Original Article

doi: 10.31674/mjn.2025.v17isupp1.007

MJN

Evaluation of Attitudes of Antenatal Care During Pregnancy at Primary Health Care Centers in Iraq: A Cross-Sectional Study

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ABSTRACT

Background: Primary Health Care (PHC) plays a critical role in ensuring that maternity care is accessible and effective for all mothers, reducing the risk of complications during childbirth. Antenatal Care (ANC) is a key component of this, as it helps detect and address potential health concerns throughout pregnancy, improving both maternal and neonatal outcomes. **Methods:** A descriptive cross-sectional study was carried out to assess the effectiveness of the ANC service in Nasiriyah, Iraq, focusing on its components, analysis, and results. The study involved 124 women receiving ANC services from three health care centres and two rural health centres in Nasiriyah, Iraq. **Results:** The results revealed that the average age of the women was 26.5 years, more than half were highly educated, (54.84%) were housewife, the percentage of women who attended the ANC once (16.93%), twice (39.52%), three times (30.64%), and four or more times (12.91%) during the duration of their pregnancy, regarding the overall content, the level of services provided by health canters and hospitals was satisfactory to (65.32%) pregnant women, the satisfaction level with Employees behaviour, (54.03%) of pregnant women felt satisfied, Regarding the waiting time, 69.35% of the individuals expressed satisfaction, (24.19%) expressed dissatisfaction, while 91.94% of individuals expressed satisfaction regarding fees. **Conclusion:** Most pregnant women have acceptable satisfaction with ANC services.

Keywords: Antenatal Care (ANC); Challenge; Maternity; Maternal Healthcare (MHC); Socio-Demographic Factors

INTRODUCTION

Antenatal Care (ANC) forms a part of Maternal Health Care (MHC), helping to detect and manage pregnancy-related complications. As per the 2018 guidelines from the World Health Organisation, regular ANC checkups can improve pregnancy outcomes by decreasing the chances of preterm births and low birth weight babies (Bountogo *et al*., 2021). When women attend four ANC appointments, they receive benefits such as tetanus shots and nutritional support, which contribute to the well-being of the mother and the child (Akseer, 2020). In Iraq, women's perspectives on the ANC are shaped by factors such as their status. A study by Molan, (2021) have shown that women from backgrounds often encounter difficulties accessing ANC services due to challenges like transportation issues, financial constraints and a lack of awareness about the benefits of ANC. These barriers highlight the importance of targeted initiatives to increase ANC utilisation among marginalised communities.

Cultural beliefs also play a role in influencing perceptions of ANC in Iraq. Research (Al-agele & Hassan, 2020) indicates that customs and familial influences can deter some women from seeking ANC services. In regions there is a preference for birth attendants over healthcare providers due to deeply ingrained cultural norms and scepticism towards modern medical practices. To overcome these challenges, it is vital to implement health education programs that are culturally sensitive and integrate practices with the promotion of ANC. This approach is crucial for addressing barriers to accessing maternal healthcare services The perception of care quality at health centres also influences women's views on ANC, leading some to opt for a Traditional Birth Attendant (TBA) instead of formal healthcare facilities. Pregnant women are more inclined to seek ANC services when they anticipate receiving respectful and empathetic care. According to Al-Abedi (2021), healthcare providers' behaviour, facilities' cleanliness, and availability of supplies greatly impact women's

Received: March 12, 2025; Received in revised form: July 31, 2025; Accepted: August 8, 2025

willingness to engage in ANC services. Enhancing the quality of care at healthcare centres through provider training in patient-centred care and ensuring resources is key to boosting ANC utilisation.

The latest technological. Digital health solutions opportunities for enhancing ANC services in Iraq. Telemedicine and mobile health apps can expand access to ANC through consultations, health education materials and appointment reminders. A recent study by (Sharma *et al*., 2023) revealed that utilising a health app increased prenatal care visit frequency and enhanced maternal health outcomes in a low-income setting. Technological advancements have the potential to close the gap, in accessing healthcare services in areas that lack resources or are away. Educational initiatives also play a role in shaping people's perceptions of healthcare. A recent cross-sectional study conducted in Iraq (Salih *et al*., 2024) demonstrated that informal community-based sources such as family and relatives played a significant role in determining pregnant women's awareness of maternal risk factors, highlighting the value of culturally embedded educational outreach. These results indicate that raising awareness through efforts can impact the utilising of prenatal care services and ultimately improve outcomes for mothers.

