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Knowledge, Attitudes, and Practices of Healthcare Workers on Hepatitis B and C in Mbujimayi, Democratic Republic of the Congo: A Cross-Sectional Study

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Abstract

Introduction: Viral hepatitis B and C remain major public health concerns globally, particularly in Africa. In the Democratic Republic of the Congo (DRC), limited access to screening and treatment contributes to high morbidity and mortality. Healthcare professionals play a critical role in prevention and control efforts, yet their knowledge, attitudes, and practices (KAP) are not well documented in certain regions. **Materials and Methods:** We conducted a descriptive, cross-sectional study among healthcare professionals in two general referral hospitals in Mbujimayi, DRC, from July 1 to July 31, 2025. Data were collected using a structured electronic questionnaire via KoboCollect. KAP scores were assessed using predefined thresholds and analyzed using descriptive statistics, bivariate tests, and multivariate logistic regression to identify associated sociodemographic factors. **Results:** Among 191 participants, 90.05% demonstrated adequate knowledge, 93.72% had favorable attitudes, and 86.91% reported good practices. However, only 9.42% believed hepatitis B and C could be cured, and vaccination coverage was low (24.08%). Younger age (<35 years), lower education level, and non-physician roles (especially midwives and nurses) were significantly associated with lower KAP scores ($p < 0.05$). Fear of death and perceived high treatment costs were common concerns. **Conclusion:** While overall KAP levels were satisfactory, critical gaps persist in curability awareness and preventive practices, particularly among younger and non-physician staff. Targeted training and improved access to vaccination and treatment are essential to strengthening hepatitis control efforts in the region.

Keywords

Hepatitis B, Hepatitis C, Knowledge, Attitudes and Practices (KAP), Healthcare Workers, Democratic Republic of the Congo, Sub-Saharan Africa

1. Introduction

Viral hepatitis B and C are among the leading causes of chronic liver disease worldwide, contributing to significant morbidity and mortality. Globally, over 500 million individuals are estimated to be living with chronic hepatitis B virus (HBV) or hepatitis C virus (HCV) infection. According to the World Health Organization (WHO), hepatitis B virus (HBV) and hepatitis C virus (HCV) together accounted for approximately 1.3 million deaths in 2022, primarily due to complications such as cirrhosis and hepatocellular carcinoma. Despite being preventable and treatable, these infections continue to pose a major public health challenge, particularly in low- and middle-income countries [1] [2].

Sub-Saharan Africa remains disproportionately affected by viral hepatitis. In 2022, the region reported over 64.7 million people living with chronic HBV infection (5.8% of the population) and nearly 8 million with HCV (0.7% of the population). The annual incidence of new infections and related deaths remains high, exacerbated by limited access to diagnostic services, antiviral therapies, and preventive interventions such as vaccination [2].

In the Democratic Republic of the Congo (DRC), HBV is considered to have intermediate endemicity (3.3%), while HCV prevalence is relatively low (0.9%). However, national data reveal alarmingly low diagnostic coverage (only 2.4% for HBV and 8% for HCV), with over 7800 deaths attributed to these infections, highlighting critical gaps in the health system's response [3] [4].

HBV, recognized as the **second most common human carcinogen after tobacco**, is transmitted primarily through **contaminated blood products**, underscoring the importance of ensuring the **safety of blood transfusions**. This mode of transmission is particularly relevant in resource-limited settings, where blood screening protocols may be inconsistently applied, and where healthcare workers are frequently exposed to blood and bodily fluids [5] [6].

In recognition of this global challenge, the World Health Organization (WHO) launched the **Global Health Sector Strategy on Viral Hepatitis 2021-2030**, which aims to eliminate viral hepatitis as a public health threat by 2030. The strategy sets ambitious targets: diagnosing 90% of people living with hepatitis, treating 80% of eligible individuals, and reducing new infections by 90%. In the African region, the WHO Strategic Framework emphasizes early childhood HBV vaccination, improved blood safety, expanded access to diagnostics and treatment, and integration of hepatitis services into primary healthcare. Member States are encouraged

to adopt multisectoral approaches and prioritize vulnerable populations, including healthcare workers [7] [8].

