Original Article

# Current Use and Barriers to Healthcare Service Utilization Among Afghan Women Refugees: A Mixed-Method Study

**Zahra Moudi[1], Sedighe S. Mollashahi[2], Narges Nouri[2], Maryam Zaboli[2], Leyla Arabnezhad[3]**

*[1]Department of Midwifery, Pregnancy Health Research Center, School of Nursing and Midwifery, Zahedan University of Medical Sciences Zahedan, Iran, [2]Department of Maternal and Child Health, Sistan and Baluchestan Province Health Center, Zahedan, Iran, [3]Department of Midwifery, Pregnancy Health Research Center, Zahedan University of Medical Sciences Zahedan, Iran*

## Abstract

**Background:** In Iran, Afghan women should be able to use the same maternal services provided to natives. Improvement of the utilization of maternal healthcare services (MHCS) requires knowledge of the specific needs of refugees. In this regard, the present study aimed to explore current use and barriers to healthcare service utilization among Afghan women refugees. **Materials and Methods:** This sequential explanatory study with a mixed-method design combined two sources of data, namely quantitative data based on data routinely collected from March 2022 to March 2023 in Zahedan city and qualitative data collected from interviews with Afghan women (n = 10) and local managers (n = 6). Purposeful sampling was used to select Afghan women refugees from birth centers. Inductive thematic analysis was used for qualitative data. **Results:** Only 7% of Afghan women attended antenatal care five times or more at 37–39 weeks of pregnancy. Moreover, 20.45% of Afghan women used traditional birth attendants in their recent birth ($F_1 = 3764.01$, $p < 0.001$). Qualitative data showed that financial barriers (especially lack of insurance and low family income) were the most important barriers to poor access to antenatal and hospital services. In addition, obtaining poor or insufficient care was another barrier to the use of care. **Conclusions:** The findings highlighted that Afghan women face different barriers to utilizing MHCS. These barriers should be addressed through collaboration between regional, national, and international agencies to provide community-based interventions, address the health needs and expectations of the local community, and improve the utilization of MHCS.

**Keywords:** *Facilities and services utilization, healthcare sector, maternal health services, prenatal care, refugees*

## Introduction

For 42 years since 1979, Afghan people have constituted one of the largest displaced populations in the world.[1] It is estimated that about 2.6 million undocumented Afghans, 600,000 Afghan passport holders, and about 780,000 refugees are living in Iran.[2] Moreover, following the ascent of the Taliban to power in Afghanistan in 2021, Iran has welcomed hundreds of thousands of asylum-seekers.[3] Iran and Afghanistan mostly share similar languages, and about 95% of them are Shia Muslims.[4] Less than half of the Afghans who live in Iran are women, and the majority of them are young and at childbearing ages.[5] According to the literature review, refugee and asylum-seeking women are at increased risk of adverse pregnancy outcomes (e.g. preterm birth, low birth weight, and stillbirth)[6,7] and maternal death.[8]

While Antenatal Care (ANC) and childbirth care are vital to ensure maternal child health,[9] a review of studies showed that in Iran, similar to other countries, refugee and asylum-seeking women face different barriers to accessing and utilizing maternal healthcare services (MHCS) services.[5,10,11] Literature review showed that several factors, including financial constraints, lack of assertiveness for communication and negotiation, cultural beliefs, and experiences of women regarding care, constrain access to Maternal Healthcare (MHC).[12] Furthermore, healthcare providers in the host community encounter challenges and barriers to providing care for Afghan women, such as communication difficulties (e.g. language barriers); cooperation with other healthcare professionals; fragmented care due to relocation of women; increased number of MHC-seeking women (from host



**How to cite this article:** Moudi Z, Mollashahi SS, Nouri N, Zaboli M, Arabnezhad L. Current use and barriers to healthcare service utilization among Afghan Women refugees: A mixed-method study. Iran J Nurs Midwifery Res 2025;30:182-91.

**Submitted:** 11-Jun-2023. **Revised:** 25-Sep-2024. **Accepted:** 27-Sep-2024. **Published:** 10-Mar-2025.

***Address for correspondence:***
*Dr. Zahra Moudi, Department of Midwifery, Pregnancy Health Research Center, School of Nursing and Midwifery, Zahedan University of Medical Sciences, Mashahie Sq. Zahedan, Postal Code: 9816913395, Iran.*
*E-mail: moudi@zaums.ac.ir*

**Access this article online**

**Website:** https://journals.lww.com/jnmr

**DOI:** 10.4103/ijnmr.ijnmr_175_23

**Quick Response Code:**

community plus migrants and asylum-seeking women), which causes long waiting time; and difficulties in the provision of adequate information.[11,13,14]

A review of previous research showed that between the years 2017 and 2021, few studies have been conducted in Iran in the field of MHC among Afghan women, all but one of which was conducted in Tehran, the capital of Iran.[4,5,15] Lack of research in some regions, such as Sistan and Baluchestan province, with specific contexts that can affect MHCS utilization (e.g. the lowest human development index),[16] has prompted the authors to conduct the present study. The purpose of this research was twofold; first, it aimed to examine the current use of MHCS among Afghan women (refugee and asylum-seekers) compared to natives, and second, it aimed to explore the potential barriers to MHCS utilization among Afghan women. The collected data can help to document practical guidance for policymakers and local managers to prioritize areas of intervention, especially in light of sanctions and inflation in Iran and the lack of resources, especially in this deprived area.

