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CLINICAL & BASIC RESEARCH

Challenges and Strategies of Providing Effective Antenatal Education Services in Oman's Public Healthcare System

Perspectives of service providers and pregnant women

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abstract: ***Objectives:*** This study aimed to explore the challenges of providing quality antenatal education from the perspectives of the healthcare service providers and pregnant women. Globally, maternal mortality is considered a critical healthcare issue because statistics consistently show that many deaths and injuries that occur during pregnancy and childbirth are avoidable. ***Methods:*** This qualitative study was conducted from January 2021 to March 2021 at 9 outpatient antenatal clinics located in the public health centres of Muscat governorate, Oman. A purposive sampling technique was used, and data were collected through in-depth interviews and field notes and analysed manually using thematic analysis. ***Results:*** A total of 30 participants were included in this study. The challenges identified by the healthcare service providers included the lack of a consultation room and designated space for health education, work overload, time constraints, under-staffing, lack of educational materials, language barriers, lack of authority and negative attitude. The pregnant women identified lack of focus on women's needs, superficial antenatal education, overcrowding, lack of educational facilities, use of medical jargon and unprofessional staff attitude towards women as key barriers to receiving quality antenatal service. Suggested solutions included improving staffing levels, designating a space for antenatal education, expanding educational activities, continuing education for caregivers, establishing midwife-led units, providing focused antenatal education and improving communication between the providers and users. ***Conclusion:*** Both healthcare service providers and pregnant women experience significant barriers that hinder them from providing and accessing quality antenatal education services, respectively. Therefore, policymakers, health planners and hospital administrators should remove these barriers and integrate some of the recommendations in this study to promote better health outcomes.

Keywords: Antenatal Education; Healthcare Providers; Pregnant Women; Public Health Practices; Women Health Services; Oman.

Advances in Knowledge

- *This study helped to explore the challenges faced by healthcare service providers and pregnant women while providing and receiving antenatal education, respectively. Identifying this will help with the design of effective corrective strategies to lower maternal and fetal healthcare costs.*
- *The study revealed the existence of disparities in adherence to the Ministry of Health's National Guidelines on antenatal education. This finding implies the need for a wider dissemination of the guidelines to streamline the provision of recommended antenatal education services across all healthcare settings in Oman.*

Applications to Patient Care

- *Pregnant women trust and value the information provided by healthcare service providers. Therefore, healthcare service providers should provide adequate, consistent and comprehensive antenatal education for pregnant women at every antenatal visit. This enhances pregnant women's understanding of vital information, resulting in positive maternal and foetal outcomes.*

Globally, maternal mortality has been considered a critical healthcare issue; data has consistently shown that avoidable deaths and injury occur during pregnancy and childbirth.[1] As further evidence of the extent of this problem, the World Health Organization (WHO), United Nations International Children's Emergency Fund, United Nations Population Fund, World Bank Group and United Nations Population Division reported that in 2017 alone, up to 295,000 women died during pregnancy or delivery worldwide.[2] These deaths have been attributed to preventable complications and could be stopped if women have access to relatively basic maternal health education services that will help them to recognise signs of danger and act accordingly.[3,4]

Several studies suggest that low levels of knowledge about signs of danger during pregnancy and delivery contribute to the high maternal mortality ratios observed globally.[5] To address these challenges, the United Nations, through Sustainable Development Goal 3, directed its member countries to improve maternal health by working to reduce maternal

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mortality rate (MMR) to less than 70 per 100,000 live births by 2030.[6–8]

In Oman, like in other developing countries, there have been positive and negative changes in significant health indicators such as infant mortality rate (IMR), low birth weight (LBW) and poor breastfeeding practices. For instance, in 2016, the IMR was 5.3 per 1,000 live births; in 2020, it increased to 7.6, and in 2021, it further increased to 8.1.[9] There was an increase in the number of LBW babies from 11.3% in 2019 to 12% in 2021.[9] Similarly, in 2019, MMR was 14.1 (per 100,000 live births), with an unwelcoming increase to 29.4 in 2020 and 42.5 in 2021.[9] Such leaps indicate the existence of challenges in the system.

Another significant maternal health indicator is that the number of pregnant women attending antenatal clinic in the first trimester reduced by nearly 10,000 from 2016 to 2019.[10] These statistics indicate the existence of significant problems in the antenatal period and emphasise the need to understand the contributing factors in order to devise corrective strategies that will reduce maternal and infant mortality and morbidity rates, especially in developing countries.[11] An important ingredient in addressing the gaps in antenatal care is the healthcare worker, who provides the information required to make pregnancy and childbirth a positive experience for the pregnant woman, her fetus and her family.