Moreover, providing support to women is crucial. Another study (Al-Kuran *et al*., 2024) emphasised how support from family and communities can encourage women to attend their healthcare appointments. Women who received encouragement from their loved ones were more inclined to prioritize their prenatal care visits. This underscores the significance of involving communities in establishing support networks that promote the use of prenatal care services. The author should not overlook the impact of healthcare policies and infrastructure. A separate study (Alhaidari *et al*., 2018) examined how healthcare policies influenced healthcare utilisation in Iraq, demonstrating that supportive policies and enhanced healthcare facilities improved access to and quality of services. Strengthening healthcare policies and infrastructure is vital for ensuring the provision of prenatal care services, also another study conducted in Baghdad (Jaber & Sahib, 2025) emphasised that the quality and accessibility of antenatal care services are directly influenced by the availability of infrastructure, human resources, and service provision. The authors highlighted disparities between central and peripheral health centres, underscoring the importance of strengthening healthcare policies and infrastructure to ensure equitable maternal care.

Challenges in Accessing ANC

Two challenges affect mothers' health and the availability of ANC services. The first set of obstacles involves difficulties within healthcare facilities. The second set involves barriers related to women's demand for ANC services. Getting access to Care in Iraq is quite challenging. It significantly impacts the health outcomes of both mothers and newborns. Issues like transportation problems and financial limitations are common among those with low incomes (Ameh *et al* 2011). Additionally, cultural beliefs and traditional customs often discourage women from seeking ANC services, as they prefer birth attendants due to a lack of trust in modern medical practices (Dada, 2019). Health centres perceived quality of Care also plays a role in ANC utilisation; substandard facilities, lack of supplies and unprofessional healthcare providers deter many women from attending regular checkups (Rahmani & Brekke, 2013). Furthermore, lack of awareness and education about the benefits of ANC contribute to utilisation rates in rural areas (Afaya *et al*., 2020).

Some barriers make access more complicated. At the same time, mobile health apps have shown potential to increase ANC visits; limitations in digital access prevent their widespread use in underserved regions (McCool *et al*., 2022). Political instability and conflicts across parts of Iraq worsen these issues by disrupting healthcare services and infrastructure (Harding & Libal, 2019). To tackle these issues effectively, an integrated approach is essential. This involves providing economic support, implementing culturally sensitive education programs, enhancing the quality of healthcare services, embracing technological advancements, and establishing strong healthcare policies. By implementing these measures, Iraq's access to care can be improved, ultimately promoting the health of mothers and newborns.

Research shows that many women choose not to visit clinics for Care due to concerns about the lack of privacy and confidentiality in primary healthcare settings. Their reluctance to seek Care promptly is often linked to feelings of anxiety. Similarly, a Q methodology study conducted in Iraq revealed that many women expressed dissatisfaction with antenatal services, citing poor communication, lack of respectful treatment, and disparities in service quality across different healthcare facilities as key deterrents to seeking care (Shabila *et al.*, 2024).

Enhancing the appeal of Antenatal Care (ANC) services for women requires a focus on the quality of care provided during consultations. Negative treatment at healthcare institutions significantly reduces the likelihood of women returning to the facility. Moreover, if a woman does return, her receptiveness to guidance may be compromised due to prior experiences. Ensuring respectful, supportive, and patient-centred care is essential to encourage consistent ANC attendance and improve maternal health outcomes.

Maternity Self-Awareness

Younger women are more prone to postpone the initiation of Antenatal Care (ANC) till the later stages of the second trimester due to their lack of awareness regarding common pregnancy signs (Warri & George, 2020; Haddrill, 2014). Numerous women face difficulties in embracing their circumstances, particularly when the pregnancy is unanticipated, since they perceive themselves as unready to adapt their lives and devote significant time to contemplating the termination of the pregnancy period (Garrod, 2022). The lack of support, criticism, or response from family members, partners, or community members significantly impacts women's willingness to accept their pregnancy (Rini, 2006). A recent study conducted in Basra, Iraq (Alfaaz, 2025), found that younger women often lack awareness regarding essential antenatal procedures and early pregnancy indicators. This gap in knowledge contributes to delayed initiation of ANC and reflects broader challenges in maternal self-awareness and health education.

