme 1: Medical Causes and Risk Factors

Obstetricians and gynecologists consistently emphasized biological causes such as chromosomal abnormalities, hormonal and metabolic disorders, autoimmune diseases, and uterine structural problems. They described chromosomal abnormalities as the most frequent and largely unavoidable cause of early miscarriage: *"Chromosomal abnormalities cause most early miscarriages and are largely beyond our control. We also see mothers with undiagnosed conditions, such as lupus, that contribute to cervical problems"* (Ob/Gyn, P4).

Clinicians also highlighted additional risk factors such as maternal age under 18, advanced maternal or paternal age (especially in cases of late marriage), and chronic conditions (e.g. hypertension, diabetes).

Midwives echoed these concerns, emphasizing the importance of maternal health before conception and identifying similar medical causes of miscarriage, including chromosomal, hormonal, metabolic, autoimmune, and structural abnormalities, as well as infections and mental health issues. They strongly advocated for early detection of medical complications. As one midwife noted: *"We see how complex maternal health is and how it affects miscarriage, which highlights the need for proactive antenatal care and early detection of complications"* (Midwife, P 6).

Women also acknowledged medical causes, often drawing on their own experiences and advice from clinicians. Many pointed to genetic disorders as a major concern, fearing that inherited or undiagnosed conditions contributed to their losses. As one woman explained:

"I have come to understand that many miscarriages stem from genetic factors beyond our control, which is heartbreaking" (Women, P3).

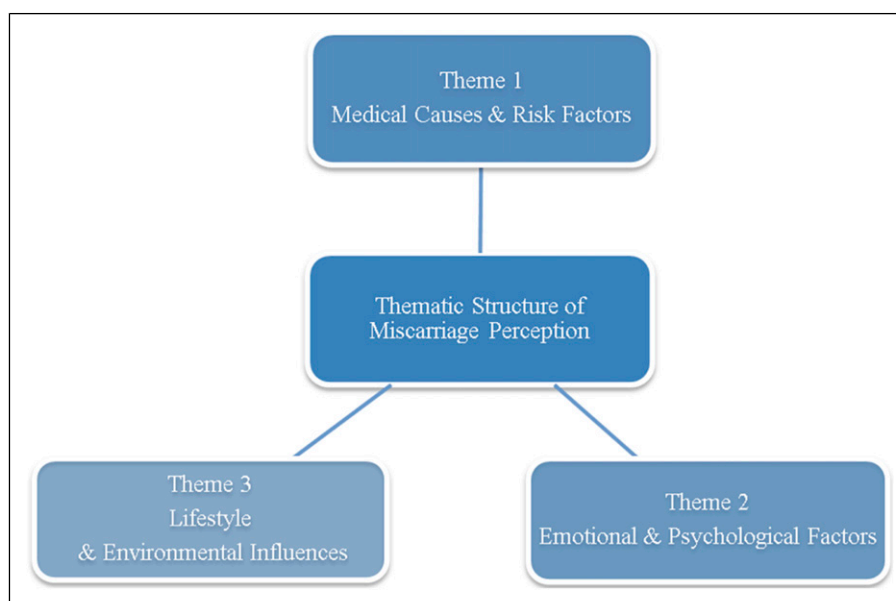


Figure 1. Conceptual Thematic Diagram.

Table 3. Overview of themes and subthemes.

Themes	Subthemes
Medical causes and risk factors	Chromosomal abnormalities Hormonal and metabolic disorders Autoimmune diseases Structural abnormalities of the uterus Advanced parental age and pre-existing conditions
Lifestyle and environmental influences	Poor diet lack of physical activity maternal obesity or underweight Waterpipe tobacco smoking, cigarette use, tobacco and alcohol consumption Exposure to modern devices (mobile phones and microwaves)
Emotional and psychological factors	Mental and Emotional tension Marital conflicts Economic difficulties Anxiety and Fear Depression

Despite articulating medical causes and risk factors, participants in all three groups disclose that miscarriage remains an inherently unpredictable and complex experience, often accompanied by a perceived lack of control. Overall, healthcare providers primarily described miscarriage in terms of established biomedical causes, including chromosomal abnormalities, maternal health conditions, and uterine abnormalities. Women with a history of miscarriage also referred to these medical explanations, but more frequently related them to their own pregnancy experiences and personal concerns about why the miscarriage had occurred. These findings indicate that, while both groups recognised biomedical causes, women's accounts were grounded in their individual experiences of pregnancy loss.

