

# UTILIZATION OF ANTENATAL CARE INFORMATION RESOURCES AMONG PREGNANT WOMEN AT ZONAL HOSPITAL, IDAH, KOGI STATE, NIGERIA

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## **Abstract**

This study investigated utilization of information resources on antenatal care for safe delivery among pregnant women at Zonal Hospital, Idah, Kogi State, Nigeria. A descriptive survey design was adopted, and a structured questionnaire was administered to all 132 women enrolled for antenatal care. Out of these, 115 responses were retrieved and analysed using frequencies, percentages, mean, and standard deviation. Findings revealed that the hospital provides mainly traditional information resources such as pamphlets, newspapers, radio programmes, and health talks, while digital resources including mobile health applications, SMS tips, and social media content were largely unavailable.

Utilization followed a similar pattern, with high use of traditional channels and low engagement with digital platforms. Factors such as provider competence, relevance of information, cultural influences, cost, and communication were found to significantly affect utilization. The study concludes that despite the availability of traditional resources, limited digital options constrain comprehensive maternal health information delivery.

**Keywords:** Antenatal care, Information resources, Utilization, Maternal health

## Introduction

Maternal and neonatal mortality is at all times high lately, suggesting a troubling period in global public health. World Health Organization in a 2025 report declared that approximately 260,000 women died during and following pregnancy and childbirth in 2023. 92% of all maternal deaths occurred in low- and lower-middle-income countries in 2023, and most could have been prevented. Sub-Saharan Africa and southern Asia accounted for around 87% (225,000) of the estimated global maternal deaths in 2023. Sub-Saharan Africa alone accounted for around 70% of maternal deaths (182,000), while southern Asia accounted for around 17% (43,000) (World Health Organization, 2025). Maternal and child health is a critical component of public health because it directly affects the wellbeing and survival of families and communities. Improving maternal health is central to reducing maternal and neonatal mortality, which remains a major challenge in many low- and middle-income countries, including Nigeria.

The Commissioner for Health in Kogi State in a declaration during the Maternal and Neonatal Mortality Reduction Initiative (MAMII) 5-Day Implementation Workshop (Kogi Reports, 2025), decried maternal and neonatal mortality rates in the state, describing it as “unacceptably high.” The MAMII program aims to reduce maternal and neonatal deaths by

focusing on localized communities such as Idah Local Government Area where there are high mortality rates. According to the report, “too many mothers and newborns are lost annually due to preventable causes.” Information providing institutions such as public and special libraries statutorily or as a matter of corporate social responsibility are required to provide relevant information resources on antenatal care services for pregnant women, leading to safe delivery.

Antenatal care is widely recognized as one of the most effective strategies for improving pregnancy outcomes by providing health information, early detection of complications, and professional guidance to ensure safe delivery. Hamdi and Mohamed (2021) defined antenatal care as an umbrella term used to describe the medical procedures and care that are carried out during pregnancy. Antenatal care remains an avenue for a number of services enabling the detection and management of pregnancy-related risks and conditions. With ANC, negative pregnancy outcomes such as anaemia, preeclampsia, and maternal mortality can be significantly addressed and possibly avoided. According to Hollowell et al. (2011) cited in Boniface et al (2023), ANC services include pregnancy-related support given between conception and the start of labor with the goal of enhancing pregnancy outcomes and the mother's and child's health.

World Health Organization (2017) outlines these supports to include tetanus toxoid vaccination, counseling, physical examinations such as fetal heart sound, laboratory tests such as urine testing for protein and sugar, blood testing for HIV/AIDS and malaria, and preventive services like taking iron and folic acid tablets. Considering the fact that ANC

often serves as a woman's initial point of contact with services, providing an entry point for built-in care, promoting healthy household habits, influencing care-seeking behaviors, and connecting women experiencing pregnancy difficulties to a referral system, utilizing ANC information resources such as pamphlets and leaflets on nutrition danger sign, books and manuals on maternal health, newspapers and magazines addressing maternal health education, as well as mobile health applications for tracking pregnancy progress becomes a necessity.

