

Experiences of emergency medical services personnel about barriers and facilitators in prehospital childbirth missions in Iran: a qualitative study

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Abstract: **Objective:** In Iran, the majority of emergency medical services (EMS) personnel are male; hence, one of their distinct and crucial missions is the prehospital childbirth mission, which might be significantly challenging for both personnel and patients. To obtain in-depth and authentic data, the present study was conducted to elucidate the barriers and facilitators of prehospital childbirth missions based on the experiences of EMS personnel. **Methods:** A qualitative study employing conventional content analysis was conducted in 2023. Participants were selected through purposive sampling from EMS personnel willing to participate in the study and who have experiences with missions leading to childbirth. Data saturation was reached through in-depth semi-structured interviews with 14 participants. Data accuracy and credibility were confirmed using the Lincoln & Guba criteria. **Results:** The results included two main themes including barriers and facilitators. Barriers were categorized into "gender-related barriers" and "personnel barriers." While "appropriate communication" and "efforts to preserve privacy" were the primary facilitator themes. **Conclusion:** The findings revealed that EMS personnel face considerable barriers in the process of these missions. Therefore, for optimal performance quality in this prominent mission, it is recommended that clinical and educational policymakers consider actively recruiting female personnel, focusing on enhancing communication and practical skills and securing the patient's privacy. These approaches can result in childbirth missions with lower stress levels for patients, families, and personnel who provide the service.

Keywords: Childbirth; Emergency Medical Services; Prehospital; Qualitative Study

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1. Introduction

Personnel of emergency medical services (EMS) represent one of the primary healthcare provider groups with direct contact with various patient populations. Throughout their activities, they experience diverse missions, such as providing care to patients with cardiac, neurological, respiratory, orthopedic, accident-related, and conflict-related issues (1). Among these missions, prehospital childbirth stands out as a crucial and distinct mission compared to others. Prehospital childbirth missions differ significantly due to various factors, including the severe pain and stress experienced by mothers during childbirth, the sensitivity of patient companions to the health of the mother and newborn, substantial healthcare criteria, and more stringent oversight by healthcare organizations. Additionally, the gender difference between personnel and patients can present more challenges

(2). The study of Khazaei and colleagues has demonstrated that gynecology and childbirth missions are among the most stress-inducing missions reported by the personnel of EMS (3). Furthermore, most of the personnel have not received proper training related to prehospital childbirth in a practical manner and in real environments which results in inadequate preparedness and self-assurance, especially among less-experienced staff (4).

The majority of EMS personnel in Iran are male, so the gender-based challenge in delivering and receiving care, particularly in the most private and intimate conditions, can be one of the most important challenges. Even though, in some childbirth missions, midwives are also dispatched along with personnel of medical emergencies, it is not always possible, especially during evening and night shifts and in rural areas. Therefore, personnel of medical emergencies are mostly dispatched to such missions without the attendance of a mid-

wife or a female healthcare professional (5). Studies show that male personnel in caring for female patients face various problems such as non-cooperation, verbal violence, and even sexual accusations, and these problems are also highly influenced by cultural and religious beliefs (2,4). However, according to the ethical codes, the EMS personnel are expected to provide appropriate and complete care to patients of both genders without discrimination (6). In Iran, interactions between males and females have significant limitations due to cultural and religious beliefs. Iranian women prefer to receive care from healthcare personnel of the same gender due to such beliefs (7). Conversely, healthcare personnel prefer to provide care to patients of the same gender (8). Iranian healthcare settings aim to separate patients based on gender in hospital wards and assign same-gender nurses to care for patients (8). However, in prehospital settings, the attendance of female personnel is not always feasible, given that the majority of trained EMS personnel are male. Although in recent years female healthcare workers have been recruited as EMS personnel their numbers remain limited, and in most centers, female staff are not available (9).