Theme 2: Lifestyle and Environmental Influences

Obstetricians and gynecologists emphasized lifestyle factors such as poor diet, physical inactivity, obesity, smoking, waterpipe tobacco smoking, and alcohol consumption as major contributors to miscarriage:

“Nowadays, people do not exercise and overeat, leading to obesity and related problems. Smoking, waterpipe tobacco smoking, and alcohol use have also become more common” (Ob/Gyn, P2).

Midwives also believed that unhealthy diets, high stress, obesity, advanced maternal age, and exposure to tobacco and alcohol increased the risk of miscarriage. Some also expressed concerns about prolonged exposure to modern devices such as mobile phones and microwaves. As one midwife explained:

“Unfortunately, there is an increase in the use of alcohol, waterpipe tobacco smoking, and psychoactive substances use, as well as increased use of devices like microwaves and mobile phones, which may also affect miscarriage” (Midwife, P3).

Women reflected on their own behaviours that may have contributed to their miscarriages. They described adopting healthier habits after experiencing multiple pregnancy losses, hoping these changes would help prevent future miscarriages. As one women explained:

“After my first miscarriage, I started eating more healthily. I thought that if I did everything right, I could prevent it from happening again” (Women, P5).

Another women said: *“My mother always warned me not to stand near the microwave because it could harm the baby, or not to use a mobile phone too much when you are pregnant” (Women, P4).*

“Everyone around me said carrying heavy things causes miscarriage” (Women, P1).

In this theme healthcare providers highlighted lifestyle and environmental factors as potential contributors to miscarriage, including smoking, obesity, poor nutrition, and environmental exposures. Women with a history of miscarriage similarly described adopting or modifying health-related behaviours, such as improving their diet and avoiding activities they believed might increase the risk of miscarriage. Their accounts reflected attempts to reduce the perceived risk of future miscarriage based on their personal experiences and understanding of pregnancy loss. Some women also described beliefs influenced by advice from family members and shared community views, particularly about environmental exposures such as microwave ovens and mobile phone use, despite the limited scientific evidence supporting these perceived risk factors.

Theme 3. Emotional and Psychosocial Factors

Emotional and psychological factors were highlighted across all participant groups. Obstetricians emphasized that maternal mental and emotional tension can significantly influence pregnancy outcomes.

“Women today face increasing psychological and emotional stress due to life pressures and marital conflict, which I believe may contribute to miscarriage” (Ob/Gyn, P2).

Midwives noted that many women with a history of miscarriage experience significant psychological challenges during pregnancy, including emotional strain related to economic hardship and interpersonal conflict. As one midwife explained:

“Financial difficulties, emotional strain, and marital conflict can all affect maternal mental health and contribute to miscarriage” (Midwife, P5).

Another midwife said, *“In my experience, sudden fright, emotional shock, and psychological pressure, especially problems with a woman’s husband, can make women more vulnerable to miscarriage” (Midwife, P 9).*

Women with a history of miscarriage also perceived psychological stress and family-related problems as factors that may have contributed to their miscarriage. As one participant explained: *“Family problems and anxiety affected my pregnancy. I was under a lot of pressure before the miscarriage” (Woman, P2).*

Both healthcare providers and women with a history of miscarriage identified psychological stress as an important perceived contributor to miscarriage. Healthcare providers discussed stress primarily as a clinical risk factor, whereas women described stressful life circumstances and emotional distress that they believed affected their pregnancies. In both groups, perceptions of stress as a risk factor for miscarriage seemed to be influenced by a mix of clinical experience, personal experiences, and shared social and cultural beliefs.

Discussion

This study provides a glimpse into how contemporary Iranian perceptions of miscarriage reveal a complex interplay of medical, environmental, and psychosocial reasons for miscarriage. The study indicates that medical conditions, lifestyle choices, environmental factors, and mental health significantly shape these groups’ perceptions and experiences of miscarriage.