Information is an important component in every human endeavor, such that the survival of every professional in all knowledge fields and discipline requires information to function productively and efficiently. Pregnant women seeking to undergo or already undergoing antenatal care are not left out of this need. In certain cases, some women are unaware of the benefits of taking certain medications or undergoing certain medical checks during pregnancy.

Despite these efforts, Okeke et al. (2015) suggest that the impact of ANC is often limited by health system constraints such as shortages of trained staff and gaps in the availability of reliable antenatal care information resources. Utilization of antenatal care information resources is influenced by multiple factors including literacy level of potential beneficiaries, geographic availability of services, affordability, and the means of information dissemination whether via health workers, traditional mass media, or digital platforms. Digital resources such as mobile apps, SMS reminders, and verified social media content have shown promise in improving access to timely maternal health information,

but their effectiveness in low-resource settings depends on infrastructure, digital literacy, and program design (Till et al., 2023).

Empirical evidence shows that women who consistently use ANC services attending recommended visits, following nutrition advice, and opting for skilled birth attendance experience better maternal and neonatal outcomes (Kuhnt & Vollmer, 2017). However, Fagbamigbe and Idemudia (2015) points out that ANC utilization remains suboptimal in many rural Nigerian communities due to cultural beliefs, cost, distance to facilities, and preference for traditional birth attendants. Similar to the situation in Idah Local Government Area, these barriers increase women's exposure to complications such as obstructed labour, postpartum hemorrhage, and sepsis. It is against this backdrop that the present study investigates utilization of information resources on antenatal care for safe delivery among pregnant women at Zonal Hospital, Idah, Kogi State, Nigeria.

### Research Questions

The following research questions guided the study:

1. What are the information resources on antenatal care utilized by pregnant women at Zonal Hospital, Idah?
2. What is the extent of utilization of information resources on antenatal care among pregnant women at Zonal Hospital, Idah?
3. What are the factors influencing the utilization of information resources on antenatal care among pregnant women at Zonal Hospital, Idah?

## Literature Review

The effective utilization of information resources on antenatal care (ANC) is widely recognized as a critical determinant of maternal and neonatal health outcomes such as safe delivery. Access to timely, accurate, and relevant information during pregnancy empowers women to make informed health decisions, adhere to recommended care practices, and identify potential complications early. Gross et al (2014) suggest that ANC services enable early identification of pregnancy related risks and complications; and ensure access of services including health education, vaccines, diagnostic tests and treatments. Understanding how pregnant women access, interpret, and utilize available information resources on antenatal care such as healthcare providers, print and digital materials, and community-based sources has become an important area of scholarly inquiry.

As observed by Onambele et al (2023), to improve neonatal outcomes in remote areas, it is imperative that women have improved access to the continuum of information sources that addresses healthcare problems, especially post-natal care, and also that village-based healthcare systems be supported to reduce geographical barriers. For pregnant women seeking information, (Triton College Library, 2020), it can come from virtually anywhere (sources or resources), ranging from personal experiences, social media, newspapers, expert judgment, journals, books, blogs, and websites, etc. depending on the source at the disposal of the seeker as it the time the information is required. The study of Kamali, Ahmadian, Khajouei, and Bahaadinbeigy (2017) on the health information needs of pregnant women revealed that the preferred information sources as indicated by

the majority of the respondents are physician, Family/friends/colleagues, internet, mass media, printed sources, Midwives/Nurses, Prior knowledge or experience, among others.

Another study by Grimes, Foster, and Newton (2014) reported by Omoanono and Eruvwe (2020) examined the sources of information used by women during pregnancy to meet their information needs. The findings revealed that chatting with a midwife was the preferred source as indicated by the majority of the pregnant women, the internet was indicated as the preferred source by less than half of the respondents while group information sessions were the least preferred information source. This position slightly contradicts with Till et al. (2023) which submits that ANC information resources include printed materials, digital tools, and interpersonal education, providing essential knowledge on nutrition, danger signs, immunization schedules, and skilled birth attendance. These resources may take the form of books, leaflets, posters, mobile health applications, verified online platforms, or direct counselling from healthcare workers (Ameyaw et al., 2024).