METHODOLOGY

Study Design and Setting

This study adopted a descriptive cross-sectional design to examine the patterns of mental health service use among pregnant women and their perceptions of the quality of care they received. This design was chosen for its effectiveness in collecting data from a specific population at a single point in time to describe key characteristics and relationships within the study group (Creswell & Creswell, 2017). The research was conducted in five deliberately chosen healthcare facilities in Nasiriyah, the administrative centre of Dhi Qar Governorate, Iraq. The selection of these facilities—three in the city's heart and two on its periphery—was a purposeful sampling strategy to ensure representation from both urban and rural settings. This method allowed for a focused inquiry into the specific contexts of mental health service provision across different geographical areas (Patton, 2014). All selected health centres are under the direct supervision of the Public Health Department and provide comprehensive essential healthcare services, including maternity and child health. Figure 1 depicts the study flowchart.

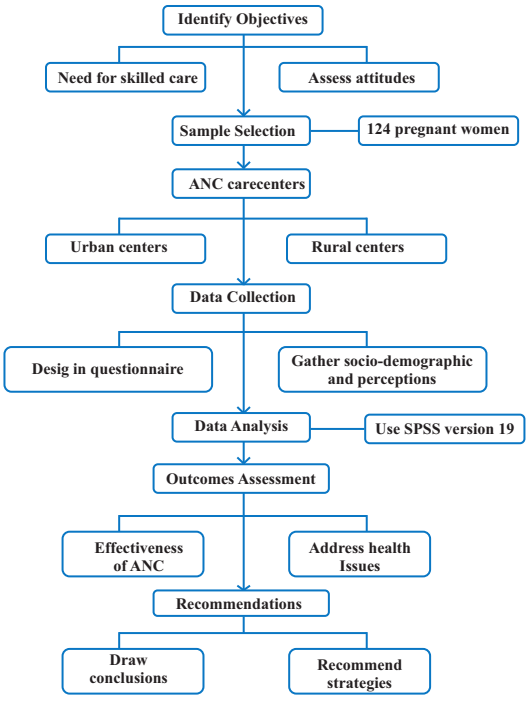

Figure 1: Flowchart of Proposed Study

Study Population and Sampling

The study population consisted of pregnant women receiving prenatal care at the selected healthcare facilities. Participants were enrolled voluntarily after a clear explanation of the study's aims, process, and the guaranteed confidentiality. Women who provided their informed consent, signed by both the researcher and the participant, were included. A copy of the consent form was provided to each participant.

Data Collection Instruments

Data were collected using a pre-tested, semi-structured questionnaire. The questionnaire was designed to gather information on participants' socio-demographic characteristics, patterns of maternal health service use, and their perception of the quality of care received during their most recent pregnancy. The questionnaire was pre-tested on seven pregnant patients at Bint Al-Huda Women and Children's General Hospital to ensure its clarity, appropriateness, and length.

Statistical Analysis

The collected data were analysed using SPSS version 19. The chi-square (X^2) test was used to examine the relationship between socio-demographic factors, mental health service utilisation, and the perception of mental health care quality. A significance level was set at a p-value of ≤ 0.05.

Ethical Consideration

This study got ethical approval from the Ministry of Higher Education and Scientific Research, University of Baghdad, Iraq with reference number 80 on 08th January 2025.

RESULTS

The results revealed that the average age of the women was 26.5 years, and interviews were conducted with all research participants. In terms of educational attainment, 3.23% were illiterate, 7.26% had a primary education, 20.97% had an intermediate education, 30.65% had a secondary education, and 37.90% had a university education. Regarding the family's monthly income, 29.03% of the families reported that it was insufficient, 33.06% reported that it was sufficient, 23.39% reported that it was adequate, and 14.52% reported that it was wealthy. Regarding the residential situation, most women (67.74%) reside in independent homes with their husbands. It was found that 25.81% of pregnant women were employees, 54.84% were housewives, and 19.35% were students, as shown in table 1.

