Original Research Article

Exploration of Knowledge, Attitude, and Practice Among Residents of Saudi Arabia Toward Hepatitis Viruses

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Abstract

Background and aim: Data available in the Kingdom of Saudi Arabia (KSA) about public knowledge, attitude, and practice (KAP) toward viral hepatitis infection are scarce. Such information is essential for designing effective intervention strategies for the prevention and control of viral hepatitis. This study aimed to assess the knowledge, attitude, and practice among residents of KSA toward hepatitis viruses. **Methods:** A cross-sectional descriptive study was conducted among 549 participants in Saudi Arabia. An electronic questionnaire (in Arabic) was used to measure the KAP of the participants. Data were analyzed using SPSS version 23 at significance level of .05. **Results:** Most of the 549 participants were Saudi citizens (96%; n = 527) and 26.6% (n = 146) of them were males and mostly from the western Saudi Arabia (72.9%; n = 400). Most participants did not hear about hepatitis viruses and showed low level of knowledge on viral hepatitis (42%). On the other hand, a positive attitude was apparent from participants' responses, and their practices were toward protecting their bodies from the infection. **Conclusion:** The level of knowledge about viral hepatitis was low (42%) among KSA residents, and the practice and attitude of the participants were toward avoiding the infection. Awareness campaigns are required to increase the public knowledge about viral hepatitis.

Keywords

attitude, hepatitis, knowledge, practice, viral hepatitis

Highlights

- What do we already know about this topic?

Data available about public knowledge, attitude, and practice toward viral hepatitis are scarce both globally and in the Kingdom of Saudi Arabia

- How does your research contribute to the field?

In this article, we show that the level of knowledge about viral hepatitis was low (42%) among KSA residents and that the practice and attitude of subjects were toward avoiding the infection.

- What are your research's implications toward theory, practice, or policy?

Based on our study outcomes, we recommend raising the knowledge of viral hepatitis among Saudi residents through conducting awareness campaigns.

Introduction

Hepatitis is a fiery state of the liver that can be self-limiting or lead to fibrosis, cirrhosis, or even carcinoma of the liver. Many viruses affect the liver resulting in transient and innocuous hepatitis. However, hepatotropic viruses are viruses which

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target the liver primarily, and each one of these can lead to clinically significant hepatitis and in some cases development to chronic viral hepatitis with viral persistence.[1] Several hepatitis viruses have been identified. In this regard, 7 human hepatitis viruses have been identified with alphabetical order including hepatitis A virus (HAV) to HGV.[2–5]

Several studies were conducted to measure viral hepatitis related knowledge, attitude, and practice (KAP) among different populations both internationally and locally. In this regard, studies in Iran,[6] Northern and Central Uganda,[7] Brazil,[8] Malaysia,[9] and India[10] showed inadequate levels of participants' KAP toward viral hepatitis which suggested the need of improving public knowledge regarding hepatitis viruses. Another study was conducted on HBV in Melbourne, Australia. This was the largest Australian study assessing knowledge and understanding of the effect, transmission, and treatment of HBV among chronically infected individuals. The findings highlighted the knowledge gaps and misconceptions held by the participants and the need to expand education and support initiatives.[11] Importantly, the data assessing the knowledge and awareness about hepatitis viruses among the residents of Saudi Arabia are scarce. Therefore, we assessed the KAP among residents of Saudi Arabia regarding hepatitis viruses.

Methods

Study Design and Settings

This was a cross-sectional study conducted among Saudi residents during the period from September 2019 to February 2020 using an electronic questionnaire. The study protocol was approved by the College of Pharmacy Council prior to conducting the study, since there was no collection of patient samples or personal identifiers/data from the study participants. Participants were sent a link for the study survey, and participation was voluntary. Once the participant clicked on the study link, they were informed about the study in the first page and were informed that their participation in the study is voluntary and they can exit the survey, if they need so. Thus, their approval to the participation of the study was obtained prior to their participation. Consequently, consent forms were not obtained.