Despite the recognized importance of these resources, variations in their accessibility, awareness, and effective use continue to influence the extent to which pregnant women benefit from antenatal services. Daniel, Michael, and Omoniyi (2022) strengthens this position, saying “in order for pregnant women live a healthy life and deliver their babies safely, they must utilize resources made available by hospitals, health care delivery organizations, and others to help reduce maternal and child mortality.” In their study on information need and resource utilization of pregnant women in University

of Calabar, they looked into the relationship between pregnant women's information needs and resource utilization.

Their analysis revealed that pregnant women's resource utilization is significantly related to their need for health information, nutrition information, delivery information, and breastfeeding information. Based on the findings, it was suggested, among other things, that the government provides libraries and free medical care to encourage women to seek health information. Antenatal care (ANC) services play a crucial role in safeguarding the health of pregnant women during their reproductive years.

Bekyieriya, Isang, and Baguune (2023) in their study highlighted some factors affecting the use of mobile health technology among pregnant women. They included limited financial resources, unreliable mobile network connectivity, unavailability of electricity in certain rural areas, low household levels of female literacy, and cultural barriers. If pregnant women must live healthy and deliver their babies safely, they must utilize resources made available by hospitals, health care delivery organizations, and others to help reduce maternal and child mortality. Pirzadeh, Nodooshan, and Nasirian (2019) reports that the knowledge and skills possessed by pregnant women on the health information needed during pregnancy, particularly, information about the benefits of maternal healthcare services directly influences their utilization of maternal healthcare services in achieving positive pregnancy outcomes.

Javanmardi, Noroozi, Mostafavi, and Ashrafi-rizi (2019) studied the challenges to access to health information during pregnancy in Iran. The findings of the study revealed

that enormous duties of women at home/ outside home, inability to distinguish between correct and false information, insufficient time to interact with health care providers, unsuccessful attempts to access various information resources, common pregnancy-related complains, stress and anxiety of confronting the challenges during pregnancy

Safe delivery, a key objective of ANC, refers to childbirth that occurs under the supervision of skilled healthcare personnel, where evidence-based interventions are used to prevent maternal and newborn complications (Okoli et al., 2020). Access to accurate antenatal information and skilled care remains central to reducing maternal and neonatal mortality and improving pregnancy outcomes.

### **Research Method**

The methodology adopted for the study was the descriptive survey research design with a well-structured questionnaire designed in line with the objectives of the study as the instrument used in collecting data. The population of the study comprises of all 132 pregnant women enrolled for antenatal clinics at the Zonal Hospital, Idah at the time of the study. Being that the population was manageable, the study adopted the census approach thereby resulting in no-sampling. The data generated were analysed using frequency counts, percentage, and Mean. A total of one hundred and thirty-two (132) questionnaires were distributed to the respondents and one hundred and fifteen (115) of them were duly completed and returned with an 87.1% return rate.

### **Results and Findings**

**Research Question 1:** What are the information resources on antenatal care utilized by pregnant women at Zonal Hospital, Idah?

**Table 1: Availability of Information Resources on Antenatal Care (N = 115)**

S/N	Items	A (n)	NA (n)	A %	NA %
1.	Pamphlets and leaflets on nutrition danger sign	64	51	√	
2.	Books and manuals on maternal and child health	59	56	√	
3.	Newspapers and magazines featuring maternal health education	65	50	√	
4.	Mobile health apps aiding tracking of pregnancy progress and providing reminders	42	73		√
5.	SMS for pregnancy health tips	37	78		√
6.	Health agencies social media posts on maternal health tips	43	72		√
7.	Radio programs on maternal health awareness	81	34	√	
8.	Talks and seminars by midwives, nurses and doctors	88	27	√	