While the Ministry of Health in Oman has taken impressive steps to build a robust health infrastructure across the country that promotes greater access to healthcare to ensure that all pregnant women receive quality healthcare services during antenatal visits, some challenges continue to hamper this success.[12] In order to succeed in their mission of addressing the healthcare needs of pregnant women, providers of antenatal education services must build professional relationships, exchange information and involve women in decision-making.[13,14]

In light of this, this study aimed to evaluate the challenges faced by healthcare service providers and pregnant women while delivering and receiving antenatal education services, respectively; it also explores some remedial strategies.

Methods

The study utilised a generic qualitative research approach using semi-structured, in-depth interviews guided by open-ended questions. The generic qualitative research approach is guided by the naturalistic paradigm and utilises different principles and practices from various qualitative traditions and theories. The naturalistic framework was chosen because it allows the researcher to explore poorly understood phenomena by generating rich data directly from concerned individuals to make logical conclusions.[16] This approach resulted in a deeper understanding of the challenges faced by healthcare service providers that negatively impact their service delivery.

This study was conducted in 9 outpatient antenatal clinics located in the public health centres of Muscat governorate, Oman from January 2021 to march 2021. These outpatient antenatal clinics provide healthcare services to both low- and high-risk pregnant women.

A purposive, non-probability sampling technique was used to identify participants who had experience working in these units. The participants included healthcare service providers who educated pregnant women and the pregnant women who received the antenatal education.

The healthcare service providers included doctors, midwives, nurses and health educators (both Omani and non-Omani) who had worked in the antenatal clinics for a minimum of 12 months. The pregnant women included in this study were those who attended antenatal care services in 1 of the institutions, had a gestational age of over 30 weeks, were aged above 18 years, were Omani and were willing to participate in one-on-one in-depth interviews with the research team.

The number of participants, both providers and users of the antenatal education services, was determined by the stage at which data saturation was reached.[15] In this study, data saturation occurred after a total of 17 healthcare service providers and 13 pregnant women had been interviewed.[16,17]

The research data were generated using a semi-structured in-depth interview guide up to the point of data saturation, resulting in a total of 30 participants.[15] The participants were informed that the interview sessions would last between 45–60 minutes or until they had answered all the questions. The researcher started the interview with casual conversation to set the stage for the participants to get comfortable for the interview. The questions were developed by the research team and validated by both subjects and research experts. The open-ended questions were aimed to explore their personal experiences, including their thoughts, feelings, views and perspectives regarding antenatal service, both as a provider and user. To obtain more detailed information, follow-up questions were asked and probes and silences were used to encourage the participants to explain more.

The participants interview guide consisted of 7 major questions and some probing questions. The researcher used communication skills, such as asking questions, maintaining proper eye contact, listening attentively, observing, showing respect and interest in what is being said and asking probing questions whenever necessary, to ensure a sensitive interaction with each participant during the interview. These strategies encouraged and motivated the participants to express themselves more and control the flow of the interview. The researcher found no difficulty communicating with any participant.

For example, for healthcare service providers questions included "What specific education do you give to prepare the women for a safe pregnancy?" and "What challenges do you face while providing antenatal education?"; probing questions included "What barriers hinder you from being an effective antenatal educator?", "How do these barriers affect your role as an antenatal educator?" and "Which strategies would be useful in mitigating these barriers?".

For pregnant women, questions included "What challenges did you face during antenatal education sessions?" and "What specific actions would help to resolve each challenge?"; probing questions included "Tell me if you had all your questions answered; if not, what went wrong?", "Tell me more about the other barriers or challenges that you encountered." and "From your point of view, what strategies would be useful in mitigating these barriers?".

The researchers ensured that the study had rigor by meeting the gold standard articulated by Lincoln and Guba, which consists of 5 critical elements: credibility, dependability, transferability, trustworthiness and confirmability.[18] To ensure data quality and preserve the data integrity, all 30 in-depth interviews were digitally audio-recorded and transcribed verbatim.

Data analysis occurred concurrently with data collection. The researchers analysed the dataset manually using the thematic analysis framework through reflexive 'immersion and crystallisation'.[19] The 'immersion' phase started off with each researcher reading, rereading and examining portions of the data in detail; then, the process of examining and reading the research data was suspended to reflect on the analysis experience. This phase then led to the second, the 'crystallisation phase', in which the researchers identified and refined the themes. This two-step, sequential data analysis process creates rich, trustworthy, sensitive and insightful research findings, hence its popularity among qualitative researchers.[20]

The researchers obtained ethical clearance and study approval from the relevant institutions, SQU (SQU.EC/322/2020) and the Ministry of Health (MH/DGHS/DPT13/2021). Each participant was asked to sign an informed consent form after determining that they had understood the nature and purpose of the study. Prior to data collection, all participants were informed of their right to either decline answering individual questions or withdraw from the entire study at any stage without any consequences. The anonymity of the participants and the confidentiality of their data were upheld and preserved. Each interview was conducted individually in a private and quiet room in the respective clinics. To ensure anonymity, codes were used instead of names, and digital copies of the interview data were kept under password protection, with access only to the research team. Additionally, the physical copies of the interview data have been carefully stored in an office and will be destroyed after 3 years.