Although this qualitative descriptive study was not designed to systematically undertake formal comparison between participant groups; we acknowledge the social and professional differences occupied by women and healthcare providers. While healthcare providers and women identified the same perceived causes of miscarriage, their interpretations reflected different forms of knowledge and experience. Healthcare providers primarily drew on biomedical knowledge and clinical experience, emphasising recognised medical risk factors and preventive strategies. In contrast, women interpreted miscarriage through their lived experiences, often integrating emotional, familial, cultural and social influences into their explanations. These perspectives should be seen as complementary rather than contradictory, reflecting the different roles and positions that healthcare providers and women occupy within the healthcare system. Recognising these differences is important for promoting patient-centered communication and culturally sensitive care, enabling healthcare professionals to better understand women’s explanatory beliefs, address misconceptions respectfully and provide support that integrates biomedical evidence with women’s lived experiences.^{20,36}

It is important to distinguish between evidence-based medical causes of miscarriage and participants’ socially shaped or perceived explanations. While many participants identified established biomedical risk factors such as chromosomal abnormalities, advanced maternal age, and metabolic disorders, others attributed miscarriage to culturally embedded beliefs or exposures for which scientific evidence remains limited (e.g., mobile phone or microwave oven use). This distinction is

especially relevant when interpreting lifestyle and environmental explanations, which often reflect social narratives rather than validated causal pathways.³

Furthermore, when applying a feminist lens, the study findings illuminate how these perceptions are influenced by gendered expectations that position women as responsible for reproductive outcomes, making them more vulnerable to internalizing socially circulated explanations particularly when biomedical causes are uncertain or invisible.⁶ Whilst participants' descriptions of biomedical causes closely reflected established scientific evidence, particularly regarding chromosomal abnormalities, advanced maternal age, and chronic maternal conditions as major contributors to early miscarriage,^{37,38} they do not represent women's perceptions and experiences. Recognizing gendered differences ensures that findings foreground a more comprehensive understanding of participants' changing perceptions and experiences rather than definitive mechanisms. This highlights the need for clear, respectful public health education that addresses misconceptions while validating women's experiences.³⁹ Healthcare providers also emphasized pre-conception management of chronic illnesses and regular prenatal care, consistent with global clinical recommendations.⁴⁰ A feminist perspective, however, highlights how the dominance of biomedical discourses can marginalize women's embodied knowledge and reinforce expectations that women must regulate their bodies perfectly to ensure a successful pregnancy.⁴¹ This strong alignment suggests that local clinical perspectives broadly reflect international medical knowledge on miscarriage.

Healthcare providers also emphasized lifestyle-related risks, particularly obesity, tobacco use and alcohol use, which align with established evidence linking these behaviours to adverse pregnancy outcomes.^{42,43} Some midwives also attributed miscarriage to environmental exposures such as mobile phone or microwave use; however, current evidence for these associations remains inconclusive.⁴⁴ These findings demonstrate the intersection of biomedical knowledge and socially shaped beliefs in participants' explanations. This highlights the need for further research on emerging environmental exposures and for clear, evidence-based public health communication that addresses misconceptions without causing unnecessary concern.⁴⁵

The findings also suggest that some perceptions of miscarriage risk were shaped by social and cultural influences. Beliefs regarding environmental exposures, psychological stress, and certain lifestyle practices appeared to be reinforced through advice from family members and shared community understandings. Similar findings have been reported in Iranian studies, where family, healthcare providers, and broader sociocultural beliefs influence women's perceptions and experiences of pregnancy loss.⁴⁶

In this study, participants consistently noted that social and psychological distress can adversely affect pregnancy outcomes. This aligns with other evidence demonstrating that poor psycho-emotional health can negatively impact pregnancy.⁴⁷ Mothers emphasized the need to prioritize mental health support, particularly for women with a history of pregnancy loss. These perspectives show how emotional experiences shape women's understanding of miscarriage risk, highlighting a gap between biomedical care and the psychological support that is perceived as necessary. From the feminist perspective this reflects how biomedical models often privilege clinical definitions of risk while overlooking women's embodied knowledge and emotional realities, thus reinforcing a hierarchical system in which women's subjective experiences are devalued.⁴⁸

Cultural and religious frameworks substantially shape psycho-social and emotional aspects of maternal wellbeing.⁴⁹ In the Iranian context, religious beliefs strongly influence how miscarriage is interpreted and managed, with studies showing that these beliefs affect women's coping responses, grief processes, and psychological adjustment to pregnancy loss. Islamic views, which frame pregnancy outcomes as predetermined events, may make women less likely to seek medical or psychological support.⁵⁰ In addition, previous research has demonstrated that social stigma and fears of blame or marital tension lead many women to conceal miscarriage, while beliefs linking loss to bad luck reinforce this secrecy.¹⁶ These factors highlight the need for culturally sensitive, psychosocially informed post-miscarriage care.