Healthcare professionals are central to the success of these efforts. Their **knowledge, attitudes, and practices (KAP)** directly influence the uptake of screening, vaccination, and treatment services. Inadequate knowledge or negative attitudes among health workers can perpetuate stigma, reduce patient engagement, and compromise the quality of care. Understanding the KAP profile of healthcare providers is therefore essential to inform training programs, policy development, and resource allocation [9] [10].

Mbujimayi, the capital of Kasai-Oriental Province in central DRC, represents a critical setting for such an assessment. Despite being a regional hub, the city faces significant health system challenges, including shortages of diagnostic tools, limited access to vaccines, and insufficient continuing education for health workers. Previous studies in urban centers such as Kinshasa and Lubumbashi have revealed gaps in hepatitis-related KAP among healthcare professionals, but data from more remote provinces remain scarce.

We hypothesized that certain sociodemographic characteristics—such as age, educational level, and professional category—are associated with significant differences in knowledge, attitudes, and practices (KAP) regarding hepatitis B and C.

This study aimed to assess the knowledge, attitudes, and practices of healthcare professionals in Mbujimayi regarding HBV and HCV, and to identify sociodemographic factors associated with suboptimal KAP. By aligning the findings with the WHO Strategic Framework, the study seeks to highlight opportunities for targeted interventions and contribute to national efforts toward hepatitis elimination in the DRC.

2. Materials and Methods

2.1. Study Design and Setting

We conducted a descriptive, analytical cross-sectional study between July 1 and July 31, 2025, in Mbujimayi, the capital of Kasai-Oriental Province in the Democratic Republic of the Congo (DRC). The study was carried out in two general referral hospitals located in distinct health zones: Saint Jean Baptiste General Referral Hospital in the Diulu Health Zone and Muya General Referral Hospital in the Muya Health Zone.

2.2. Study Population

The target population included healthcare professionals working in the selected hospitals. Participants were categorized into two main groups: medical professionals (general practitioners and specialists) and paramedical professionals (nurses, laboratory and imaging technicians, nutritionists, physiotherapists, anesthesiologists, and midwives). Inclusion criteria were being employed at one of the two hospitals and providing informed consent to participate in the

study.

2.3. Sample Size and Sampling

We calculated the sample size using the formula for cross-sectional studies:

$$n = \frac{Z^2 \cdot p(1-p)}{d^2}$$

The minimum required sample size was estimated at 151 participants, assuming an expected proportion of 50% for adequate knowledge, a precision of 8%, and a 95% confidence level. Our final sample (n = 191) exceeded this threshold.

A non-probabilistic, voluntary sampling approach was used. All eligible healthcare workers who agreed to participate during the study period were included. The final sample comprised 191 respondents.

2.4. Data Collection

Data were collected using a structured electronic questionnaire developed in KoboCollect and administered via Android smartphones. A pilot study was conducted from June 15 to 30, 2025, among 30 healthcare professionals from two hospitals in the city of Mbujimayi not included in the study, with the aim of pretesting the questionnaire to ensure the clarity and consistency of the items. The pre-tested questionnaire was administered by four trained third-year undergraduate students in Biomedical Sciences, under the supervision of a physician-academic assistant. Prior to fieldwork, all enumerators received one day of training covering: 1) research ethics and informed consent procedures; 2) administration of standardized questionnaires (avoiding leading questions); 3) neutral interview techniques; and 4) operation of the KoboCollect system. The survey covered all hospital departments, including Internal Medicine, Pediatrics, Gynecology-Obstetrics, Surgery, Laboratory, Imaging, Dentistry, Physiotherapy, and Pharmacy.

2.5. Variable

The questionnaire captured sociodemographic characteristics (age, gender, marital status, education level, profession, residence, and religion), as well as knowledge, attitudes, and practices (KAP) related to viral hepatitis B and C.

