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## A Review on Knowledge of Antenatal Services among Pregnant Women

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Emmanuel Asomaning <sup>1</sup>, Prosper Argum <sup>2</sup>, Emmanuel Osei <sup>3</sup>

<sup>1, 2, 3</sup> Catholic University of Ghana, P.O. Box 363, Sunyani, Bono Region

Corresponding author: Emmanuel Asomaning, e-mail: [emmanuelasomaning90@gmail.com](mailto:emmanuelasomaning90@gmail.com)

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### How to Cite

Emmanuel Asomaning, Prosper Argum, Emmanuel Osei (2025). A Review on Knowledge of Antenatal Services Among Pregnant Women. *International Journal of Multidisciplinary Studies and Innovative Research*, 13(2), 11-20. DOI: 10.53075/Ijmsirq/0953646545

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**Abstract:** This review explores the knowledge and utilization of antenatal care (ANC) services among pregnant women, highlighting the factors that shape their awareness and engagement. Adequate knowledge of ANC services is crucial for maternal and fetal health, as it enables timely health monitoring, promotes early detection of complications, and facilitates informed healthcare decisions during pregnancy. However, various socioeconomic, cultural, and geographic barriers continue to limit ANC knowledge and utilization, particularly in low-resource settings. This review synthesizes current literature on the factors influencing ANC awareness, including educational level, income, urban versus rural residence, and community-based healthcare outreach. Cultural beliefs also play a pivotal role, often shaping perceptions and practices around pregnancy that impact ANC engagement. The importance of health education as an intervention is emphasized, with evidence suggesting that tailored educational programs, community health worker involvement, and mobile health (mHealth) applications improve ANC awareness and uptake, particularly among vulnerable populations. Policy reforms and healthcare provider training are also recognized as essential strategies to bridge existing knowledge gaps. The findings underscore the need for multi-faceted, context-sensitive interventions to address the diverse needs of pregnant women globally, thereby promoting equitable access to ANC and improving maternal and neonatal health outcomes.

**Keywords:** Antenatal care (ANC), maternal health, health education, socioeconomic factors, cultural beliefs

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### 1. INTRODUCTION

Antenatal care (ANC) provides critical health monitoring and education that contribute to maternal and fetal health, aiming to reduce

complications during pregnancy, childbirth, and postpartum. Adequate knowledge of ANC among pregnant women has been associated with higher utilization rates and better health outcomes

(Lincetto et al., 2021). Antenatal care (ANC) is recognized as a cornerstone of maternal and child health, providing essential healthcare services to monitor and support maternal and fetal health during pregnancy. The World Health Organization (WHO) advocates for at least eight ANC visits to ensure comprehensive health assessments and interventions, a standard that has demonstrated effectiveness in reducing maternal and neonatal mortality rates globally (WHO, 2016; Lincetto et al., 2021). Despite these guidelines, many pregnant women, especially in low- and middle-income countries, do not receive adequate ANC due to factors such as limited knowledge, socioeconomic barriers, cultural beliefs, and accessibility issues (Jiang et al., 2021). Knowledge of ANC services among pregnant women plays a crucial role in the timely initiation and adherence to these services. Research shows that awareness of the available ANC services can lead to increased utilization, which correlates with improved maternal and neonatal outcomes (Sharma et al., 2019). Women with higher levels of education and from urban settings are generally more informed about ANC and are thus more likely to utilize these services than their rural counterparts (Abubakar et al., 2020). These disparities highlight the importance of targeted educational interventions, particularly for vulnerable populations with limited access to healthcare information.

