

# Evaluation of the Knowledge and Attitudes of Students at the University of N'Djamena on Hepatitis B

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**Abstract:** *Introduction:* Viral hepatitis B constitutes a real global public health problem. According to the WHO, Chad is one of the so-called high endemic areas for the hepatitis B virus. The aim of this study was to improve the prevention of hepatitis B virus in the university environment. *Methodology:* This was a cross-sectional study with a descriptive aim, spread over a period of one year. The university campus of Toukra and the Faculty of Exact and Applied Sciences of Farcha were used as study settings. The data were collected on a standardized form. *Results:* Five hundred (500) students were interviewed. The average age was  $23.06 \pm 2.8$  years. The sex ratio was 2.9. The vast majority (91.4%) had heard of viral hepatitis B. School and university awareness were the main sources of information. The clinical signs frequently cited by the respondents were fatigue and fever. However, little was known about the mode of transmission. The majority cited saliva as the source of contamination (76.2%). Among the means of prevention, vaccination was cited by 55.8% of participants. Only 19.4% of the participants admitted to being immune to the virus. However, 79.8% wanted to be vaccinated against the disease. The majority (83.4%) felt that going to the health service was the best way to deal with HBV exposure. *Conclusion:* Although most respondents had good knowledge of the disease, very few were vaccinated. There is a need to expand vaccination to the general population.

**Keywords:** Attitude, Knowledge, Viral Hepatitis B, Students, N'Djamena, Chad

## 1. Introduction

Hepatitis B is an inflammatory infection of the liver caused by the hepatitis B virus (HBV). HBV can be transmitted by exposure of mucous membranes or non-intact skin to infected blood or other body fluids. In Africa and Asia, transmission occurs mainly during the perinatal period, from mother to child [1]. Up to 90% of those infected in early childhood may become chronic [2].

Viral hepatitis B constitutes a real public health problem because of its frequency, its complications and its socio-economic consequences. The WHO estimates that more than 2 billion people have been infected with the hepatitis B virus during their lifetime, that means about 30% of the world

population. Of this population of infected individuals, approximately 257 million are chronic carriers [1].

The prevalence of chronic carriers is very high in Africa and Asia. It is in the order of 8 to 26% [3].

In Benin, the prevalence of HBV was 14.02% [4]. It was 9.1% in Burkina Faso [5].

Chad is part of this highly endemic area. The seroprevalence of HBsAg and HCV-Ac in HIV-infected individuals 1 was 16.1% and 1% respectively [6].

Despite this high prevalence of infection in sub-Saharan Africa and Asia, knowledge of this condition remains limited.

In Chad, there is very little data on the study of knowledge and attitude of this disease in the university environment to

our knowledge although the country is part of the so-called high endemic areas. Hence the interest of this work which aimed at improving the prevention of hepatitis B virus in the university environment.

## 2. Methodology

The university campus of Toukra and the Faculty of Exact and Applied Sciences of Farcha served as a study setting.

It was a cross-sectional study with a descriptive aim, which was spread over one year.

The study population consisted of students at the University of N'Djamena, specifically those from the Toukra campus and the Faculty of Exact and Applied Sciences of Farcha who consented and were present during the collection period.

The sampling was random. Five hundred students were interviewed. The standard questions has been requested was completed by the respondents. For those who could not read and write French (Arabic speakers), the questionnaire was completed by the interviewer during a face-to-face interview. The translation of the questions into Arabic was done in accordance with the pre-established translation guide.

The study obtained the authorization of the different deaneries (Faculties of Human Health Sciences, Faculties of Exact and Applied Sciences of Farcha and Toukra University Campus). Participation was free and voluntary. The anonymity of the participants was respected.

The information transcribed from the collected data and questionnaires was entered into a database and analyzed using SPSS software.

## 3. Results

### 3.1. Sociodemographic Data

In this series, men represented 74% (n=372). The sex ratio (M/F) was 2.9. The age range of 21 to 25 years was the most represented. The mean age was  $23.06 \pm 2.8$  years. Participants had a Bachelor's degree 2 in 42.4% (n=212).

Students from the Toukra campus constituted more than half of the respondents (58.6%). Single people were frequently found in this series (68.8%).

