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Qualitative Study of Perceived HBV Prevalence and Contributing Factors Among Pregnant Women in Public Hospitals of the Afar Region, Ethiopia

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Abstract

Background: Hepatitis B virus (HBV) remains a major public health concern among pregnant women in Ethiopia, particularly in the Afar Region. This study explored perceived prevalence and contributing factors among antenatal care attendees.

Methods: This study used a qualitative design and was conducted in five public hospitals of the Afar Region. A total of 35 participants (10 healthcare providers and 25 pregnant women) were included in the qualitative component. Data were collected through key informant and in-depth interviews and analyzed using thematic analysis.

Results: Findings indicated limited awareness, inadequate diagnostic and treatment services, rural residence, low education, cultural practices, and poor healthcare access as key contributing factors to HBV among pregnant women.

Conclusion: Strengthening HBV screening, vaccination, and maternal health services is essential to reduce transmission and improve maternal outcomes in the Afar Region.

Keywords: Hepatitis B virus; pregnant women; Afar Region; seroprevalence; antenatal care; qualitative study; maternal health; Ethiopia.

1. Introduction

Hepatitis B virus (HBV) is a significant global public health concern due to its long-term effects, including cirrhosis, liver cancer, and chronic liver disease, which increase mortality rates (Umer et al., 2023).HBV is 50–100 times more contagious than HIV and HCV due to its high viral load in bodily fluids and its ability to survive outside the body for up to seven days. This resilience facilitates transmission through shared needles, small amounts of blood, and unsterilized equipment, posing a greater risk, particularly in healthcare settings(Chernet et al., 2017). According to (World Health Organization., 2024), viral Hepatitis causes 1.3 million deaths annually, making it the second most common infectious cause of death globally after tuberculosis.

In Ethiopia, hepatitis B infection is a significant public health challenge. The prevalence among pregnant women is 4.7%, while in the general population, it is higher, at 7.4% (Kebede et al., 2018). This burden is particularly severe in remote regions like the Afar Region. Factors such as cultural practices, poor healthcare access, and inadequate vaccination coverage contribute to the high prevalence of HBV in these areas.

This study aims to assess Perceived HBV Prevalence and Contributing Factors Among Pregnant Women in Public Hospitals of the Afar Region, Ethiopia.

2. Materials and methods

2.1.Study Setting, Period, and Design

A qualitative study was conducted in five public hospitals of the Afar Region, Ethiopia, to explore the perceived prevalence and contributing factors of Hepatitis B Virus (HBV) among pregnant women attending antenatal care (ANC) services. The study was carried out in Dubti General Hospital, Abala Primary Hospital, Muhammad Aklie Memorial Hospital, Kelewan Primary Hospital, and Dalifage Primary Hospital.

A total of 35 participants were included in the qualitative component, comprising 10 healthcare providers and 25 pregnant women. Data were collected between August 2, 2023, and August 1, 2024. The study employed an exploratory qualitative design to capture in-depth experiences and perceptions regarding HBV. Data were gathered through key informant interviews and in-depth interviews and analyzed using thematic analysis.

2.2. Population, Inclusion, and Exclusion Criteria

The study targeted pregnant women attending ANC services at selected public hospitals in the Afar Region. To be eligible, participants must meet the following inclusion criteria: they must be pregnant women attending ANC services at one of the five study hospitals during the data collection period, and they must provide informed consent for participation, which includes consent for blood tests to detect Hepatitis B surface antigen (HBsAg) and participation in the survey or interview.

Exclusion criteria included pregnant women who were either unable or unwilling to provide informed consent, those with severe liver conditions other than HBV (such as cirrhosis or hepatitis C), and pregnant women who had a previously documented positive HBsAg status. The exclusion of women with known HBV positivity ensures that the study focuses on identifying previously undiagnosed cases of Hepatitis B, thereby assessing gaps in awareness and prevention.

2.3. Sample Size Determination and Sampling Technique

This study employed a qualitative research design and included key informant interviews (KIIs) and in-depth interviews (IDIs) conducted in five public hospitals in the Afar Region. A total of 35 participants were involved in the study, comprising 10 healthcare professionals (2 from each hospital) and 25 pregnant women (5 from each hospital). This ensured adequate representation across all selected hospitals.