Results

A total of 30 participants voluntarily participated in the study; 17 were healthcare service providers (5 doctors, 5 midwives, 5 nurses and 2 health educators), and 13 were pregnant women. The healthcare service providers had between 5–20 years of clinical experience in antenatal clinics. The pregnant women were aged between 23–39 years, had a gestational age of 30–37 weeks and had between 1–6 children. All the pregnant women either had a primary, secondary or tertiary level of education, with 9 being formally employed and 4 being housewives.

The first challenge reported by the healthcare service providers was the lack of a separate room for performing individual assessments of pregnant women. Several healthcare workers reported the shared examination rooms as a major challenge, noting that it negatively affects the pregnant women's ability to discuss sensitive issues of concern with their healthcare service providers, fearing that they might be overheard by others:

'The patient doesn't feel comfortable…she might have a lot to discuss with her care providers. But privacy issues are compromised here…' (HCP-DR#1)

'There is no privacy…we are seeing and talking with the women in the same room where another doctor is seeing another woman' (HCP-MW#1)

A second challenge that hinders the provision of quality antenatal education services is the lack of a designated and private space for providing education:

'We do not have room to separate pregnant women and provide education sessions for them' (HCP-MW#4)

'We need a proper place…unfortunately, we have one office, and 2 colleagues share the same office… women don't feel comfortable…' (HCP-EDU#1)

'The room is really not suitable…sometimes, because of disturbance, I will forget to provide education to the women. I cannot close the door; when I close it, the other patient keeps knocking the door, so I decided to leave the door open' (HCP-SN#3)

Another significant challenge mentioned was increased work overload due to a high patient number and multiple responsibilities:

'We have a lot of patients…this is an issue that prevents us from providing the optimal type of care in general…' (HCP-DR#1)

'Also, the patient list is long, causing you to rush' (HCP-SN#4)

'…the clinic is very busy, and there's more workload…we are seeing overbooked cases. …with this, of course it is difficult to provide elaborative education to the women' (HCP-DR#5)

In relation to multiple assignments, the healthcare service providers reported being assigned multiple tasks, which hindered them from providing effective education:

'Usually, as a doctor, we are doing multiple tasks; we are the ones collecting blood for investigation, doing ultrasound scans and talking to the patient and giving advice…a lot of things we are doing… we are in a rush' (HCP-DR#1)

'A lot of documentation, which consumes the time we register in the system, in the book and the green card, etc. I feel if there was less registration [documentation] I might get time so I can provide education…' (HCP-SN#5)

'My role here is to give education to all patients in the health centre, including school students and those with chronic diseases, not just pregnant women' (HCP-EDU#2)

The lack of time was another obstacle faced in providing antenatal education to pregnant women:

'No time for education; we really need time, and honestly, I feel that the women need a lot of education as part of their care. Lack of time is the biggest challenge…' (HCP-SN#5)

'…for proper counselling, she [the patient] needs at least 30 minutes, along with examining her and documenting the care. We are seeing lots of patients per day, so we don't have much time for education and counselling' (HCP-DR#4)

'No time to talk to them or to educate them, but we give tips. And if she has any question, we'll try to answer them, but as a routine to teach them, no time to stay with the patient explaining to her about her condition' (HCP-MW#4)

Another major challenge faced by healthcare service providers is the shortage of staff in the antenatal clinics:

'We are only two staff in the clinic; we have a lot of things to do, but we try our best…we see what they [pregnant women] know and what they don't know, and based on that, we give the [missing] education…' (HCP-SN#1)

'The problem is we have one doctor, and she has to finish 14 patients…that is why there's no time to sit and give time for patient education.' (HCP-SN#3)

Another aspect of the staff shortage reported was the non-availability of a midwife in these antenatal clinics.