It is also important to recognize that communication about miscarriage does not occur in a neutral space but is shaped by healthcare hierarchies and gendered power dynamics.⁴⁸ In Iran, as in many reproductive health settings, clinicians often hold greater authority than patients, which may limit women's ability to ask questions, express concerns, or challenge medical explanations.¹⁶ Feminist and reproductive justice perspectives emphasize that women's reproductive experiences are influenced not only by biology but also by structural inequities, cultural expectations of motherhood, and unequal power relations within the healthcare system.²⁰ Recognizing these dynamics provides additional context for understanding how women interpret miscarriage-related information and may help explain variations in the emotional responses and help-seeking patterns identified in this study.²¹

A feminist and gender-sensitive theoretical lens highlights how perceptions of miscarriage are shaped by patriarchal and pronatalist norms that position women as primarily responsible for reproductive success. In this context, miscarriage can become moralized, leading women to internalize blame even when biomedical causes are evident.⁵¹ Societal expectations regarding bodily control can affect how miscarriage is perceived, either as an unavoidable biological event or as a personal

failure. These norms influence women's emotional responses and their willingness to seek help, as well as their need for care in the face of unfair reproductive expectations.⁵²

Recommendations

Recommendations from this study includes a necessary focus on mental health because psycho-emotional morbidity can significantly impact recovery after miscarriage. This translates as a need to incorporate mental health screening as a routine component of care for all women, especially those who have miscarried. This screening needs to be concurrent with the provision of emotional support and counseling as required.¹⁴ A holistic approach to care, that includes medical, obstetric and psycho-emotional health is critical to mitigate the emotional challenges associated with miscarriage and promote overall women's well-being.³

While the participants reflected on the causes of miscarriage, they also suggested actionable strategies to minimize these risks. Their findings, based on both medical expertise and their own experiences, emphasized the need for proactive measures in three key areas: Testing and screening, psychological support and maternal education. Integrating these recommendations with feminist principles of embodied care and reproductive autonomy highlights that miscarriage care must extend beyond biomedical management to include emotional, informational, and decision-making support. A feminist perspective highlights the importance of promoting autonomy through respectful communication. Presenting the recommendations in this way emphasizes the need for comprehensive, patient-centered care that addresses the clinical, emotional, and structural aspects of miscarriage.

Limitations and Strengths

The regional focus of this study limits the transferability of the findings to other cultural and healthcare settings. In addition, although data saturation was achieved, the relatively small number of participants within each subgroup may have restricted the diversity of perspectives captured, particularly those associated with different socioeconomic, educational, and cultural backgrounds. Future studies that recruit participants from multiple regions and more diverse populations may provide a broader understanding of perceptions of miscarriage.

As with all qualitative research, the interpretation of the data may have been influenced by the researchers' perspectives. This was addressed through transparent reporting of the research team's positionality, collaborative data analysis, framework analysis, and peer debriefing. Social desirability bias may also have influenced participants' responses; however, including participants with diverse clinical and lived experiences strengthened the credibility of the findings.

Conclusion

This study provides insights into how obstetricians, midwives, and women with a history of miscarriage perceive its causes within the Iranian context. Healthcare providers primarily explained miscarriage in biomedical terms, whereas women with a history of miscarriage often interpreted its causes through their personal experiences and efforts to make sense of pregnancy loss. Both groups identified medical, lifestyle, environmental, and psychological factors as important perceived contributors, although some beliefs reflected cultural understandings rather than established scientific evidence. These findings highlight the importance of providing evidence-based, culturally sensitive communication and supportive miscarriage care that acknowledges both clinical knowledge and women's lived experiences. Further research in diverse settings is needed to explore these perceptions and to inform the development of culturally appropriate educational resources and interventions for miscarriage care.