This study was conducted in Sistan and Baluchestan province, Iran. This province is located in the southeast of Iran, on the border with Pakistan and Afghanistan. Three universities of medical sciences (Iranshar, Zabol, and Zahedan) provide healthcare services to the inhabitants of this province. Zahedan University of Medical Sciences (ZAUMS) provides healthcare services to the inhabitants of the cities and villages of Zahedan, Mirjaveh, Khash, Saravan, and Sib Soran. In 2022, the total fertility rate in Zahedan was 3.6% for each woman at reproductive age. Overall, 294,484 Afghans (refugees or asylum-seekers) are living in cities and villages affiliated with ZAUMS. In Iran, all Primary Healthcare Services (PHCS) provide services, such as vaccinations, ANC, postnatal care, laboratory tests, micronutrients (e.g. iodofolic, iron, vitamin D), and antiretroviral therapy for HIV/AIDS, which are free of charge for Afghans and Iranians.

Refugees have to pay to access curative services (emergency, outpatient, and inpatient) in secondary and tertiary levels of healthcare, but the cost of service depends on their insurance.[17] Only 6% of Afghans in Iran have registered for health insurance. The greatest challenge is that undocumented Afghans cannot register for insurance. Moreover, many Afghans in Sistan and Baluchestan are day laborers and are not able to afford the premium costs and buy insurance.[18]

## Materials and Methods

A sequential explanatory mixed-method design was applied to address two different questions in the present study. Quantitative data from the analyses of the available data (first phase) provided a strong potential for the examination of the use of available MHCS and identification and comprehension of aspects of MHC that need improvement. This phase helped with data collection for the qualitative phase (second phase). It should be noted that "for research to have an impact, both knowledge producer and user need to be involved in its creation and application which takes account of context and stakeholder interest."[19]

The quantitative part involved a cross-sectional study that was conducted to determine the rate at which Afghan women refugees use available services for MHC compared to natives. These data help to identify commonalities and differences among refugees and natives in using available services and inform the need for efforts to improve the provision of services for the refugee population. In this phase, secondary analysis was carried out on the existing integrated archival data from cities and villages affiliated with Zahedan, Mirjaveh, Khash, Saravan, and Sib Soran (ZAUMS) that have been routinely collected. All the information on households of Afghan and Iranian women and type of healthcare (e.g. type of delivery, place of delivery, birth attendance, number of prenatal care, and number of postnatal care) have been documented in an electronic medical record system called "integrated Ceib" software. After ethical approval and necessary permissions were obtained, the data were extracted by the head of the Maternal and Child Health Department, and the data form was completed for refugees and Iranian women who received services from the existing system. The data were collected from March 21, 2022, to March 21, 2023. It was not possible to separately calculate the percentages of the Afghan and Iranian women who had four ANC utilization. However, ANC coverage rate was defined as the percentage of women aged 10–54 years with a live birth during a given time period who received ANC by skilled healthcare personnel divided by the total number of women aged 10–54 years with a live birth during the same period.[20] Moreover, the rate of postnatal care coverage for mothers was defined as the percentage of women aged 10–54 years who received a health check by a trained healthcare provider within 3 days after delivery divided by the total number of women aged 10–54 years with a live birth during the same period (last 12 months).

Quantitative data showed MHC (e.g. institutional childbirth) to be worse for Afghan women refugees compared to that for natives. Exploratory qualitative methods were applied to two groups (Afghan women and managers) to gain an in-depth understanding of supply and demand barriers to the use of MHCS by Afghan women. In-depth interviews were conducted with 10 Afghan women and their relatives (their husbands and mothers or mothers-in-law). Purposeful sampling was employed to recruit information-rich cases. The inclusion criteria were as follows: 1) Afghan nationality; 2) experience of non-institutional delivery in urban areas of Zahedan city; 3) experience of giving birth during the last 6 months (regardless of the type

