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# SAUDI POPULATION KNOWLEDGE AND AWARENESS LEVEL OF HEPATITIS (TYPES, SYMPTOMS, METHODS OF TRANSMISSION, COMPLICATION AND RISK FACTOR)

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## Abstract

**Background:** This article discusses level of knowledge and awareness of hepatitis. Due to the prevalence of viral hepatitis, particularly hepatitis B and C, is a significant global health concern. Studies have shown that knowledge and awareness about hepatitis among the general public and healthcare professionals in Saudi Arabia is inadequate. This highlights the need to develop targeted educational programs and preventive healthcare policies to address the knowledge gaps and reduce the burden of viral hepatitis in the country. This study was to determine the level of knowledge and awareness about hepatitis types, symptoms, transmission routes, complications, and risk factors among Saudi populations. **Methods:** A cross-sectional study in Saudi Arabia evaluated public awareness and knowledge about hepatitis types. Participants were recruited via social media. The inclusion criteria were Saudi residents, while the exclusion criteria were not specified. The sample size was calculated as 384 using the Raosoft calculator, with a 50% indicator percentage, 5% margin of error, and 95% confidence interval. Data was collected through a structured questionnaire and pilot-tested on 20 individuals. The final data was entered into Excel and analyzed using SPSS version 25. This study aims to provide insights into the Saudi population's understanding of hepatitis, which can guide public health interventions. **Results:** The study assessed the knowledge and awareness of hepatitis among a cohort of 591 participants in Saudi Arabia, revealing critical gaps and areas for improvement. Although a majority (63.3%) identified hepatitis A, B, C, D, and E as viral infections, a significant portion (31.5%) remained uncertain about this fact. While 59.2% recognized personal hygiene as a preventive measure for hepatitis B and C, 25.9% were unsure, indicating a need for better education. Awareness of vaccine availability was also lacking, particularly for hepatitis C, with 47.2% of respondents unaware of any vaccination. Attitudes towards individuals with hepatitis exhibited stigma, as 44% believed such individuals should be barred from certain occupations, while 39.6% expressed concerns about infection rates. Despite a majority (83.6%) acknowledging the importance of blood screening prior to donation,

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only 18.4% of participants demonstrated high overall knowledge of hepatitis. With 47.9% categorized as having low knowledge and 71.7% displaying only moderate awareness. **Conclusion:** The study revealed significant gaps in knowledge and awareness of hepatitis types, prevention, and treatment among the Saudi Arabian population. While a majority (63.3%) recognized various hepatitis viruses, a concerning 31.5% remained uncertain about their viral nature. Knowledge of personal hygiene as a preventive measure was noted in 59.2% of the participants. Attitudinal findings revealed a pervasive stigma, with 44% believing individuals with hepatitis should be excluded from certain jobs. Ultimately, only 18.4% displayed high overall knowledge of hepatitis, with 47.9% categorized as having low knowledge levels.

**Keywords:** Knowledge, Awareness, Hepatitis, Saudi Arabia

## Introduction:

Hepatitis has historically been defined as a disease of the liver. Eleven viruses, nine of which are hepatotrophic and two of which are transitory in nature, are linked to hepatitis in humans. Globally, hepatitis virus infection is a serious public health concern, with reports of a higher prevalence in developing nations. The different hepatitis viruses, including Hepatitis A, B, C, D, and E, can cause acute or chronic liver disease, and pose significant health and economic burdens, particularly in resource-limited settings [1]. Comes in five separate types: A, B, C, D, and E. In addition, there are more types that are not classified or have a less clear association to the illness Hepatitis [2]. Over 71 million individuals worldwide suffer from chronic hepatitis C infection, whereas over 296 million people worldwide are chronically infected with the hepatitis B virus (HBV) [3,4].

A study have been published on the Knowledge, attitudes, and practices of the population regarding viral Hepatitis B and C worldwide. Valentin Călugăreanu. reported that the population's knowledge and awareness of viral hepatitis B and C Both the general public and medical professionals still don't know enough about viral hepatitis B and C infections. Education and knowledge of viral hepatitis B and C are becoming more and more important. Valentin Călugăreanu [5].

A cross-sectional study conducted among general public of Saudi Arabia on level of knowledge of and testing rate for Hepatitis C Infection, the study suggests that knowledge about HCV infection among the general public of Saudi Arabia is inadequate [6].

A study on the knowledge, attitude, and practice of Hepatitis B among Saudi Arabia's healthy population was carried out in 2017. The findings showed that while the majority of participants had low levels of practice, 56% of them had good knowledge of the disease and high ratings for both knowledge and attitude [7]. A cross-sectional study carried out among general population of Riyadh, KSA awareness of hepatitis C. The study reveals that participants had little knowledge about hepatitis C prevention and treatment [8]. 2019 marked the completion of study on people's understanding of the hepatitis E virus, and the findings indicated that a large number of individuals were ignorant of this information [9].

In 2021, research has been conducted on level of knowledge among Saudi residents and the result has shown that most participants did not hear about hepatitis viruses and showed low level of knowledge on viral hepatitis (42%) [10]. In regards to the small number of researches relevant to our topic, particularly in Saudi Arabia, to identify the knowledge gaps Saudi population have on hepatitis in order to develop preventive healthcare policies and tailored education to reduce the disease burden. This study was conducted to assess the knowledge and awareness level of hepatitis types, symptoms, methods of transmission, complications and risk factors among Saudi Arabian society.

