

Practices of Health Care Workers Regarding Viral Hepatitis in Babylon Province, Iraq

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Annotation: **Background:** Viral hepatitis is a significant public health issue, affecting millions of people annually. Health care workers represent high risk population for viral hepatitis infection.

Objective: This study seeks to assess the level of practice of healthcare workers regarding viral hepatitis.

Methodology: A descriptive cross-sectional study was conducted on healthcare providers in the Babylon Governorate. A convenient, non-probability sample of 365 healthcare providers with less than three years of service working in departments of the selected hospitals. The data collection started from the first of October 2024 till the 31 of December 2024.

Results: The results of this study indicate that 44.9% of HCWs have a moderate practice score, followed by 30.7% of the participants have a good practice score, and only 24.4% of HCWs have a poor practice score. The results of this study reveal that there is a significant relationship between demographic (such as age groups, and educational level) and overall

practice score (P. value <0.05). These results explain that, age (26-30 years), and high education have good assessment scores for practice about viral hepatitis.

Conclusion: The study concludes that the highest proportions of healthcare providers have moderate levels of practices about viral hepatitis. The results reveal that older age, higher education, academic nurses, physicians, those who have completed hepatitis B vaccination, and those who have received training in viral hepatitis prevention and management are associated with good practices regarding viral hepatitis with a $p < 0.05$.

Keywords: Viral hepatitis, healthcare workers, infection control, occupational health, hepatitis B vaccination, preventive practices, Babylon province.

Introduction

Hepatitis is a liver inflammation produced by several infectious viruses and noninfectious substances, which may result in a variety of health issues, some of which are deadly. The hepatitis virus has five primary strains, known as types A, B, C, D, and E. While they all cause liver disease, they vary significantly in terms of route of transmission, the severity of sickness, geographical distribution, and preventative approaches (WHO, 2024). Epstein-Barr virus, cytomegalovirus, herpes virus, Coxsackie virus, and rubella virus are among the viruses that may cause hepatitis. Hepatitis may be caused by a variety of factors, including chemicals and medications, autoimmune illnesses, metabolic difficulties, and genetic abnormalities (Chyad & Faris, 2022). If left untreated, hepatitis may progress to fibrosis of the liver, cirrhosis, fulminant hepatic failure, hepatocellular cancer, and death (de Martel *et al.*, 2015).

Viral hepatitis produces both acute and chronic illnesses, with serious consequences and squeals (Mac *et al.*, 2019). Hepatitis B and C viruses are transferred by contaminated blood and may cause both acute and chronic hepatitis. Hepatitis D virus, which is likewise transmitted via the blood, exclusively affects patients infected with hepatitis B virus, and this dual infection leads to poorer liver-related consequences. Hepatitis A and E are spread mostly by the fecal-oral route, which involves the intake of food or drink contaminated with infected feces (Torre *et al.*, 2021).

Every profession has a unique collection of potential risks. The risk of contracting blood-borne illnesses is one of the risks unique to healthcare institutions. In particular, illnesses brought on by viruses such as the Human Immunodeficiency Virus (HIV), Hepatitis B (HBV), and Hepatitis C (HCV) are concerning because they may result in long-term, life-altering conditions (Anandadurai *et al.*, 2024).

Healthcare workers (HCWs) may be exposed to these illnesses in a variety of ways while working in a healthcare facility. Needle stick injuries constitute the preponderance of activities associated with this type of exposure. Blood borne illness exposure at work may also result from injuries caused by various sharp objects, such as the blades and IV cannulas (Anandadurai *et al.*, 2024).

Healthcare practices are an important part of patient care and are often designed to fit the broader system of their application (Jacobs & Mynatt, 2017). Largely, screening, treatment, and preventive practices are handy in managing HBV infection. Time and again, post-exposure prophylaxis (PEP), hepatitis B vaccination principally for at-risk individuals including HCWs (Akibu et al., 2018; Malewezi et al., 2016), as well as safe patient handling practices and waste management, create a safe and healthy working environment for both HCWs and patients (Demsiss et al., 2018).

Material and method

Study design

It is a descriptive cross sectional study was conducted on healthcare providers with less than three years' service.

Setting of the study

The study was conducted in the Babylon Governorate in five hospitals, which are (Marjan Teaching Hospital, Babylon Teaching Hospital for Women and Children, Al-Qasim General Hospital, Al-Mahawil General Hospital, and Imam Ali General Hospital).