- **Knowledge** was assessed using 11 items covering general awareness, transmission routes, symptoms, complications, prevention, and vaccination. Scores ranged from 0 to 28. A score ≥ 14 was considered adequate, aligned with WHO standardized KAP surveys. This threshold reflects competence in identifying key hepatitis facts and transmission prevention strategies.
- **Attitudes** were measured using 4 items (maximum score: 6), including perceived risk, emotional response to diagnosis, and perceived cost of care. A score ≥3 was considered favorable.
- **Practices** were evaluated using 5 items (maximum score: 5), including screen-

ing history, vaccination status, and behavior toward infected individuals. A score ≥3 was considered good.

The cut-off points used to classify KAP scores (knowledge ≥ 14, attitudes ≥ 3, practices ≥ 3) were based on similar studies conducted in sub-Saharan Africa, ensuring comparability of findings across contexts.

2.6. Statistical Analysis

Data were exported to Stata version 16 for analysis. Descriptive statistics summarized participant characteristics and KAP levels. Bivariate analyses (Chi-square or Fisher's exact test, as appropriate) were used to identify associations between sociodemographic variables and KAP outcomes. Variables with $p \leq 0.20$ in bivariate analysis were included in multivariate logistic regression models to adjust for potential confounders. Adjusted odds ratios (aOR) and 95% confidence intervals (CI) were reported. Statistical significance was set at $p < 0.05$.

2.7. Ethical Considerations

Ethical approval was obtained from the Institutional Ethics Committee of the University of Mbujimayi (Approval No. 002/CEI/UM/2023). Written authorization was also secured from the Faculty of Medicine, Pharmacy and Public Health, and from the administrative authorities of both hospitals. All participants provided informed consent, and confidentiality and anonymity were strictly maintained throughout the study. All data collected via KoboCollect were anonymized and securely stored on password-protected servers, in compliance with ethical standards for electronic data management.

3. Results

3.1. Participant Characteristics

A total of 191 healthcare professionals participated in the study.

Table 1. Distribution of the study population by sociodemographic characteristics.

Variables	Numbers (n = 191)	%*
Age: Average ± ET		
Under 35 years old	70	36.65
Greater than or equal to 35 years old	121	63.35
Gender		
Female	74	38.74
Male	117	61.26
Marital status		
Single	52	27.23
Married	135	70.68
Divorce	4	2.09

Continued

Level of education		
Medical Specialty Certificate/Postgraduate Medical	3	1.57
Diploma	84	43.98
Medical Doctor		
Master's Degree	37	19.37
Associate Degree/Undergraduate Diploma	34	17.80
High School Diploma/Secondary School Certificate	33	17.28
Commune		
Diulu	27	14.14
Kanshi	54	28.27
Bipemba	21	10.99
Dibindi	40	20.94
Muya	49	25.65
Religion		
Christian	186	97.38
Muslim	2	1.05
Kimbaguist	3	1.57
Professional category		
Doctor	87	45.55
Nurse	69	36.13
Laboratory Technician	19	9.95
Nutritionist	8	4.19
Midwife	8	4.19

*Except for variables whose parameters are specified next to the variable name.

The mean age was 36 ± 7 years, with 63.35% aged 35 years or older. The majority were male (61.26%) and married (70.68%). Regarding education, 43.98% were medical doctors, 19.37% held a bachelor's degree, 17.80% had an associate degree, and 17.28% had a secondary school certificate. Most participants resided in the communes of Kanshi (28.27%), Muya (25.65%), and Dibindi (20.94%). Professionally, doctors represented 45.55% of the sample, followed by nurses (36.13%), laboratory technicians (9.95%), and midwives/nutritionists (4.19% each). Nearly all participants identified as Christian (97.38%) (Table 1).