Considering that the experiences of EMS personnel in providing service in childbirth missions are a vast and multi-dimensional process, it is necessary to collect data from the people who have undergone such experiences in order to identify the challenges in this field and to plan future amendments that can help make the patients more comfortable and improve the performance of EMS personnel. In order to obtain in-depth information, the utilization of quantitative methods may lead to limited and superficial data as well as the potential for losing some data. Therefore, the present study adopts a qualitative method with the aim of exploration the experiences of personnel of EMS regarding the barriers and facilitators when undertaking childbirth missions.

2. Methods

2.1. Study design

This investigation employed a qualitative approach and conventional content analysis. The design aimed to obtain comprehensive insights into the explored phenomenon. This type of exploration seeks understanding through personal interpretations, researcher-participant interchanges, and values. Data interpretation comprised priori coding, subcategories, and principal categories (10).

2.2. Study participants

The 14 personnel of EMS teams who expressed a willingness to participate in the study and had experience conducting prehospital childbirths were selected through purposive sampling and then interviewed. All participants were male, aged between 24 and 45, having work experience extending from 1 to 19 years, and had the experience of participating in between 1 to 12 childbirth missions culminating in birth. The study was conducted in Sanandaj, Iran, between 15 March

and 20 July 2023.

2.3. Data collection and procedure

Data were collected through in-depth semi-structured interviews led by the principal investigator in a quiet ambiance at the participants' workplace. The interviews were recorded using an audio recording device. Participants were apprised of the confidentiality and anonymity of the data prior to the interviews. Interviews commenced with semi structured approach the general questions of "please explain your experiences from the childbirth missions" and "please mention examples of your experiences in this matter." Then, based on the interview process and the findings, other questions were asked to obtain more in-depth information. At the end of each interview, the participant was asked to mention any experience related to the purpose of the study that wasn't asked, if they wanted. Interviews typically lasted between 30 to 40 minutes. Data examination commenced instantly following the first interview and continued until data saturation was attained through not emerging new codes, albeit diverse participant selection in the last two interviews was confirmed.

2.4. Ethical consideration

This study was approved by the Ethics Committee of the Kurdistan University of Medical Sciences with approval code: IR.MUK.REC.1401.278. Ethical considerations in the investigation comprised stating the study's intent and obtaining informed consent from participants and ensuring data confidentiality and anonymity.

2.5. Statistical analysis

Data analysis was conducted using the Graneheim and Lundman approach, involving five stages: 1) transcription of each interview after completion, 2) reading the interview transcripts to gain a general understanding of the content, 3) identifying primary units and priori codes, 4) categorizing priori codes into broader subcategories, and 5) defining subcategories and principal categories (10). After each session, the recorded interviews were transcribed by corresponding author and then reviewed several times to obtain an initial idea and general understanding of the data. Next, the interviews were read line by line, and the initial coding was carried out to find the ideas related to the barriers and facilitators in prehospital childbirth missions. Subcategories were then formed according to the similarities in the initial codes, and categories were later formed according to the differences and similarities between these subcategories.

Finally, the main themes were identified and appropriately named. MAXQDA-10 was used to simplify data classification and analysis. Moreover, all the members of the study team were involved in the process of data analysis, and the textual data were separately coded and compared by each team member. Disagreements were resolved through discussions until a final consensus was reached.

2.6. Rigor and trustworthiness

The data were validated through the criteria of credibility, confirmability, dependability, and transferability (11). To enhance credibility, data collection involved a lengthy period, and a diverse selection of participants with various demographic characteristics. Data analysis was conducted in collaboration with all members of the research team, and final agreement was reached. Furthermore, to align the researcher's interpretations with the participants, sentences or some parts of sentences were paraphrased for the participants during interviews. Finally, the data were shared with four individual participants to assess their agreement with their experiences and perspectives, and their approval was obtained.

To assess confirmability, the data were compared with the interpretations of a qualitative research specialist outside the research team after providing the data to them. This comparison showed a high level of agreement between the research team's analysis and the external researcher.