The key informant interviews involved healthcare professionals such as doctors, nurses, and midwives who are directly engaged in antenatal care (ANC) services. Their inclusion provided valuable insights into clinical practices, HBV management, and challenges faced in service delivery. These 10 key informants contributed in-depth professional perspectives on the healthcare system's response to HBV among pregnant women.

In addition, 25 pregnant women attending ANC services participated in in-depth interviews. These respondents were selected from each hospital to explore their lived experiences, including awareness of HBV, stigma, health-seeking behavior, and the social and economic challenges they face. Their narratives provided important contextual understanding of the impact of HBV at the community and individual levels.

2.4.**Data Collection Tool and Technique**

A qualitative data collection approach was employed in this study. Data were gathered using semi-structured in-depth interviews and key informant interviews with healthcare professionals working in antenatal care and maternal health services across the selected public hospitals in the Afar Region. An interview guide was developed based on the study objectives, focusing on perceived HBV prevalence, contributing factors, and challenges in diagnosis and management.

2.5.**Data Processing and Analysis**

The collected qualitative data were transcribed verbatim and translated into English where necessary. The transcripts were carefully reviewed for accuracy and completeness before analysis. The data were then organized, coded, and analyzed using thematic analysis. Initial codes were generated through repeated reading of the transcripts to identify meaningful patterns and recurring ideas. Similar codes were subsequently grouped into broader categories, which were further developed into themes and sub-themes that reflected participants' experiences and perceptions. NVivo software (Version 11) was used to facilitate data organization, coding, retrieval, and management throughout the analysis process. The findings were interpreted and presented based on the major themes and sub-themes that emerged from the data.

3. RESULTS

3.1.Sociodemographic Characteristics

A total of 442 pregnant women attending antenatal care (ANC) services in five selected public hospitals of the Afar Region participated in the study, yielding a 100% response rate.

The findings show that the participants were predominantly young, with 39.8% aged 18–24 years and 31.4% aged 25–29 years, indicating a largely youthful reproductive population.

More than half of the respondents (59.7%) resided in rural areas, reflecting the predominantly rural settlement pattern of the region.

In terms of religion and ethnicity, 88.0% of participants were Muslim and 86.2% were from the Afar ethnic group, showing strong cultural and religious homogeneity.

Regarding educational status, nearly half of the respondents (48.6%) were unable to read and write, indicating low educational attainment among pregnant women.

The majority (93.2%) were married, consistent with local sociocultural norms, and 79.9% were housewives, reflecting traditional gender roles in the community.

Economically, a large proportion (83.3%) reported a monthly household income of less than 500 Birr, highlighting severe economic hardship and vulnerability among the study participants (Table 1).

Table 1: Sociodemographic information among pregnant mothers attending ANC clinics in five selected Public Hospitals in Afar, Region, Ethiopia, from August 2023 to August 2024

Variable	Category	Frequency	Percentage
Age	18-24	176	39.8
	25-29	139	31.4
	30-34	74	16.7
	35-39	53	12.0
Place of residence	Urban	178	40.3
	Rural	264	59.7
Religion	Islam	389	88.0
	Christian	53	12.0
Ethnicity	Afar	381	86.2
	Amhara	34	7.7
	Others	27	6.1
Education status	Cannot read and write	215	48.6
	Can read and write	81	18.3
	Primary school	66	14.9
	Secondary school	35	7.9
	Higher education	45	10.2
Marital status	Married	412	93.2
	Others (Single, divorced, widowed)	30	6.8
Family size	1-4 Members	191	43.2
	5 -8 Members	180	40.7
	9- 12 Members	71	16.1
Occupational status	Housewife	353	79.9
	Government Employed	42	9.5
	self-employed	28	6.3
	Not Employed	19	4.3
Monthly Income	<500	368	83.3
	1000-3000	37	8.4
	>3000	37	8.4

Qualitative Insights into HBV Prevalence among Pregnant Women in Public Hospitals: Experiences, Challenges, and Familiarity

In Afar Regional State, Ethiopia, treating Hepatitis B (HBV) cases among pregnant women receiving prenatal treatment presents a number of issues and considerations that are examined in this paper. Healthcare personnel from five hospitals—Dalefaage Primary Hospital, Abala Primary Hospital, Keluwan Primary Hospital, Muhammad Akle Primary Hospital, and Dubti General Hospital—were interviewed in order to gather data.