Measurement and Data Collection Tool

Data were collected by using an electronic questionnaire, which included questions designed to fulfill the study objectives. The questionnaire had a brief introduction explaining the aims and significance of the study. A pilot study was conducted on 20 participants to assure the reliability of the used questionnaire. The questionnaire was modified according to the responses of the pilot study participants. Then, a final electronic questionnaire on Google Forms was developed for data collection. Data were collected by distribution of the questionnaire, where a link to the study questionnaire was sent through social media to several groups in the Kingdom of Saudi Arabia (KSA). Data collectors sent the link with briefing on the study and kindly requested from the participants who reside in KSA to respond to the questionnaire.

The questionnaire was divided into 4 sections. Section 1 included questions covering socio-demographic characteristics of the study participants. This section included questions about gender, age, nationality, district of residence, marital status, and highest educational attained. Section 2 included questions to examine the knowledge of the study participants about hepatitis viruses. Section 3 included questions to determine participants' attitude toward hepatitis viruses. Finally, section 4 included questions to determine the practice of participants toward protecting themselves from hepatitis viruses.

Sample Size and Study Participants

The sample size was calculated by the sample size equation: $n = z^2 p\,(1-p)/e2$ where **n** is the sample size, **z** (1.96) is the z-score associated with a level of confidence (95%), **p** is the sample proportion, expressed as a decimal, and **e** (.05) is the margin of error, expressed as a decimal. The calculated sample size was 384 participants. Data were collected from residents of Saudi Arabia (foreigners and citizens), including men and women 18 years or older, who were willing to volunteer and participate in the study. In total, 549 residents randomly participated in this study from all regions of the Saudi Kingdom.

Statistical Analysis

The data were collected on Google Drive and were revised, coded, entered to Excel/SPSS sheets, analyzed, and tabulated. Statistical Package for Social Sciences (SPSS)® version 23.0 software (Armonk, NY: IBM Corporation) was used for data analysis. The knowledge questions were scored as one point for any correct answer and a zero for incorrect answer. Knowledge score was calculated by summing the score of the correct responses divided by number of questions in the knowledge section. Results are presented as the frequencies and percentages. Inferential analysis was conducted using Chi-square and Fisher's exact tests. Differences were considered significant at $P < .05$.

Results

Demographic Data

A total of 549 participants filled the online questionnaire. The baseline demographic characteristics of the respondents are shown in Table 1. As shown, most of the participants were females (n = 403; 73.4%). The age of the participants ranged from 18 to 68 years with an average of 30.2±12.1 years. Most of the participants were Saudi citizens (n = 527; 96%) and were residents of the western region of Saudi Arabia (n = 400; 72.9%). More than half of the participants were unmarried (n = 291; 53%) and most of them had a college degree (n = 444; 80.9%).

Table 1. Baseline demographic characteristics of the respondents.

Demographic Characteristics	Frequencies n (%)
Gender	
Male	146 (26.6)
Female	403 (73.4)
Nationality	
Saudi	527 (96.0)
Non-Saudi	22 (4.0)
District of residence	
Northern Saudi Arabia	14 (2.6)
Eastern Saudi Arabia	29 (5.3)
Central Saudi Arabia	61 (11.1)
Western Saudi Arabia	400 (72.9)
Southern Saudi Arabia	45 (8.2)
Education level	
None/primary	7 (1.3)
Middle	16 (2.6)
High school	66 (12)
University	444 (80.9)
Other	16 (2.6)
Marital status	
Married	240 (43.7)
Unmarried	291 (53)
Divorced or widow	18 (3.3)

Assessment of the knowledge of the study participants about hepatitis viruses:

As shown in Table 2, more than half of the participants knew that viruses cause hepatitis, and that personal hygiene prevents HAV and HEV infections. Also, 54.5% of the participants knew that HBV and HCV can be prevented and more than half of them knew that there is a vaccine for HVA and HBV. In addition, more than 81% of the participants knew that subjects should be screened for hepatitis viruses before donating blood and that they should use sterile needles for injections. On the other hand, there was poor knowledge or misconceptions regarding prevention of HAV, HBV, HCV, and HEV using personal hygiene and that HAV and HEV can be prevented. Also, there was poor knowledge regarding curability of HBV and its mode of transmission and the same was true for HCV transmission. The overall knowledge score was ~42%.

