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REVIEW

Factors associated with knowledge of viral hepatitis B and C during a hepatitis awareness campaign in 2021 in Togo

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Objective: The study aimed to identify the factors associated with good knowledge of viral hepatitis B and C.

Methods: A cross-sectional study with prospective data collection was conducted from 27 to 28 July 2021 (two days) on World Hepatitis Day in 2021.

Results: The study included 577 respondents. The average age of the respondents was 36.68 ± 13.09 years. There were 299 men (51.82%) with a 1.08 sex ratio. The proportion of respondents with good overall knowledge was 58.23% for viral hepatitis B and 45.22% for viral hepatitis C. The factors associated with good overall knowledge of viral hepatitis B were gender, education level, and having once heard about the hepatitis B virus (HBV) during a blood donation. The factors associated with good knowledge of the hepatitis C virus (HCV) were education level and having once heard about HCV during an awareness campaign.

Conclusion: The respondents in this study did not have adequate information about viral hepatitis B and C. To inform more people, it is important to intensify awareness campaigns.

Keywords: knowledge, viral hepatitis B and C, awareness

Introduction

Viral hepatitis is a public health issue.[1] There are several virus types with hepatic tropism; the most well-known are the alphabetic viruses (A, B, C, D, E, and G). Hepatitis B and C viruses are responsible for a transition to chronicity, with the possibility of complications, such as cirrhosis or liver cancer.[2] According to World Health Organization (WHO) estimates, there are 240 million cases of chronic hepatitis B virus (HBV) infection and 71 million cases of hepatitis C virus (HCV) infection worldwide.[1] Sub-Saharan Africa is the most affected by HBV.[3]

Viral hepatitis and its complications are a leading cause of death worldwide. In 2015, more than one million people died of viral hepatitis, mainly from cirrhosis and primary liver cancer.[1] Viral hepatitis is an enormous psychological and financial burden in endemic regions, particularly in low-income countries.[4] Prevention remains the best strategy for combating the spread of these viruses. Accordingly, sufficient knowledge and appropriate attitudes towards these infections are the cornerstones of prevention.

In Togo, numerous studies have examined knowledge about viral hepatitis B and C, but none have examined the factors associated with this knowledge.[5,6] Therefore, this study sought to describe respondents' level of knowledge about viral hepatitis B and C and identify the factors associated with good knowledge of viral hepatitis B and C.

Methods

Study framework

The study was conducted at the Campus Teaching Hospital of Lomé during an awareness campaign on viral hepatitis B and C in 2021 as part of World Hepatitis Day.

Study population

This was a cross-sectional study. The study population consisted of all individuals of either sex, aged 15 years and above, who presented at the screening site. Anyone aged 15 years or above who gave informed verbal consent was included in the study. Anyone with an unusable survey form was excluded from the study.

Study materials and process

A questionnaire was used. Individual counselling was given to all those present. Following informed consent at the end of the interview, a trained interviewer completed the questionnaire.

Data collection

Data were collected using a pre-established survey form. The data was entered using EpiData software version 3.1. The parameters studied were sociodemographic data, history and lifestyle, and data on the knowledge of hepatitis B and C viruses (such as the sources of information on viral hepatitis B and C, cause, primarily affected organ, means of transmission, symptoms, complications, and possible treatment and cure in Togo). For each question asked, a score of one point was given if the respondent gave the correct answer on knowledge of viral hepatitis B and C. There were seven questions. A point was awarded if the respondent could give the following answers to the questions:

- Cause of hepatitis B and C? Viruses.
- Organ most affected by HBV and HCV? Liver.
- Means of transmission? For HBV, blood, sexual, and mother-child. For HCV, blood and sexual.

- Symptoms of viral hepatitis B and C? Jaundice, fatigue, and fever.
- Complications of viral hepatitis B and C? Cirrhosis and cancer.
- Possible to treat viral hepatitis B and C? Yes.
- Possible to cure viral hepatitis B and C in Togo? Yes.

For each question about viral hepatitis B and C, a point was not awarded if the respondent gave the following answers:

- Cause of hepatitis B and C? Answers other than the viruses.
- Organ most affected by HBV and HCV? Answers other than the liver.
- Means of transmission? For HBV, a single answer between blood, sexual, mother-child, or other answers than these. For HCV, other answers than blood and sexual transmission.
- Symptoms of viral hepatitis B and C? Answers other than jaundice, fatigue, and fever.
- Complications of viral hepatitis B and C? Other answers than cirrhosis and cancer.
- Possible to treat viral hepatitis B and C? No.
- Possible to cure viral hepatitis B and C? No.

Operational definition

The respondents' overall knowledge was considered good if they could give at least five correct answers to the seven questions. Their overall knowledge was considered poor if they gave fewer than five correct answers to the seven questions.

