

## Practical knowledge and attitudes of pregnant women about viral Hepatitis B in N'djamena

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### Abstract

Viral hepatitis B, defined as inflammation of the liver caused by the hepatitis B virus, is a major public health problem worldwide. The aim of this study was to assess the knowledge and practical attitudes of pregnant women concerning viral hepatitis B. This was a descriptive cross-sectional study conducted over six months in two hospitals in the city of N'Djamena. Pregnant women attending antenatal clinics at the Hôpital de l'Amitié Tchad-Chine or the Hôpital de District Sud de N'Djamena were included. Data were collected using pre-administered questionnaires administered during antenatal consultations. A total of 350 pregnant women were interviewed, of whom 51 had a positive HBsAg result, representing a prevalence of 14.57%. The mean age was 26.4 ±5.6 years. All school levels were represented. In terms of transmission routes: 37.3% of women cited the sexual route, versus 29.4% for the blood route. Mother-to-child transmission was known by 33.3% of pregnant women across all levels of education. However, knowledge was higher (over 70%) among pregnant women with higher levels of education. Nearly 80% of women surveyed were aware of the existence of the vaccine, but less than 1% had been vaccinated. Pregnant women's knowledge of the vaccine remains limited, despite the efforts made in recent years to improve the management of viral hepatitis.

**Keywords:** Knowledge; HVB; Pregnant Women; N'Djamena/Chad.

### 1. Introduction

Viral hepatitis B (HBV) is a common disease and an international public health problem. The modes of transmission are multiple and variable. Infantile transmission, whether horizontal or vertical, is more frequent in tropical environments. Infection acquired in early childhood (horizontal or vertical) often progresses to chronicity [1].

WHO estimates that there are 240 million chronic carriers worldwide, over 70% of them in sub-Saharan Africa and East Asia [2].

- Prevalence varies according to geographical zone.
- Africa south of the Sahara lies in the WHO's high-prevalence zone [2].
- In Eastern Europe, a prevalence of 5% has been reported [3].
- In Northern Europe, the figure was 1.5% [3].
- In West Africa, prevalences of 14.7%, 11.57% and 11.4% have been reported in Mali, Senegal and Burkina Faso respectively [4-6].
- In Central Africa, a prevalence of 18.4% has been reported in the far north of Cameroon [7].

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- According to the WHO, Chad is a high-prevalence area. A study carried out in 2022 found a prevalence of 19% [8].

However, despite the high national prevalence of viral hepatitis B, few studies have been carried out among pregnant women, the main sources of vertical transmission. Hence the interest of this study, which aims to assess pregnant women's knowledge of viral hepatitis B and thus improve its management.

## 2. Material and Methods

This was a descriptive cross-sectional study conducted over a period of six (6) months from March 1 to September 1, 2023 in the city of N'Djamena. The gyneco-obstetrics department of the "Hôpital de l'Amitié Tchad Chine" and the maternity ward of the Hôpital de District Sud, commonly known as Hôpital Union, in N'Djamena served as the setting. Sampling was consecutive and exhaustive.

Pregnant women residing in N'Djamena and attending antenatal care at one of the study hospitals were included with their consent. Health professionals (nurse, midwife, doctor or pharmacist) and non-consenting women were not included.

Data were collected using a multivariate questionnaire administered by an investigator, covering socio-demographic data, knowledge, attitudes and practices in relation to viral hepatitis B. The questionnaire was written and administered in English, French and Spanish. The questionnaire was written and administered in French for those with a medium or high level of education. For those with little or no French education, the questionnaire was translated orally into the national language, either local Arabic or Ngambaye, according to the respondent's preference. Data were collected during prenatal consultations. Data were processed using SPSS software.

## 3. Results

During the study period, a total of 502 women were seen in antenatal consultation (ANC), 350 of whom agreed to answer the questionnaires and thus participate in the study, i.e. a 69.7% participation rate. Fifty-one (51) of the 350 had a positive HBsAg result, i.e. a prevalence of 14.57%.

### 3.1. Socio-demographic Data

The mean age was 26.4±5.6 years, with extremes of 15 and 43 years. The 20-30 age group accounted for over 70%. Pregnant women with secondary education were the most represented (46.6%).table1

**Table 1** Pregnant women by socio-demographic characteristics.

Socio-demographic characteristics		
Ages (years)	Number (N)	Percentage (%)
[15-20[	48	13,7
[20-25[	77	22,0
[25-30[	105	30,0
[30-35[	82	23,4
[35-40[	31	8,9
[40-45[	7	2,0
Educational level		
No	17	4,8
Primary	137	39,1
Secondary	163	46,6
Higher	33	9,4

**Table 2** Distribution of pregnant women according to general knowledge of HBV.

General knowledge HBV	Number (n)	Percentage (%)
Causal agent	Good response	
All levels combined	182	52
Routes of sexual transmission		
All levels	130	37,1
Top level	33	100
Mother-to-child transmission		
All levels	89	25,4
Upper level	27/33	78,8
Fecal-oral route (saliva)		
General knowledge HBV	Number (n)	Percentage (%)
Causal agent	Good response	
All levels	42	12,0
Upper level	31	93,9
Blood transmission		
All levels	91	26,3
Upper level	33	100
Existence of effective modern		
All levels	73	20,8
Upper level	21	63,6
Existence of vaccine		
All levels	279	79,7
Upper level	33	100
Average PMTCT vaccine		
All levels	97	27,7
Highest level	27	81,8