As shown in Table 2, the knowledge of the study participants regarding hepatitis viruses was low (41.8%). In this regard, inferential analysis in Table 2 showed that the knowledge of the participants that hepatitis A, B, C, D, and E are caused by viruses was associated with the age of the participant (P = .003) and education level (P = .005), where elder participants and those with high level of education tended to respond correctly. Also, the knowledge about personal hygiene was highly significant with gender regarding prevention of HBV and HCV and HAV and HEV (P = .002, and .013, respectively), where higher proportions of males responded "yes" for this question. This was, also, associated with the age group of the participants, where higher proportions of those aging >40 years answered "yes" for this question (P < .001, and .034, respectively). Also, the knowledge regarding vaccination of viral hepatitis was above average, where ~53% of the participants properly answered the questions for vaccination of HAV and HBV and there was a highly significant association between the correct answer and age of the participants for both viruses, where higher proportions of those aging >40 years answered this question correctly (P = .003, and .005, respectively). Also, this was associated with marital status, where higher proportions of widowed/divorced respondents tended to answer these questions correctly (P < .05 for both viruses). In addition, 38.1% of participants had the misconception that HCV can be prevented by vaccination.

Regarding hepatitis curability, the participants showed moderate knowledge that HCV is curable, as 43% answered yes for this question and this was highly associated with gender (P = .002) and age of the participants (P = .006), where higher proportions of males and those aging >40 years answered this question correctly. About 49.4% of participants had the knowledge that HBV is curable (Table 2).

Most of the participants had a good knowledge regarding the necessity of blood screening for hepatitis virus before donation (81.4%) and that they should use sterile needles to prevent infection with viral hepatitis (81.2%). Both questions were significantly associated with the age of the participants and their marital status (P < .05; Table 2), where higher proportions of males and those aging >40 years answered this question correctly.

Assessment of the attitude of the study participants toward hepatitis viruses

Table 3 shows the respondents' attitude toward hepatitis viruses. As shown, 41.1% of the participants strongly disagreed/disagreed concerning the presence of their child in the same class with children with any type of hepatitis viruses. Also, 51.7% of them have no objection to dealing with someone who has a liver virus. These attitudes have no significant association with gender, age, education, or marital status (P > .05). Almost two-thirds of the respondents (61.5%) strongly disagreed/disagreed about sharing personal items with others and this was significantly related to age group (P = .033), where a higher proportion of respondents in age groups between 21–40 years disagreed on this statement.

About two-thirds (n = 338; 66.5%) of the participants strongly disagreed/disagreed that hepatitis viral vaccines should not be mandatory, and this was significantly associated with the age of the participants (P = .025), educational level (P = .035), and marital status (P < .01), where higher proportions of respondents with age groups between 21–40 years, university graduates, and widowed/divorced participants strongly disagreed on this statement. This question suggests that vaccination against hepatitis viruses must be

Table 2. Assessment of the knowledge about hepatitis viruses on 3 axes of knowledge, transmission, and prevention.