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**Materials and Methods**:

**Study design:**

A cross-sectional study conducted between July to November 2024, based on a structured questionnaire developed by the authors, evaluates Saudi Arabian awareness and knowledge about hepatitis types. To acquire individuals from around Saudi Arabia, a sample recruiting approach relied on social media platforms (such as Twitter, Snapchat, Instagram, WhatsApp, Facebook, etc.).

**Inclusion and Exclusion Criteria:**

To acquire individuals from around Saudi Arabia, a sample recruiting approach relied on social media platforms (such as Twitter, Snapchat, Instagram, WhatsApp, Facebook, etc.).

**Sample size:**

In order to determine the minimum number of responses required to provide a representative sample for the entire population, sample size calculations were made. The Raosoft sample size calculator was used to calculate the sample size. The sample size that was determined was 384 with an indicator percentage of 0.50, a margin of error of 5%, and a confidence interval (CI) of 95%.

**Method for data collection and instrument (*Data collection Technique and Tools)*:**

Data were collected by using an electronic questionnaire, which included questions designed to fulfill the study objectives. 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. Section 2 included questions to examine the knowledge of the study participants about hep- atitis viruses. Section 3 included questions to determine par-ticipants' attitude toward hepatitis viruses. Finally, section 4 included questions to determine the practice of participants toward protecting themselves from hepatitis viruses [10].

**Scoring system:**

In all, 40 statements served to assess the participants' attitudes and degree of knowledge. 5 statements for demographics, 14 for knowledge, 10 for awareness, and 11 for practice. The knowledge questions were scored as one point for any correct answer and a zero for incorrect answer or "I don't know" The original Bloom's cut-off points, 80.0%-100.0%, 60.0%-70%, and 59.0% .

**Part I: Knowledge**

knowledge score varied from 0 to 18 points and was classified into three levels as follows: those with a score of 9 or below (10) were classified as having a low level of knowledge, those with scores between 14and 16 as having a moderate level of knowledge, and those with scores 17 or above as a high level of knowledge.

**Part II: Attitude**

Attitude scores varied from 0 to 20 points and were classified into three levels as follows: those with a score of 9 or below (9) were classified as having a low level of attitude, those with scores between

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12and 14as having a moderate level of attitude, and those with scores 19 or above as having a high level of attitude.

**Pilot test**:
Twenty people were requested to complete the questionnaire once it had been sent to them. This was done in order to evaluate the study's feasibility and the questionnaire's simplicity for use. The final study data did not include the data from the pilot trial.

**Analyzes and entry method:**
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 electronic data was saved as an excel file in Microsoft Excel (2016) for Windows. The data was then imported to SPSS for Microsoft Windows, version 25, for statistical analysis

**Results:**

Table (1) displays various demographic parameters of the participants with a total number of (591). The age distribution shows a predominant presence of younger individuals, with approximately 39.1% falling below 21 years, suggesting a youthful demographic likely comprising students or early entrants into the workforce. Gender representation is notably skewed towards females, comprising nearly 60% of the participants, while the national composition reflects a strong majority of Saudi nationals at 93.1%, indicative of a localized population. Educational attainment reveals that over three-quarters of the participants possess post-secondary qualifications (either pursuing or holding a university degree), highlighting a well-educated cohort. In terms of marital status, a significant majority are single (67.2%), which aligns with the higher age concentration in the younger brackets. The occupational status is primarily student-oriented, reflecting the demographic's educational focus, while income levels reveal considerable financial variance, with a substantial portion earning less than 1,000.

***Table (1): Sociodemographic characteristics of participants (n=591)***

| ***Parameter*** | | ***No.*** | ***Percent (%)*** |
|---|---|---|---|
| ***Age*** | less than 20 years | 107 | 18.1 |
| | 20 to 21 | 124 | 21.0 |
| | 22 to 23 | 82 | 13.9 |
| | 24 to 30 | 94 | 15.9 |
| | 31 to 45 | 110 | 18.6 |
| | more than 45 | 74 | 12.5 |
| ***Gender*** | Female | 354 | 59.9 |
| | Male | 237 | 40.1 |
| ***Nationality*** | Saudi | 550 | 93.1 |
| | Non-Saudi | 41 | 6.9 |
| ***Educational level*** | Middle school | 4 | .7 |
| | High school | 84 | 14.2 |
| | Diploma | 31 | 5.2 |
| | University student | 226 | 38.2 |
| | Bachelor's degree | 222 | 37.6 |