'I don't have a midwife here…she could help somehow if we work together, and I guess she can help a lot in this part as well' (HCP-DR#5)

'We do not have a midwife in our institution, and as a nurse, I did not have any [midwifery] course… except [from] my experience working in an ANC clinic. I learn things from daily work and self-learning…' (HCP-SN#4)

The non-availability of teaching resources and materials was also cited as a challenge by these participants:

'We are not provided with educational resources and materials such as recorded videos to provide the education; we only depend on the leaflets, and we try to give education when they ask us…' (HCP-MW#5)

'We do not have leaflets for all educational topics, that is why we sometimes ask them to read more on the internet…' (HCP-SN#3)

In addition to other barriers, several midwives particularly emphasised the persistent challenge of disempowerment by the healthcare system in relation to their limited prescribed scope of practice in the antenatal clinics:

'I feel the midwife has the capability to provide antenatal education comprehensively if she was given the support [read permission] to do that by the necessary authorities' (HCP-MW#1)

'I am here as a general nurse not as a midwife, although my certificate is in midwifery…in the clinic, my responsibility is just to inform the doctors. ...We are not authorised to give education regarding complications of pregnancy' (HCP-MW#4)

Another important challenge faced by healthcare workers is the reluctance of some women to focus on the available health education opportunities. This challenge was reported mainly as the reluctance of some pregnant women to planned educational sessions:

'…[some pregnant women]…are not interested, and they don't ask…even if we tell something, they will not show the interest to learn or to know' (HCP-DR#4)

'Also, some women who have previous experience, for example with diabetes, will say that "I already

know what to eat and what to do from my previous experience…" She will not come even if the services are available. I wish the women take it seriously…' (HCP-EDU#1)

This results in the healthcare professional having to shoulder the additional burden of constantly determining the desired educational needs of the women, which results in more work for healthcare professionals.

A major challenge faced by pregnant women in this study was the lack of focus of antenatal education on the actual needs of pregnant women:

'Every pregnant woman should receive education… even me, when I come for my second pregnancy, I believe I might need education on many things; each pregnancy is unique, and it should not be treated as if she knows from her previous experience' (P.W#1)

'Unfortunately, she explained without details… the patient comes out of the [antenatal] clinic with questions in her mind. As that was my first childbirth, that situation caused me fear and phobia…' (P.W#4)

In addition, some women felt that the healthcare service providers gave them answers that did not address their needs. They perceived this as providing them with superficial education:

'We see that the pregnant woman is not aware of the problem, and the doctor gives her superficial information about treatment and the risks and consequences. The medical staff should ask and discuss problems and symptoms with the pregnant woman in [more] detail' (P.W#7)

'We also need them [HCPs] to focus more on educating us about childbirth, the postpartum stage and how to deal with a nursing baby' (P.W#9)

'We wish the medical staff would pay more attention to education… they only pay attention to routine examinations of pregnant women…' (P.W#12)

'They are not focusing on educating the pregnant women. If the pregnant woman is educated and aware of these topics, she would be able to deal with every symptom and problem that happens with her' (P.W#13)

Another challenge to receiving quality antenatal care is the large number of patients overcrowding the clinics:

'Another big problem is the overcrowded clinic and the large number of pregnant women who visit the clinic. Sometimes, I find six patients with me in the same room, waiting to undergo blood pressure examinations. So, you find the nurse trying to finish off the patients and just leave' (P.W#4)

In further agreement, another participant reiterated that:

'The problem in the institution is the limited number of employees. Every day, they receive from 20 to 30 pregnant women. This is difficult… [and] more than the health workers' capacity. They cannot give lectures or provide [quality] antenatal educational services for all the women here' (P.W#5)

Another persistent challenge mentioned by most pregnant women was the lack of resources required for effective teaching sessions:

'We need more educational services… The medical staff is only depending on leaflets…they are not using a variety of methods… How can they guarantee that the pregnant women will read these leaflets to get the information?' (P.W#11)

The use of unfamiliar language during sessions limits women's understanding of the content:

'Among the challenges I face as a pregnant woman is the medical staff's use of terms that I do not understand. Although I'm a nurse, there are some terms I do not understand, especially since I do not work in the maternity department' (P.W#7)

The healthcare service providers suggested various strategies to improve antenatal education services. Some healthcare service providers recommended staffing antenatal clinics with midwives as a strategy to help improve the provision of antenatal educational services:

'…we should also have specialised staff, mainly midwives, so that they can give more, since they are more familiar with these topics that need to be discussed with pregnant women, and they can give better services' (HCP-SN#1)

'[It is] very important to have a midwife…she will help to make my life easy. She knows what to do without coming back to me. A midwife is very important and should be available in each health centre…' (HCP-DR#1)

'If we have a midwife, she can help a lot… she can do abdominal palpation, checking the foetal heart rate and provide health education; if she is available, I feel the burden will reduce and the workload will be shared between us…' (HCP-DR#2)