	Response N (%)				*P* Value			
Question	Yes	No	I don't Know	Correct Answer	Gender	Age Group	Education Group	Marital Status
Hepatitis A, B, C, D, and E are caused by viruses	312 (56.8%)	24 (4.4%)	213 (38.8%)	312 (56.8%)	.648	.003**	.005**	.551
Is personal hygiene effective to prevent Hepatitis B and C?	291 (53%)	63 (11.5%)	195 (35.5%)	63 (11.5%)	.002**	.000**	.635	.024*
Is personal hygiene effective to prevent Hepatitis A and E?	335 (61%)	53 (9.7%)	161 (29.3%)	335 (61%)	.013*	.034*	.597	.062
Can infection with viral Hepatitis B and C be prevented?	299 (54.5%)	35 (6.4%)	215 (39.2%)	299 (54.5%)	.001**	.000**	.893	.005**
Can infection with viral Hepatitis A and E be prevented?	39 (7.1%)	291 (53%)	219 (39.9%)	39 (7.1%)	.648	.057	.729	.659
Is there a vaccine for viral hepatitis A	294 (53.6%)	58 (10.6%)	197 (35.9%)	294 (53.6%)	.174	.003**	.196	.027*
Is there a vaccine for viral hepatitis B	289 (52.6%)	37 (6.7%)	223 (40.6%)	289 (52.6%)	.493	.005**	.545	.008**
Is there a vaccine for viral hepatitis C?	209 (38.1%)	70 (12.8%)	270 (49.2%)	70 (12.8%)	.590	.011*	.205	.090
Is HCV curable?	236 (43%)	49 (8.9%)	264 (48.1%)	236 (43%)	.002**	.006**	.602	.203
Is HBV curable?	271 (49.4%)	48 (8.7%)	230 (41.9%)	48 (8.7%)	.004**	.000**	.081	.049*
Does Hepatitis B and C spread like AIDS?	150 (27.3%)	120 (21.9%)	279 (50.8%)	150 (27.3%)	.146	.150	.789	.630#
Blood should be screened for hepatitis virus before donation?	447 (81.4%)	16 (2.9%)	86 (15.7%)	447 (81.4%)	.698	.023*#	.120	.031*#
Clean and cock food thoroughly cannot prevent Hepatitis A and E virus?	152 (27.7%)	190 (34.6%)	207 (37.7%)	190 (34.6%)	.199	.484	.351	.878
Sterile needles should be used when injecting to prevent infection with viral hepatitis?	446 (81.2%)	15 (2.7%)	88 (16%)	446 (81.2%)	.135	.120#	.808	.001**#
Average				41.8%				

#Fisher's exact test.
*Statistically significant difference.
**Highly significant difference.

Table 3. Assessment of the attitude of the study participants regarding hepatitis virus infections.

Question	Response N (%)					*P* Value			
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Gender	Age Group	Education Group	Marital Status
I have no objection to dealing with someone who has a liver virus	110 (20.0)	174 (31.7)	165 (30.1)	75 (13.7)	25 (4.6)	.109	.216	.063	.371
I don't mind having my child in the same class with children with any type of hepatitis viruses	71 (12.9)	102 (18.6)	150 (27.3)	161 (29.3)	65 (11.8)	.731	.547	.872	.742
I don't mind sharing my personal gadgets with anyone else	52 (9.5)	69 (12.6)	88 (16.0)	160 (29.1)	178 (32.4)	.360	.033*#	.073	.132
Hepatitis viral vaccines should not be mandatory	59 (10.7)	52 (9.5)	73 (13.3)	172 (31.3)	193 (35.2)	.445	.025*#	.035*#	.001**#
People with a hepatitis virus should not be allowed to work in restaurants and cafeterias	259 (47.2)	80 (14.6)	116 (21.1)	57 (10.4)	37 (6.7)	.474	.049*#	.423	.009**
A person with hepatitis should be allowed to donate blood	50 (9.1)	44 (8.0)	73 (13.3)	172 (31.3)	193 (35.2)	.248	.382	.488	.176
I have concerns about a liver virus	115 (20.9)	122 (22.2)	171 (31.1)	107 (19.5)	34 (6.2)	.582	.711	.144	.016**#
Infection with a liver virus is shameful	37 (6.7)	54 (9.8)	109 (19.9)	184 (33.5)	165 (30.1)	.446	.389	.343	.782
It is safe to have a meal with a hepatitis patient	66 (12.0)	77 (14.0)	181 (33.0)	140 (25.5)	85 (15.5)	.708	.529	.441	.730
I am willing to detect the liver virus	321 (58.5)	124 (22.6)	63 (11.5)	25 (4.6)	16 (2.9)	.227	.332	.473	.142

#Fisher's Exact Test.
*Statistically significant difference.
**Highly significant difference.

compulsory in Saudi Arabia. Also, 237 (43.1%) of the participants had a concern about being infected with liver viruses and this was significantly associated with marital status, where a higher proportion of widowed/divorced respondents disagreed on this statement ($P = .016$; Table 3).

Most of the participants showed objection to the work of people with viral hepatitis infection in restaurants and cafeterias and this was significantly associated with the age ($P = .049$) and marital status ($P = .009$), where higher proportions of respondents aging >40 years and those who are widowed/divorced strongly agreed on this statement. Also, most of the participants strongly disagreed to allow the person with a hepatitis virus to donate blood (Table 3). In addition, more than half of the participants (58.5%) were willing to detect the liver virus by being tested for these viruses. On the other hand, only 16.5% of the participants believed that infection with viral hepatitis is shameful with no significant association with gender, age, educational level, or marital status (Table 3).