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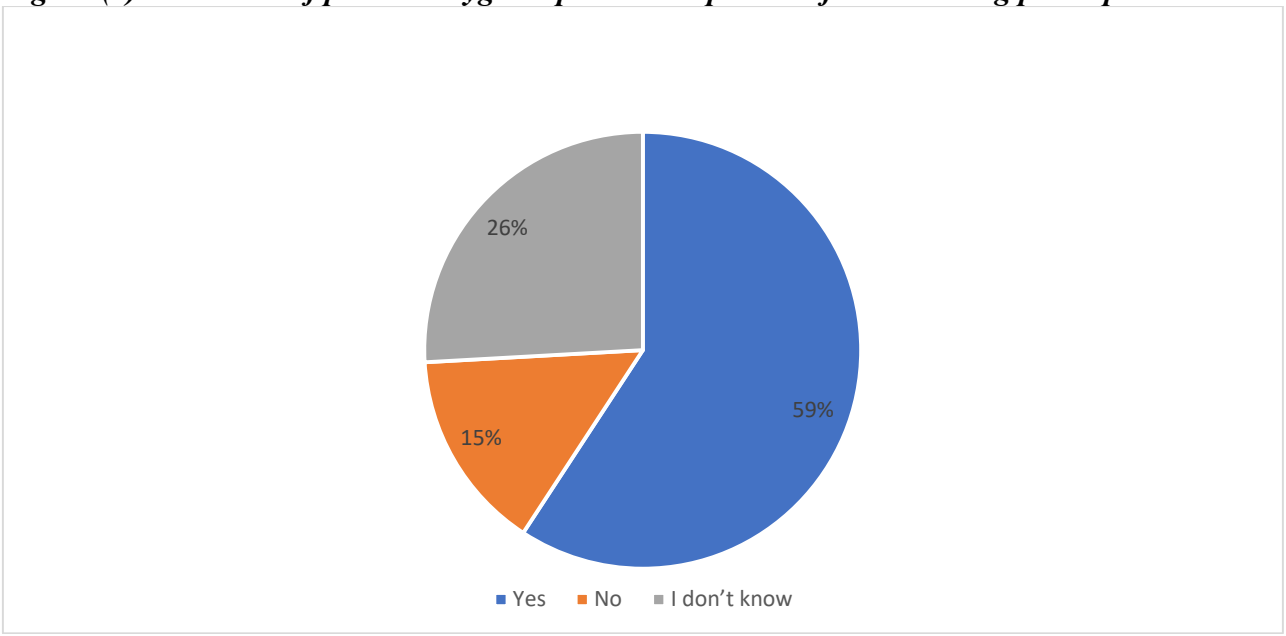
| | | | |
|---|---|---|---|
| | Master's degree | 20 | 3.4 |
| | PHD | 4 | .7 |
| ***Marital status*** | Single | 397 | 67.2 |
| | Married | 174 | 29.4 |
| | Divorced | 9 | 1.5 |
| | Widowed | 11 | 1.9 |
| ***Residential region*** | Northern region | 9 | 1.5 |
| | Southern region | 20 | 3.4 |
| | Central region | 36 | 6.1 |
| | Eastern region | 70 | 11.8 |
| | Western region | 456 | 77.2 |
| ***Occupational status*** | Student | 327 | 55.3 |
| | Employee | 160 | 27.1 |
| | Unemployed | 77 | 13.0 |
| | Retired | 27 | 4.6 |
| ***Monthly income*** | Less than 1000 | 252 | 42.6 |
| | 1000 to 5000 | 145 | 24.5 |
| | 5001 to 10000 | 67 | 11.3 |
| | 10001 to 15000 | 48 | 8.1 |
| | More than 15000 | 79 | 13.4 |

As shown in figure 1, Out of a total of 591 participants, 59.2% (350 respondents) believe that personal hygiene is effective in preventing Hepatitis B and C. On the other hand, 14.9% (88 respondents) think that personal hygiene is not effective for this purpose. Notably, 25.9% (153 respondents) are unsure, indicating a significant portion of the group lacks awareness or knowledge about the relationship between hygiene and hepatitis prevention.

***Figure (1): Illustrates if personal hygiene prevents hepatitis infection among participants.***



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As illustrated in table (2), The data presented reflects critical insights into the knowledge of hepatitis among a diverse group of 591 participants. Notably, a significant majority of respondents, 63.3%, correctly identified that hepatitis A, B, C, D, and E are caused by viruses, although a concerning 31.5% remained uncertain. Personal hygiene was recognized as an effective prevention measure against hepatitis B and C by 59.2% of participants, indicating a need for continued education in this area, especially given that 25.9% were unsure. The perceived vaccine availability for hepatitis A and B was acknowledged by 42.1% and 52.8% of respondents, respectively, yet a substantial proportion remained uninformed, particularly about hepatitis C, where 47.2% indicated they did not know of a vaccine. Furthermore, a high level of awareness regarding the necessity of blood screening before donation was evidenced by 83.6%.

***Table (2): Parameters related to knowledge of hepatitis among participants (n=591).***

| **Parameter** | | **No.** | **Percent (%)** |
|---|---|---|---|
| ***Hepatitis A, B, C, D, and E are caused by viruses?*** | Yes | 374 | 63.3 |
| | No | 31 | 5.2 |
| | I don't know | 186 | 31.5 |
| ***Is personal hygiene effective to prevent Hepatitis B and C?*** | Yes | 350 | 59.2 |
| | No | 88 | 14.9 |
| | I don't know | 153 | 25.9 |
| ***Is personal hygiene effective to prevent Hepatitis A and E?*** | Yes | 347 | 58.7 |
| | No | 51 | 8.6 |
| | I don't know | 193 | 32.7 |
| ***Can infection with viral Hepatitis B and C be prevented?*** | Yes | 388 | 65.7 |
| | No | 20 | 3.4 |
| | I don't know | 183 | 31.0 |
| ***Can infection with viral Hepatitis A and E be prevented?*** | Yes | 355 | 60.1 |
| | No | 24 | 4.1 |
| | I don't know | 212 | 35.9 |
| ***Is there a vaccine for viral hepatitis A*** | Yes | 249 | 42.1 |
| | No | 72 | 12.2 |
| | I don't know | 270 | 45.7 |
| ***Is there a vaccine for viral hepatitis B*** | Yes | 312 | 52.8 |
| | No | 35 | 5.9 |
| | I don't know | 244 | 41.3 |
| ***Is there a vaccine for viral hepatitis C?*** | Yes | 211 | 35.7 |
| | No | 101 | 17.1 |
| | I don't know | 279 | 47.2 |
| ***Is HCV curable?*** | Yes | 252 | 42.6 |
| | No | 57 | 9.6 |
| | I don't know | 282 | 47.7 |
| ***Is HBV curable?*** | Yes | 275 | 46.5 |
| | No | 58 | 9.8 |