of childbirth); 4) ability to understand and speak Persian (Farsi); and 5) possession of medical records in the mentioned electronic medical record system. The sampling was terminated when no new data was forthcoming, and the researcher reached data saturation.[21] The initial contact with participants was made by staff at the healthcare centers to establish the time of interviews. After obtaining written consent from Afghan women, interviews were carried out in the healthcare centers. The purpose of the study was explained to the women and their relatives, and they were assured that their participation in the study was completely voluntary and they were free to withdraw at any time with no penalty. Additionally, the participants were assured of the confidentiality of data. Interviews were conducted in Persian and lasted for 45–60 min on average. Women who spoke the Persian language were selected for three reasons: 1) most people from Afghanistan speak Persian; 2) to make sure that they understand the objectives of the study and give informed consent; and 3) the process of translation may face the subjective judgment and linguistic selection of the translator. The researcher started a conversation with the participants by asking open-ended questions, such as the following: "Please explain to me about receiving ANC during pregnancy, childbirth, and the postnatal period." Furthermore, if they did not have an institutional childbirth, they were asked "Please explain to me why you chose to give birth outside of the hospital?" As women told their stories and experiences, to encourage them to talk more, further questions were asked, such as "Why?," "Please explain more," and "Please also share the experiences of your neighbors about MHC." Additionally, semi-structured in-depth interviews were conducted with six managers of the Maternal and Child Health Department who had extensive experience in providing maternity care for Afghan women. The interviews were conducted in the offices of the managers. In the interviews, the following issues were discussed: 1) barriers that prevent women from utilizing PHCS in Governmental Primary Healthcare Centers (GPHCCs) and 2) barriers that prevent women from institutional childbirth (formal or legal medical facility staffed by skilled delivery assistance). All interviews were audiotaped, transcribed verbatim, and analyzed by the first author.

The findings of the qualitative phase were analyzed separately and used to interpret findings generated in the quantitative phase. Statistical analyses were performed in SPSS software (version 16.0). The descriptive statistics were used to describe the utilization of MHCS among Afghan women refugees and Iranian women. The Chi-squared test was employed to analyze the categorical and binary data. In addition, two-tailed tests were employed to compare the variables between Afghan and Iranian women. $p$ values of less than 0.05 were considered statistically significant.

To analyze qualitative data, the six-phase framework for doing thematic analysis was employed.[22] In the first step, all interviews were conducted in Persian and the interviews were transcribed verbatim. Next, the transcripts were read line by line. The transcripts were read multiple times to get familiar with them and obtain general ideas from the data. The second phase consisted of generating initial codes. This means that transcripts were read and the most relevant concepts (segment of data) were coded by the main scholar (a Ph.D. in Reproductive Health, who has been living in the city and working as a midwife for about 30 years) and another midwife, who agreed on the codes.

The third phase began when all the collected data were initially coded and a list of the different codes were generated. To achieve credibility, some of the participants were asked to review the findings to ensure that interpretation was appropriate and provided additional information if necessary. Furthermore, five staff who provided services to women in the healthcare centers were invited to help with interpretation. In the next stage, the first and second authors worked together to categorize similar codes into subcategories, and themes. During the fourth phase, the themes were reviewed to ensure that they were effectively linked to the data. In the fifth phase, after the provision of a final list of themes, they were named and defined to identify the essence of each theme. Finally, the codes were transformed into a narrative of the results.

### Ethical considerations

The ethical approval of the present study was obtained from the Ethics Committee of ZAUMS, Iran (July 16, 2022; IR.ZAUMS.REC.1401.141). Subsequently, the authors obtained permission from Zahedan Deputy of Health and Directors of all healthcare facilities to use data for this study. After participants received sufficient information about the purpose of the research and what it means for them to take part in the study, informed written consent was obtained from all respondents for voluntary participation in the research. In addition, permission was obtained to record the interviews. Moreover, participants were assured that they were free to leave the study at any time without any coercion. To ensure the confidentiality and anonymity of the study participants, individual identities were deleted while presenting data.

## Results

### Quantitative results

From March 21, 2022, to March 21, 2023, a total of 580,089 women of reproductive age (10–54 years) lived in the cities and villages affiliated with ZAUMS, 81.75% (474,230) and 18.25% (105,859) of which were Iranian and Afghan, respectively. Moreover, a total of 45,365 women had given birth in the cities and villages affiliated with ZAUMS during this period, 78.71% and 21.29% of which were Iranian and Afghan, respectively. Data showed that only 7% (3215/45,365) of all pregnant

women (regardless of nationality) attended ANC five times or more at 37–39 weeks of pregnancy in GPHCCs from March 21, 2022, to March 21, 2023. In addition, the average coverage of routine postnatal care within 3 days after childbirth was about 37%. The MHCS utilization among Iranian and Afghan women is presented in Table 1.

## Qualitative results

Two of the managers were the Director of the Family and School Health Department, and the other three were midwives who were responsible for providing services to Iranian and Afghan mothers in this unit. Three out of 10 Afghan women were accompanied by their relatives. All of them lacked insurance coverage. Demographic characteristics of Afghan women who participated in the qualitative phase are summarized in Table 2.