Sampling Size:

The sample was calculate using Steven Thompsons (Thompson, 1987) formula for calculation of sample size with the formula. As a result, the minimum sample size for health care providers is **334**, while we have taken **365** to strengthen the study.

Criteria of selection

Inclusion

Healthcare providers for both sexes with less than three years' service who work in selected hospitals, agreed to participate in the study, and are working both day and night shift.

Exclusion

Healthcare providers experience less than one year, respondent did not complete the questionnaire in full, healthcare providers who have not been in contact with patients, and participants in the pilot study.

Sampling techniques

A convenient, non-probability sample of 365 healthcare providers with less than three years of experience working in hospitals in Babylon Governorate was selected. Hospitals were selected based on the governorate's geographical location, with five hospitals selected out of ten government hospitals, distributed as follows: two central hospitals, one southern hospital, and two northern hospitals. Samples were distributed based on their total number in each hospital. These hospitals were selected from each region based on the increasing numbers of new staff deployed by the Babylon Health Department.

Data collection method

After converting the questionnaire into Arabic, the local language, and employing closed-ended questions, the data was gathered through in-person interviews with every healthcare worker. The researcher filled out a structured questionnaire, which was used to interview participants and gather data. The questions were asked in plain Arabic.

Scoring Criteria

Assessment of Practices:

The questions regarding assessment of practices” The rating and scoring of items are three points Likert scale applied for rating practices. The Likert respondent scale was used to rate the three

levels. A grade of (3) was given for "Always," (2) for "Sometimes," and (1) for "Never." The scoring system was designed to reflect agreement.

The questions in practices "With 12 questions on practices, a score of 36 was the highest. A score between 60 and 79% was deemed acceptable/moderate (22-28), less than 60% was deemed poor (<22), while a score of equal or more than 80% was regarded as good (≥ 29) ((Ramlı et al., 2018; Ali & Angelene, 2018; Shareef & Al-Sarray, 2022).

Statistical Analysis

The information for each item on the questionnaire was copied to code sheets, the data was input into a personal computer, and the statistical package from SPSS-27 was used to evaluate the data. Simple statistics like frequency, percent, average, standard deviation, and range displayed the data. A Chi-square test (X^2 -test) was utilized to identify the significance of qualitative data percentage differences. The P-value was considered statistically significant when it was equal to or less than 0.05 (Benjamin et al., 2018).

Result and discussion

Table (3.1): The distribution of healthcare workers according to the demographic characteristics

Demographic characteristics of HCWs		No.	%
Age groups	21-25 years	201	55.1
	26-30 years	141	38.6
	>30 years	23	6.3
	Mean \pm SD (Range)	25.9\pm2.9 (21-37)	
Gender	Male	158	43.3
	Female	207	56.7
Marital status	Single	224	61.4
	Married	141	38.6
Area of residence	Urban	272	74.5
	Rural	93	25.5
Educational level	Secondary	12	3.3
	Institute	158	43.3
	Collage	195	53.4

The results of this study indicate that most health care workers belonging to ages 21-25 years (55.1%), followed by those aged 26-30 years (38.6%). This finding agree with a cross-sectional study was carried out by (Hossain et al., 2021) which revealed that the largest proportion of participants (76.8%) were in the 21-30 age. Also, (Alshamarti et al., 2022) reported that the highest percentage (51.5%) were in the age group (20-26) years. While, the finding of Cross-sectional descriptive study was carried out by (Al-Khalidi & Nasir, 2022), the results show that the largest proportion of HCWs (43.4%) were in age (30-39) years. and (Akibu et al., 2018) reported that the highest percentage of HCWs (46.3%) were in the age group (31-40) years. This finding disagrees with our finding. In our opinion because we excluded HCWs who have more than three a year's service. This means that the sample I studied is made up more of new health care providers who are often in younger age groups.

According to the gender more than half of HCWs were females (56.7%). This finding consisted with the present study finding conducted by (Al-Khalidi & Nasir, 2022) found that (59.6%) of subjects were females. While these results are lower than the study finding done by (Garg et al., 2023) which found that (66.8%) of sample were females. Another study by (Mustafa et al., 2018) found that (65.1%) of participates were females. On other hand, the finding of present study is inconsisted with the finding of (Suleiman et al., 2020) found that (63.3%) of sample were males. A study by (Alharbi et al., 2022) found that (58.2%) of sample were males. The possible explanation of this variation between the studies might be excluded some female from the study

in reason of pregnancy or birth period that will absolutely make such significant changes on the results.