3.2. Knowledge, Attitudes, and Practices of Healthcare Workers on Viral Hepatitis

Figure 1 shows the frequency of adequate knowledge, favorable attitudes, and good practices among participants.

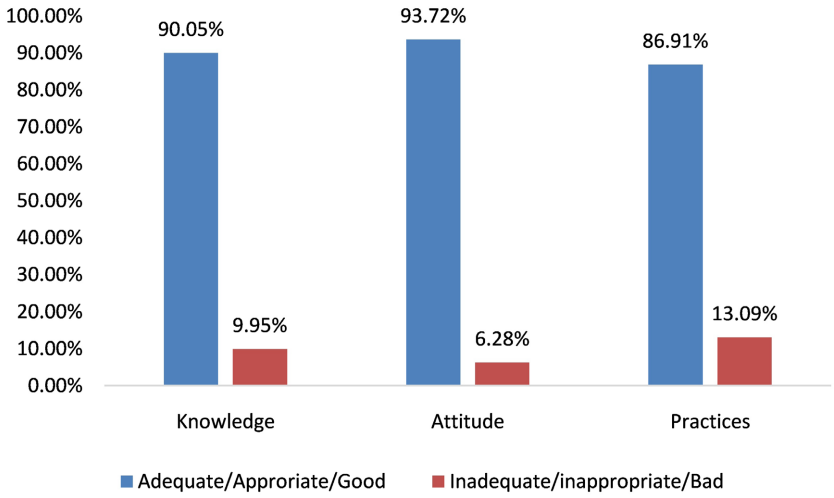

Figure 1. Assessment of healthcare providers' knowledge, attitudes, and practices regarding HBV and HCV in the two hospitals in Mbujimayi.

3.2.1. Knowledge of Healthcare Workers on Viral Hepatitis

Overall, 90.05% of participants demonstrated adequate knowledge of hepatitis B and C (**Figure 1**). **Table 2** presents participants' knowledge of viral hepatitis.

Table 2. Distribution of the study population according to knowledge about HBV or C.

Questions	Numbers (n = 191)	%
Have you ever heard of viral hepatitis?		
Yes	186	97.38
No	5	2.62
What types of HV do you know?		
HVA	43	22.51
HBV	47	24.60
HVC	46	24.08
HVD	31	16.23
HVE	24	12.56
HVG	2	1.04
I don't know	5	2.61
Do you think HV can affect the liver?		
Yes	182	95.28
No	2	1.04
I don't know	7	3.66
Can a person with HV have symptoms?		
Yes	180	94.24
No	3	1.57
I don't know	8	4.18

Continued

Which of the following symptoms are commonly encountered during HV (BC)?		
Diarrhea, abdominal bloating	62	32.46
Nausea, vomiting, loss of appetite	30	15.71
Fever, jaundice	70	36.65
I don't know	39	20.41
How can hepatitis B or C be transmitted?		
Contaminated blood	179	93.71
Sharp objects	170	89.00
Unprotected sex	175	91.62
From mother to child	156	81.67
Tattoos	116	60.73
I don't know	5	2.61
Can hepatitis B or C become complicated?		
Yes	180	94.24
No	6	3.14
I don't know	5	2.61
Can HV be cured?		
Yes	18	9.42
No	145	75.91
I don't know	28	14.65
If curable, by what means? N = 18		
Modern medicine	18	100
Traditional practitioner	0	0
Can viral hepatitis be prevented?		
Yes	181	94.76
No	2	1.05
I don't know	8	4.19
What are some ways you can prevent HV?		
Vaccination	180	94.24
Use of personal sharp objects	122	63.87
Safe sex	165	86.39
Abstinence	160	83.77
Pre-transfusion screening	150	78.53
I don't know	5	2.61
Is the HBV vaccination available?		
Yes, for children	171	89.53
Yes, for both.	8	4.19
I don't know	12	6.28

Most had heard of viral hepatitis (97.38%) and knew it affects the liver (95.28%). Commonly recognized types included HBV (24.60%), HCV (24.08%), and HAV (22.51%). Knowledge of transmission routes was high: contaminated blood (93.71%), unprotected sex (91.62%), sharp objects (89%), mother-to-child transmission (81.67%), and tattoos (60.73%). While 94.24% acknowledged the potential for complications, only 9.42% believed hepatitis B or C could be cured. Prevention methods were well known, with 94.24% citing vaccination and 78.53% mentioning pre-transfusion screening. However, only 89.53% knew that HBV vaccination is available for children (Table 2).