Statistical analysis

All data were recorded in a database designed using EpiData version 3.1. Statistical analysis was done using Stata software version 14.2. Statistical analysis included a descriptive section of the population and a comparative section according to the studied variables. For descriptive analysis, results were expressed as headcount and percentage for qualitative variables or means and standard deviations for quantitative variables. For comparative analysis, Pearson's chi-square or Fisher's exact tests were used for qualitative variables and t-test for quantitative variables.

Logistic regression was used to identify the factors associated with the level of knowledge about hepatitis B and C. For each initial model, variables showing a $p < 0.2$ in univariate analysis were used as explanatory variables. A top-down, step-by-step procedure was used to select the final model. This involved progressively removing the least significant variables ($p > 0.05$). At each step, we confirmed no confounding between the removed variable and those remaining in the model by checking for changes in the odds ratios (tolerated variation: 20%) or radical changes in their degrees of significance and the overall significance statistic of the model.

Ethical considerations

The hospital's management agreed to conduct the study, and the respondents gave informed verbal consent. The questionnaire was designed to be submitted and processed by a computer. Thus, each file had a unique number identifying the report to preserve anonymity.

Results

Global data

Of the 635 respondents who participated in the campaign, 577 were aged 15 years or over.

Data on knowledge of viral hepatitis B and C existence

Of the 577 people surveyed, 486 had heard of HBV, and 429 had heard of HCV.

Sociodemographic characteristics

The average age of the 577 respondents was 36.68 ± 13.09 years, with extremes of 15 and 77 years. The most represented age group was 25–35 years (26.17%). There were 299 men (51.82%) with a 1.08 sex ratio (Table I).

Information resources on viral hepatitis B and C

Among those respondents who had once heard of viral hepatitis B and C, the hospital was their source of information on hepatitis B (46.50%) and C (47.09%) (Table II).

Table I: Study population characteristics

	Number (*n*)	Proportion (%)
Gender		
Male	299	51.82
Female	278	48.18
Age groups		
15–24	147	25.48
25–34	151	26.17
35–44	135	23.40
45–54	83	14.38
55–64	49	8.49
65–74	11	1.91
> 75	1	0.17
Medical history and lifestyle		
Vaccination against HBV	83	14.38
Multiple sexual partners	34	5.89
Blood transfusion	32	5.04
Intravenous drug use	26	4.51
Tattoo	15	2.60
Piercing	14	2.43
Marital status		
Single	284	49.22
Married	265	45.93
Widowed	18	3.12
Divorced	10	1.73
Education level		
University	316	54.77
Secondary	170	29.46
Primary	61	10.57
Non-schooled	60	5.20

HBV – hepatitis B virus

Table II: Distribution of respondents according to information sources on viral hepatitis B and C

	n	%
Where did you hear about HBV? (*n* = 486)		
Hospital	226	46.50
Media	178	36.63
Awareness campaign	147	30.25
School	91	18.72
Surroundings	76	15.64
Blood donation	38	7.82
Carrier parent	23	4.73
Where did you hear about HCV? (*n* = 429)		
Hospital	202	47.09
Media	162	37.76
Awareness campaign	132	30.77
School	84	19.58
Surroundings	62	14.45
Blood donation	35	8.16
Carrier parent	16	3.73

HBV – hepatitis B virus, HCV – hepatitis C virus

Table III: Distribution of respondents according to their knowledge of the possibility of treatment and cure for hepatitis B and C in Togo

	n	%
Possible treatment for viral hepatitis B (*n* = 486)		
Yes	417	85.80
No	69	14.20
Possible treatment for viral hepatitis C (*n* = 429)		
Yes	339	79.02
No	90	20.98
Possible cure for viral hepatitis B (*n* = 486)		
Yes	399	82.10
No	87	17.90
Possible cure for viral hepatitis C (*n* = 429)		
Yes	338	78.79
No	91	21.21

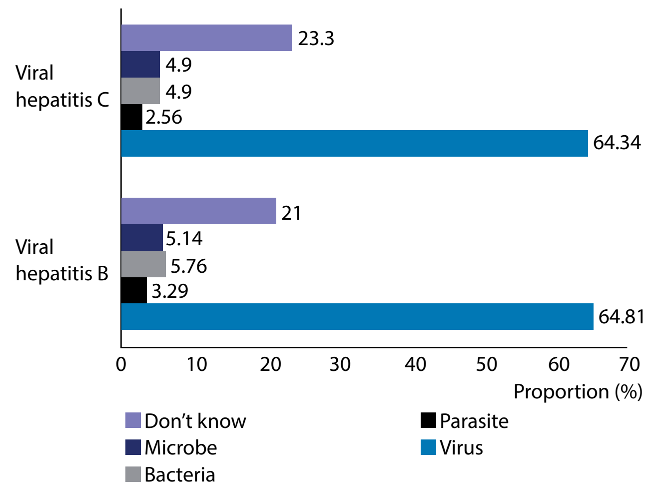

Figure 1: Distribution of respondents according to their knowledge of the causes of viral hepatitis B and C