Cultural beliefs and societal norms also influence ANC knowledge and utilization. In many regions, traditional perceptions regarding pregnancy and maternal health can discourage women from seeking formal healthcare, leading to underutilization of ANC services (Abubakar et al., 2020). Furthermore, studies have found that women in communities with strong healthcare outreach programs are more likely to be informed about ANC services and the benefits they provide, underscoring the value of community-based health education (Olowokere & Okanlawon, 2018). Health education is a critical component in bridging the knowledge gap among pregnant women regarding ANC. Evidence from various countries suggests that integrating health education into ANC programs enhances women's understanding of healthcare requirements during pregnancy, subsequently promoting early and

consistent ANC visits (Olowokere & Okanlawon, 2018; WHO, 2022). Therefore, an emphasis on health education tailored to community needs and cultural contexts is vital in improving maternal health literacy. Knowledge of ANC services is influenced by a combination of socioeconomic, cultural, and educational factors. Addressing these determinants through community-based health education, improved healthcare provider communication, and supportive policy measures could improve ANC knowledge and utilization, ultimately reducing maternal and neonatal mortality.

Previous studies had highlighted the critical role of antenatal care (ANC) in reducing maternal and neonatal mortality and morbidity. Studies have consistently shown that regular ANC visits enable early detection and management of pregnancy-related complications, significantly enhancing maternal and child health outcomes (Carroli et al., 2018). Yet, numerous factors such as socioeconomic status, educational attainment, cultural influences, and accessibility to healthcare facilities continue to affect ANC utilization among pregnant women worldwide (Asseffa et al., 2020). Socioeconomic factors have a pronounced impact on ANC utilization. Evidence suggests that women from higher income brackets and those with advanced levels of education tend to access ANC services more frequently, underscoring the link between educational level, income, and health-seeking behaviors (Tsawe & Susuman, 2018). This trend is prevalent in both high-income and low-income countries, where socioeconomically advantaged women demonstrate better ANC uptake than their disadvantaged counterparts (Adekanbi et al., 2021).

Cultural norms and community attitudes further shape women's attitudes toward ANC. A study conducted in Ethiopia highlighted that traditional beliefs surrounding pregnancy and childbirth often deter women from seeking formal healthcare, thus decreasing their likelihood of using ANC services (Gebreyesus et al., 2019). In some communities, family members or traditional healers are preferred sources of care during pregnancy, which can lead to delayed or missed ANC appointments. This finding is corroborated by research in Nigeria,

where cultural resistance to formal health services has contributed to low ANC attendance rates (Sanni et al., 2019). The accessibility of healthcare facilities is another significant determinant of ANC utilization. Studies from rural areas in Kenya indicate that long travel distances, coupled with inadequate transportation infrastructure, create substantial barriers to ANC access (Ndidi & Oseremen, 2018). Additionally, limited healthcare resources in rural settings such as a shortage of trained healthcare providers complicate the delivery of essential ANC services (Anaba et al., 2021). These findings highlight the need for interventions to address both physical and logistical barriers to ANC in rural regions. Health education has emerged as an effective strategy to enhance knowledge and utilization of ANC services. A study conducted in Ghana demonstrated that health education interventions significantly improved pregnant women's awareness of ANC services and increased early initiation of ANC visits (Adu-Gyamfi et al., 2020). These programs, often delivered through community health workers, have shown success in promoting ANC utilization, especially among women in low-resource settings.

This review examines the existing literature on pregnant women's knowledge of ANC services, with a focus on understanding the determinants that influence awareness and the role of health education in ANC uptake.

## 2. FACTORS INFLUENCING KNOWLEDGE OF ANC SERVICES

Knowledge of antenatal care (ANC) services is shaped by multiple intersecting factors, including socioeconomic, demographic, cultural, and healthcare accessibility variables. These determinants play a crucial role in whether and how pregnant women access ANC services, with significant implications for maternal and child health outcomes.

**Socioeconomic and Demographic Factors:** Socioeconomic status (SES) remains a primary determinant of ANC knowledge and utilization. Studies reveal that women from higher SES backgrounds generally have greater awareness of ANC services, likely due to improved access to health information and healthcare resources (Gage

& Guirlène Calixte, 2019). Education level is particularly influential, as it equips women with the knowledge and empowerment needed to make informed healthcare decisions. Women with higher levels of education often initiate ANC visits earlier and adhere to recommended schedules compared to women with limited formal education (Ononokpono & Odimegwu, 2020). Additionally, urban residence plays a critical role, as urban-dwelling women are more exposed to health promotion campaigns and have greater access to ANC facilities than those in rural settings (Adedokun & Yaya, 2021).