3.2.2. Attitudes toward Viral Hepatitis

A favorable attitude was observed in 93.72% of participants (Figure 1). Table 3 presents participants' attitudes toward Viral Hepatitis.

Table 3. Distribution of the study population according to attitudes and perceptions toward viral hepatitis B and C.

Questions	Numbers (n = 191)	%
Do you think you can contact an HV?		
Yes	156	81.67
No	30	15.70
I don't know	5	2.61
How would you react if you found out that you or one of your family members had HV?		
Fear	120	32.11
Sadness	3	1.57
Go to the hospital	61	31.93
See a pastor	2	1.04
I don't know	5	2.61
Have you ever had symptoms of HV?		
Yes	16	8.37
No	169	88.48
I don't know	5	2.61
In your opinion, what would be the cost of diagnosing and treating hepatitis B or C?		
expensive cost	156	81.68
Affordable	27	14.14
Free	2	1.05
No idea	6	3.14
What should you worry about if you are diagnosed with HBV or C?		
The high cost of treatment	51	26.70
Fear of contaminating a family member	31	16.23

Continued

Fear of death	99	51.83
Fear of being rejected by society	4	2.09
Indifference	1	0.52
I don't know	5	2.61

Most believed they could contract hepatitis (81.67%) and would seek hospital care if diagnosed (31.93%). Fear was the most common emotional response (32.11%), followed by concern about death (51.83%) and transmission to family members (16.23%). The cost of diagnosis and treatment was perceived as high by 81.68% of respondents (Table 3).

3.2.3. Prevention and Care Practices

Good practices were reported by 86.91% of participants (Figure 1). Table 4 presents participants' practices regarding prevention and care of viral hepatitis.

Table 4. Distribution of the study population according to practices regarding hepatitis B and C.

Questions	Numbers (n = 191)	%
Have you ever had an HBV or C screening test?		
Yes	178	93.68
No	7	3.68
I don't know	5	2.63
In what circumstances? n = 178		
Blood donation	129	72.47
Premarital examinations	73	41.01
Routine Examination	71	39.88
Voluntary review	120	67.41
Forgotten reason	2	1.12
Once you tested positive for HV, would you go to the hospital for further testing and treatment?		
Yes	135	70.68
No	51	26.70
I don't know	5	2.63
Have you ever been vaccinated against hepatitis B?		
Yes	6	3.14
No	46	24.08
I don't know	139	72.77
Do you think the hepatitis B vaccine could be dangerous?		
Unlikely	17	8.90
Never	156	81.68
No idea	18	9.42

Continued

Can you easily be around someone who has viral hepatitis A, B, C, D, or E?		
Yes	179	94.21
No	6	3.16
I don't know	5	2.63
Have you ever been treated for hepatitis B or C?		
Yes	4	2.14
No	185	97.88

A large majority had undergone screening for hepatitis B or C (93.68%), primarily during blood donation (72.47%) or voluntary testing (67.41%). However, only 24.08% had been vaccinated against hepatitis B, and 3.14% had received treatment for hepatitis. Most participants (94.21%) expressed willingness to interact with infected individuals, and 81.68% considered the vaccine safe (Table 4).

3.3. Factors Associated with Knowledge, Attitudes, and Practices

Table 5. Factors associated with adequate knowledge of viral hepatitis B and C.