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Ethical considerations

Ethical approval for this study was obtained from the Human Research Ethics Committee of Kerman University under approval number IR.KMU.REC.1403.246 on 27 August 2024.

Consent to participate

Written informed consent was obtained from all participants before their involvement in the study.

Author contributions

FA: conceptualization, writing – original draft, validation, resources, project administration, and visualization. SC: supervision, writing – review & editing, methodology, and formal analysis. NB: data curation, investigation, and software. OH: data curation, investigation, and software.

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Data Availability Statement

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Artificial intelligence disclosure

Claude AI (Anthropic) was used for grammar and spelling checking only. All scientific content, data analysis, interpretation, and conclusions were written by the authors. The authors alone are responsible for all content and any errors in this publication.

Supplemental material

Supplemental material for this article is available online.

References

1. Galeotti M, Mitchell G, Tomlinson M, et al. Factors affecting the emotional wellbeing of women and men who experience miscarriage in hospital settings: a scoping review. *BMC pregnancy and childbirth* 2022; 22(1): 270. <https://doi.org/10.1186/s12884-022-04585-3>
2. Blohm F, Fridén B and Milsom I. A prospective longitudinal population-based study of clinical miscarriage in an urban Swedish population. *Bjog* 2008; 115(2): 176–182. discussion 83. <https://doi.org/10.1111/j.1471-0528.2007.01426.x>
3. Quenby S, Gallos ID, Dhillon-Smith RK, et al. Miscarriage matters: the epidemiological, physical, psychological, and economic costs of early pregnancy loss. *The Lancet* 2021; 397(10285): 1658–1667. [https://doi.org/10.1016/s0140-6736\(21\)00682-6](https://doi.org/10.1016/s0140-6736(21)00682-6)
4. Moradinazar M, Najafi F, Nazar ZM, et al. Lifetime prevalence of abortion and risk factors in women: evidence from a cohort study. *Journal of pregnancy* 2020; 2020(1): 4871494. <https://doi.org/10.1155/2020/4871494>
5. Hojati M, Izadi S and Mansourian M. Epidemiology of Spontaneous Abortion in Iran: A Comprehensive Analysis of Demographic, Socioeconomic, Fertility, Clinical Characteristics, and Lifestyle Factors, 2025, Version published to <https://doi.org/10.21203/rs.3.rs-6461180/v1> on Research Square, May 9, 2025.
6. Hamper J. *Pregnancy without birth: a feminist philosophy of miscarriage*: by Victoria Browne, 2023. Bloomsbury Publishing, 2024, p. 217.
7. Lee JMY, Feeley C and Wyatt D. A systematic review and thematic synthesis of women's coping strategies for early to late miscarriage. *Women and Birth* 2026; 39(1): 102144. <https://doi.org/10.1016/j.wombi.2025.102144>
8. Kukulskienė M and Žemaitienė N (eds). *Experience of late miscarriage and practical implications for post-natal health care: qualitative study*. Healthcare. MDPI, 2022.
9. MacDorman MF and Gregory EC. Fetal and Perinatal Mortality: United States, 2013. *Natl Vital Stat Rep* 2015; 64(8): 1–24.
10. Finley J, Hay S, Oldziej J, et al. The genomic basis of sporadic and recurrent pregnancy loss: a comprehensive in-depth analysis of 24,900 miscarriages. *Reprod Biomed Online* 2022; 45(1): 125–134. <https://doi.org/10.1016/j.rbmo.2022.03.014>
11. Banno C, Sugiura-Ogasawara M, Ebara T, et al. Attitude and perceptions toward miscarriage: a survey of a general population in Japan. *Journal of Human Genetics* 2020; 65(2): 155–164. <https://doi.org/10.1038/s10038-019-0694-1>
12. Bender AR, Christiansen OB, Elson J, et al. ESHRE guideline: recurrent pregnancy loss: an update in 2022. *Hum Reprod Open* 2023; 2023(1): hoad002. <https://doi.org/10.1093/hropen/hoad002>