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| | | | |
|---|---|---|---|
| | I don't know | 258 | 43.7 |
| ***Does Hepatitis B and C spread like AIDS?*** | Yes | 279 | 47.2 |
| | No | 80 | 13.5 |
| | I don't know | 232 | 39.3 |
| ***Blood should be screened for hepatitis virus before donation?*** | Yes | 494 | 83.6 |
| | No | 14 | 2.4 |
| | I don't know | 83 | 14.0 |
| ***Clean and cock food thoroughly cannot prevent Hepatitis A and E virus?*** | Yes | 195 | 33.0 |
| | No | 170 | 28.8 |
| | I don't know | 226 | 38.2 |
| ***Sterile needles should be used when injecting to prevent infection with viral hepatitis?*** | Yes | 473 | 80.0 |
| | No | 9 | 1.5 |
| | I don't know | 109 | 18.4 |

As shown in figure (2), out of 591 participants, only 3.4% (20 respondents) strongly agree that a person with hepatitis should be allowed to donate blood, and 1.4% (8 respondents) agree. In contrast, a significant majority of 59% (349 respondents) strongly disagree, and 24.4% (144 respondents) disagree with this statement. Meanwhile, 11.8% (70 respondents) remain neutral. These findings demonstrate that most participants understand the risks associated with allowing individuals with hepatitis to donate blood, reflecting a general awareness of the potential for disease transmission through blood donations.