**Cultural and Community Influences:** Cultural beliefs and community norms can significantly influence pregnant women's knowledge and perceptions of ANC. In many rural communities, traditional beliefs surrounding pregnancy may discourage women from seeking formal healthcare, instead promoting the reliance on family members or traditional birth attendants (TBA) (Chukwuma et al., 2020). These cultural barriers are often intertwined with stigma, where discussing pregnancy-related health openly is considered taboo, limiting women's knowledge of available services (Ayele et al., 2018). However, some regions with strong community health initiatives have effectively improved ANC knowledge. For instance, studies in Nigeria have shown that culturally sensitive community health programs help bridge the knowledge gap by providing accessible information and challenging negative cultural beliefs (Adebowale & Oladipo, 2020).

**Accessibility of Health Services:** Accessibility, encompassing both physical distance to health facilities and availability of healthcare professionals, is another key factor influencing ANC knowledge. Women in remote areas often have less awareness of ANC services due to their limited interaction with healthcare facilities and professionals. Research from rural Kenya illustrates that long travel distances and poor road infrastructure make it difficult for pregnant women to access ANC services, leading to lower knowledge levels and utilization rates (Maina et al., 2021). In contrast, urban areas generally have better infrastructure and more healthcare providers,

facilitating greater awareness of ANC services (Mugo et al., 2019).

**The Role of Health Education:** Health education is an essential factor in increasing knowledge about ANC services among pregnant women. Evidence suggests that health education programs, particularly those integrated within ANC visits, significantly improve women's awareness of ANC services and their benefits (Olusanya et al., 2020). Programs led by community health workers, who often have stronger connections with local populations, have proven particularly effective in rural settings (Bohren et al., 2021). Health education initiatives that focus on ANC awareness not only increase knowledge but also encourage earlier and more consistent attendance at ANC appointments, enhancing both maternal and fetal health outcomes.

### **3. IMPORTANCE OF HEALTH EDUCATION IN INCREASING KNOWLEDGE**

Health education is a foundational component in promoting antenatal care (ANC) utilization, as it empowers pregnant women with the knowledge necessary to make informed health decisions. Numerous studies indicate that when pregnant women receive targeted health education, they demonstrate greater understanding and adherence to ANC guidelines, which leads to improved maternal and neonatal health outcomes (Nyamtema et al., 2019). ANC health education not only provides information on essential services like nutritional support, immunizations, and screening for conditions such as anemia but also equips women to recognize warning signs during pregnancy, facilitating timely healthcare interventions (Atuhaire & Mugisha, 2020).

One of the most impactful elements of health education is the role of community health workers in disseminating ANC information, particularly in low-resource settings where access to healthcare facilities is limited. Studies from Sub-Saharan Africa show that community health education initiatives have increased early ANC attendance and adherence, with trained health workers providing culturally sensitive education that addresses the specific needs of pregnant women

within their communities (Kiplagat et al., 2018). For instance, in Uganda, community-based education led by health workers has significantly increased ANC awareness, prompting women to initiate ANC visits within the first trimester (Atuhaire & Mugisha, 2020).

Moreover, the mode of education delivery plays a critical role in knowledge uptake. A study conducted in rural India found that interactive education sessions that include visual aids and hands-on demonstrations improve comprehension and retention of ANC information more effectively than passive lecture-based approaches (Kumar et al., 2021). Similarly, mobile health (mHealth) interventions are increasingly used to deliver health education, reaching pregnant women in remote areas through SMS reminders and informational messages. Evidence from Tanzania indicates that mHealth ANC education initiatives have successfully increased knowledge about ANC schedules and reduced missed appointments (Lund et al., 2019).