**Key: A= Available NA= Not Available**

Table 1 presents the availability of information resources on antenatal care at Zonal Hospital, Idah, and the findings show that the hospital provides more traditional and interpersonal information resources than digital ones. Specifically, pamphlets and leaflets on nutrition and danger signs were reported available by 55.7% of respondents, while 51.3% indicated the availability of books and manuals on maternal and child health. Newspapers and magazines featuring maternal health content were also available as confirmed by 56.5% of the respondents. In contrast, digital-based resources were largely unavailable, as 63.5% reported that mobile health apps were not accessible, and 67.8% stated that SMS pregnancy health tips were not provided. Similarly, 62.6% indicated that health agencies' social media posts were not available at the facility. Meanwhile, radio

programmes emerged as one of the most accessible information resources, with 70.4% affirming their availability, while talks and seminars by healthcare personnel were the most available resource with 76.5% agreement. Overall, the findings suggest that Zonal Hospital, Idah depends heavily on print materials and face-to-face health education while lacking modern, technology-driven antenatal information delivery channels.

**Research Question 2:** What is the extent of utilization of information resources on antenatal care among pregnant women at Zonal Hospital, Idah?

**Table 2: Extent of Utilization of Information Resources on Antenatal Care**

S/N	Items	VHE	HE	LE	VLE	Mean	SD	Decision
9.	Pamphlets and leaflets on nutrition danger sign	40	55	15	5	3.13	0.80	Accepted
10.	Books and manuals on maternal and child health	28	42	26	19	2.69	1.02	Accepted
11.	Newspapers and magazines featuring maternal health education	45	50	12	8	3.15	0.87	Accepted
12.	Mobile health apps aiding tracking of pregnancy progress and providing reminders	14	17	44	40	2.04	0.99	Not Accepted
13.	SMS for pregnancy health tips	18	22	37	38	2.17	1.06	Not Accepted
14.	Health agencies social media posts on maternal health tips	24	15	45	31	2.28	1.08	Not Accepted
15	Radio programs on maternal health awareness	36	44	20	15	2.88	1.00	Accepted
16	Talks and seminars by midwives, nurses and doctors	40	50	15	10	3.04	0.91	Accepted
<b>Grand Mean</b>						=	<b>2.67</b>	

**Key: VHE= Very High Extent, HE=High Extent, LE=Low Extent, VLE=Very Low Extent**

Table 2 reveals the extent to which pregnant women at Zonal Hospital, Idah utilize the available antenatal care information resources, showing a clear pattern in favour of

traditional sources over digital platforms. The results indicate high utilization of printed and interpersonal resources, with pamphlets and leaflets on nutrition and danger signs recording a mean score of 3.13, while newspapers and magazines also showed high engagement with a mean of 3.15, the highest among all resources. Books and manuals were moderately used, reflected by an accepted mean score of 2.69. On the other hand, digital information resources were poorly utilized, as mobile health apps recorded a low mean of 2.04, SMS pregnancy tips had a mean of 2.17, and health agencies' social media posts had a mean of 2.28, all below the acceptance cutoff of 2.50. Conversely, radio programmes on maternal health were used to a high extent (mean = 2.88), while health talks and seminars by healthcare professionals were also widely utilized (mean = 3.04). These findings imply that pregnant women rely more on traditional channels for maternal health information, likely due to the low availability and accessibility of mobile and digital antenatal information platforms at the facility.

**Research Question 3:** What are the factors influencing the utilization of information resources on antenatal care among pregnant women at Zonal Hospital, Idah?

**Table 3: Factors Influencing the Utilization of Information Resources on Antenatal Care**

S/N	Items	VHE	HE	LE	VLE	Mean	SD	Decision
17.	Availability of adequate antenatal care information	45	50	12	8	3.15	0.87	Accepted
18.	Availability of qualified healthcare providers	50	48	10	7	3.23	0.85	Accepted
19	Relevance of information provided to personal needs	40	52	13	10	3.06	0.90	Accepted
20.	Cultural beliefs and practices	35	40	25	15	2.83	1.01	Accepted

21.	Cost of accessing antenatal care services	38	44	20	13	2.93	0.98	Accepted
22.	Language of communication used during health education	42	46	15	12	3.03	0.96	Accepted
23.	Privacy and confidentiality of patient information	37	43	20	15	2.89	1.00	Accepted
24.	Attitude of healthcare workers towards patients	30	32	28	25	2.58	1.10	Accepted
<b>Grand Mean</b>						=	<b>2.96</b>	