The barriers to receiving MHCS were divided into two main parts, namely "utilization of GPHCCs (for pre and postnatal care)," and "utilization of institutional delivery services." Categories and themes are shown in Figures 1 and 2, respectively.

## Part I: Utilization of governmental primary healthcare centers

Using the collated codes and extracted data, eight categories and three themes for barriers to the use of GPHCCs were developed: 1) raising concerns about care and acting on them (unaddressed concerns about the right place for care, necessity to be accompanied by a family member to the health centers, and lack of insurance coverage); 2) healthcare policies (prohibition of provision of family planning services in the GPHCCs, shortage of supplements, non-provision of focused ANC; and 3) poor healthcare service delivery (inequalities in the distribution of health workers per capita (which leads to long waiting times and creates obstacles for accepting new cases) and poor quality of ANC.

**Table 1: Maternal healthcare service utilization among Iranian and Afghan women**

| | Iranian *n* (%) | Afghans *n* (%) | Total *n* (%) | *p*[$$$$$$] |
|---|---|---|---|---|
| Total number of childbirths performed in a year | 35,708 (78.71) | 9657 (21.29) | 45,365 (100) | ------- |
| Place of childbirth | | | | |
| Hospital | 31,451 (88.08) | 4612 (47.76) | 36,063 (79.50) | <0.001 |
| Home | 1654 (4.63) | 2565 (26.56) | 4219 (9.30) | |
| Out-of-hospital childbirth centers | 2249 (6.30) | 2173 (22.51) | 4422 (9.74) | |
| Delivery in the way | 89 (0.25) | 41 (0.42) | 130 (0.29) | |
| Others[$] | 265 (0.74) | 266 (2.75) | 531 (1.17) | |
| Type of childbirth attendant | | | | |
| Traditional | 1042 (2.92) | 1975 (20.45) | 3017 (6.65) | <0.001 |
| Trained[$$] | 34,666 (97.09) | 7682 (79.55) | 42,348 (93.35) | |
| Type of delivery | | | | |
| Normal vaginal delivery | 26,226 (73.45) | 8319 (86.14) | 34,545 (76.15) | <0.001 |
| Cesarean section | 9482 (26.55) | 1338 (13.86) | 10,820 (23.85) | |
| ANC[$$$] visit coverage rate (weeks pregnant)[$$$$] | | | | |
| First (6–10) | 12,045 (33.73) | 2514 (26.03) | 14,559 (32.09) | <0.001 |
| Second (16–20) | 21,071 (59.00) | 5532 (57.28) | 26,603 (58.64) | 0.002 |
| Third (24–30) | 20,933 (58.62) | 5849 (60.57) | 26,782 (59.04) | <0.005 |
| Fourth (31–34) | 16,913 (47.36) | 4907 (50.81) | 21,820 (48.09) | <0.001 |
| Fifth (35–37) | 14,143 (39.61) | 4316 (44.69) | 18,459 (40.69) | <0.001 |
| Sixth (38) | 5692 (15.94) | 2132 (22.08) | 7824 (17.25) | <0.001 |
| Seventh (39) | 3671 (10.28) | 1368 (14.17) | 5039 (11.11) | <0.001 |
| Eighth (40) | 1787 (5.00) | 769 (7.96) | 2556 (5.63) | <0.001 |
| Postnatal care visits[$$$$$] | | | | |
| First (on day 3) | 13,272 (37.17) | 3700 (38.31) | 16,972 (37.41) | 0.03 |
| Second (days 10–15) | 17,536 (49.11) | 4889 (50.63) | 22,425 (49.43) | 0.008 |
| Third (days 30–42) | 13,140 (36,80) | 4806 (49.77) | 16,946 (37.35) | <0.001 |

[$]Probably incorrect registration or delivery was performed in the office and was not reported due to legal prohibition. [$$]Midwife and physician. [$$$]ANC: Antenatal care. [$$$$]Percentage of women aged 10–54 years with a live birth in a given time period that received antenatal care by skilled health personnel/Total number of women aged 10–54 years with a live birth in the same period. [$$$$$]Percentage of women aged 10–54 years who received a health check by a trained healthcare provider (within 3 days after delivery)/Total number of women aged 10–54 years with a live birth in the same period (last 12 months). [$$$$$$]Chi-square test