***Figure (2): Illustrates if a person with hepatitis infection should donate blood according to participants.***

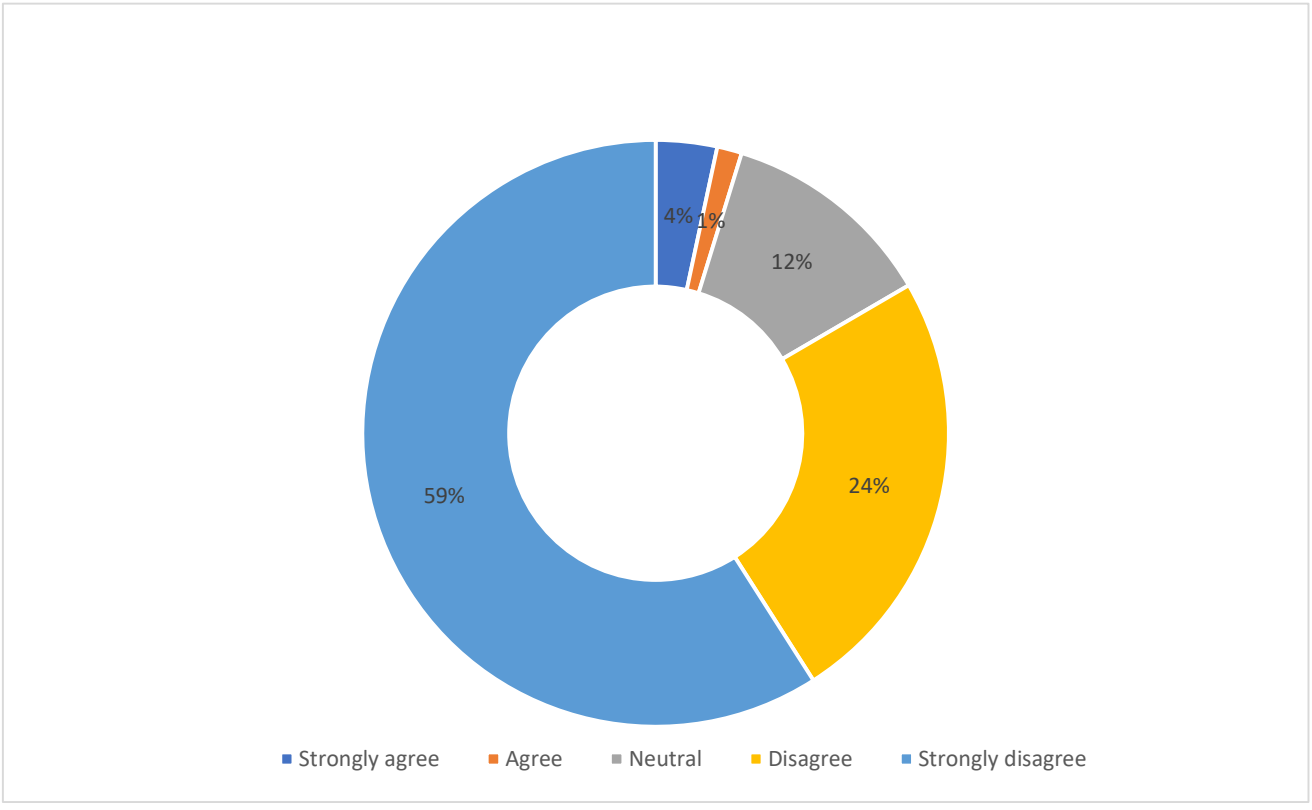

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Table (3) reveals a compelling insight into participants' attitudes and level of awareness regarding hepatitis. The survey, which encompasses a sizable cohort of 591 individuals, highlights a notable ambivalence towards engaging with those affected by liver virus infections. While a significant minority expressed non-discriminatory views—indicated by 16.4% strongly agreeing and 19.3% agreeing with the statement on interacting with virus carriers—most participants remained neutral (40.4%), underscoring a prevailing uncertainty or lack of knowledge. Conversely, a robust 44% of respondents strongly believed that individuals with hepatitis should be excluded from restaurant and cafeteria employment, revealing a strong stigma associated with the condition. Concerns about infection rates are apparent, with 39.6% of participants agreeing that they held worries about liver viruses. Interestingly, there exists a willingness to undergo testing, as evidenced by 43.5% expressing strong agreement with the need for detection, suggesting a dichotomy between personal apprehensions and the readiness to confront the issue directly.

***Table (3): participants' awareness towards hepatitis (n=591).***

| ***Parameter*** | | ***No.*** | ***Percent (%)*** |
|---|---|---|---|
| ***I have no objection to dealing with someone who has a liver virus*** | Strongly agree | 97 | 16.4 |
| | Agree | 114 | 19.3 |
| | Neutral | 239 | 40.4 |
| | Disagree | 87 | 14.7 |
| | Strongly disagree | 54 | 9.1 |
| ***I don't mind having my child in the same class with children with any type of hepatitis viruses*** | Strongly agree | 40 | 6.8 |
| | Agree | 58 | 9.8 |
| | Neutral | 191 | 32.3 |
| | Disagree | 162 | 27.4 |
| | Strongly disagree | 140 | 23.7 |
| ***I don't mind sharing my personal gadgets with anyone else*** | Strongly agree | 32 | 5.4 |
| | Agree | 74 | 12.5 |
| | Neutral | 84 | 14.2 |
| | Disagree | 138 | 23.4 |
| | Strongly disagree | 263 | 44.5 |
| ***Hepatitis viral vaccines should not be mandatory*** | Strongly agree | 26 | 4.4 |
| | Agree | 37 | 6.3 |
| | Neutral | 142 | 24.0 |
| | Disagree | 162 | 27.4 |
| | Strongly disagree | 224 | 37.9 |
| ***People with a hepatitis virus should not be allowed to work in restaurants and cafeterias*** | Strongly agree | 260 | 44.0 |
| | Agree | 127 | 21.5 |
| | Neutral | 135 | 22.8 |
| | Disagree | 35 | 5.9 |
| | Strongly disagree | 34 | 5.8 |
| ***A person with hepatitis should be allowed to donate blood*** | Strongly agree | 20 | 3.4 |
| | Agree | 8 | 1.4 |
| | Neutral | 70 | 11.8 |
| | Disagree | 144 | 24.4 |

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| | | | |
|---|---|---|---|
| | Strongly disagree | 349 | 59.1 |
| ***I have concerns about a liver virus*** | Strongly agree | 119 | 20.1 |
| | Agree | 234 | 39.6 |
| | Neutral | 182 | 30.8 |
| | Disagree | 41 | 6.9 |
| | Strongly disagree | 15 | 2.5 |
| ***Infection with a liver virus is shameful*** | Strongly agree | 19 | 3.2 |
| | Agree | 31 | 5.2 |
| | Neutral | 148 | 25.0 |
| | Disagree | 185 | 31.3 |
| | Strongly disagree | 208 | 35.2 |
| ***It is safe to have a meal with a hepatitis patient*** | Strongly agree | 21 | 3.6 |
| | Agree | 62 | 10.5 |
| | Neutral | 202 | 34.2 |
| | Disagree | 171 | 28.9 |
| | Strongly disagree | 135 | 22.8 |
| ***I am willing to detect the liver virus*** | Strongly agree | 257 | 43.5 |
| | Agree | 227 | 38.4 |
| | Neutral | 83 | 14.0 |
| | Disagree | 11 | 1.9 |
| | Strongly disagree | 13 | 2.2 |

The data presented in Table 4 regarding the knowledge levels about hepatitis among the surveyed population reveals a concerning trend that merits further attention. Notably, while a minority, comprising 18.4% of respondents, demonstrated a high level of knowledge, the majority, amounting to 47.9%, classified as having low knowledge levels. This indicates that nearly half of the participants are inadequately informed about hepatitis, which is critical given the potential health ramifications associated with this disease. The moderate knowledge group, making up 33.7%, suggests that there is some awareness, but it may not be sufficient for effective prevention or management strategies.