Table 2: Qualitative Insights into HBV Prevalence in Public Hospitals: Experiences, Challenges, and Familiarity

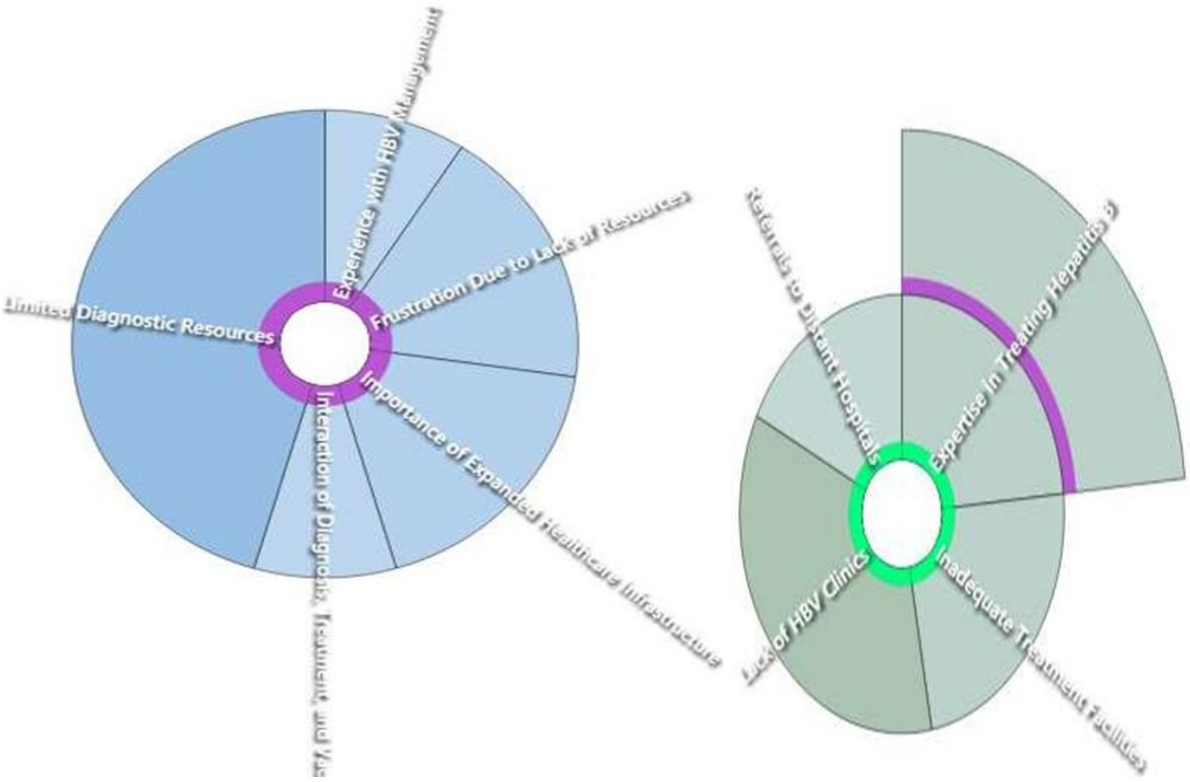
Nodes (Themes)	Sub Nodes
Experiences and Challenges	**Expertise in Treating Hepatitis B, Inadequate Treatment Facilities, Lack of HBV Clinics, Referrals to Distant Hospitals, health experts at Dubti General Hospital**
Familiarity with Seroprevalence and Challenges	**Experience with HBV Management, Frustration Due to Lack of Resources, Importance of Expanded Healthcare Infrastructure, Interaction of Diagnosis, Treatment, and Vaccination, Limited Diagnostic Resources**

As shown in the above Table, the qualitative findings analyzed by NVivo Software 11 from interviews with healthcare personnel across five hospitals—Dalefaage Primary Hospital, Abala Primary Hospital, Keluwan Primary Hospital, Muhammad Akle Primary Hospital, and Dubti General Hospital—reveal significant insights regarding their experiences and challenges in managing HBV cases. Healthcare workers highlighted that treating Hepatitis B during prenatal care presents numerous difficulties, driven by various systemic and infrastructural barriers. The qualitative insights indicate a complex interplay between these factors, further emphasizing the public health challenge of HBV in the Afar Region.