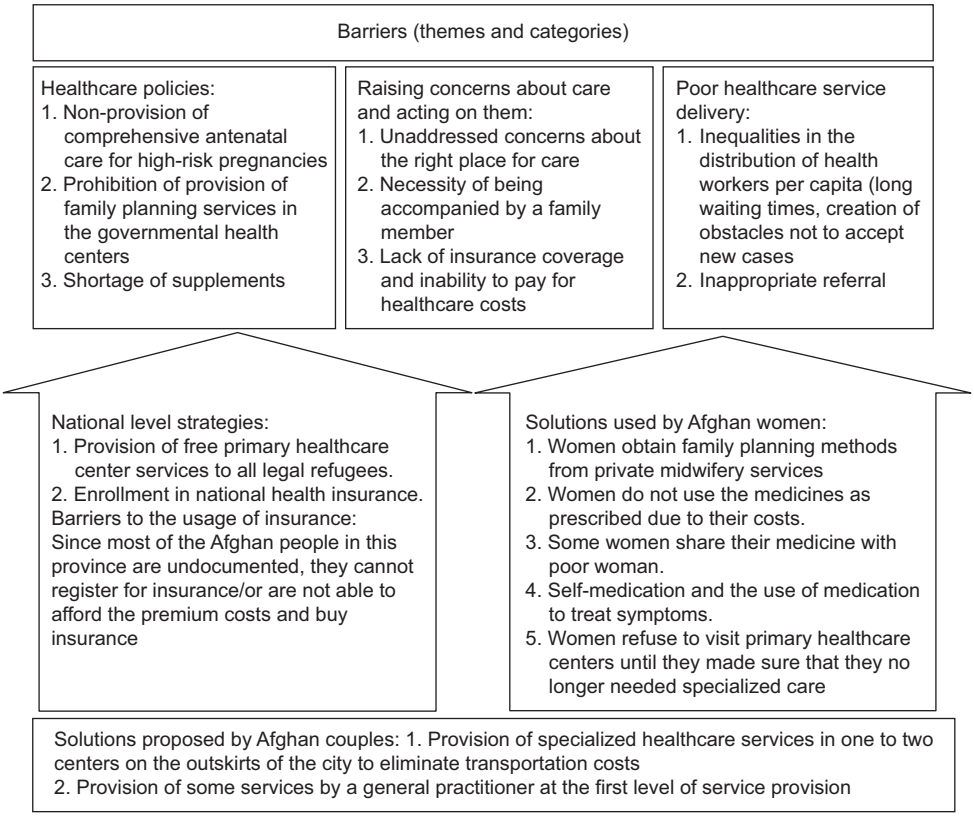


**Figure 1: Perception of Afghan women of the barriers related to the utilization of public health centers and creative solutions to overcome these barriers**

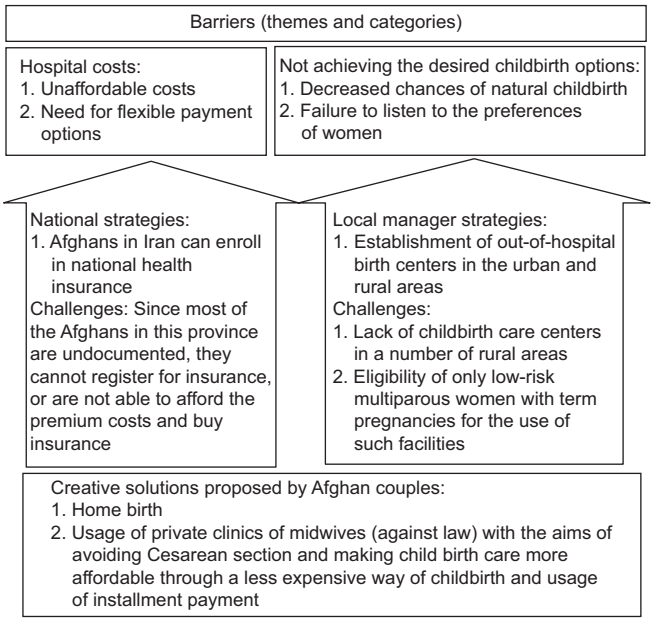


**Figure 2: Perception of Afghan women of the barriers related to the utilization of institutional delivery services and solutions to overcome these barriers**

### *Raising concerns about care and acting on them*

#### Unaddressed concerns about the right place for care

A number of women discussed the following subject in their interview: *"I visited the health centers during previous pregnancies. These centers are a good choice if pregnant women are healthy."* (Gravida 3, 30 years old). Another one noted: *I was afraid and did not go to the health center. When the doctor gave me an ultrasound, he said that my baby might suffocate (detecting a nuchal cord) and that I should be under the supervision of a specialist. He did not say to go to the health center for care."* (Gravida 6, 30 years old).

Therefore, sometimes, the health status of women and the ability to find providers who meet their specific needs determine the utilization of public healthcare services.

#### Necessity to be accompanied by a family member to health centers

Husbands accompanying their wives to a health center was important for two reasons. First, women could not go to the health centers without the consent of their husbands. *"After giving birth, I did not come for the second and third care. My husband had gone to another city and there was no one else to bring me to the center."* (Gravida 3, 24 years old).