***Table (4): Shows knowledge level about hepatitis score results.***

| | **Frequency** | **Percent** |
|---|---|---|
| High level of knowledge | 109 | 18.4 |
| Moderate knowledge | 199 | 33.7 |
| Low knowledge level | 283 | 47.9 |
| Total | 591 | 100.0 |

The data presented in Table 5 elucidates the varying levels of awareness regarding hepatitis among a sample of 591 respondents. Notably, a significant proportion, accounting for 71.7%, exhibited moderate awareness about the disease, indicating a substantial understanding but suggesting the necessity for further education to elevate this awareness to high levels. In contrast, only 10.7% of participants demonstrated high awareness, raising concerns about the adequacy of current informational resources and outreach programs related to hepatitis. Furthermore, 17.6% of individuals showed low awareness,

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highlighting a critical gap in knowledge that could potentially lead to increased risks of transmission and complications associated with the disease.

***Table (5): Shows awareness level about hepatitis score results.***

| | **Frequency** | **Percent** |
|---|---|---|
| High awareness | 63 | 10.7 |
| Moderate awareness | 424 | 71.7 |
| Low awareness | 104 | 17.6 |
| Total | 591 | 100.0 |

Table (6) shows that the knowledge level of hepatitis has statistically significant relation to age (P value=0.0001), educational level (P value=0.045), occupation (P value=0.049), and monthly income (P value=0.014). It also shows statistically insignificant relation to gender, nationality, marital status, and region of residence.

***Table (6): Relation between knowledge level of hepatitis and sociodemographic characteristics.***

| ***Parameters*** | | ***Knowledge level*** | | ***Total (N=591)*** | ***P value**** |
|---|---|---|---|---|---|
| | | **High or moderate knowledge** | **Low knowledge level** | | |
| ***Gender*** | Female | 192 | 162 | 354 | 0.207 |
| | | 62.3% | 57.2% | 59.9% | |
| | Male | 116 | 121 | 237 | |
| | | 37.7% | 42.8% | 40.1% | |
| ***Age*** | less than 20 years | 33 | 74 | 107 | 0.0001 |
| | | 10.7% | 26.1% | 18.1% | |
| | 20 to 21 | 59 | 65 | 124 | |
| | | 19.2% | 23.0% | 21.0% | |
| | 22 to 23 | 50 | 32 | 82 | |
| | | 16.2% | 11.3% | 13.9% | |
| | 24 to 30 | 59 | 35 | 94 | |
| | | 19.2% | 12.4% | 15.9% | |
| | 31 to 45 | 71 | 39 | 110 | |
| | | 23.1% | 13.8% | 18.6% | |
| | more than 45 | 36 | 38 | 74 | |
| | | 11.7% | 13.4% | 12.5% | |
| ***Nationality*** | Saudi | 288 | 262 | 550 | 0.658 |
| | | 93.5% | 92.6% | 93.1% | |
| | Non-Saudi | 20 | 21 | 41 | |
| | | 6.5% | 7.4% | 6.9% | |
| ***Educational level*** | Middle school | 2 | 2 | 4 | 0.045 |
| | | 0.6% | 0.7% | 0.7% | |
| | High school | 43 | 41 | 84 | |
| | | 14.0% | 14.5% | 14.2% | |

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| | | | | | |
|---|---|---|---|---|---|
| | Diploma | 14 | 17 | 31 | |
| | | 4.5% | 6.0% | 5.2% | |
| | University student | 104 | 122 | 226 | |
| | | 33.8% | 43.1% | 38.2% | |
| | Bachelor's degree | 132 | 90 | 222 | |
| | | 42.9% | 31.8% | 37.6% | |
| | Master's degree | 9 | 11 | 20 | |
| | | 2.9% | 3.9% | 3.4% | |
| | PHD | 4 | 0 | 4 | |
| | | 1.3% | 0.0% | 0.7% | |
| ***Marital status*** | Single | 199 | 198 | 397 | 0.096 |
| | | 64.6% | 70.0% | 67.2% | |
| | Married | 96 | 78 | 174 | |
| | | 31.2% | 27.6% | 29.4% | |
| | Divorced | 8 | 1 | 9 | |
| | | 2.6% | 0.4% | 1.5% | |
| | Widowed | 5 | 6 | 11 | |
| | | 1.6% | 2.1% | 1.9% | |
| ***Residential region*** | Northern region | 5 | 4 | 9 | 0.270 |
| | | 1.6% | 1.4% | 1.5% | |
| | Southern region | 14 | 6 | 20 | |
| | | 4.5% | 2.1% | 3.4% | |
| | Central region | 18 | 18 | 36 | |
| | | 5.8% | 6.4% | 6.1% | |
| | Eastern region | 30 | 40 | 70 | |
| | | 9.7% | 14.1% | 11.8% | |
| | Western region | 241 | 215 | 456 | |
| | | 78.2% | 76.0% | 77.2% | |
| ***Occupation*** | Student | 158 | 169 | 327 | 0.049 |
| | | 51.3% | 59.7% | 55.3% | |
| | Employee | 98 | 62 | 160 | |
| | | 31.8% | 21.9% | 27.1% | |
| | Unemployed | 40 | 37 | 77 | |
| | | 13.0% | 13.1% | 13.0% | |
| | Retired | 12 | 15 | 27 | |
| | | 3.9% | 5.3% | 4.6% | |
| ***Monthly income*** | Less than 1000 | 112 | 140 | 252 | 0.014 |
| | | 36.4% | 49.5% | 42.6% | |
| | 1000 to 5000 | 80 | 65 | 145 | |
| | | 26.0% | 23.0% | 24.5% | |
| | 5001 to 10000 | 36 | 31 | 67 | |
| | | 11.7% | 11.0% | 11.3% | |
| | 10001 to 15000 | 30 | 18 | 48 | |
| | | 9.7% | 6.4% | 8.1% | |

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| | | | | | |
|---|---|---|---|---|---|
| | More than 15000 | 50 | 29 | 79 | |
| | | 16.2% | 10.2% | 13.4% | |

***P value was considered significant if ≤ 0.05.***

Table (7) shows that the awareness level of hepatitis has statistically significant relation to region of residence (P value=0.049). It also shows statistically insignificant relation to gender, age, educational level, nationality, monthly income, marital status, and occupation.