Assessment of the practice of the study participants toward hepatitis viruses

Table 4 shows the assessment of the practices of the study participants toward liver viruses. As shown, there was a significant association between both gender and age group in the question asking about eating in permanent catering utensils and order the single use (plastic) utensils, where higher proportions of males have answered this question with sometimes, whereas a higher proportion of those aging >40 years answered this question with "always" ($P = .005$ and .040, respectively). Also, there was a significant difference in the question regarding avoiding injections in hospitals to protect self from transmission of hepatitis viruses which was significantly associated with gender and age of the participants, where a higher proportion of males answered this question with sometimes, whereas higher proportions of those aging >40 years answered this question with "always" ($P = .006$ and .027, respectively). In addition, 253 (46.1%) of the participants selected "always" for the question about asking the barbers/hairdressers to use new or sterile tools for shaving and cutting hair as they fear of transmission of diseases. This was significantly associated with gender ($P = .007$) and marital status ($P = .021$), where higher proportions of males and married respondents answered this question with "always". Moreover, 261 (47.5%) of the participants selected "never" when asked about sharing their personal items with others (clothes, towels, toothbrush, and earphones). This was significantly associated with educational level ($P = .003$), where higher proportions of university graduates never shared their personal items with others. Furthermore, in the question asking about avoiding blood transfusions and dental procedures to avoid infection with liver viruses, 28.8% of the participants chose "never" (n = 158) while 191 (34.8%) of participants chose always in the question asking about sharing dinnerware with strangers for fear of infection (Table 4). On the other hand, 191 (34.8%) of the participants reported that they always avoid eating from street vendors' food for fear of being infected with liver viruses. This was significantly associated with gender, age, and marital status ($P = .031$, .001, and .010, respectively), where higher proportions of males, those aging >40 years, and married respondents answered this question with "always". On the other hand, there was a similarity between those who chose never (n = 145; 26.4%) and sometimes (n = 145; 26.4%) when answering the questions "If I know this person is infected with the hepatitis virus, I avoid shaking hands and sitting next to him". Finally, half or more of the participants choose "always" when answering the question "wash personal sterilizers after use" and ("dispose of razors after use in the trash") with a frequency of 270 (49.2%) and 346 (63.0%), respectively. The practice question about using protective tools during intercourse showed that many of the participants chose never (n = 136; 31.5%) and this was significantly associated with gender, age group, and marital status of the participants ($P < .001$; Table 4), where higher proportions of females, married, and those aging >40 years answered this question with "never".

Discussion

Many studies in KSA, Asia, and Africa have been found in the literature measuring KAP of medical students and healthcare providers mainly regarding Hepatitis B and sometimes Hepatitis C.[12–21] However, very few studies were found measuring KAP of patients and the general population. Thus, the current study was conducted in the period from December 2019 to February 2020 to assess the KAP of the KSA residents toward viral hepatitis. A total of 549 individuals participated in the study. The knowledge of the study participants regarding hepatitis viruses was low (41.8%). Also, about 56.8% of our participants knew that hepatitis A, B, C, D, and E are caused by viruses. A bit higher level of knowledge, 70%, was found in a previous study in Taif, KSA, which assessed participants' knowledge on only HBV.[21] Slightly lower level of knowledge regarding Hepatitis B and C was found in a study conducted among the general population in China where only 36.1% of their respondents showed sufficient level of knowledge.[22]

Awareness on HAV vaccination in our study was moderate (53.6%), and most of the participants knew that personal hygiene is effective in preventing Hepatitis A and E (61%). Our results are consistent with the findings of a study among Malaysian public university students

Table 4. Assessment of the practices of the study participants associated with liver viruses.