To increase dependability, the research process was described in detail to allow for follow-up by other researchers. The study's context and participant characteristics were described to facilitate decision-making regarding the applicability of the study's results in different settings.

3. Results

The results encompassed 283 priori codes, eight subcategories, four sub-themes, and two main themes (Table 1).

Barriers

1. Gender barriers

1.1. Non-acceptance of male personnel: This subcategory was extracted from priori codes including not addressing male personnel during the childbirth process, patient reluctance to accept male personnel, aggression towards male personnel, and inquiries about the absence of female personnel by patient companions.

Upon arriving at the mission scene, the husband of a patient astonishingly asked when men have been providing midwifery and childbirth care. This is not accurate.

1.2. Fear of accusation of privacy invasion: This subcategory extracted from priori codes including instances of the fear of invading the patient's privacy, fear of accusations from the patient, and fear of accusations from the patient's companions.

We had a patient whose husband was not home and only her sister was home. By the arrival of the husband, I was at his wife's bedside, and because she was exposed, I was worried that the husband would accuse me of invading her privacy.

2. Personnel barriers

2.1. Lack of access to midwives: This subcategory was extracted from priori codes including the absence of midwives during the night shift and the absence of midwives in certain healthcare centers.

We had a mission that was at 11:00 pm and due to the ab-

sence of a midwife accompanying us as male personnel, tensions arose between the patient's family and ourselves, as family members did not consent to take necessary actions.

2.2. Non-professional personnel: This subcategory was extracted from priori codes including inexperience, lack of sense of responsibility among colleagues, and a lack of practical training in real

I will never forget the fear and stress I experienced on my initial mission related to childbirth regarding what actions I ought to take and what I should do because I had no previous experience of real childbirth whilst studying at university.

Facilitators

1. Appropriate communication: This category is extracted from two subcategories, "appropriate communication with the patient" and "appropriate communication with the patient's companions."

1.1. Appropriate communication with the patient: This subcategory extracted from priori codes including obtaining consent before procedures, explaining the process, and providing a description of the newborn's condition to the patient.

- Foremost, the patient, who was around 30 years of age from a village, did not allow us to provide care, but my colleague explained to her that our aim was to help, and she was not the first female patient in the childbirth mission for us and she was like his sister. Then, the patient gradually allowed herself to be cared for and the necessary actions were taken for her.

1.2. Appropriate communication with the patient's companions: This subcategory extracted from priori codes including obtaining permission from the patient's companions, providing information about the patient's condition, and explaining the newborn's condition.

- The patient was a young woman, and the family's concerns were heard from the other room, so I explained to them for a few moments that the condition of the patient and the baby was fine. They thanked me and their noise and worries decreased.

2. Efforts to preserve the patient's privacy: This category included two subcategories, "minimal entry into the private space" and "involving the patient's companions."

2.1. Minimal entry into the patient's privacy: This subcategory extracted from priori codes including minimizing the number of individuals present in the delivery room, refraining from unnecessary observation of the patient's genital area, and ensuring minimal exposure.

- When we arrived at the scene, we encountered a young lady as patient who had many people of both sexes and different ages in her house, and the patient was very upset as to why she had to give birth in such crowded conditions. We talked to the people and the patient's room got quiet. The patient calmed down and thanked me for this action.

2.2. Involving the patient's companions: This subcategory extracted from priori codes including actively engaging the patient's companions to reduce the patient's stress, make the

Table 1 Themes, categories, and subcategories of interviews with EMS personnel about prehospital childbirth experiences

Themes	Categories	Subcategories
Barriers	Gender barriers	Non-acceptance of male personnel
		Fear of accusation of privacy invasion
	Personnel barriers	Lack of access to midwives
		Non-professional personnel
Facilitators	Appropriate communication	Appropriate communication with the patient
		Appropriate communication with the patient's companions
	Efforts to preserve the patient's privacy	Minimal entry into the patient's privacy
		Involving the patient's companions

healthcare providers more comfortable, and facilitate the patient's ability to ask questions.