'The midwife will help a lot…and she will be more interested in preparing the women for delivery, and she can even explain to the doctors here about the management of different stages of labour' (HCP-DR#3)

Another recommendation was having a designated room provided to the clients:

'We need a proper place to educate mothers because education is an essential part of antenatal care' (HCP-MW#3)

'One of the solutions is to provide a room for counselling' (HCP-EDU#2)

Some healthcare service providers further recommended increasing the number of clinical staff:

'If we increase the number of staff, it will help to improve the quality of our service' (HCP- DR#5)

'If they can give us enough staff, it will help a lot in this area' (HCP-NS#1)

'They need to provide more educators in the [antenatal] clinics' (HCP-EDU#1)

Expanding and ensuring diversity in the educational activities and methods was another suggested strategy to improve the provision of educational service, according to the healthcare service providers:

'We [currently use] leaflets and posters. ...[but] we need various educational materials, such as figurines and mannequins...to explain and deliver the information clearly...the illustrations attract more attention' (HCP-EDU#2)

'Maybe we can make audio-visual aids which will really help to attract the women's attention, especially the young mothers and even the multigravida mothers' (HCP-DR#5)

'Create a schedule for nurses to prepare a topic for the pregnant women, and we can cooperate with other healthcare providers, like physiotherapists and dietitians, to provide teaching sessions for the pregnant women; it will be fair enough to provide the pregnant women with a schedule of different educational classes' (HCP-MW#4)

In terms of scheduled teaching sessions, a midwife recommended the following:

'I think we should schedule teaching sessions for pregnant women at least weekly' (HCP-MW#1)

The participants also suggested continuing professional development through courses and workshops:

'[We] need courses related to antenatal education because there are many methods we can learn to provide better services...and if the educator is trained, then more topics can be included in the education...it will be perfect' (HCP-MW#2)

'...workshops and training for the staff are needed to improve service delivery because not all are familiar with the educational topics...sometimes, new staff need somebody to follow...the idea of training will be good as it will help us to learn, refresh and update our knowledge...' (HCP-SN#4)

'Providing training courses for physicians, nurses and educators, especially about topics related to labour and birth, exercises, contraceptives...etc., will be very helpful in improving service delivery' (HCP-DR#5)

An important strategy suggested by a midwife to improve the provision of antenatal education services involved hiring a staff member dedicated to providing education:

'I will suggest assigning a staff whose only role is to educate the women; that will really help a lot...even a simple advice you give might stick in her [PW] mind and help to change a lot of behaviours. As midwives, we try our best to provide the women with the information we gained from our midwifery program...education should be something that is regularly provided to the women in all aspects of care... We should not wait for complications to occur before we provide the education' (HCP-MW#5)

Another innovative strategy suggested was the provision of a telephone hotline for pregnant women to call and ask key questions that need to be answered urgently by healthcare service providers:

'...they need a hotline they can call to make inquiries... I believe some of the questions might not come during their visit; when she goes home, some questions might arise, and then she wonders what to do...' (HCP-MW#2)

Another recommendation was the establishment of midwife-led care units across the country:

'In the midwife-led clinic, we have sufficient time to discuss and provide individualised care...the women will be seen by the same midwife, so it helps in strengthening the trust relationship... Also, she will feel more comfortable discussing and expressing [herself] better than if she is seen by different providers during each visit...' (HCP-MW#2)

The use of social media to pass educational messages was also recommended since social media is widely accepted by many people as this participant affirms:

'Like in TV, structured education can be displayed on TV so that people can see and follow because I feel that through social media, the idea of [antenatal] education will be more accepted by people' (HCP-SN#4)

The pregnant women also suggested various strategies to improve antenatal education services. The women suggested the need for focused and regular antenatal education throughout pregnancy:

'The pregnant woman should get education before going through the experience of childbirth...she might go too late... Also, they should focus more on the proper method of pushing while giving birth...' (P.W#10)

'They need to give us information about childbirth and the child. In the first trimester, they are supposed to give us information about the correct meals, medicine, exercises and positions of sleeping and the movement of the pregnant woman for safe pregnancy' (P.W#9)

'The staff in antenatal clinics should give pregnant women, at the beginning of their pregnancy, a lecture on how to deal with the symptoms of pregnancy and the complications that they may be exposed to. ...we need

more focus from the medical staff…educate them about pregnancy as they are at a very sensitive and important stage' (P.W#4)

'They [HCPs] are supposed to tell us that at the first stage of pregnancy, avoid this type of food, and in the second stage, these are certain types that you avoid or take…also, they should educate us about movement and physical activity during the pregnancy, either routinely or daily, especially if the pregnant women have problems during pregnancy' (P.W#8)

Some pregnant women suggested the introduction of various educational activities in the clinics:

'We do not only need routine visits and check-ups, we also need education about all related care. I suggest conducting educational lectures…and discussing the experiences of other mothers. Also, the available posters and brochures should be reviewed and updated…' (P.W#2)

'Create a group and give education, and sometimes, in the same group, some women might have experience that other women can benefit from' (P.W#3)

'We also wish there would be an awareness video for the pregnant woman to benefit from and that will help her to understand and comprehend the information more' (P.W#7)

In addition, some pregnant women recommended hiring a staff solely dedicated to providing antenatal education:

'It would be beneficial if we have a specialist nurse in the health institution specifically providing antenatal educational services' (P.W#13)

'I feel the nurses are busy, so it will be better to employ somebody to provide the teaching and education…this person will listen to the woman, answer all her questions, reassure her and make her feel supported…' (P.W#1)

'I belief that a nurse or a specialist in antenatal educational services must provide the pregnant women with all information needed' (P.W#2)

Similar to the healthcare service providers, the pregnant women also suggested that a dedicated office be made available for education and counselling:

'An education office can be set up for pregnant women. This will result in the provision of more care… they will open their hearts to express their feelings, needs and inquiries. This will help to answer questions in their mind…' (P.W#2)

Another recommendation to improve antenatal services was minimising the use of medical jargon:

'The first thing is to make sure that the pregnant woman understands all that the doctor says to her, so they need to avoid using difficult terms' (P.W#7)

Discussion

The current study identified many factors that negatively impact the provision and reception of antenatal education services in the selected health facilities in Oman. These findings are comparable to those of a previous study conducted in Oman by Al Maqbali, which found that pregnant women appeared disempowered and seemed to lack control over the care they received.[14] As a result, the women felt unsatisfied, especially because a significant discrepancy existed between what they expected and needed and the actual care and information they received during antenatal visits.

Similarly, in Iran, Javanmardi *et al*. conducted a study on the challenges women face in accessing health information during pregnancy and found that there was insufficient interaction between these women and healthcare service providers. In addition, there was also failure to access various information resources from the health facilities.[21] The authors recommended that policy-makers and health-planners remove the barriers that interfere with the delivery of quality health information during pregnancy. A study conducted in Addis Ababa, Ethiopia, on antenatal care and health education also identified similar challenges. The challenges included but were not limited to the shortage of staff, lack of time, lack of training, negative staff attitude, negative cultural beliefs and practices and lack of incentives for healthcare service providers. As reported in the current study, these barriers hinder effective antenatal education service provision in the selected health facilities.[5]

Regarding how these challenges might be mitigated, both healthcare service providers and pregnant women provided some suggestions about who, where, when and how to improve the current antenatal education services. The rationale for these strategies is that when such gaps are addressed, they result in improved antenatal education services, which in turn creates a positive impact on obstetrical outcomes, such as reducing the incidence of low-birth weight and prematurity and promoting exclusive breastfeeding, benefitting the baby, mother and family.[22,23]

The most prominent suggestions from both groups included the provision of a proper designated space for antenatal education, a dedicated staff for antenatal education, innovative educational activities and facilities and tailor-made training for healthcare service providers. These recommendations are consistent with those documented in Woldeyohannes and Modiba's study in Ethiopia, which advocated for ongoing education for healthcare service providers,

assignment of dedicated staff to provide antenatal education services and reducing patient numbers per day.[5]

Another recommendation that has received attention in previous studies is the creation of midwife-led antenatal clinics. A classical Cochrane Collaborative study found that pregnant women who received prenatal, intrapartum and postnatal care primarily from a midwife were less likely to deliver prematurely and required fewer medical interventions compared with women cared for by obstetricians or family physicians.[24] The study found that midwife-led care resulted in fewer epidurals and episiotomies, lesser odds of premature delivery and greater odds of spontaneous vaginal birth and a better pregnancy experience overall. This finding is consistent with the WHO, International Confederation of Midwives (ICM) and National Institute for Health and Care Excellence recommendation that midwife-led care is the safest approach of care for healthy pregnant women who have no immediate danger signs.[25–27]

Additionally, several other studies have argued that midwife-led-care empowers pregnant women and instils confidence in them, helping them to believe in their ability to give birth without medical and obstetric interventions. According to the ICM, midwife-led care means that the midwife is the lead healthcare professional responsible for the planning, organising and delivery of care to a woman from the point of initial booking for antenatal care until the postpartum period.[26] The women in these studies also reported developing the ability to recognise the danger signs in pregnancy, which helped them to abstain from risky behaviours and avoid complications associated with pregnancy and childbirth, resulting in positive outcomes.[28,29] In recent times, this model has received further support, with the WHO advocating in 2020 for investment in such midwifery models of care to provide high-certainty and evidence-based care. This strategy would improve maternity care by integrating such care into existing healthcare systems, thereby helping to transform maternal health globally.[30]