Second, the husband plays a role in transportation, and he should pay the costs associated with some of the routine pregnancy care services (e.g. sonography). *"I said to my neighbor, now that the staff at the health center won't start your prenatal care without doing an ultrasound, go and do it. She replied that my husband won't take me for an ultrasound, my husband said there is no money."* (Gravida 2, 20 years old).

**Table 2: Demographic characteristics of Afghan women who participated in the qualitative phase (*n*=10)**

| Demographic characteristics | *n* (%) |
|---|---|
| Educational level | |
| Illiterate | 9 (90) |
| Primary school | 1 (10) |
| Gravida | |
| 1 | 2 (20) |
| ≥2 | 8 (80) |
| History of cesarean section | |
| Yes | 1 (10) |
| No | 9 (10) |
| Type of delivery | |
| NVD* | 10 (100) |
| C/S | 0 (0.00) |
| Place of childbirth | |
| Home | 3 (30) |
| Out-of-hospital birth center | 4 (40) |
| Private clinic of midwives | 3 (30) |
| Number of PNC**: | |
| ≤5 | 2 (20) |
| >5 | 8 (80) |
| Place of PNC: | |
| Private clinic of doctors | 2 (20) |
| Health centers | 5 (50) |
| Both of them | 3 (30) |
| Number of postnatal care: | |
| ≤3 | 6 (60) |
| >3 | 4 (40) |
| Age of women (years): | |
| Mean (SD) | 24 (±4) |
| Length of stay in Iran (years): | |
| Mean (SD) | 14 (±8) |

*NVD: Normal vaginal delivery, ** PNC: Postnatal care

As a result, lack of financial resources can be one of the important barriers to the involvement of husbands in maternal care, initial contact of women with a healthcare provider, and utilization of prenatal care services

### Lack of insurance coverage and inability to pay for healthcare costs

The main and actual barrier to achieving outpatient healthcare services is the lack of insurance and unaffordability to pay for healthcare costs. One of the women explained: "*The staff at the health center told me that you are anemic and gave me a referral letter for specialist treatment. I tore it up and threw it away. My husband is a day laborer. For example, he works one day and is unemployed for days. I don't have health insurance, and I have trouble affording healthcare costs.*" (Gravida 3, 30 years old). Another woman noted: "*My neighbor is Afghan, she has diabetes. Since she has to get free insulin, she injects as little insulin as she can. She injects insulin only once instead of three times a day. At the same time, we have another neighbor who also has diabetes, sometimes she shares her prescribed insulin with this poor woman.*" (Gravida 6, 28 years old).

Therefore, women who do cannot afford the cost of prescribed medication, do not not takinge their needed medications as prescribed, or sometimes, do not follow the therapeutic recommendations.

## *Healthcare policies*

### Lack of provision of comprehensive antenatal care for high-risk pregnancies

A woman explained how this issue can take significant time to search for and attain services and place financial pressure on poor Afghan refugees: *"If a complication was diagnosed during pregnancy, the staff in the GPHCCs could not do anything. They only refer you to a specialist. I was Rh negative and my husband was Rh positive, the staff in the health center told me that I had to take an injection and they told me that I should go to a gynecologist to prescribe it (anti-D immunoglobulin). Therefore, we had to pay the cost of a doctor's visit and traveling cost in addition to the medicine cost."* (Gravida 3, 23 years old).

Her husband said: *"If there was a well-equipped center for specialized services (including a specialist and ultrasound) in the outskirts of the city, then we would only have to pay for the medicine."* (day laborer, 28 years old).

### Prohibition of provision of family planning services in governmental healthcare centers

Despite the efforts of the government to provide free postnatal care services to all mothers, one of the reasons why women do not utilize postnatal services provided in the GPHCCs is the lack of provision of required services (including the provision of family planning and services) due to national policies. One of the women who did not attend the GPHCC 6 weeks after birth explained: *"I have three children with about 1-year age gap between them. My third pregnancy was unplanned. The (governmental) health center did not offer family planning services. Therefore, I went to the midwife's office, and she inserted an intrauterine device for me."* (Gravida 3, 20 years old).

### Shortage of supplements

Distribution of dietary supplements free of charge to the mother and child can be an effective motivation to increase the utilization of healthcare services during pregnancy and the postpartum period. One of the women stated: *"When I went to the health center, they told me to buy supplements from a pharmacy. Each time it cost me 2,000,000 Iranian*

*rials (nearly equivalent to one day's salary of a day laborer)."* (Gravida 6, 28 years old).

### *Poor healthcare service delivery*

Some women did not utilize MHCS due to poor healthcare service delivery.