Variables	n	Adequate knowledge n (%)	P val	OR (95% CI)	ORa (95% CI)	P val
Age			<0.001	5.8 [1.9 - 16.9]	2.4 [0.7 - 7.9]	0.151
Under 35 years old	70	56 (80.00)				
Greater than or equal to 35 years old	121	116 (95.87)				
Gender			0.42	1.4 [0.5 - 3.8]		
Female	74	65 (87.84)				
Male	117	107 (91.45)				
Marital status			0.658	1.26 [0.4 - 3.5]		
Single	52	46 (88.46)				
Married	135	124 (91.85)				
Divorce	4	2 (50.00)				
Level of education			<0.001	0.44 [0.2 - 0.6]	0.7 [0.4 - 1.4]	0.376
Medical Doctor (Specialists + General Practitioners)	87	87 (98.85)				
Certificate	37	33 (89.19)				
Medical Doctor	34	27 (79.41)				
Master's Degree	33	26 (78.79)				
Undergraduate Diploma						
High School Diploma						

Continued

Commune			0.800	1.04 [0.7 - 4]	
Diulu	27	26 (96.30)			
Kanshi	54	50 (92.59)			
Bipemba	21	19 (90.48)			
Dibindi	40	34 (85.00)			
Muya	49	43 (87.76)			
Religion			0.495	2.3 [0.2 - 22]	
Christian	186	168 (90.32)			
Muslim	2	2 (100.00)			
Kimbaguist	3	2 (66.67)			
Professional category			<0.001	0.36 [0.2 - 0.5]	0.4 [0.3 - 0.71] 0.001
Doctor	87	86 (98.85)			
Nurse	69	63 (91.30)			
Laboratory Technician	19	13 (68.42)			
Nutritionist	8	7 (87.50)			
Midwife	8	3 (37.50)			

Among the 87 doctors, 3 were specialists (CS) and 84 were general practitioners.

In the analysis of factors associated with knowledge (Table 5), education level and professional category emerged as the strongest predictors. Physicians demonstrated the highest levels of knowledge, while midwives and laboratory technicians showed markedly lower scores. Although younger age (<35 years) was associated with poorer knowledge in unadjusted analysis, this effect was not sustained after adjustment.

Table 6. Factors associated with adequate attitude towards viral hepatitis B and C.

Variables	n	Adequate attitude n (%)	P val	OR (95% CI)
Age			0.129	
Under 35 years old	70	64 (91.42)		2.7 [0.7 - 10]
Greater than or equal to 35 years old	121	117 (96.69)		1
Gender			0.169	
Female	74	68 (91.89)		2.5 [0.6 - 9.15]
Male	117	113 (96.58)		1
Marital status			0.237	
Single	52	51 (98.07)		0.3 [0.03 - 2.2]
Married	135	126 (93.33)		1
Divorce	4	4 (100)		-

Continued

Level of education			0.082	0.6 [0.3 - 1]
Medical Doctor (Specialists + General Practitioners)	87	84 (96.55)		
Master's Degree	37	36 (97.29)		
Undergraduate Diploma	34	32 (94.11)		
High School Diploma	33	29 (87.87)		
Commune			0.599	0.9 [0.5 - 1.4]
Diulu	27	25 (92.59)		
Kanshi	54	52 (96.29)		
Bipemba	21	21 (100)		
Dibindi	40	37 (92.50)		
Muya	49	46 (93.87)		
Religion			-	-
Christian	186	176 (94.62)		
Muslim	2	2 (100)		
Kimbaguist	3	3 (100)		
Professional category			<0.001	0.4 [0.2 - 0.7]
Doctor	87	84 (96.55)		
Nurse	69	68 (98.55)		
Laboratory Technician	19	17 (89.47)		
Nutritionist	8	8 (100)		
Midwife	8	4 (50)		

Among the 87 doctors, 3 were specialists (CS) and 84 were general practitioners.

Regarding attitudes (Table 6), most healthcare professionals exhibited favorable perceptions toward hepatitis B and C. However, professional category remained a significant determinant, with midwives showing notably less favorable attitudes. No other sociodemographic variable was significantly associated with attitude levels.