Moreover, these proposed strategies align with the antenatal care recommendations of Queensland Health, Australia, which requires antenatal education to equip pregnant women with balanced information, including information about pregnancy, birth and possible complexities and the transition into the postnatal period. Additionally, the strategy recommends that a dedicated health educator be adequately trained and prepared to provide antenatal education based on the principle of adult learning.[31] Furthermore, in Ireland, the National Women and Infant Health Program states that providers of antenatal education should be supported with the most up-to-date educational materials. This support should include innovative audio-visual aids that will help to provide evidence-based information to parents. Besides, these providers should be granted protracted time to engage in continuous professional development programmes to improve their skills and understanding of adult learning, group facilitation and evidence-based practice, among others. The programme further recommends conducting antenatal education in a safe, clean and well-equipped physical environment to enhance each pregnant woman's active participation and adequately meet their learning needs.

Conclusion

The current study established that healthcare service providers and pregnant women experience many challenges while providing and receiving antenatal education services, respectively. As a result of the many challenges, significant deficiencies exist in the quality and quantity of antenatal education services provided to pregnant women, especially in relation to pregnancy, labour and birth, postpartum and new-born care. The findings also clearly indicate that these antenatal educational services are not provided uniformly and adequately to all pregnant women. It is therefore recommended that there be designated spaces, dedicated staff, innovative educational activities and creation of awareness about the actual scope of midwifery practice among healthcare service providers and the public. Finally, this study also recommends that midwife-led antenatal clinics should be established to provide comprehensive maternity services in line with the current recommendation of the WHO.

AUTHORS' CONTRIBUTION

MYKA conceptualised the idea and was involved in data collection. VS and GAM contributed to the design, analysis and drafting of the manuscript. VS and GAM supervised the study. All authors approved the final version of the manuscript.

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CONFLICT OF INTEREST

The authors declare no conflicts of interests.