Furthermore, healthcare providers' communication skills greatly influence the effectiveness of ANC education. Research shows that when healthcare workers are trained in effective communication techniques, they can better engage with patients and overcome cultural or language barriers that may impede understanding (Singh et al., 2020). Personalized, respectful interactions foster trust, encouraging women to attend ANC sessions consistently and ask questions that improve their understanding of pregnancy and childbirth care. Health education is a pivotal factor in increasing ANC knowledge, especially in resource-limited settings. By using community-based programs, mHealth solutions, and improved healthcare provider communication, ANC education initiatives can bridge gaps in knowledge, promoting better health behaviors among pregnant women and improving maternal and neonatal health outcomes.

### **4. GLOBAL GAPS IN KNOWLEDGE OF ANC SERVICES**

Despite extensive global efforts to promote antenatal care (ANC) services, significant knowledge gaps remain among pregnant women,

particularly in low-resource settings. Research has consistently shown that a substantial proportion of women are unaware of the full scope and importance of ANC services, including critical aspects such as nutritional counseling, routine screenings, and vaccinations (Yeoh et al., 2016). The World Health Organization (WHO) emphasizes the need for comprehensive ANC knowledge to reduce maternal and neonatal morbidity and mortality; however, this goal is far from being achieved in many regions (WHO, 2020).

One major contributor to these knowledge gaps is a lack of formal education among pregnant women in low-income countries. Studies from sub-Saharan Africa indicate that women with limited formal education are less likely to understand the importance of ANC services, which directly impacts their willingness and ability to seek these services (Fagbamigbe et al., 2022). Additionally, in South Asia, it has been observed that women with low literacy levels face challenges in accessing information about ANC, including understanding the benefits of routine check-ups and the administration of preventive interventions (Rahman et al., 2018). Cultural and societal influences further exacerbate these knowledge gaps. In various regions, traditional beliefs and community norms surrounding pregnancy often restrict women from obtaining accurate information on ANC, as they may rely on family members or traditional healers for guidance (Diala et al., 2020). For instance, in certain West African communities, it is believed that frequent medical visits during pregnancy may result in complications, discouraging women from attending ANC appointments (Johnson-Agbakwu et al., 2019). This cultural resistance poses a barrier to bridging the knowledge gap and improving ANC uptake.

Access to healthcare facilities also plays a pivotal role in ANC knowledge. Women in rural and remote areas often have limited access to healthcare providers who can inform them about the necessity of ANC services. Research in Southeast Asia has highlighted that geographic barriers, combined with inadequate healthcare infrastructure, result in lower ANC awareness

among rural women compared to their urban counterparts (Qureshi et al., 2021). Moreover, these disparities are not confined to low-income countries. In some underserved communities within high-income nations, pregnant women face similar knowledge gaps due to limited healthcare access and socioeconomic challenges (Chen et al., 2019). These gaps underscore the need for targeted interventions to enhance ANC knowledge. The implementation of community-based health education programs, particularly those led by community health workers, has proven effective in raising awareness and promoting ANC utilization (Afulani et al., 2018). However, more culturally sensitive and accessible educational initiatives are required to address the diverse needs of women globally and bridge the ANC knowledge gap.

## 5. INTERVENTIONS TO IMPROVE KNOWLEDGE OF ANC SERVICES

Interventions aimed at enhancing pregnant women's knowledge of antenatal care (ANC) services have been implemented worldwide, leveraging community programs, healthcare provider training, and policy reforms to address knowledge gaps and improve ANC utilization.

**Community-Based Programs:** Community-based interventions have shown significant success in promoting ANC knowledge among pregnant women, particularly in rural and underserved areas. Engaging community health workers (CHWs) to educate pregnant women about ANC has proven effective, especially when these workers are members of the local community and can tailor information to local cultural contexts (Rahman et al., 2019). For example, a study conducted in Bangladesh demonstrated that CHWs provided crucial information about ANC services, leading to improved ANC attendance and increased awareness of maternal health needs (Rahman et al., 2019). In Uganda, community-based programs have also successfully enhanced ANC knowledge through educational sessions and home visits, significantly impacting maternal health outcomes (Atukunda et al., 2019).