#### Inequalities in the distribution of health workers per capita

One of the managers explained: "*There are inequalities in the distribution of health workers per capita*." (10 years of work experience).

With a shortage of healthcare providers in a health center, women are forced to endure longer waiting times. Moreover, crowding in health centers can also cause mistreatment of pregnant women by staff. One of the women stated: *"In health center, sometimes staff either did not answer or answered very late. They answered angrily, and told us to stand in line until it's your turn."* (Gravida: 1, 19 years old).

#### Inappropriate referral

There was a failure to complete the care before referring women to the second level of care to eliminate or reduce the waste of money and time in care delivery. One woman stated: *"The staff in the health center told me that you had to go to a gynecologist to prescribe anti-D immunoglobulin for you. When I went to the obstetrician, she said that first you had to do the necessary laboratory tests, and then I would prescribe the medicine for you."* (Gravida: 1, 19 years old).

In this case, the pregnant women had to pay for two visits to the doctors, travel expenses, and the cost of laboratory tests (which are free at the first level of care).

## Part II: Utilization of institutional delivery services

Based on the collated codes and extracted data, four categories and two themes emerged for barriers to the use of GPHCCs: 1) hospital costs (unaffordable costs and need for flexible payment options); and 2) lack of achievement of the desired childbirth options (decreasing chances of natural childbirth and failure to listen to the preferences of women).

### *Unaffordable costs*

Many Afghans in Sistan and Baluchestan do not have health insurance to cover the costs of hospital childbirth. One of the women who had a premature birth (35 weeks pregnant) in the office of a midwife stated: *"When my labor pains started, I went to the hospital and they told me that I should be hospitalized. I couldn't afford to pay the hospital bills, so I came and gave birth in the midwife's office. The costs were half of the hospital costs."* (Gravida: 3, 23 years old).

Because it is illegal to give birth at home and offices of midwives in Iran, two midwife-led birthing units have been established by local managers on the outskirts of Zahedan city. The cost of delivery in these units is very low. However, there are barriers (e.g. they are not allowed to accept complicated pregnancies and prim gravida women) to the use of these birth units. One woman with high blood pressure and fetal macrosomia who gave birth at home explained: *"Since we cannot afford to give birth in the hospital, we have to give birth outside the hospital. Now that I think about giving birth at home, I say that God had mercy on me."* (Gravida: 6, 28 years old).

#### Need for flexible payment options

Giving birth in the office of a midwife was financially beneficial to Afghan women from two aspects: first, the total cost was less than hospital care; second, they could pay the birth costs in installments. The husband of one of the women explained: *"I paid two-thirds of the total costs of childbirth in cash. Since I didn't have more money, I paid the rest later. This was good (payment method) for us."* (day laborer, 28 years old).

### *Achievement of the desired childbirth options*

#### Decreased chances of natural childbirth

The reason why women avoid giving birth in the hospital is to have a natural childbirth. One woman stated: *"I went to the hospital to give birth, they said that you should do a cesarean section (ultrasound detection of nuchal cord). I went to the birthing unit and gave birth naturally."* (Gravida: 6, 30 years old).

#### Failure to listen to the preferences of women

This important issue can lead to one way flow of information from care providers to pregnant women; therefore, they were not able to understand the realistic needs of women and involve them in the decision-making process. One woman explained: *"I was told that you have already had a cesarean section and you should have a cesarean section again. However, God helped, and I gave birth at home."* (Gravida: 3, 30 years old). Another woman explained: *"I was referred to hospital since my pregnancy had lasted longer than 42 weeks. In the hospital, they told me I should have a cesarean section. I had a normal vaginal birth before, so I went to the midwife's office, she gave me a (misoprostol) pill, and I gave birth naturally."* (Gravida: 2, 20 years old).

## Discussion

The present study investigated the current use and perceived barriers related to MHCS utilization among Afghan women. The participants explained the barriers in two sections: obstacles to the use of GPHCCs and institutional childbirth.

In relation to barriers to the use of GPHCCs, quantitative data showed that only 26% of Afghan women refugees received the first ANC within the first trimester of

pregnancy. This rate is higher than that in some other countries, such as Zambia (17%).[23] This could be explained by the fact that in Iran, all postnatal care (PNC) services are free of charge at GPHCCs for all Iranian pregnant women and legal Afghan women.[24] As most of the Afghans in Sistan and Baluchestan province are undocumented, an arrangement was made at the local level to help Afghan pregnant women (even undocumented ones) use PHCS (including ANC and vaccination), which increases access and use of MHCS.