***Table (7): Awareness level of hepatitis in association with sociodemographic characteristics.***

| ***Parameters*** | | ***Awareness level*** | | ***Total (N=591)*** | ***P value**** |
|---|---|---|---|---|---|
| | | **High or moderate awareness** | **Low awareness** | | |
| ***Gender*** | Female | 295 | 59 | 354 | 0.468 |
| | | 60.6% | 56.7% | 59.9% | |
| | Male | 192 | 45 | 237 | |
| | | 39.4% | 43.3% | 40.1% | |
| ***Age*** | less than 20 years | 94 | 13 | 107 | 0.108 |
| | | 19.3% | 12.5% | 18.1% | |
| | 20 to 21 | 101 | 23 | 124 | |
| | | 20.7% | 22.1% | 21.0% | |
| | 22 to 23 | 71 | 11 | 82 | |
| | | 14.6% | 10.6% | 13.9% | |
| | 24 to 30 | 70 | 24 | 94 | |
| | | 14.4% | 23.1% | 15.9% | |
| | 31 to 45 | 87 | 23 | 110 | |
| | | 17.9% | 22.1% | 18.6% | |
| | more than 45 | 64 | 10 | 74 | |
| | | 13.1% | 9.6% | 12.5% | |
| ***Nationality*** | Saudi | 450 | 100 | 550 | 0.172 |
| | | 92.4% | 96.2% | 93.1% | |
| | Non-Saudi | 37 | 4 | 41 | |
| | | 7.6% | 3.8% | 6.9% | |
| ***Educational level*** | Middle school | 3 | 1 | 4 | 0.345 |
| | | 0.6% | 1.0% | 0.7% | |
| | High school | 76 | 8 | 84 | |
| | | 15.6% | 7.7% | 14.2% | |
| | Diploma | 23 | 8 | 31 | |
| | | 4.7% | 7.7% | 5.2% | |
| | University student | 183 | 43 | 226 | |
| | | 37.6% | 41.3% | 38.2% | |
| | Bachelor's degree | 181 | 41 | 222 | |
| | | 37.2% | 39.4% | 37.6% | |
| | Master's degree | 17 | 3 | 20 | |
| | | 3.5% | 2.9% | 3.4% | |

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| | | | | | |
|---|---|---|---|---|---|
| | PHD | 4 | 0 | 4 | |
| | | 0.8% | 0.0% | 0.7% | |
| ***Marital status*** | Single | 332 | 65 | 397 | 0.056 |
| | | 68.2% | 62.5% | 67.2% | |
| | Married | 143 | 31 | 174 | |
| | | 29.4% | 29.8% | 29.4% | |
| | Divorced | 5 | 4 | 9 | |
| | | 1.0% | 3.8% | 1.5% | |
| | Widowed | 7 | 4 | 11 | |
| | | 1.4% | 3.8% | 1.9% | |
| ***Residential region*** | Northern region | 7 | 2 | 9 | 0.049 |
| | | 1.4% | 1.9% | 1.5% | |
| | Southern region | 12 | 8 | 20 | |
| | | 2.5% | 7.7% | 3.4% | |
| | Central region | 31 | 5 | 36 | |
| | | 6.4% | 4.8% | 6.1% | |
| | Eastern region | 54 | 16 | 70 | |
| | | 11.1% | 15.4% | 11.8% | |
| | Western region | 383 | 73 | 456 | |
| | | 78.6% | 70.2% | 77.2% | |
| ***Occupation*** | Student | 273 | 54 | 327 | 0.553 |
| | | 56.1% | 51.9% | 55.3% | |
| | Employee | 126 | 34 | 160 | |
| | | 25.9% | 32.7% | 27.1% | |
| | Unemployed | 65 | 12 | 77 | |
| | | 13.3% | 11.5% | 13.0% | |
| | Retired | 23 | 4 | 27 | |
| | | 4.7% | 3.8% | 4.6% | |
| ***Monthly income*** | Less than 1000 | 212 | 40 | 252 | 0.359 |
| | | 43.5% | 38.5% | 42.6% | |
| | 1000 to 5000 | 117 | 28 | 145 | |
| | | 24.0% | 26.9% | 24.5% | |
| | 5001 to 10000 | 50 | 17 | 67 | |
| | | 10.3% | 16.3% | 11.3% | |
| | 10001 to 15000 | 40 | 8 | 48 | |
| | | 8.2% | 7.7% | 8.1% | |
| | More than 15000 | 68 | 11 | 79 | |
| | | 14.0% | 10.6% | 13.4% | |

***P value was considered significant if ≤ 0.05.***

**Discussion:**

Hepatitis is an inflammatory condition of the liver that may resolve on its own or progress to fibrosis, cirrhosis, or even liver cancer. Various viruses can impact the liver, resulting in temporary and benign hepatitis. However, hepatotropic viruses specifically target the liver and can cause clinically significant