Table 1: The Socio-Demographic Attributes of the Participants

Personal Traits Related to Socio-Demography	n = 124	95% CI
Age (yr.)		
14-19	6 (4.84%)	1.06-8.62
20-25	48 (38.71%)	30.14-47.28
26-30	39 (31.45%)	23.28-39.62
31-36	22 (17.74%)	11.02-24.47
≥37	9 (7.26%)	2.69-11.82
Ranking of Education		
Illiterate	3 (3.23%)	0.12-6.34
Primary	8 (7.26%)	2.69-11.82
Middle	26 (20.97%)	13.80-28.13
Secondary	40 (30.65%)	22.53-38.76
Higher	47 (37.90%)	29.36-46.44
Equivalent Income		
Insufficient	36 (29.03%)	21.03-37.03
Sufficient	41 (33.06%)	24.79-41.33
Adequate	29 (23.39%)	15.94-30.84
Wealthy	18 (14.52%)	8.24-20.80
Residential Situation		
With partner	40 (32.26%)	24.01-40.51
Independent	84 (67.74%)	59.49-75.99
Employment Status		
Employed	32 (25.81%)	17.90-33.72
Housewife	68 (54.84%)	45.55-64.13
Student/other	24 (19.35%)	12.84-25.86

The women have experienced three or more spontaneous abortions. With regard to ANC visits during pregnancy, the percentage of women who attended the ANC once (16.93%), twice (39.52%), three times (30.64%), and four or more times (12.91%) during the duration of their pregnancy. Regarding the location of the ANC visit during pregnancy, 16.13% of the women visited the hospital, while 83.87% visited the health centres.

In terms of parturition status, 24.19% of women experienced it during their first pregnancy, 62.90% had numerous pregnancies and 12.90% had multiple deliveries. In terms of the historical status of abortion, the study revealed that 75.81% of pregnant women had no prior miscarriages, while 13.71% had experienced one miscarriage. Additionally, 7.26% had had two previous miscarriages, and 3.20% had experienced three or more miscarriages. The percentage of women who delivered naturally within the hospital was 16.13%. In comparison, (18.55%) were delivered naturally but with the assistance of other instruments, 52.42% were delivered by caesarean section, and 12.90% were delivered by a certified midwife outside the hospital, as per table 2.

Table 2: Utilisation Attitudes for MHC Services

Attitudes	*n* = 124	95% CI
Parturition Status		
Primiparous	30 (24.19%)	16.61-31.77
Multiparous	78 (62.90%)	54.51-71.29
Grand multiparous	16 (12.90%)	6.96-18.84
Historical of Abortion Status		
Non	94 (75.81%)	67.78-83.84
1	17 (13.71%)	7.87-19.55
2	9 (7.26%)	3.15-11.37
≥3	4 (3.20%)	0.73-5.67
Visits to ANC During Pregnancy		
1	21 (16.93%)	10.46 - 23.40
2	49 (39.52%)	30.80 - 48.24
3	38 (30.64%)	22.56 - 38.72
≥ 4	16 (12.91%)	6.80 - 19.02
Location of the ANC Visiting		
Hospital	20 (16.13%)	9.52 - 22.74
Health centre	104 (83.87%)	77.26 - 90.48
Delivery Status		
Vaginal birth -normal-hospital	20 (16.13%)	9.46-22.80
Vaginal birth -Assistant	23 (18.55%)	11.51 -25.59
Caesarean	65 (52.42%)	43.56 -61.28
Vaginal birth -TBA maternity	16 (12.90%)	6.98 -18.82

Regarding the overall content, the level of services provided by health centres and hospitals was satisfactory for 65.32% of pregnant women. Discontented (26.61%) and Unconcerned (8.07%) were the emotions that characterised them. Regarding the satisfaction level with Employees behaviour, 54.03% of pregnant women felt satisfied, 34.68% felt discontented, and 11.29% felt unconcerned. Regarding the waiting time, 69.35% of the individuals expressed satisfaction, 24.19% expressed dissatisfaction, and 6.46% expressed indifference. Regarding service fees, 91.94% of individuals expressed satisfaction, 3.23% expressed dissatisfaction, and 4.83% expressed indifference (table 3).

Table 3: Views on MHC Services

Contentment Level	*n* = 124	95% CI
Overall Contentment		
Contented	81 (65.32%)	56.83-73.81
Uncontented	33 (26.61%)	18.60-34.62
Unconcerned	10 (8.07%)	3.16-12.96
Employees Behaviour		
Contented	67 (54.03%)	45.11-62.95
Uncontented	43 (34.68%)	26.25-43.11
Unconcerned	14 (11.29%)	5.56-17.02
Waiting Period		
Contented	86 (69.35%)	61.23-77.47
Uncontented	30 (24.19%)	16.34- 32.04
Unconcerned	8 (6.46%)	2.09-10.83
Fee of Services		
Concerned	114 (91.94%)	87.56-96.32
Uncontented	4 (3.23%)	0.11-6.35
Unconcerned	6 (4.83%)	1.08-8.58

DISCUSSION

Comparing the Results to Other Studies

The evaluation of ANC services in Nasiriyah, Iraq, provides valuable insights into the perceptions and utilisation of MHC among pregnant women. This study, conducted with 124 pregnant women, reveals a diverse demographic and socio-economic background, which plays a crucial role in shaping their experiences and satisfaction levels with ANC services. To contextualise these findings, comparing them with related studies from different regions and settings is essential, highlighting similarities and differences in ANC service utilisation and satisfaction.