Table 7. Factors associated with adequate practice of viral hepatitis B and C.

Variables	n	Adequate practice n (%)	P val	OR (95% CI)	ORa (95% CI)	P val
Age			<0.001	5.6 [2.2 - 14.3]	2.3 [0.8 - 6.6]	0.131
Under 35 years old	70	52 (74.28)				
Greater than or equal to 35 years old	121	114 (94.21)				
Gender			0.000	6.3 [2.4 - 16.9]	3 [1 - 8.8]	0.045
Female	74	55 (74.32)				
Male	117	111 (94.87)				

Continued

Marital status			0.129	1.9 [0.8 - 4.7]		
Single	52	42 (80.76)				
Married	135	121 (89.62)				
Divorce	4	3 (75)				
Level of education			<0.001	0.3 [0.2 - 0.5]	0.5 [0.3 - 1]	0.060
Medical Doctor (Specialists + General Practitioners)	87	85 (97.70)				
Master's Degree	37	32 (86.48)				
Undergraduate Diploma	34	29 (85.29)				
High School Diploma	33	20 (60.60)				
Commune			0.669	0.9 [0.7 - 1.2]		
Diulu	27	23 (85.18)				
Kanshi	54	49 (90.74)				
Bipemba	21	20 (95.23)				
Dibindi	40	32 (80)				
Muya	49	42 (85.71)				
Religion			-	-		
Christian	186	161 (86.55)				
Muslim	2	2 (100)				
Kimbaguist	3	3 (100)				
Professional category			<0.001	0.3 [0.2 - 0.5]	0.6 [0.4 - 0.95]	0.033
Doctor	87	85 (97.70)				
Nurse	69	56 (81.15)				
Laboratory Technician	19	18 (94.73)				
Nutritionist	8	6 (75)				
Midwife	8	1 (12.50)				

Among the 87 doctors, 3 were specialists (CS) and 84 were general practitioners.

As for practices (Table 7), younger age, lower education, and non-physician roles were independently associated with suboptimal preventive behaviors. Midwives and nurses were less likely to report good practices, particularly in vaccination and care-seeking. These findings underscore the need for targeted interventions among younger and non-medical staff to improve hepatitis-related practices.

4. Discussion

4.1. Knowledge, Attitudes, and Practices of Healthcare Workers on Viral Hepatitis

This study conducted in Mbujimayi, Democratic Republic of the Congo, revealed

that most healthcare professionals demonstrated satisfactory levels of knowledge, attitudes, and practices (KAP) regarding hepatitis B and C. However, significant disparities persist across age groups, education levels, and professional categories. These findings are consistent with those reported in other African settings and underscore the need for targeted interventions to address persistent gaps in hepatitis-related competencies among healthcare workers.

Knowledge levels were highest among physicians and those with advanced education, while midwives and laboratory technicians exhibited significantly lower scores. Similar trends have been documented in Ethiopia, where Hebo *et al.* found that although 73.9% of healthcare workers had good knowledge of HBV, only 42.6% demonstrated good preventive practices, and vaccination coverage remained low (25%) [11]. In Liberia, Freeman *et al.* reported that only 35.9% of healthcare workers had completed the HBV vaccination schedule, despite high awareness of transmission risks [12]. In South Africa, Mashilo *et al.* observed that while 83% of primary healthcare staff had good knowledge of HBV epidemiology, only 40% demonstrated adequate understanding of prevention and management strategies [13].

Attitudes toward hepatitis were generally favorable in our study, with most participants recognizing their vulnerability and expressing willingness to seek care if diagnosed. Nonetheless, midwives were significantly less likely to report favorable attitudes, even after adjustment. This finding aligns with studies from Ghana and Sudan, which highlighted similar attitudinal gaps among paramedical staff [14]. Fear of death and concerns about treatment costs were prevalent, echoing findings from Burkina Faso and Sierra Leone, where stigma and limited access to care were identified as major barriers to effective hepatitis management [14] [15].