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References

1. World Health Organization. New global targets to prevent maternal deaths. From: https://www.who.int/news/item/05-10-2021-new-global-targets-to-prevent-maternal-deaths Accessed: Apr 2023.
2. WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Maternal mortality: Levels and trends 2000 to 2017. Geneva: 2019. From: https://www.who.int/publications/i/item/9789241516488 Accessed: Apr 2023.
3. Ahmad D, Mohanty I, Hazra A, Niyonsenga T. The knowledge of danger signs of obstetric complications among women in rural India: Evaluating an integrated microfinance and health literacy program. BMC Pregnancy Childbirth 2021; 21:79. https://doi.org/10.1186/s12884-021-03563-5.
4. Feroz A, Perveen S, Aftab W. Role of mHealth applications for improving antenatal and postnatal care in low and middle income countries: A systematic review. BMC Health Serv Res 2017; 17:704. https://doi.org/10.1186/s12913-017-2664-7.
5. Woldeyohannes FW, Modiba LM. Antenatal Care Users, Health Care Providers' Perception and Experience on Antenatal Care Health Education: Qualitative Study at Five Public Health Centers, Addis Ababa, Ethiopia, 2020. https://doi.org/10.21203/rs.3.rs-76740/v1.
6. Kruk ME, Chukwuma A, Mbaruku G, Leslie HH. Variation in quality of primary-care services in Kenya, Malawi, Namibia, Rwanda, Senegal, Uganda and the United Republic of Tanzania. Bull World Health Organ 2017; 95:408–18. https://doi.org/10.2471%2FBLT.16.175869.
7. Ononokpono DN, Baffour B, Richardson A. Mapping maternal healthcare access in selected West African countries. Etude Popul Afr 2020; 34:5082–105. https://doi.org/10.11564/34-1-1495.
8. United Nations. United Nations Sustainable Development Goal 3: Ensure healthy lives and promote well-being for all at all ages. From: https://www.un.org/sustainabledevelopment/health/ Accessed: Apr 2023.
9. Ministry of Health. Annual Health Report 2021. From: https://www.moh.gov.om/en/web/statistics/-/-2-10 Accessed: Apr 2023.
10. Ministry of Health. Annual Health Report. From: https://www.moh.gov.om/en/web/statistics/annual-reports Accessed: Apr 2023.
11. Karlsen S, Say L, Souza JP, Hogue CJ, Calles DL, Gulmezoglu AM, et al. The relationship between maternal education and mortality among women giving birth in health care institutions: Analysis of the cross sectional WHO Global Survey on Maternal and Perinatal Health. BMC Public Health 2011; 11:606. https://doi.org/10.1186/1471-2458-11-606.
12. Halim LB, Alajmi F, Al Lamki S. Ensuring universal access to primary health care in Oman 2018. From: https://improvingphc.org/ensuring-universal-access-primary-health-care-oman Accessed: Apr 2023.
13. Dong K, Jameel B, Gagliardi AR. How is patient-centred care conceptualized in obstetrical health? Comparison of themes from concept analyses in obstetrical health- and patient-centred care. Health Expect 2022; 25:823–39. https://doi.org/10.1111/hex.13434.
14. Al-Maqbali F. Navigating antenatal care in Oman: A grounded theory of women's and healthcare professionals' experiences. Ph.D. Thesis, 2019, University of Manchester, Manchester.
15. Etikan I, Musa SA, Alkassim RS. Comparison of convenience sampling and purposive sampling. Am J Theor Appl Stat 2016; 5:1–4. https://doi.org/10.11648/j.ajtas.20160501.11.
16. Bradshaw C, Atkinson S, Doody O. Employing a qualitative description approach in health care research. Glob Qual Nurs Res 2017; 4:2333393617742282. https://doi.org/10.1177%2F2333393617742282
17. Moser A, Korstjens I. Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. Eur J Gen Pract 2018; 24:9–18. https://doi.org/10.1080/13814788.2017.1375091.
18. Lincoln Y, Guba EG. Naturalistic inquiry. Newbury Park, CA, USA: Sage, 1985.
19. Borkan JM. Immersion–crystallization: A valuable analytic tool for healthcare research. Fam Pract 2021; 39:785–9. https://doi.org/10.1093/fampra/cmab158
20. Nowell LS, Norris JM, White DE, Moules NJ. Thematic analysis: Striving to meet the trustworthiness criteria. Int J Qual Methods 2017; 16:1609406917733847.
21. Javanmardi M, Noroozi M, Mostafavi F, Ashrafi-Rizi H. Challenges to access health information during pregnancy in Iran: A qualitative study from the perspective of pregnant women, midwives and obstetricians. Reprod Health 2019; 16:128. https://doi.org/10.1186/s12978-019-0789-3.
22. Silva EP, Lima RT, Osório MM. Impact of educational strategies in low-risk prenatal care: Systematic review of randomized clinical trials. Cien Saude Colet 2016; 21:2935–48. https://doi.org/10.1590/1413-81232015219.01602015.
23. Maastrup R, Rom AL, Walloee S, Sandfeld HB, Kronborg H. Improved exclusive breastfeeding rates in preterm infants after a neonatal nurse training program focusing on six breastfeeding-supportive clinical practices. PLoS One 2021; 16:e0245273. https://doi.org/10.1371/journal.pone.0245273.
24. Potera C. Evidence supports midwife-led care models: Fewer premature births, epidurals, and episiotomies; greater patient satisfaction. Am J Nurs 2013; 113:11–15. https://doi.org/10.1097/01.NAJ.0000437097.53361.dd.
25. World Health Organization. Standards for improving quality of maternal and new born care in health facilities 2016. From: https://apps.who.int/iris/bitstream/handle/10665/249155/9789241511216-per.pdf Accessed: Apr 2023.
26. International Confederation of Midwives. Philosophy and model of midwifery care 2018. From: https://www.internationalmidwives.org/assets/files/definitions-files/2018/06/eng-philosophy-and-model-of-midwifery-care.pdf Accessed: Apr 2023.
27. National Institute for Health and Care Excellence. Antenatal care for uncomplicated pregnancies. From: https://www.nice.org.uk/terms-and-conditions#notice- of rights Accessed: Apr 2023.
28. Voon ST, Lay JTS, San WTW, Shorey S, Lin SKS. Comparison of midwife-led care and obstetrician-led care on maternal and neonatal outcomes in Singapore: A retrospective cohort study. Midwifery 2017; 53:71–9. https://doi.org/10.1016/j.midw.2017.07.010
29. Sandall J, Soltani H, Gates S, Shennan A, Devane D. Midwife-led continuity models versus other models of care for childbearing women. Cochrane Database Syst Rev 2016. https://doi.org/10.1002/14651858.CD004667.pub5
30. Edmonds JK, Ivanof J, Kafulafula U. Midwife led units: Transforming maternity care globally. Ann Glob Health 2020; 86:44. https://doi.org/10.5334%2Faogh.2794.
31. The Queensland Health. Recommendations for antenatal education content, development and delivery. From: https://clinicalexcellence.qld.gov.au/priority-areas/service-improvement/maternity-service-improvement Accessed: Apr 2023.