A key challenge identified by healthcare professionals is the absence of dedicated HBV clinics or specialized treatment facilities, which severely hampers effective infection management.

Many pregnant women in the Afar region must travel to distant hospitals for treatment due to the lack of comprehensive HBV services available locally. Inadequate infrastructure in hospitals such as Abala, Dalefaage, and Keluwan exacerbates this issue, leaving pregnant women without the essential care they require. In contrast, Dubti General Hospital stands out as the region's sole provider of HBV care, operating a dedicated HBV clinic. Despite the challenges, the healthcare professionals at Dubti General Hospital are highly familiar with HBV management, citing comprehensive knowledge of diagnosis, treatment protocols, and preventive measures. They emphasize the critical role their facility plays in providing essential care to pregnant women living with HBV.

Conversely, healthcare staff from other hospitals expressed frustration over insufficient medical supplies and resources essential for effective HBV management. The shortage of diagnostic tools and laboratory facilities presents significant barriers to timely and accurate diagnosis. These insights reflect the varying degrees of preparedness and challenges healthcare providers face across different Afar region hospitals as they strive to combat the Hepatitis B Virus effectively.



- **Figure 1: NVivo 11 Software Output – Qualitative Insights into HBV Prevalence, Challenges, and Familiarity in Public Hospital ANC, Afar Region, North Eastern Ethiopia**

Table 4: Qualitative insight on Socioeconomic and Cultural Factors contributing to Hepatitis B Virus Prevalence

Nodes (Themes)	Sub-Nodes
Cultural Beliefs and Practices	- Traditional Health Beliefs
	- Stigma and Discrimination Associated with HBV
	- Silence and Secrecy in Pastoralist Communities
	- Social Norms Regarding Disease Transmission and Gender Roles
Economic Factors	- Poverty and Limited Access to Healthcare
	- Financial Strain Due to Medical Costs (e.g., Selling Livestock)
	- Informal Sector Work and Lack of Health Insurance
	- Economic Impact of Health on Family Livelihoods
Education and Awareness	- Low Awareness of HBV and its Transmission
	- Lack of Knowledge about Prevention Measures
	- Language Barriers and Inadequate Health Education
Healthcare Access and Services	- Limited Access to Healthcare Facilities and Resources
	- Traditional Medicine vs. Modern Healthcare

As indicated in Table 4, qualitative findings from key informant interviews highlighted the significant role of socioeconomic and cultural factors in the transmission of HBV among pregnant women. Healthcare professionals emphasized that lower socioeconomic status limits access to healthcare services, making it difficult for pregnant women to receive timely diagnosis, treatment, and vaccination, which contributes to the spread of the virus. A representative from Dalefage Primary Hospital expressed concerns about the inadequacy of healthcare infrastructure, forcing women to travel long distances for HBV screening and treatment. This issue is further exacerbated by the limited availability of healthcare professionals and facilities, particularly in rural areas. Cultural practices such as home births and female genital mutilation (FGM) were identified as additional risks, as they often occur without proper infection control, increasing the likelihood of HBV transmission.

The nomadic lifestyle, especially in pastoralist communities, presents another challenge by disrupting healthcare continuity. Frequent movement prevents consistent access to HBV screening, treatment, and vaccination, leaving individuals vulnerable to undiagnosed infections. The practice of polygamy, combined with a lack of awareness about HBV transmission, further contributes to the spread of the virus. Additionally, the stigma surrounding HBV significantly hinders pregnant women from seeking medical care, as cultural norms often lead to delays in treatment due to fear of ostracism. This stigma not only affects the women's health but also places their unborn children at risk due to delays in diagnosis and treatment.