However, the rating found in this study is lower compared to those of studies conducted in some other countries (e.g., Nepal: 70% and Ethiopia: 44%) and some parts of Iran (49%).[25,26] In agreement with previous studies performed in Iran, Afghan women are either not eligible to enroll in Iranian health insurance or cannot afford it. Therefore, due to the lack of capital for expensive antenatal procedures (e.g., sonography), they delay or defer from ANC.[15,27]

Quantitative data showed that the number of women (including Afghans) who used prenatal services from the 16$^{th}$ to around the 30$^{th}$ week of pregnancy increased by about 61% compared to the first trimester. These differences could be justified by the fact that the perceived costs (transportation, loss of wage, income of the family, and husbands accompanying their wives to receive MHC) were worth the received service in the second trimester (free of charge prenatal laboratory test and vaccination) by vulnerable Afghan women. Therefore, to improve the availability of affordable antenatal services for Afghan women, a collaboration between international agencies/organizations and national and local managers is needed (e.g. provision of portable sonography to GPHCCs).

This reason can also explain the low utilization of postnatal care services. As contraceptives are not provided in the centers and children are vaccinated at the age of 2 months, the women do not see any reason to spend time visiting health centers after birth. To increase utilization of postnatal care, both demand (e.g. increase of knowledge) and supply factors (e.g. provision of contraception) need to be addressed.

Additionally, the difficulties in access to specialized healthcare services were another important issue raised by Afghan women. Women with complicated pregnancies need to be managed by specialists, and as they cannot receive specialized services in GPHCCs, they saw no reason to go to health centers for ANC. ANC and postnatal visits in a private office may not work for vulnerable refugees. Therefore, to provide affordable and accessible specialized care to women in need, it is necessary that specialized healthcare services be delivered through a distributed network (e.g., outpatient clinics) in health centers on the outskirts of the city to high-risk women in the community.[28]

In accordance with previous studies, the qualitative data of this study showed that access to medicine is also a major challenge among Afghan refugees and should be addressed.[29] Therefore, it seems that close collaboration between international organizations/agencies and the Ministry of Health and Medical Education of Iran (MOHME) is needed to improve the access of Afghan refugees to medicine. Moreover, the Iranian government recently issued a new law called Rejuvenation of Population and Protection of the Family. According to this law, poor women who used to obtain contraception and prenatal screening for free from GPHCCs can no longer have access to them, and these items can only be prescribed by a gynecologist.[30] To increase the access of vulnerable groups, such as Afghan and marginalized women, to these items, it is necessary to consider the conditions of these women in the law.

In relation to institutional childbirth, quantitative data showed that about 26.5% and 22.5% of Afghan women choose to give birth at home and out-of-hospital birthing centers, respectively. In line with previous studies, qualitative data showed that the inability to pay hospital costs was a major obstacle in the way of seeking and utilizing hospital childbirth.[15] Similar to previous studies, the collected data showed that some women choose to give birth at home or in the office of a midwife to avoid unnecessary cesarean section, pay a reasonable price for normal childbirth, and find an affordable payment option, too (e.g. installment payment).[15] Therefore, midwife-led childbirth centers, as an alternative to hospital delivery which provide affordable and acceptable childbirth care services (for refugees and vulnerable groups),[31] should be supported by collaboration of international organizations and MOHME.

To the best of our knowledge, the present study was the first attempt to show the current utilization of MHCS by using big data on Afghan refugees in rural and urban areas of ZAUMS, Iran. Moreover, the barriers to the use of MHCS among (mainly undocumented) Afghan women refugees in this deprived area were explored, and the solutions they used despite the existing bottlenecks to achieve the services they need were explored. However, there are some limitations that should be taken into consideration before generalizing results. First, the qualitative phase of this study was conducted in urban areas, which might not have represented the rural refugees with different needs and expectations. Second, Afghan women who were registered in the electronic medical record system at health centers were recruited in this research; therefore, it is possible to have missed the perception of those who did not use the governmental health system. Third, due to time and resource constraints, the qualitative findings were based on a small sample size in a disadvantaged city, which might have limited the representativeness of the results. However, the heterogeneity of the participants, especially interviewing spouses together, helped to obtain more general insights.

## Conclusion

In conclusion, when vulnerable Afghan refugees decide to use MHCS, they consider costs to meet their needs and expectations (e.g. receiving specialized services and achieving normal vaginal delivery) to ensure the health of themselves and their newborns. The situation of vulnerable Afghan women in this deprived region, especially women with pregnancy complications and medical problems, should be considered more seriously by international agencies. Due to sanctions, the Iranian government is unable to provide more subsidies for MHCS. Therefore, international agencies should help local authorities not only to provide free or low-cost services to refugees but also to provide services according to their individual needs and expectations to improve the utilization of MHCS.

### Acknowledgments

We thank Zahedan University of Medical Sciences for providing permission for this study and all women who participated in this study. We also wish to extend our special thanks to all staff of health centers for their support to accomplish this study.

### Financial support and sponsorship

Zahedan University of Medical Sciences

### Conflicts of interest

Nothing to declare.

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