13. Neiger R. Long-Term Effects of Pregnancy Complications on Maternal Health: A Review. *J Clin Med* 2017; 6(8): 76. <https://doi.org/10.3390/jcm6080076>
14. Farren J, Jalmbrant M, Falconieri N, et al. Posttraumatic stress, anxiety and depression following miscarriage and ectopic pregnancy: a multicenter, prospective, cohort study. *American journal of obstetrics and gynecology* 2020; 222(4): 367.e1–367.e22. <https://doi.org/10.1016/j.ajog.2019.10.102>
15. Lee L, Ma W, Davies S, et al. Toward optimal emotional care during the experience of miscarriage: an integrative review of the perspectives of women, partners, and health care providers. *Journal of Midwifery & Women's Health* 2023; 68(1): 52–61. <https://doi.org/10.1111/jmwh.13414>
16. Haseli A, Rahnejat N and Rasool D. Reasons for unsafe abortion in Iran after pronatalist policy changes: a qualitative study. *Reprod Health* 2024; 21(1): 182. <https://doi.org/10.1186/s12978-024-01929-4>
17. Lacci-Reilly KR. *Communicative Needs of Patients Who Experience Miscarriage: Understanding Healthcare Communication and Reproductive Self-Efficacy*. Doctoral thesis, The University of North Carolina at Charlotte, 2022.
18. de Beauvoir S. *The Second Sex Vintage Series* (Borde C and Malovany-Chevallier S, Trans). Vintage Books, 2011.
19. Rich A. *Of Woman Born: Motherhood as Experience and Institution*. W. W. Norton, 1976.
20. Kapadia F. Reproductive Justice Matters: A Public Health of Consequence, August 2022. *Am J Public Health* 2022; 112(8): 1107–1109. <https://doi.org/10.2105/AJPH.2022.306959>
21. Hall B, Akwatu C and Danvers AA. Reproductive Justice as a Framework for Abortion Care. *Clin Obstet Gynecol* 2023; 66(4): 655–664. <https://doi.org/10.1097/grf.0000000000000811>
22. O'Brien BC, Harris IB, Beckman TJ, et al. Standards for reporting qualitative research: a synthesis of recommendations. *Acad Med* 2014; 89(9): 1245–1251. <https://doi.org/10.1097/ACM.0000000000000388>
23. Dennehy R, Hennessy M, Meaney S, et al. How we define recurrent miscarriage matters: A qualitative exploration of the views of people with professional or lived experience. *Health Expect* 2022; 25(6): 2992–3004. <https://doi.org/10.1111/hex.13607>
24. Saunders B, Sim J, Kingstone T, et al. Saturation in qualitative research: exploring its conceptualization and operationalization. *Qual Quant* 2018; 52(4): 1893–1907. <https://doi.org/10.1007/s11135-017-0574-8>
25. Alvesson M, Sandberg J and Einola K. Reflexive design in qualitative research. In: *The SAGE handbook of qualitative research design*. Sage Publications, 2022, pp. 23–40.
26. Ahlness EA and Mog A. Reflexivity Across the Research Process: A Metasynthesis and Integration Model of Exemplary Practices. *Qual Health Res* 2025; 35(2): 10497323251384538. <https://doi.org/10.1177/10497323251384538>
27. Nowell LS, Norris JM, White DE, et al. Thematic analysis: Striving to meet the trustworthiness criteria. *International journal of qualitative methods* 2017; 16(1): 1609406917733847. <https://doi.org/10.1177/1609406917733847>
28. Tracy SJ. Qualitative quality: Eight “big-tent” criteria for excellent qualitative research. *Qualitative inquiry* 2010; 16(10): 837–851. <https://doi.org/10.1177/1077800410383121>
29. Birks M and Mills J. *Grounded theory: A practical guide*. Sage Publications, 2022.
30. Saldaña J. *The coding manual for qualitative researchers*. Sage Publications, 2021.
31. Timmermans S and Tavory I. Theory construction in qualitative research: From grounded theory to abductive analysis. *Sociological theory* 2012; 30(3): 167–186. <https://doi.org/10.1177/0735275112457914>
32. Braun V and Clarke V. *Thematic analysis: A practical guide*. Sage Publications, 2021.
33. Thomas DR. A general inductive approach for analyzing qualitative evaluation data. *American journal of evaluation* 2006; 27(2): 237–246. <https://doi.org/10.1177/1098214005283748>
34. Ritchie J and Spencer L. Qualitative data analysis for applied policy research. In: *Analyzing qualitative data*. Routledge, 2002, pp. 173–194.
35. Silver C and Lewins A. *Using software in qualitative research: A step-by-step guide*. 2nd ed. Sage, 2014.
36. Mirtabar SM, Barat S, Kheirkhah F, et al. Experiences of women with threatened abortion: a qualitative study of pregnant women and health providers in Iran. *BMC Health Serv Res* 2025; 25(1): 550. <https://doi.org/10.1186/s12913-025-12682-0>
37. Magnus MC, Wilcox AJ, Morken NH, et al. Role of maternal age and pregnancy history in risk of miscarriage: prospective register based study. *Bmj* 2019; 364: l869. <https://doi.org/10.1136/bmj.l869>
38. Okoth K, Subramanian A, Chandan JS, et al. Long term miscarriage-related hypertension and diabetes mellitus. Evidence from a United Kingdom population-based cohort study. *PLoS One* 2022; 17(1): e0261769. <https://doi.org/10.1371/journal.pone.0261769>
39. Meaney S, Corcoran P, Spillane N, et al. Experience of miscarriage: an interpretative phenomenological analysis. *BMJ open* 2017; 7(3): e011382. <https://doi.org/10.1136/bmjopen-2016-011382>
40. Khakeade H, Potdukhe A, Taksande AB, et al. Preconception care: a strategic intervention for the prevention of neonatal and birth disorders. *Cureus* 2023; 15(6): e41141. <https://doi.org/10.7759/cureus.41141>
41. Andipatin MG, Naidoo AD and Roomaney R. The hegemonic role of biomedical discourses in the construction of pregnancy loss. *Women Birth* 2019; 32(6): e552–e559. <https://doi.org/10.1016/j.wombi.2019.03.006>