- We had a young patient who had the first experience of giving birth, and when we started the procedures, she was anxious and asked why you don't have female personnel. I told one of the ladies of their family to come closer and help us as it was necessary so that our contact and look at the patient got lessened. The patient calmed down and felt better.

4. Discussion

The current study demonstrated that the EMS personnel face specific barriers in childbirth missions. However, based on their fruitful experiences, facilitating factors also play a role in providing superior service to these patients. One principal barrier mentioned was the gender barrier, wherein a subcategory is the non-acceptance of male personnel. Previous studies have indicated this refusal can significantly impact a patient's access to medical care (12,13). The non-acceptance of the opposite gender by patients may be influenced by the extent of privacy exposure and physical contact required, as previous studies have shown the foremost reason for female patients not accepting male care providers relates to receiving care concerning their privacy (12,14). During the birthing process, the patient's most intimate areas are exposed to medical staff, which makes accepting male personnel rather challenging. At the same time, religious and cultural beliefs in Iran concerning the degree of contact and communication permitted between unrelated men and women indicate serious limitations as such conditions are considered haram. Childbirth undoubtedly involves a substantial degree of contact and witnessing of private areas. Therefore, the importance of preserving the infant's life makes it comprehensible why parents allow receiving care from male personnel. Declining care from male personnel can potentially result in delayed care interventions and consequently risks increase of serious consequences for the health of the mother and the infant, tensions in patient-personnel communication, unpleasant recollection of the child delivery for patients and their families, diminished job satisfaction, and employee attrition.

Another barrier subtheme is the fear of being accused of privacy invasions. To provide necessary care during childbirth personnel should touch and witness the genital area and

change the patient's body position. Such required medical procedures could be unacceptable and be considered as the personnel's intentional sexual abuse by the patient's companions. Therefore, personnel mentioned they have experienced fears of this misunderstanding, and this concept has been a barrier to safely and peacefully providing care. Although previous investigations focused on in-hospital caring, they have also highlighted the notion of fear of being accused of sexual abuse in the care of women patients by males (15,16).

One of the most critical prerequisites for delivering high-quality care is ensuring a sense of security and tranquility among healthcare personnel against people and the environment on the scene. Prehospital missions, for various reasons such as the emergent nature of the conditions, limited access to personnel and equipment, and the increased chaos due to a higher number of individuals on the scene compared to in-hospital care, entail greater stress (17). This stress considerably increases in birthing missions, which are one of the most significant healthcare service situations. Furthermore, the fear of accusation of sexual assault can further decrease concentration, increase errors, reduce service quality, and even cause employee attrition. Hence, it is necessary to prevent these issues through actions like providing comprehensive education to pregnant mothers and their families about the objectives and procedures of EMS personnel, as well as creating an environment and making efforts to increase the presence of female healthcare personnel in EMS.

Another major obstacle that emerged from the experiences was related to the quantity and quality of human resource allocation to medical emergency teams. Providing appropriate care in birthing missions, given the need to access the most private spaces of patients, necessitates personnel of the same gender. In Iran, EMS personnel are predominantly male, but in childbirth missions, if midwives are available from other healthcare centers, they are utilized. Nevertheless, access to midwifery personnel is limited as they are only present during the morning shift at healthcare centers and are not available in the afternoon or at night (9). Therefore, it is essential to situate or provide on-call midwifery personnel in terms of childbirth missions.

Furthermore, quality service provision requires prior training and preparedness. However, the EMS personnel expressed that insufficient practical experience in birthing missions

was a significant barrier to service delivery. Given that pre-hospital birthing missions inherently come with high stress and pressure for both the personnel and the patients, it is necessary for the personnel to be highly skilled in practical skills to ensure care with minimal negative consequences. Creating readiness necessitates simulation training alongside real experiences of childbirth missions as first participating as assistants and later as primary procedure conductors. Despite the existing challenges, the experiences of EMS personnel have indicated that some factors can play facilitating roles in this regard.