Question	Response N (%)					*P* Value			
	Always	Usually	Sometimes	Rarely	Never	Gender	Age Group	Education Group	Marital Status
I avoid injections in hospitals to protect myself from transmission of hepatitis viruses	122 (22.2)	72 (13.1)	134 (24.4)	96 (17.5)	125 (22.8)	.006*	.027*	.327	.368#
I avoid blood transfusions and dental procedures because I am afraid, he will get the liver virus	106 (19.3)	70 (12.8)	119 (21.7)	96 (17.5)	158 (28.8)	.385	.123	1.000	.056#
I don't share dinnerware with strangers for fear of infection	191 (34.8)	89 (16.2)	129 (23.5)	71 (12.9)	69 (12.6)	.775	.761	.145	.575#
I do not eat in permanent catering utensils and order the same use (plastic)	142 (25.9)	82 (14.9)	139 (25.3)	87 (18.5)	99 (18.0)	.005*	.040	.507	.019#*
Avoid eating from street vendors' food for fear of being infected with liver viruses	191 (34.8)	85 (15.5)	158 (28.8)	62 (11.3)	53 (9.7)	.031	.001*	.372	.010
Ask barbers/hairdressers to use new or sterile tools for shaving and cutting hair for fear of transmission of diseases	253 (46.1)	81 (14.8)	101 (18.4)	55 (10.0)	59 (10.7)	.007	.224	.116	.021#*
I share my personal items (my clothes, my towel, my toothbrush, and earphones) with others	71 (12.9)	45 (8.2)	78 (14.2)	94 (17.1)	261 (47.5)	.069	.607	.003*	.448#
If I know this person is infected with the hepatitis virus, I avoid shaking hands and sitting next to him	81 (14.8)	77 (14.0)	145 (26.4)	101 (18.4)	145 (26.4)	.885	.428	.563	.979#
Wash personal sterilizers after use	270 (49.2)	96 (17.5)	105 (19.1)	40 (7.3)	38 (6.9)	.021	.470	.643	.684#
Dispose of razors after use in the trash	346 (63.0)	76 (13.8)	73 (13.3)	27 (4.9)	27 (4.9)	.209	.671	.408	.494#
Use protection during intercourse	115 (26.6)	35 (8.1)	79 (18.3)	67 (15.5)	136 (31.5)	.000*	.000*	.499	.000#*

#Fisher's exact test.
*Statistically significant difference.
**Highly significant difference.

which found that the knowledge regarding vaccination of HAV was moderate (49.2%).[23] Regarding the availability of vaccination of HBV and HCV, 52.6% and 38.1% of our respondents, respectively, answered these questions with "yes". A recent study in Hong Kong found that 62.4% and 19% of their respondents believed that there is a vaccination for Hepatitis B and C, respectively.[24]

Regarding curability of hepatitis C, 236 (43%) of our participants believed that it is curable. A study that was conducted among undergraduate medical students in Karachi, Pakistan, supports our findings, where they found that 13.1% of the students indicated that HCV is completely curable and 39.0% showed "curable up to certain level".[25] Lower level of knowledge regarding HCV curability was found in a study conducted among the general public in China, where only 25.5% of their respondents believed that HCV is curable.[22] For HBV, 49.4% of our participants assumed that it was curable, while 53.9% of participants in the study in Pakistan believed that it is curable up to a certain level.[25]

Regarding attitudes toward viral hepatitis, it was found that half of the participants in this study strongly agreed/agreed that they were willing to deal with someone who has a liver virus. This was similar to a study that surveyed dentists in Al Jouf, Saudi Arabia, showing that 29 (70.7%) of the participants feel confident on dealing with HBV-infected patients.[26] Findings of another study in Lahore, Pakistan, showed that 52% of their general public respondents believed that it is safe to deal and sit with patients infected with HCV.[27] More than half of the participants in our study agreed that people with a hepatitis virus should not work in restaurants and cafeterias and this was associated ($P = .009$) with marital status. This was similar to a study that surveyed Al Jouf dentists showing that 32 (78%) of the participants agreed that people with a hepatitis virus should not work in restaurants and cafeterias.[26]

In our study, almost all participants suggest that hepatitis vaccines should be mandatory in KSA where they showed more dissatisfaction to the statement that "Hepatitis viral vaccines should not be mandatory in Saudi Arabia" and half of the participants had a concern about hepatitis virus infection. Findings in another study conducted in Al Jouf, Saudi Arabia, showed similar attitudes (95.8%) of primary healthcare physicians who agreed that the HBV vaccine should be mandatory and 85 (70.8%) have concerns about HBV.[28]