One key discovery from the research is the level of education among the participants, with 37.90% having completed university education and 3.23% being unable to read. This differs from a study conducted in Ethiopia, where a smaller percentage of mothers had education levels impacting their use of ANC services and satisfaction levels (Tura, 2009). The higher educational achievements in Nasiriyah likely contribute to the reported increased satisfaction levels, as education is often linked to health awareness and proactive health-seeking behaviours. Regarding income distribution in the study, diversity was noted, with 29.03% of families reporting income and 14.52% classified as wealthy. This pattern is similar to a study conducted in Kenya, where financial limitations significantly affected ANC service utilisation (Mathe, 2017). In both scenarios, women from lower-income backgrounds encountered difficulties accessing ANC services, highlighting the necessity for tailored interventions to support disadvantaged groups. Additionally, the research emphasises the role of health centres, with 83.87% of women opting for these facilities for ANC, compared to 16.13% choosing hospitals. This preference for health centres aligns with findings from a study in Bangladesh, where community health centres were deemed accessible and affordable for pregnant women (Anwar *et al*., 2008) However, using health facilities might also suggest some challenges in the availability and quality of hospital services, prompting an investigation into the factors that influence these decisions.

Regarding childbirth history, the research discovered that 62.90% of women had given birth before, while 24.19% were pregnant at the time. This finding corresponds with a study conducted in Nigeria, which also noted several women who had given birth before seeking care (Fawole, 2008). The study suggests that women who have gone through childbirth tend to utilise ANC services in areas possibly because of their familiarity and knowledge about the birthing process. One notable finding from the research is the rate of deliveries at 52.42%, surpassing the average rate. This contrasts with studies in countries like India, where caesarean rates were lower (Singh *et al.*, 2020) The significant number of births in Nasiriyah raises concerns regarding procedures, patient preferences and potential overuse of interventions during childbirth. It calls for an investigation to ensure that caesareans are performed based on necessity rather than convenience or financial incentives. Feedback on ANC services in Nasiriyah was generally positive, with 65.32% of women expressing satisfaction with the Care they received. In a study conducted by Boah *et al*. (2024), they emphasised that early initiation and continuity of ANC visits significantly improved care quality received in northern Ghanaian health facilities. The alignment between these studies reinforces the importance of early engagement and sustained attendance in ANC programs to ensure optimal maternal health outcomes. Another study in Ghana found that 63% of women reported being satisfied with their ANC services (Ansu-Mensah *et al*., 2020). However, the Nasiriyah study identified issues related to staff conduct and long waiting times as sources of dissatisfaction. Similar challenges were noted in a study in Pakistan where prolonged waits and unfriendly staff attitudes affected women's satisfaction with ANC services (Ali, 2008). These recurring problems highlight the need for staff training and management to improve experiences. The research also indicated that a large majority of women 91.94% were content with the service fees. This differs from a study in Uganda, where high fees were a barrier to accessing antenatal care services (Singh *et al*., 2020). The affordability of these services in Nasiriyah is viewed positively. Should be upheld to ensure financial constraints do not hinder access to healthcare.

In terms of miscarriage history, the study revealed that 75.81% of women in Nasiriyah had not experienced miscarriages before, while 13.71% had encountered one miscarriage. These figures are consistent with a study conducted in Turkey, which also reported rates of miscarriages among women (Ata *et al*., 2011). Recognising the history of miscarriages is crucial for tailoring prenatal care services to meet the needs of women who have faced pregnancy losses, providing them with the support and attention they need. The research highlights how

socio-demographic factors influence prenatal care services' utilisation and satisfaction levels. The participants' varied educational backgrounds and income levels underscore the importance of targeted interventions to cater to socio-economic needs. Ayele *et al*. (2025) analysed demographic and health surveys from sub-Saharan, Africa between 2015 and 2022, reveal the educational attainment, household income, and access to health insurance significantly influence the utilisation of ANC services. Women with higher education and economic stability were more likely to attend four or more antenatal visits, indicating how socio-demographic factors directly affect health-seeking behaviour and satisfaction with maternal care. These findings reinforce the results from Nasiriyah, where women with university-level education and higher income levels reported increased ANC service satisfaction.