Table IV: Knowledge level of viral hepatitis B and C

	n	%
Knowledge of hepatitis B virus (*n* = 496)		
Good knowledge of the cause	303	62.35
Good knowledge of the organ affected	387	79.63
Good knowledge of the means of transmission	254	52.26
Good knowledge of symptoms	347	71.40
Good knowledge of complications	87	17.90
Good knowledge of treatment in Togo	399	82.10
Good knowledge of recovery	417	85.80
Knowledge of hepatitis C virus (*n* = 429)		
Good knowledge of the cause	265	61.77
Good knowledge of the organ affected	322	75.06
Good knowledge of the means of transmission	78	18.18
Good knowledge of symptoms	277	64.57
Good knowledge of complications	71	16.55
Good knowledge of treatment in Togo	338	78.79
Good knowledge of recovery	339	79.02

Data on knowledge of viral hepatitis B and C

The virus was the cause cited by 315 respondents (64.81%) for viral hepatitis B and 276 respondents (64.34%) for viral hepatitis C. The liver was the affected organ cited by 387 respondents (79.63%) for viral hepatitis B and 322 respondents (75.06%) for viral hepatitis C. The blood route was the means of transmission cited by 316 respondents (65.02%) for HBV and 266 respondents (62%) for HCV. For HBV, the sexual and mother-to-child transmissions were cited by 280 (57.61%) and 168 (34.57%) respondents, respectively.

Fatigue was the symptom cited by 267 respondents (54.94%) for viral hepatitis B, and 226 respondents (52.68%) for viral hepatitis C. Jaundice was cited by 185 respondents (38.07%) for viral hepatitis B and 168 (39.16%) for hepatitis C. Complications cited by respondents were liver cancer (*n* = 474, 97.53%) and cirrhosis (*n* = 285, 58.64%) for viral hepatitis B, and cirrhosis (*n* = 235, 54.78%) and liver cancer (*n* = 172, 40.10%) for viral hepatitis C.

The possibility of treating viral hepatitis B in Togo was known to 417 respondents (85.80%), and curative treatment was possible according to 399 respondents (82.10%). Viral hepatitis C could be treated and cured in Togo, according to 339 (79.02%) and 338 (78.79%) respondents, respectively (Table III)(Figure 1).

Respondents' knowledge of the causes and organs affected by viral hepatitis B and C was good; however, complications were poorly understood (Table IV). Overall, 58.23% of respondents had good knowledge of HBV, and 45.22% had good knowledge of HCV.

Table V: Factors associated with good knowledge of viral hepatitis B

	Univariate analysis			Multivariate analysis		
	OR	95% CI	*p*	OR	95% CI	*p*
Age (years)						
< 36	0.91	0.63 to 1.31	0.61			
≥ 36						
Gender						
Male	0.54	0.38 to 0.78	0.00	0.67	0.46 to 0.98	0.04
Female						
Marital status						
Single	1.28	0.89 to 1.84	0.18			
Non-single						
Education level						
University	2.88	1.98 to 4.19	0.00	2.51	1.70 to 3.70	0.00
Non-university						
Medical history and lifestyle						
HBV vaccination:						
Yes	1.39	0.84 to 2.32	0.19			
No						
Blood transfusion:						
Yes	0.93	0.44 to 1.97	0.86			
No						
Intravenous drug use:						
Yes	0.58	0.25 to 1.38	0.21			
No						
Tattoo:						
Yes	0.35	0.10 to 1.18	0.08			
No						
Piercing:						
Yes	2.70	0.74 to 9.79	0.12			
No						
Sexual partners:						
Unique	1.64	0.73 to 3.68	0.23			
Multiple						
Needle sharing:						
Yes	0.57	0.89 to 3.52	0.54			
No						
Information source						
Hospital:						
Yes	1.48	1.03 to 2.13	0.04			
No						
Media:						
Yes	1.31	0.90 to 1.91	0.16			
No						
Awareness campaign:						
Yes	1.59	1.07 to 2.39	0.02			
No						
Blood donation:						
Yes	3.44	1.49 to 7.99	0.00	2.57	1.09 to 6.10	0.03
No						
School:						
Yes	1.41	0.88 to 2.26	0.16			
No						