**Training Healthcare Providers:** Improving healthcare providers' knowledge and communication skills is another critical

intervention strategy. Healthcare providers often serve as primary sources of health information for pregnant women, so their ability to effectively communicate the benefits and requirements of ANC is essential (Yadav et al., 2020). In India, training programs focused on enhancing the interpersonal and cultural competency skills of healthcare providers have shown a positive impact on ANC service delivery. Providers trained in these programs reported increased comfort in discussing maternal health topics with patients, leading to better patient understanding and adherence to ANC visits (Gupta & Sharma, 2021). These provider-focused interventions underscore the need for healthcare systems to prioritize provider training in communication and patient education.

**Policy Initiatives:** Policy-driven interventions, particularly those that institutionalize ANC education, have also been successful in increasing ANC knowledge. Some governments have implemented policies that mandate educational sessions for expectant mothers during their initial ANC visits, which significantly improves knowledge and utilization (Mujuru et al., 2018). For instance, Zimbabwe's maternal health policy includes mandatory ANC education sessions that cover the importance of ANC visits, nutrition, and warning signs during pregnancy (Mujuru, Chipato, & Mutsvangwa, 2018). In addition, many countries have adopted policies promoting free or subsidized ANC services, making ANC more accessible and encouraging more women to seek out these services (Odetola et al., 2020).

**Technology-Driven Interventions:** With the growth of digital health technologies, mobile health (mHealth) applications have emerged as a promising tool to improve ANC knowledge. Studies indicate that text-message reminders and informational applications can improve maternal health knowledge and encourage women to attend regular ANC visits (Feroz et al., 2021).

A randomized controlled trial in Pakistan demonstrated that mHealth applications, which provided weekly informational messages on ANC, significantly improved the ANC knowledge and attendance rates among rural women (Feroz et al., 2021). Similarly, mobile platforms in Kenya, offering tailored ANC information, have

successfully reached pregnant women in remote areas, empowering them to make informed health decisions (Gichuhi et al., 2020).

## 6. CONCLUSION AND RECOMMENDATIONS

This review underscores the importance of antenatal care (ANC) knowledge among pregnant women as a critical determinant of maternal and neonatal health outcomes. The analysis reveals that while socioeconomic status, educational attainment, and urban residency correlate positively with ANC utilization, cultural beliefs and healthcare accessibility barriers pose significant challenges, especially in low-resource settings. Interventions that prioritize community-based health education, engage community health workers, and leverage mobile health (mHealth) technologies show promising results in bridging knowledge gaps and increasing ANC uptake.

Moreover, healthcare provider training in culturally sensitive communication and patient education is essential for enhancing service delivery and patient engagement. Effective ANC strategies must address the diverse social, economic, and cultural factors impacting women's access to care. By implementing multi-faceted, context-sensitive approaches, healthcare systems can foster equitable access to ANC, ultimately improving health outcomes for mothers and their children. Future research should continue to explore innovative and scalable approaches to health education and accessibility to further enhance ANC utilization globally.

Based on the findings the following recommendations were made:

- a. To improve antenatal care (ANC) knowledge and utilization among pregnant women, especially in underserved communities, a multi-level strategy is essential. First, community-based health education programs should be expanded, with a focus on employing local health workers who understand cultural nuances and can provide trusted, accessible ANC information. These programs could

integrate interactive and visual learning tools to enhance comprehension. b. b.

- b. Second, the use of mobile health (mHealth) applications and SMS-based reminders should be scaled up to deliver ANC information directly to pregnant women, especially those in remote areas.
- c. Health policies should mandate ANC education during initial healthcare visits, ensuring that all women receive foundational knowledge early in their pregnancies.
- d. Training healthcare providers in effective, culturally sensitive communication methods is also critical to ensure positive interactions that encourage ANC attendance and retention.
- e. Finally, governments and healthcare organizations should invest in improving infrastructure in rural areas, including transportation options to healthcare facilities, to reduce physical access barriers.

By adopting these recommendations, healthcare systems can create a more inclusive and informed environment that promotes maternal and neonatal health across diverse populations.

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