The notable number of deliveries and instances where dissatisfaction with staff attitudes and wait times exists point towards opportunities for improving the quality of Care provided. Comparing these findings with data from regions reveals challenges and successes in delivering prenatal care services. The importance of education, income and healthcare access in influencing the use of Care highlights the need for global healthcare improvement strategies. By focusing on areas that require enhancements and utilising the strengths identified in this study, policymakers and healthcare providers can work towards ensuring that all expectant mothers receive high-quality care regardless of their economic circumstances.

The reason why pregnant women delay their visits to ANC facilities is because of the behaviour displayed by nurses towards them (Jinga *et al*., 2019). This highlights the need for nurses to improve their attitudes and provide Care. It's important to create a welcoming environment for women during antenatal care visits, as this can increase their willingness to engage with ANC services. Adjusting how pregnant women are treated during appointments could make a difference. If a pregnant woman experiences mistreatment during her visit, she may not follow the advice given at the clinic (Nghifikwa, 2021). Pregnancy experiences may influence negative attitudes from women. Research suggests that women may skip ANC if they don't see pregnancy danger signs as serious. However, how pregnant women react to danger signs depends on their knowledge of these signs and understanding of the risks if left untreated. Based on a research study carried out in Tanzania, it was discovered that the lack of health information at healthcare facilities led to pregnant women being unaware of the benefits and having a view of the quality of maternal health services provided during ANC visits (Mwangakala, 2016). The negative perceptions towards ANC services could be linked to the delivery of services. Pregnant women who experience treatment are likely to share their experiences with others, causing them to delay seeking ANC services (Nhemachena, 2011). Hence, ensuring quality services in rural areas is essential for increasing utilisation. When pregnant women are satisfied with their Care, they are more likely to have positive attitudes towards healthcare services (Srivastava *et al*., 2019).

The credibility of the healthcare system suffers when pregnant women do not receive Care during their visits. A study in Tanzania revealed that unfavourable delivery experiences affected the healthcare system's reputation, reducing community trust in giving birth at a healthcare facility and contributing to increased home births. Women who received subpar services lost confidence in healthcare facilities and opted for home births instead (Mselle *et al*., 2013).

Limitation

Despite the valuable insights gained, this study has several limitations that should be acknowledged. Firstly, the data collection process was challenged by the difficulty of accessing healthcare facilities, which required extensive coordination and time. Secondly, a significant limitation was the lack of awareness among pregnant women regarding the importance of academic research in improving health services. This often resulted in participants being reluctant to engage fully, as many wished to return home as quickly as possible due to the lack of alternative caregivers for their children. This factor may have limited the depth of information gathered and could have introduced a potential bias, as the participants might not be fully representative of the broader population of pregnant women.

CONCLUSION

The study's findings indicate that a lack of knowledge is a significant barrier to the proper utilisation of Antenatal Care (ANC) services among expectant mothers. Despite the availability of these services, there is a

clear need for effective communication strategies to improve pregnant women's understanding of the importance of ANC. The results suggest that health education efforts have not been fully effective in changing the attitudes and beliefs of expectant mothers regarding these services.

Recommendation

Enhance Information Dissemination: Health education programs should be intensified through both written materials, such as pamphlets and brochures, and broadcast media, including radio and television, to better inform pregnant women about the importance of ANC. Implement Daily Health Education Sessions: Healthcare facilities should conduct daily health education sessions in waiting areas to provide continuous information to expectant mothers. Encourage Active Participation: Healthcare professionals must actively encourage pregnant women to participate in these sessions and ask questions to assess their level of knowledge and ensure information is retained. Provide Training for Healthcare Providers: Healthcare providers should participate in seminars and training to overcome the obstacles identified as barriers to antenatal care utilisation. Include Traditional Practitioners: To improve overall maternity care, traditional practitioners should be integrated into maternal health care programs to provide them with the necessary information and skills.

Conflict of Interest

The authors declare that they have no competing interests.

ACKNOWLEDGEMENT

The authors are thankful to the participants from the Maternal and Neonate Nursing Department, Baghdad University, Iraq for their contribution to this study. They also appreciate the staff of the healthcare facilities in Nasiriyah for their great support in completing this study.

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