Establishing appropriate communication emerged as a key facilitator. This communication entails making efforts to establish clear and comprehensible verbal and non-verbal communication with the patient and their family. People require transparent and mutually comprehensible communication for the provision and receipt of human services to ensure a mutual understanding of the subject (18). In exceptional situations such as childbirth, especially when there is a difference in the gender of the service provider and receivers, appropriate communication holds more considerable importance in preventing potential misunderstandings during touches, observations, and service provision (19). Explaining the process, actions, and verbal and non-verbal expression of the real intent, which is service delivery, can greatly contribute to creating a positive atmosphere and high-quality service. Thus, EMS personnel must acquire the necessary communication skills through training and preparation on how to communicate with patients of the opposite gender, especially in special conditions such as birthing, to ensure the provision of quality service and experience less stress and tension by generating positive feedback on this matter.

Another facilitator is the effort to preserve patient privacy. Although providing service to a patient during the birthing stage, especially outside of the hospital, involves entering the patient's most private space, efforts to minimize privacy entrance can be beneficial. Previous studies have shown that patients often accept a minimal level of privacy entrance to receive appropriate care and are willing to cooperate (13,20). Undoubtedly, one of the most critical conditions for accepting the services provided by healthcare personnel is creating a sense of security and trust in the patient, which, under special circumstances, involves ensuring the patient's confidence in the personnel's efforts to respect their privacy, given each unique condition (21). Therefore, efforts should be made to preserve patient privacy as much as possible. Despite the better and more acceptable option of respecting patient privacy through the presence of midwifery personnel, due to the limitations mentioned, it is necessary to strive to maintain maximum patient coverage, restrict unnecessary physical and visual contact with the patient's private body parts, ensure privacy, and explain the purposes of actions leading to entry into the patient's private space so that the patient can be assured that efforts are being made to respect their privacy. In addition, if the entry into the patient's pri-

vate space occurs by EMS personnel, it is solely to provide care.

5. Limitations

Access to in-depth, real data on gender-related issues, particularly in Iran, presents its unique constraints. Nevertheless, by assuring participants of the confidentiality of their information and creating a comfortable interview environment, these limitations have been minimized.

6. Conclusion

The results revealed that the EMS personnel face various obstacles in carrying out birthing missions, which pose challenges for both them and the patients involved. Nevertheless, facilitating factors have been identified based on real experiences and insights provided by the participants. Therefore, given the critical nature of the birthing process, it is recommended that policymakers and clinical educators focus on the recruitment of female personnel, efforts to enhance communication skills, practical skills, and the utmost respect for patient privacy to optimize the performance of this crucial prehospital mission with reduced stress for patients, their families, and the service providers. Achieving this can reduce the risk of burnout and job attrition among personnel create positive experiences for patients and lessen the physical and psychological postpartum consequences for both mothers and infants.

7. Declarations

7.1. Acknowledgement

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7.2. Authors' contribution

all authors contributed equally to the study.

7.3. Conflict of interest

There are no personal or organizational conflicts of interest.

7.4. Funding

None.

References

1. Nohl A, Afflerbach C, Lurz C, Brune B, Ohmann T, Weichert V, et al. Acceptance of COVID-19 vaccination among front-line health care workers: a nationwide survey of emergency medical services personnel from Germany. *Vaccines*. 2021;9(5):424.