CI – confidence interval, HBV – hepatitis B virus, OR – odds ratio

Table VI: Factors associated with good knowledge of viral hepatitis C

	Univariate analysis			Multivariate analysis		
	OR	95% CI	*p*	OR	95% CI	*p*
Age (years)						
< 36	0.83	0.56 to 1.21	0.32			
≥ 36						
Gender						
Male	0.67	0.46 to 0.98	0.04			
Female						
Marital status						
Single	1.18	0.81 to 1.73	0.39			
Non-single						
Education level						
University	2.35	1.56 to 3.50	0.00	2.21	1.48 to 3.32	0.00
Non-university						
Medical history and lifestyle						
Blood transfusion:						
Yes	1.23	0.57 to 2.64	0.60			
No						
Intravenous drug use:						
Yes	0.80	0.32 to 2.00	0.63			
No						
Tattoo:						
Yes	0.97	0.26 to 3.66	0.96			
No						
Piercing:						
Yes	1.84	0.51 to 6.63	0.34			
No						
Sexual partners:						
Unique	1.33	0.59 to 2.99	0.48			
Multiple						
Needle sharing:						
Yes	2.67	0.59 to 3.00	0.42			
No						
Information source						
Hospital:						
Yes	1.50	1.02 to 2.19	0.04			
No						
Media:						
Yes	0.99	0.67 to 1.47	0.96			
No						
Awareness campaign:						
Yes	1.72	1.14 to 2.60	0.01	1.53	1.00 to 2.33	0.04
No						
Blood donation:						
Yes	1.16	0.58 to 2.31	0.68			
No						
School:						
Yes	1.52	0.94 to 2.45	0.09			
No						

CI – confidence interval, OR – odds ratio

Factors associated with overall knowledge of viral hepatitis B and C

In multivariate analysis, male gender, university education, and having heard about the viral HBV during a blood donation were associated with good overall knowledge of viral hepatitis B (Table V). In multivariate analysis, good knowledge of viral hepatitis C was associated with university education and having heard of hepatitis C during an awareness campaign (Table VI).

Discussion

During this study, 577 people aged 15 years and over were surveyed, of whom 486 had heard of HBV and 429 had heard of HCV. Among those who had heard of HBV, 58.23% had good overall knowledge. Ahmad et al.[7] reported similar results. However, these results differ from those of Frambo et al.,[8] who reported that only 16% of the study population had a good knowledge of viral hepatitis B in their study. Although similar or better than those described in the literature, these results are still insufficient.

Togo is a country in an endemic viral hepatitis B and C zone, and knowledge of these diseases needs to be improved among the population. Of those respondents who had heard of HCV, 45.22% had good overall knowledge. Yakoubou et al.[6] reported low knowledge of viral hepatitis C among their patients in 2018, while Joukar et al.[9] reported that healthcare workers' knowledge of viral hepatitis C was satisfactory. The fight against viral hepatitis, which is still little-known in our communities, should involve disseminating the right information about these diseases to all sections of the national population.

Male gender, university education, and having heard about HBV during a blood donation were factors significantly associated with good knowledge of HBV. University education and having heard about HCV during awareness-raising were factors significantly associated with knowledge of HCV. This shows that education programmes, blood donation counselling, and awareness campaigns are essential to disseminate information about viral hepatitis and improve knowledge of the disease. Therefore, it is important to include a section on viral hepatitis in education programmes from primary school onwards and increase awareness campaigns.

Brouard et al.[10] reported that good knowledge of HBV transmission modes was found more often in people with a tertiary qualification (compared to those with no qualifications). Our results are also comparable to those of Lohouès-Kouacou et al.,[11] who reported that among the factors influencing knowledge of hepatitis B, education level was associated with good knowledge of hepatitis B. In the study by Mongo-Onkouo et al.,[12] they found that individuals with a higher education level had better knowledge of the existence of a treatment and vaccine against HBV, and adopted a better attitude towards the pathology. In their study, Niangoran et al.[13] reported that having undergone specific training in viral hepatitis outside the academic curriculum, having been screened for viral hepatitis, and having people with the condition in their entourage were factors associated with good knowledge of viral hepatitis B and C.

In India, Mukherjee et al.[14] found that knowledge of viral hepatitis B and C was associated with higher education and income levels. They speculated that participants in their study with a lower socioeconomic status may have less access to information about HBV and HCV, including fewer opportunities to visit healthcare facilities for such information. The cost of medical care, facility remoteness, and the lack of transportation could be reasons for these patients' lack of knowledge.

Healthcare providers can raise awareness to improve knowledge about viral hepatitis. However, they are also at the core of the population's lack of knowledge. Studies have reported that patients' inability to understand medical jargon, the healthcare staff's unfriendliness, patients' fear of being verbally abused by doctors and paramedical staff, and anxiety are major obstacles to effective communication between patients and healthcare staff.[15,16]

Conclusion

Respondents' knowledge of HBV was associated with gender, education level, and having heard about HBV once during a blood donation, and knowledge of HCV was associated with education level and having heard about HCV once during an awareness campaign. These results call for measures to inform the public through awareness-raising sessions in the media and other communication channels, counselling during consultations and blood donations, and including viral hepatitis B and C information in school programmes from primary school onwards.

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