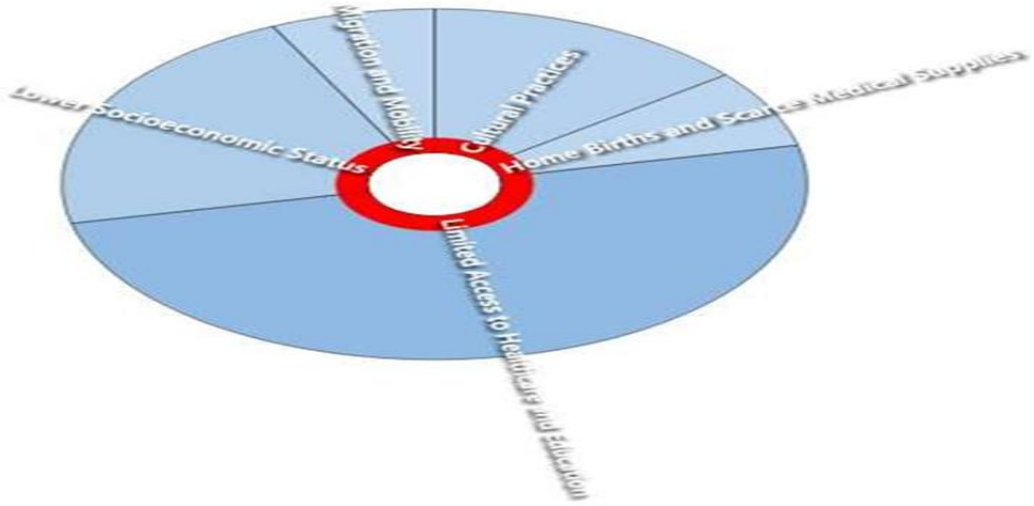


Figure 3: NVivo 11 Software Output – Socioeconomic & Cultural Factors in Hepatitis B Infection

The Figure 3: NVivo 11 Software Output – Socioeconomic & Cultural Factors in Hepatitis B Infection

presents the major factors contributing to Hepatitis B virus (HBV) risk among pregnant women in the Afar Region. It shows that HBV vulnerability is influenced by interconnected determinants, including low socioeconomic status, cultural practices, home births and unsafe medical procedures, migration and pastoral mobility, and limited access to healthcare and education. Overall, the diagram highlights that HBV transmission in the study area results from a combination of structural, cultural, and health system-related challenges rather than a single isolated factor.

3. Conclusion and Recommendation

This study explored the perceived prevalence and contributing factors of Hepatitis B virus (HBV) infection among pregnant women attending antenatal care services in public hospitals of the Afar Region, Ethiopia. The findings revealed that HBV remains a significant public health concern in the study area, driven by a combination of individual, cultural, socioeconomic, and health system-related factors.

The qualitative and quantitative evidence indicated low levels of awareness about HBV, widespread poverty, limited education, and strong rural residence patterns as key underlying determinants of vulnerability. In addition, risky cultural and clinical practices such as female genital mutilation (FGM), home deliveries, sharing of sharp materials, and inadequate infection prevention practices were commonly reported among participants.

From the health system perspective, major gaps were identified, including limited availability of diagnostic services, lack of dedicated HBV treatment centers, shortage of trained healthcare personnel, and weak referral systems. Except for Dubti General Hospital, most facilities lacked adequate capacity for HBV screening, management, and follow-up care, forcing patients to travel long distances for services.

Overall, the study demonstrates that HBV prevention and control in the Afar Region is constrained by intersecting structural and behavioral factors. Without strengthened maternal health services and improved community awareness, the risk of mother-to-child transmission and chronic HBV burden is likely to persist.

Recommendations

1. Strengthening Health Service Delivery

- The Afar Regional Health Bureau should establish integrated HBV screening and management services in all public hospitals providing antenatal care.
- Expand laboratory capacity to ensure routine HBsAg testing for all pregnant women during ANC visits.
- Decentralize HBV services beyond Dubti General Hospital by establishing functional HBV clinics in primary hospitals.

2. Improving Maternal Health Interventions

- Ensure universal HBV vaccination for newborns, including timely birth-dose vaccination within 24 hours.
- Integrate HBV prevention into routine antenatal care packages, including counseling and risk assessment.
- Strengthen infection prevention practices in maternity wards, especially during delivery and surgical procedures.

3. Community Awareness and Health Education

- Implement targeted community-based awareness campaigns focusing on HBV transmission, prevention, and mother-to-child transmission.
- Use local communication channels and Afar language messages to improve understanding in rural and pastoralist communities.
- Address stigma and misconceptions surrounding HBV to encourage early health-seeking behavior.

4. Addressing Socioeconomic and Cultural Factors

- Collaborate with community and religious leaders to reduce harmful traditional practices such as unsafe home deliveries and unsterile procedures.
- Promote behavioral change interventions.
- Strengthen women's education and empowerment programs to improve health decision-making.

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