**Key: VHE= Very High Extent, HE=High Extent, LE=Low Extent, VLE=Very Low Extent**

Table 3 presents the factors influencing the utilization of antenatal care information resources among pregnant women, and the findings indicate that all listed factors significantly influence utilization, as each recorded a mean score above the decision benchmark of 2.50. The availability of adequate antenatal information was a major determinant with a mean of 3.15, while the availability of qualified healthcare providers had the highest influence with a mean of 3.23, emphasizing the importance of skilled personnel in facilitating effective maternal health information use. Relevance of information to personal needs (mean = 3.06) and the language of communication used during health education (mean = 3.03) also strongly influenced utilization, highlighting the importance of clarity and contextual relevance. Socio-cultural and economic factors were equally significant, as cultural beliefs and practices recorded a mean of 2.83, while cost of accessing antenatal services had a mean of 2.93. Privacy and confidentiality concerns (mean = 2.89) and the attitude of healthcare workers (mean = 2.58) further influenced women's willingness to use available information resources. Collectively, these results show that utilization is shaped by the availability of quality information, provider

competence, socio-cultural considerations, economic constraints, language, and the interpersonal behaviour of healthcare staff.

## Recommendations

### 1. Expand the Availability and Integration of Digital Antenatal Information

**Resources:** The hospital should strategically adopt modern digital platforms such as mobile health applications for pregnancy tracking, SMS-based maternal health reminders, and verified social media channels to complement existing traditional information sources. This will improve real-time access to pregnancy-related information, especially for women who rely on mobile devices. Implementing user-friendly digital tools will also enhance continuity of care beyond clinic visits and align the hospital with contemporary maternal health communication practices.

### 2. Strengthen Health Education Delivery Through More Structured Interpersonal

**Interventions:** Given the high utilization of interpersonal information channels, the hospital should institutionalize regular health talks, demonstrations, and group counselling sessions facilitated by midwives, nurses, and maternal health educators. These activities should be scheduled consistently during antenatal visits and tailored to address common pregnancy concerns, danger signs, nutrition, and newborn care. This will reinforce learning, correct misconceptions, and optimize the strong preference for face-to-face information delivery among pregnant women.

### 3. Enhance the Communication Skills, Attitudes, and Professional Competence of

**Healthcare Providers:** Training programmes should be organized periodically to

build the capacity of healthcare workers in patient communication, cultural sensitivity, and client-friendly service delivery. Since the attitude of healthcare workers and clarity of communication were key factors influencing utilization, improving provider–client interaction will increase pregnant women's confidence in available information resources and encourage greater participation in antenatal care activities.

#### **4. Improve ICT and Structural Support for Antenatal Information Dissemination:**

The hospital should invest in basic information and communication technology infrastructure such as reliable internet connectivity, digital information kiosks, and dedicated spaces for accessing maternal health information. Strengthening ICT support will provide the foundation needed for the introduction of digital antenatal resources and ensure that pregnant women can conveniently access reliable health information within the facility.

### **Conclusion**

The findings of this study demonstrate that while a variety of antenatal care information resources exist at Zonal Hospital, Idah, the facility relies predominantly on traditional and interpersonal channels such as pamphlets, newspapers, radio programmes, and health talks delivered by healthcare professionals. These resources were both widely available and highly utilized by pregnant women, as reflected in the high mean scores recorded in the study. In contrast, modern digital information resources including mobile health applications, SMS-based maternal health tips, and social media-based health

education were generally unavailable and consequently underutilized, revealing a significant gap in technology-driven antenatal information delivery.

Furthermore, all the identified factors influencing utilization, including availability of information, competence of healthcare providers, relevance and clarity of communication, cultural considerations, and cost of services, were found to play important roles in shaping women's engagement with antenatal information. Collectively, these results indicate that while the hospital provides adequate traditional antenatal information support, the absence of digital platforms limits the scope, accessibility, and timeliness of maternal health information, thereby emphasizing the need for improved investment in digital health solutions, enhanced communication strategies, and strengthened health education services to promote safer delivery outcomes for pregnant women in the facility.

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