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hepatitis, which in certain instances may develop into chronic viral hepatitis characterized by viral persistence [11]. To date, six human hepatitis viruses have been identified, labeled in alphabetical order from hepatitis A virus (HAV) to HGV. The severity and duration of hepatitis can significantly vary based on the infectious agent and associated comorbidities [12]. Depending on the cause of hepatitis, the severity can differ greatly, ranging from mild cases that are almost asymptomatic to severe instances that necessitate liver transplantation. Hepatitis is also categorized into "acute" and "chronic" forms, depending on the length of liver inflammation. Some types of hepatitis can resolve swiftly, while others may evolve into chronic conditions lasting for years. Certain individuals may experience rapid progression to fulminant liver failure, whereas some may remain asymptomatic carriers [13]. A wealth of comprehensive research and numerous academic publications consistently reveal a troubling pattern: knowledge and awareness regarding viral hepatitis are surprisingly low. In spite of the plethora of available information and resources, a considerable segment of the population remains unaware of the causes, modes of transmission, symptoms, and potential ramifications of this infectious disease [14]. Thus, we aimed in this study to determine the level of knowledge and awareness about hepatitis types, symptoms, transmission routes, complications, and risk factors among Saudi populations.

Our study's findings on the knowledge and awareness of hepatitis among participants in Saudi Arabia reveal significant gaps when compared to previous research. In a study by Bashair S. Alotaibi et al. [15], it was reported that 56.8% of participants recognized hepatitis A, B, C, D, and E as viral infections, which aligns closely with our finding of 63.3%, though a notable percentage of participants in both studies expressed uncertainty. Furthermore, while awareness regarding vaccination was moderate at 53.6% in Alotaibi's study, our research highlighted a concerning 47.2% of participants unaware of any hepatitis C vaccination. Personal hygiene awareness as a preventive measure was recorded at 61% in Alotaibi's cohort, which is lower than the 59.2% in our findings, yet both indicate a critical need for improved education on preventive strategies. Moreover, addressing attitudes towards individuals with hepatitis, Alotaibi's study indicated that 43% of participants viewed hepatitis C as curable, which gives a more optimistic outlook compared to our finding where 44% believed such individuals should be excluded from specific occupations. This stigma reflects broader societal attitudes that may hinder education and open conversations about the disease. Contrasting with our study, where only 18.4% demonstrated high overall knowledge of hepatitis, other studies reveal varying levels of knowledge within different demographics. For instance, a previous study in Taif, KSA, noted a knowledge level of 70% regarding HBV alone, indicating regional differences in awareness [16]. In comparison, a general population study in China reported only 36.1% of participants with sufficient knowledge about Hepatitis B and C [17], suggesting that despite our participants displaying better knowledge regarding hepatitis viruses, there remains an urgent need for culturally adapted educational interventions. Studies focused on hepatitis E further illustrate the mixed awareness landscape. Shaima O. Althobaiti [18] identified that 34% of participants had not heard of hepatitis E, which highlights a discrepancy in knowledge when compared to our findings, potentially suggesting that educational outreach may need to be more inclusive of all hepatitis types. Additionally, awareness about the symptoms of hepatitis was relatively low, as demonstrated by the 39.5% knowledge level about hepatitis E in Althobaiti's study. In comparison to other global statistics, a recent Hong Kong study indicated that 62.4% and 19% of participants believed in the existence of vaccinations for hepatitis B and C, respectively [19]. This contrasts with the findings of Al Jouf dentists, where a significant proportion, 78%, concurred that individuals infected with hepatitis should not work in food-service roles, accentuating the pervasive stigma associated with hepatitis in various societies [20]. Moreover, 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 [21]. In comparison, a study among Puerto Rican adults examined the

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knowledge regarding HAV vaccination, it was found that one-half (50.7%) of the participants knew that HAV can be prevented by a vaccine [22]. moreover, 86.3% of the total participants ($N = 710$) recognized the importance of good sanitation and personal hygiene in preventing HAV. Additionally, results from a study conducted among patients visiting a hepatitis clinic in a tertiary care hospital in Rawalpindi, Pakistan, in which they found that 48% of the participants indicated that viral hepatitis is curable coincides with our study results [23].

**Conclusion:**

In conclusion, this study underscores a pressing need for enhanced education and awareness regarding viral hepatitis among the Saudi Arabian population. Despite a moderate level of recognition of the hepatitis viruses, significant gaps persist in knowledge about prevention, symptoms, and vaccination options, particularly for hepatitis C. The prevalent stigma associated with the disease further complicates public perceptions, indicating an urgent call for targeted educational interventions. Addressing these knowledge deficiencies is essential to reduce the disease burden, promote early diagnosis, and foster a supportive environment for individuals affected by hepatitis. By developing culturally relevant educational resources, public health initiatives can improve understanding and ultimately mitigate the impact of hepatitis in the community.

**Ethical approval**

An informed consent was obtained from each participant after explaining the study in full and clarifying that participation is voluntary. Data collected were securely saved and used for research purposes only.

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There was no external funding for this study.

**Conflict of interests**

The authors declare no conflict of interest.

**Informed consent:**

Written informed consent was acquired from each individual study participant.

**Data and materials availability**

All data associated with this study are present in the paper.

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