In our study, 321 (58.5%) of the respondents strongly agreed with the statement "I am willing to detect the liver virus". This rate is lower than that found in a study conducted to assess knowledge, attitudes, and practices of barbers about Hepatitis B and C transmission in Hyderabad, Pakistan, which showed that 182 (92.8%), agreed to be personally tested for infections with hepatitis viruses.[29] This difference might be due to the sensitivity of barber profession, where customers are scared to get the infection from barbers. Thus, barbers might be more willing to be tested for HBV and HCV. Another important finding from our study is that 32.4% of the participants strongly disagreed with the statement "I don't mind sharing my personal gadgets with anyone else". Also, we found that 66.5% of the participants strongly disagreed/disagreed with the statement "A person with hepatitis should be allowed to donate blood" and our findings appear similar when compared to another study conducted among students of the Center for Physical Education in Pakistan.[30] The later study showed that 68% of the participants answered that blood should be screened for HBV before transfusion. Importantly, we have to consider the differences in the demographics and the knowledge level between the students of Center for Physical Education Health & Sports Science, University of Sindh and the public residents of Saudi Arabia.

Participants in our study had an adequate practice in avoiding eating from street vendors' food because the fear from infections, where 191 (34.8%) chose "always" for that question and this was significantly associated with the gender, age, and marital status of the participants ($P = .031$, .001 and .010, respectively). This finding is similar to two surveys conducted in Karachi.[31,32]

The practice of asking barbers/hairdressers to use new or sterile tools for shaving and cutting hair, wash personal sterilizers after use, and disposing razors after use in the trash is high. This is akin to other studies conducted in Pakistan and Iraq.[27,29,33] The percentage of participants in this study who chose "always" in responding to sharing personal items (clothes, towels, toothbrush, and earphones) with others was 71 (12.9%) and "rarely" was 94 (17.1%). This is contradictory to the findings of the study conducted in Karachi which could be attributed to the increased level of knowledge among the participants in Karachi.[32] In our study, 145 (26.4%) of the participants did not mind shaking hands or sitting next to a person with a hepatitis virus. Almost similar findings were found in a study conducted in Iraq among patients undergoing surgery, where 32% of them revealed that they avoid meeting with patients with Hepatitis.[33] This is inconsistent with another study conducted in Pakistan,[29] which could be attributed to the lower level of knowledge among the surveyed participants in the Pakistani populations.

In our study, 136 (31.5%) of the participants answered "Never" when asked about using protection during intercourse while about one-third (34.7%%) answered "always" and "usually". This is inconsistent with another study conducted in Ethiopia, where 65.5% of their participants answered "Yes" for this question which represented a high level of knowledge, which is mainly due to the area of study of their respondents who were medical and health science students.[34]

Although 549 participants contributed to this study, it has several limitations. First, most of the respondents

were females, which does not reflect the demographic structure of KSA residents. This was due to the use of social media for data collection rather than face-to-face method. Females could have more time to use the social media than males and consequently dominated the respondents. Second, the majority of the respondents (72%) were from the western region of KSA. Thus, generalizing the results to whole KSA could be misleading. Third, the study was an internet-based survey and consequently older people, illiterates, and individuals who did not have access to the social media did not participate in this study.

Summary and Conclusions

Level of knowledge about viral hepatitis was found to be low (42%) among residents of KSA. The practice and attitude of most participants were toward avoiding the infection. Based on our study outcomes, we recommend raising the knowledge of viral hepatitis among Saudi residents through conducting awareness campaigns on viral hepatitis.

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Conflicting of Interests

The Authors declare that there is no conflict of interest.

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Data availability

All data pertinent to this study are included herein.

Ethical considerations

Permissions to conduct the study were obtained from the management of the College of Pharmacy, Taif University, Taif, Saudi Arabia.

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Appendix

Notation

HAV	Hepatitis A virus
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HDV	Hepatitis D virus
HEV	Hepatitis E virus
HFV	Hepatitis F virus
HGV	Hepatitis G virus
KAP	Knowledge, Attitude, and Practice
KSA	Kingdom of Saudi Arabia
SPSS	Statistical Package for Social Sciences
TU	Taif University.