Preventive and care practices were widely adopted, particularly screening, which was reported by over 93% of participants. However, vaccination coverage remained low (24.08%), and only a small fraction had ever received treatment. These findings mirror those from Ghana, where Kumah *et al.* found that although 100% of public health students were aware of HBV vaccination, only 58.8% had been vaccinated, and cost was a major barrier [16]. In a pan-African study involving 12 countries, Shah *et al.* reported that only 61% of healthcare workers were vaccinated against HBV, with significant disparities between East and West Africa, and cost cited as the most frequent reason for non-vaccination [14].

The finding that only 9.42% of participants believe hepatitis B or C can be cured may negatively affect patient counseling and adherence to treatment. Targeted educational interventions are needed to correct this misconception among healthcare workers.

The most commonly identified transmission routes—contaminated blood, unprotected sex, and sharp objects—are consistent with findings from studies in Dakar [17]. However, awareness of hepatitis virus types beyond B and C remains limited, as also reported in Morocco [18] and Ghana [16].

Our findings indicate descriptive associations between sociodemographic char-

acteristics and KAP scores. Given the cross-sectional design, these results should not be interpreted as causal relationships.

4.2. Implications for Practice and Policy

Taken together, these findings highlight the need for structured continuing education programs, improved access to hepatitis vaccines, and enhanced communication strategies to address misconceptions and promote evidence-based practices. Aligning these efforts with the WHO Strategic Framework for Viral Hepatitis 2021-2030 will be essential to achieving national and regional elimination goals.

Future educational programs should emphasize the distinction between hepatitis B, which is preventable through vaccination, and hepatitis C, which is highly curable with modern antiviral therapies. This differentiation is critical for effective prevention and treatment strategies.

4.3. Limitations

This study has several limitations. First, its cross-sectional design precludes any inference of causality between sociodemographic factors and KAP outcomes. Second, data were collected through self-reported questionnaires, which may be subject to social desirability bias, particularly regarding attitudes and practices. Third, the study was conducted in only two hospitals in Mbujimayi, limiting the generalizability of findings to other regions of the Democratic Republic of the Congo or sub-Saharan Africa. Moreover, the use of non-probabilistic, voluntary sampling may introduce selection bias, limiting the representativeness of our findings. Therefore, results should be interpreted as specific to the two hospitals included in this study. Fourth, the absence of serological testing prevented correlation between reported practices and actual hepatitis B or C infection status. Finally, the low vaccination rate reported may reflect both limited access and recall bias, as many participants were unsure of their vaccination history.

Despite these limitations, the study provides valuable insights into hepatitis-related KAP among healthcare professionals in a resource-limited setting and highlights key areas for intervention aligned with WHO elimination targets.

5. Conclusion

This study highlights both strengths and gaps in the knowledge, attitudes, and practices of healthcare professionals in Mbujimayi regarding hepatitis B and C. While overall awareness and screening practices are encouraging, significant disparities persist among younger, less-educated, and non-physician staff, particularly midwives and nurses. Low vaccination coverage and limited understanding of curability reflect systemic barriers and missed opportunities for prevention. These findings underscore the urgent need for targeted training, improved access to vaccination, and integration of hepatitis services into routine care. Aligning local efforts with the WHO Strategic Framework for Viral Hepatitis 2021-2030 will

be essential to advancing hepatitis elimination goals in the Democratic Republic of the Congo and across sub-Saharan Africa.

Contributions and Responsibilities of the Authors

André K.K. and Gloria K.L. wrote the study protocol. Darla N.C., Gloria K.L., Meseje K.M., Japhet T.N., and Daniel K.C. collected the data under the supervision of André K.K.; Stéphanie M.K. and André K.K. analyzed the data. Claude M.M. and André K.K. drafted the "Discussion". Joris L.L. led the study from protocol development to conclusion.

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Conflicts of Interest

The authors declare that they have no competing interests.

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