In this study, most HCWs were single. This result is in agreement with the study findings conducted by (Akibu et al., 2018) which found that the highest percentage (54.4 %) of HCWs was unmarried. A possible explanation for this result may be that the majority of participants in our study are at an early age and are not economically qualified for marriage

In this study, the results found that majority of HCWs live in urban areas. These results agreed with the study finding carried out in the Babylon province, Iraq (Shraifat & Slama, 2024) which found that 65.3 of participates live in urban. The increase in the number of participants from urban areas can be attributed to the ease of access to workplaces, as most hospitals and health facilities are concentrated in urban areas.

Regarding to level of education, the study found that the highest proportion of HCWs have a bachelor's (53.4%), followed by diploma (43.3%). These results agreed with the findings of (Hossain et al., 2021) , which found that 64.9% of the participants have an education level Bachelor. Also, (Alshamarti et al., 2022) they found that 50% of HCWs were Bachelors. Because in recent years the number of government and private colleges has increased, which has made it easier for employees with a diploma to complete their studies and obtain a higher degree (bachelor's degree). It has also led to an increase in the number of graduates with a bachelor's degree. Other reasons include increased awareness of education and the employee's ambition to advance in the career ladder.

Practices of healthcare workers

Table (3.11): The distribution of the participant's responses according to their practices about viral hepatitis

Practices	Never		Sometimes		Always	
	No.	%	No.	%	No.	%
1. My workplace has a strong commitment to occupational health and safety.	19	5.2	67	18.4	279	76.4
2. Avoid sharing food and tableware with someone infected with HAV and HEV.	89	24.4	21	5.8	255	69.9
3. Cover wounds immediately to prevent exposure to blood and other body fluids.	78	21.4	44	12.1	243	66.6
4. Do you follow strict hand hygiene practices before and after patient contact?	112	30.7	57	15.6	196	53.7
5. Wear appropriate personal protective equipment such as gloves and mask.	118	32.3	67	18.4	180	49.3
6. Check for viral hepatitis when you are exposed to a needle stick injury.	101	27.7	105	28.8	159	43.6
7. Educating patients about the methods of transmission and prevention of viral hepatitis	103	28.2	97	26.6	165	45.2
8. Clean and disinfect dirty surfaces and equipment after the patient leaves.	104	28.5	66	18.1	195	53.4
9. Do you regularly participate in	95	26.0	96	26.3	174	47.7

training seminars while working on hepatitis prevention?						
10. Do you ensure that all contaminated needles, syringes, and sharps medical waste are disposed of safely and properly?	79	21.6	49	13.4	237	64.9
11. Changing gloves before going to another patient.	56	15.3	129	35.3	180	49.3
12. I always report needle stick injuries to the Disease Prevention and Control Committee.	88	24.1	128	35.1	149	40.8

The current results found that the highest percentage (76.4%) of the healthcare workers answer with always regarding workplace has a strong commitment to occupational health and safety. These results agreed with studies by (Punia et al., 2014) and (Kotwal & Taneja, 2010) which found that reported a slightly higher proportion of 82% and 86% of respondents following safety and proper disposal protocol, respectively.

In this study, 69.9% of the healthcare workers were always avoids sharing food and tableware with someone infected with HAV and HEV. This finding is consistent with the study results done by (Althobaiti et al., 2021) who revealed that most HCWs have good practices were healthy eat to avoid infected with HEV.

Most the participants (66.6%) always cover wounds immediately to prevent exposure to blood and other body fluids. This result is in agreement with the study findings conducted by (Yakob et al., 2015) which found that the highest percentage of HCWs always good practice standard when exposure to blood and body fluid.

More than half (53.7%) of HCWs always follow strict hand hygiene practices before and after patient contact. A similar study done by (Yakob et al., 2015) which reported that 68.7% of HCWs wash their hands before examining the patients.

The study found that the highest percentage (49.3%) of HCWs always wear appropriate personal protective equipment such as a gloves and mask. This finding is consistent with the study results done by (Yazid et al., 2023) who revealed that over half of HCWs consistently wear gloves (53.4%).