### 3.2. Pregnant Women's Knowledge of HBsAg

Knowledge of viral hepatitis B was variable but generally low. One hundred and sixty-eight (168) pregnant women, i.e. 48% of the total, were unaware of the causative agent of the disease. In terms of transmission routes, sexual transmission was known by 37.1% of pregnant women at all levels. However, knowledge of this route of transmission was better among women in higher grades. (33/33). Mother-to-child transmission was known by 25% of women at all levels of education.

### 3.3. Pregnant Women's Practices with Regard to Viral Hepatitis B

Of the 502 women followed up for ANC during the study period, the 350 who agreed to answer the questionnaires had all been screened for HBV, HCV and HIV. Of the remaining 152, 61 knew their status (screened during previous pregnancies or during a health check-up). Almost all women had not been vaccinated against HBV (99.6%). Table 2

#### 4. Discussion

Viral hepatitis B, a major public health problem, no longer needs to be demonstrated, especially in sub-Saharan Africa [1,2]. The knowledge and practical attitudes of pregnant women, the main source of transmission, certainly influence the transmission of the disease.

In this series, 502 women were seen in prenatal consultation at the two study hospitals, 350 of whom agreed to take part in the study, and all were screened for hepatitis B free of charge, representing a 69.6% participation rate. This participation rate calls on us to raise awareness among all those involved in the care of parturients, in order to meet WHO recommendations that all pregnant women should be screened for HBsAg. Of the pregnant women screened, 51 were HBsAg positive, representing a prevalence of 14.57%.

This result is in line with the literature, which classifies most sub-Saharan African countries, including Chad, as high-prevalence zones.

Similar results were reported by :

- Khadidjatou S et al. in Benin in 2019 who reported 14.02% [9].
- Doumbia K et al. in Mali found 17% of HBsAg-positive cases in women in 2022 [10].
- Abdoul et al. in 2020 reported 18.4% in Cameroon [7]. It should be noted that prevalence varies from one geographical area to another.
- In Morocco, it was 2.35% according to Sbiti M et al [11].
- This difference could be explained by environmental factors linked to geographical location, classifying countries into high, medium and low prevalence zones [12].

The mean age was 26.4+/-5.6 with extremes of 15 and 43 years. Our results are similar to those of Sbiti M et al. in Morocco and Boushab M in Mauritania, who found an average age of 28+/-6 and 28+/-7 respectively [11,13]. The young age of the patients can be explained by the early acquisition of the infection through vertical or horizontal transmission during childhood, on the one hand, and by the youthfulness of the African population on the other, especially in this context, where women of childbearing age are relatively young.

In terms of level of education, almost half have secondary education, and over 39% have primary education. This result is lower than in the Benin study, where secondary education accounted for 52.8% of cases [9].

Knowledge of the disease varies according to the level of schooling. Only 52% of pregnant women surveyed knew the causative agent of the disease. Of the remaining 48%, some believe that the illness is caused by bacteria, while others claim that the disease is the result of a divine spell, which is mystical in our context. In terms of contamination routes, sexual transmission was known to be the source of contamination for 37.1%, followed by blood for 26.3%, all levels of education combined. It should be emphasized that knowledge is higher among pregnant women with higher levels of education (100%). Mother-to-child transmission, the main source of transmission in Africa and East Asia, was known in only 25% of cases, all levels combined. In France, this route was known by over 80% of the women surveyed [14]. This study shows that higher levels of education improve knowledge of the condition. Over 78% of women in higher education recognized that the hepatitis B virus can be transmitted from mother to child, compared with 25% of the study population as a whole. Njoya et al. found 25.9% for the vertical route [15]. These differences could be explained by the educational levels of the study population. Although not recognized as a source of hepatitis B transmission, the salivary route continues to be cited by African populations (who probably confuse hepatitis B with hepatitis A). In our series, 12% of women believe that hepatitis B is transmitted by saliva.

In practical terms, 80% of women surveyed at all levels were aware of the existence of the hepatitis B vaccine, and more than 27% recognized its importance in preventing mother-to-child transmission of the virus. Despite this high of awareness of the vaccine, less than 1% of women claim to be vaccinated against HBV. With regard to the importance of PMTCT, our result is lower than that of the Cameroon study, where over 40% of women were aware of the importance of PMTCT [15].

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#### 5. Conclusion

This study shows that overall knowledge of hepatitis B among pregnant women in N'Djamena is limited. Pregnant women with a high level of education, however, had a better knowledge. Efforts still need to be made to raise awareness

and educate young girls, who are potential candidates for childbearing. Further work would be useful to better define the problem.

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## Compliance with ethical standards

### *Disclosure of conflict of interest*

The authors declare no conflicts of interest.

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