**Table 1.** Socio-demographic characteristics.

Characteristics	Categories	Numbers (%)
Sex	Male	372 (74,0)
	Female	128 (25,0)
Age (years)	< 20	21 (4,2)
	21 - 25	402 (80,4)
	26 - 30	70 (14,0)
	> 30	7 (1,4)
Marital status	Single	344 (68,8)
	Married/Couple	153 (30,6%)
	Divorced) /separated	3 (0,6%)
Level of education	Bachelor's degree 1	176 (35,2)
	Bachelor's degree 2	212 (42,4)
	Bachelor 3	94 (18,8)
	Master 1	17 (3,4)

Characteristics	Categories	Numbers (%)
University Campus	Master 2	1 (0,2)
	Toukra campus	293 (58,6)
	Faculty of Farcha	207 (41,4)

### 3.2. Knowledge and Perception of Viral Hepatitis B

Most of the respondents had heard of HBV, in a proportion of 91.4% (n=457).

The source of information for the students interviewed was mainly from the school environment (64.0%, n=320).

**Table 2.** Distribution of respondents according to their knowledge of the mode of transmission of HBV and means of prevention.

Knowledge	Categories	Number (%)
Have you heard of HBV?	Yes	457 (91,4)
	No	43 (8,6)
Source of information	school	320 (64,0)
	Radio	292 (58,4)
	Talk-show	292 (58,4)
	Television	288 (57,6)
	Internet	249 (49,8)
	Immunization campaign	219 (43,8)
	Screening campaign	192 (38,4)
	Don't know	85 (17,0)

The clinical manifestation most known by the respondents was fatigue in a proportion of 69.8% (n=349).

The majority of students (n=327), or 65.4%, had declared that there was a possibility of recovery from viral hepatitis B. However, more than half of the respondents (n=280) did not know that there was a treatment for viral hepatitis B.

In addition, 71.8% (n=359) felt that HBV infection could lead to complications.

**Table 3.** Distribution of respondents according to their knowledge of the mode of transmission of HBV and means of prevention.

Modes	Categories	Number (%)
Modes of HBV transmission	Salivary	381 (76,2)
	Sexual	235 (47,0)
	Blood contact	199 (39,8)
	Mother to child	186 (37,2)
	Food contamination	181 (36,2)
	Don't know	13 (2,6)
	HBV vaccination	279 (55,8)
Means of prevention of hepatitis B	HBV screening	247 (49,4)
	Safe sex	217 (43,4)
	Hand washing	210 (42,0)
	Decontamination of blood- soiled items	159 (31,8)
	Single-use syringe	155 (31,0)
	Use of sterile equipment	140 (28,0)
	Sleeping under mosquito nets	70 (14,0)

Regarding the mode of transmission, the salivary route was the most cited with 76.2% (n= 381) of cases.

In the present study, more than half of the participants or 55.8% (279) knew that there is a vaccine that protects against viral hepatitis B.

In terms of immunization, the large proportion of students were not vaccinated against viral hepatitis B, 80.6% (n=403). However, 6.4% (32) had received all three doses of vaccine against the virus.

Students' attitudes towards the risk of HBV infection.

As for the attitude of the students after an exposure to a risk, the majority of the participants interviewed, 83.4% (n=417) opted for a medical consultation.

The 30, 8% (n=154) of the participants had proposed awareness as a means of combating viral hepatitis B.

## 4. Discussion

The present study which concerns the evaluation of the knowledge and attitudes of the students of the University of N'Djamena about viral hepatitis B concerns 500 students.

The average age was  $23.06 \pm 2.8$  years. This result is lower than those found by Mayanna *et al.* in Chad in 2021 who reported a mean age of  $29.5 \pm 9$  years [7]. On the other hand, the study by Boutayeb *et al.* in Morocco found  $32 \pm 11$  years [8]. This difference can be explained by the fact that the present study took place in a young student environment. This age group is generally a large segment of the active population in Chadian universities.

The majority of the students were male (74%) with a sex ratio (M/F) of 2.9. This result is similar to those of Bouyateb *et al.* in Morocco where men represented 81% [8]. The predominance of males found in the present study could be explained by the fact that in Chad, women are undereducated compared to men. On the other hand, Traore A in Mali in 2014; Lawson *et al.* in Senegal in 2017 had found a female predominance respectively at 59.8% and 57% [9, 10].

The majority of respondents were single with a rate of 68.8% against 31.2% married. This can be explained by the youth of our population (average age 23.06 years). In addition, family responsibilities in a marital situation do not favor studies. However, almost all participants (91.4%) were aware of the existence of viral hepatitis B.