2. Cash RE, Swor RA, Samuels-Kalow M, Eisenbrey D, Kaimal AJ, Camargo CA. Frequency and severity of pre-hospital obstetric events encountered by emergency medical services in the United States. *BMC Pregnancy Childbirth*. 2021;21:1-8.
3. Khazaei A, Esmaeili M, Navab E. The most and least stressful prehospital emergencies from emergency medical technicians' view point; a cross-sectional study. *Arch Acad Emerg Med*. 2019;7(1).
4. Nishimwe A, Ibisomi L, Nyssen M, Conco DN. The effect of a decision-support mHealth application on maternal and neonatal outcomes in two district hospitals in Rwanda: pre-post intervention study. *BMC Pregnancy Childbirth*. 2022;22(1):52.
5. Ghocham SA, Valiee S, Kamyari N, Vatandost S. Level of self-care and patient care against COVID-19 among emergency medical services personnel; a cross-sectional study. *Arch Acad Emerg Med*. 2023;11(1).
6. Cheraghi F, Oshvandi K, Ahmadi F, Selsele OS, Majedi MA, Mohammadi H, et al. Comparison of nurses' and nursing students' attitudes toward care provision to opposite-gender patients. *Nurs Midwifery Stud*. 2019;8(2):104-11.
7. Sharifi S, Valiee S, Nouri B, Vatandost S, editors. Investigating patients' attitudes toward receiving care from an opposite-gender nurse. *Nursing Forum*; 2021: Wiley Online Library.
8. Vatandost S, Oshvandi K, Ahmadi F, Cheraghi F. The challenges of male nurses in the care of female patients in Iran. *Int Nurs Rev*. 2020;67(2):199-207.
9. Miri K, Sabbaghi M, Mazlum SR, Namazinia M. The trend of change in the role of prehospital emergency medical services in Iran's healthcare system: a situational analysis. *BMC Emergency Medicine*. 2023;23(1):99.
10. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today*. 2004;24(2):105-12.
11. Speziale HS, Streubert HJ, Carpenter DR. *Qualitative research in nursing: advancing the humanistic imperative*: Lippincott Williams & Wilkins; 2011:470.
12. Alqufly AE, Alharbi BM, Alhatlany KK, Alhajjaj FS. Muslim female gender preference in delaying the medical care at emergency department in Qassim Region, Saudi Arabia. *J Family Med Prim Care*. 2019;8(5):1658-63.
13. Younas A, Inayat S, Masih S. Nurses' perceived barriers to the delivery of person-centred care to complex patients: a qualitative study using theoretical domains framework. *J Clin Nurs*. 2023;32(3-4):368-81.
14. Mao A, Cheong PL, Van IK, Tam HL. "I am called girl, but that doesn't matter"-perspectives of male nurses regarding gender-related advantages and disadvantages in professional development. *BMC nursing*. 2021;20(1):1-9.
15. Zeighami M, Mangolian Shahrabaki P, Dehghan M. Iranian nurses' experiences with sexual harassment in workplace: a qualitative study. *Sex Res Social Policy*. 2023;20(2):575-88.
16. Kingsberg SA, Schaffir J, Faught BM, Pinkerton JV, Parish SJ, Iglesia CB, et al. Female sexual health: barriers to optimal outcomes and a roadmap for improved patient-clinician communications. *J Womens Health*. 2019;28(4):432-43.
17. Bhurtel A, Bhattarai PC. Environmental factors affecting training transfer among the instructors. *Vocations and Learning*. 2023;16(2):293-312.
18. Valiee S, Moradi Y, Vatandost S. Female patients' experiences of barriers to communication with male nurses: a qualitative study. *J Qual Res Health Sci*. 2022;11(4):218-23.
19. Svedberg E, Strömbäck U, Engström Å. Women's experiences of unplanned prehospital births: A pilot study. *Int Emerg Nurs*. 2020;51:100868.
20. Sistani M, Zandi KN, Manjazb F, Nasiri M, Khoshab H. The relationship between cultural sensitivity and levels of work interaction among emergency medical services staff in Iran. *International Journal of Africa Nursing Sciences*. 2023;19:100612.
21. Iott BE, Campos-Castillo C, Anthony DL, editors. Trust and privacy: how patient trust in providers is related to privacy behaviors and attitudes. *AMIA Annual Symposium Proceedings*; 2019: American Medical Informatics Association.