In this study, the highest percentage (45.2%) of the participants reported always educating patients about the methods of transmission and prevention of viral hepatitis. This result agreed with (Neloska et al., 2022) which found that the positive linear correlations have reaffirmed that better educating of transmission can lead to positive prevention and subsequently to good practices.

The highest percentage (47.7%) of the health care workers always regularly participate in training seminars while working on hepatitis prevention. This finding is inconsistent with the study results done by (Allene & Delelegn, 2020) who revealed that only 16.62% of HCWs participated in health education program related to Hepatitis B. Also, a study conducted in southeast Ethiopia (Bekele et al., 2015) that found that 65.3% of HCWs had not received course training on needle stick injury prevention. This difference between the studies may be due to the difference in the institution's policies in terms of scheduling training courses. With regard to this study, health institutions have made training courses almost compulsory for employees because they are a basic requirement for job promotion.

Most HCWS (64.9%) were always ensuring that all contaminated needles, syringes, and sharps medical waste are disposed of safely and properly. A similar study done by (Elfaitouri et al., 2023) which reported that the majority of respondents said they properly disposed of sharps after

use. Also, another studies reported that majority of nurses used sharp bins for proper disposal of sharps during injection procedures, indicating a positive practice (Bazie, 2020) (Motaarefi et al., 2016). Previous studies have highlighted the significance of using sharps containers for safe disposal, emphasizing the responsibility of healthcare facilities in providing adequate resources for proper disposal (Berhan et al., 2021). Also, (Dwiartama et al., 2022) reported that high proportion of participants reported that dispose of waste in an orderly manner.

In this study, the highest percentage (49.3%) of the participants reported always changing gloves before going to another patient. This result is in agreement with the study findings by (Allene & Delelegn, 2020) reported that the highest percentage of nurses were always change gloves for each patient during blood taking. A study by conducted by (Elsherbeny, 2018) which found that most nurses use protective equipment (gloves) when handling sharp instruments and during procedures.

The study found that the highest percentage (40.8%) of HCWs always report needle stick injuries to the Disease Prevention and Control Committee. This finding is consistent with the study results done by (Allene & Delelegn, 2020) who revealed that 59.4% of the participants were always report for needle stick injury.

Table (3.12): The relationship between the overall practice score and demographic characteristics of HCWs

Demographic characteristics		Total Practices score						P- value
		Poor		Moderate		Good		
		No.	%	No.	%	No.	%	
Age groups	21-25 years	63	31.3	86	42.8	52	25.9	0.003
	26-30 years	24	17.0	63	44.7	54	38.3	
	>30 years	2	8.7	15	65.2	6	26.1	
Gender	Male	39	24.7	66	41.8	53	33.5	0.504
	Female	50	24.2	98	47.3	59	28.5	
Marital status	Single	58	25.9	104	46.4	62	27.7	0.281
	Married	31	22.0	60	42.6	50	35.5	
Area of residence	Urban	66	24.3	128	47.1	78	28.7	0.289
	Rural	23	24.7	36	38.7	34	36.6	
Educational level	Secondary	7	58.3	4	33.3	1	8.3	<0.001
	Institute	52	32.9	64	40.5	42	26.6	
	Collage	30	15.4	96	49.2	69	35.4	

The results explain that, age (26-30 years), and high education level are associated with good assessment scores for practice about viral hepatitis (P. value <0.05). these findings agreed with Angelo *et al.* (2024) who revealed that older age had a good practices about viral hepatitis. Also, a similar study by Ahmad *et al.* (2016) which discovered that high education level was associated with good practice about viral hepatitis. We can explain that age is most likely directly proportional to years of service, which gives the older age enough experience that makes their practices good. Also, a higher level of education tends to increase degrees of knowledge, through which degrees of practice may increase, that is, there is a direct relationship between knowledge and practices, as shown in the correlation table below.

In the present study, there was non-significant relationship between demographic characteristics (such as gender, residence and marital status) and overall practices score (P. value >0.05). these findings are in line with the study results done by Altaf *et al.* (2022), discovered that there was non-significant relationship between gender and practices level about viral hepatitis. Also, a similar study by Althobaiti *et al.* (2021) who revealed that there was non-significant relationship between marital status and practices level about viral hepatitis.