In this study, the salivary route was the most cited route of transmission (76.2%), followed by the sexual route (47%), mother-to-child transmission (37.2%) and the blood route (30.0%). Njoya O *et al.* in Cameroon reported in their work that sexual transmission came in first place with 31.3%, followed by vertical transmission (25.9%) [11]. However, in the series by Kodjoh N *et al.*, blood transmission was the most cited route of transmission (90.7%), followed by sexual transmission (88.7%), then salivary transmission (40%) and mother-to-child transmission (35.3%) [12]. On the other hand, in the series of Boutayeb H *et al.* the main transmission was the blood route (71%), followed by the salivary route (26%) and the sexual route (24%) [8]. This survey revealed the limitations of knowledge about the routes of HBV transmission. The salivary route is falsely cited in the majority of cases. In reality, this is the route of transmission of viral hepatitis A.

On the other hand, 71.8% of the respondents were aware that viral hepatitis B was a source of secondary complications. This result is different from that reported by Redonnet A in Rouen where knowledge of the complications of viral hepatitis B was cited by 49.4% [13]. In the study by Njoya O *et al.* knowledge of the complications of viral hepatitis B was cited in 16.4% of cases [11]. The better

knowledge of the complications of this disease in the present study would be related to the high frequency of the disease on the one hand, and on the other hand by the study population which is essentially composed of students, a priori educated.

In addition, in this series, vaccination is the most known prevention method (55.8%), followed by screening (49.4%) and decontamination of soiled objects (12%). These results are similar to those of Redonnet A in France, where vaccination was cited in 64.6% [13]. Njoya O *et al.* also reported a predominance of vaccination in 41.7% followed by screening (8.8%) [11]. In Benin, Kodjoh *et al.* made the same observation [12]. These different studies show that vaccination remains one of the best-known means of prevention of viral hepatitis B.

After exposure to a risk of contamination, the majority of respondents thought of using health facilities for treatment (83.4%), followed by 29.0% who planned to consult traditional practitioners and 23% who opted for cleaning with an antiseptic. While Redonnet A in Rouen in 2011 had reported that after an exposure to a risk of HBV contamination, 69.6% of the exposed have a first reflex to be tested [15]. For Njoya O *et al.* in Cameroon 93.4% of the respondents thought first of traditional treatments after exposure to HBV [11]. The preference to use qualified medical personnel in case of HBV exposure declared by the respondents is an attitude to be encouraged.

In the present study, 19.4% of subjects declared to be vaccinated. They were 6.4% to have been fully vaccinated (3 doses). This result is similar to that of a French study conducted in 2004 which reported that 21.7% were vaccinated [14]. The present result is much lower than those of Daou A in Mali in 2018, Bawe LD *et al.* in Senegal in 2020 and Aulnay B in France in 2020, which had reported respectively 37.30%; 65.10% and 77% of HBV vaccination coverage [15-17]. This study shows that the vaccination status remains a worrying situation for our population living in a high HBV endemic area with a low coverage rate.

Regarding vaccine availability, 34.8% of respondents stated that vaccines are available at all ages. Redonnet A obtained a similar result (33%) [13]. These results highlight the lack of knowledge of the population about the supply of HBV vaccine, hence the need to increase awareness about the availability of the vaccine and its supply chain.

Finally, as regards information channels, schools (64%), discussion forums (58.4%), the media (radio, 58.4% and television, 57.6%), and screening and vaccination campaigns (38.4% and 43.8%) were frequently cited. These communication channels should be improved by putting more programs on television and radio. Health communication in schools should also be strengthened, with emphasis on screening and vaccination. In the study by Gueye *et al.* in Senegal in 2020, schools came last after the media and other venues with 6.3% and 10.80% respectively [3]. The predominance of schools as sources of information in our context would be in line with the current textbooks in Chad that deal with STIs in general.

## 5. Conclusion

Viral hepatitis B constitutes a real public health problem on a global scale. Chad, like other African countries south of the Sahara, is part of the high prevalence zone according to the WHO.

The present study conducted in a student environment shows a better knowledge of the existence of the disease. However, the level of vaccination coverage is low.

Thus, it appears essential to continue awareness raising in schools, universities and other gathering places. A campaign to promote screening in the community at large is also necessary. Particular emphasis should be placed on vaccination, which is and remains the best means of prevention.

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