42. Iqbal Z, Jilane SDA, Uppada LP, et al. Evaluating the Clinical Risk Factors Associated With Miscarriages in Women in Karachi, Pakistan. *Cureus* 2021; 13(10): e19057. <https://doi.org/10.7759/cureus.19057>
43. Sundermann AC, Zhao S, Young CL, et al. Alcohol Use in Pregnancy and Miscarriage: A Systematic Review and Meta-Analysis. *Alcohol Clin Exp Res* 2019; 43(8): 1606–1616. <https://doi.org/10.1111/acer.14124>
44. Abad M, Malekafzali H, Simbar M, et al. Association between electromagnetic field exposure and abortion in pregnant women living in Tehran. *Int J Reprod Biomed* 2016; 14(5): 347–354.
45. Hoeger KM and Piltonen TT. The Environment and Reproduction. *Semin Reprod Med* 2024; 42(4): 249–250. <https://doi.org/10.1055/s-0044-1801397>
46. Shahry PAF, Sereshti M and Vasegh Rahimpour F. Surrounded by the Misconceptions of Significant Others: The Main Concerns of Iranian Women Following Perinatal Loss. *Journal of Evidence Based Medicine and Healthcare* 2022; 9(10): 1–6.
47. Traylor CS, Johnson JD, Kimmel MC, et al. Effects of psychological stress on adverse pregnancy outcomes and nonpharmacologic approaches for reduction: an expert review. *Am J Obstet Gynecol MFM* 2020; 2(4): 100229. <https://doi.org/10.1016/j.ajogmf.2020.100229>
48. Malory B. *Language, Gender and Pregnancy Loss*. Cambridge University Press, 2025.
49. Crowther S, Stephen A and Hall J. Association of psychosocial–spiritual experiences around childbirth and subsequent perinatal mental health outcomes: an integrated review. *Journal of Reproductive and Infant Psychology* 2020; 38(1): 60–85. <https://doi.org/10.1080/02646838.2019.1616680>
50. Allahdadian M and Irajpour A. The role of religious beliefs in pregnancy loss. *J Educ Health Promot* 2015; 4: 99. <https://doi.org/10.4103/2277-9531.171813>
51. Miller SC. The Moral Meanings of Miscarriage. *Journal of Social Philosophy* 2015; 46(1): 141–157. <https://doi.org/10.1111/josp.12091>
52. Makleff S, Wilkins R, Wachsmann H, et al. Exploring stigma and social norms in women's abortion experiences and their expectations of care. *Sex Reprod Health Matters* 2019; 27(3): 1661753. <https://doi.org/10.1080/26410397.2019.1661753>