

ORIGINAL ARTICLE

Knowledge and Attitude of Nurses towards Hepatitis B and C Prevention and TransmissionSUMERA JABEEN^{1*}, MANSOOR GHANI², SAMINA KAUSAR², RAHILA MUSHTAQ¹, ASMA KHALID³, MISBAH HANIF¹¹Department of Nursing, Nursing Instructor, Shaikha Fatima Institute of Nursing and Health Sciences, Lahore –Pakistan²Department of Nursing, Nursing Coordinator, University of Health Sciences, Lahore-Pakistan³Department of Nursing, Principal-Gulfree College of Nursing, Lahore- PakistanCorrespondence to Miss. Sumera Jabeen, Email: sumerajb1@gmail.com. Tel: +92-3334498825**ABSTRACT****Background:** Nurses are considered a key member of health care delivery system who are providing essential care to their clients.**Aim:** To assess knowledge and attitude of charge nurses, working in tertiary care hospitals of Lahore.**Study Design:** Cross-sectional descriptive study.**Methodology:** A sample size of 272 staff nurses working in four tertiary care hospitals of Lahore were enrolled by using method of non-probability convenient sampling. Data was collected by adopted questionnaire. Data was analyzed by SPSS software, version 23. Results were compiled and presented as frequencies and percentages. Frequencies were computed for categorical variables. Chi-square / Fisher's exact test was used to determine the association of knowledge and attitude. A p-value ≤ 0.05 was taken as significant.**Results:** The result revealed that 36.4% nurses had good level of knowledge and 9.6% nurses had excellent knowledge related to Hepatitis B and C prevention and transmission. Majority of the participants 76.5% depicted positive attitude.**Practical Implication:** Nurses are the primary source of information for the public, so it's critical to assess their knowledge and attitudes about these disorders. A better understanding of health workers' knowledge and attitudes about the risk of liver disease, particularly among nurses, will aid in the creation of suitable preventative initiatives for this demographic. This study helped in Program planning for monitoring and improving the nursing care services at health care setups.**Conclusion:** We concluded that beside a sub optimal level of knowledge of viral Hepatitis B and C, nurses have been willingly providing care to their clients with positive attitude.**Keywords:** Patient Satisfaction, Nursing Care, Prevention and Knowledge.**INTRODUCTION**

The liver is one of the vital organs of human body and plays a major role in metabolism with various essential functions in the body and any injury to this organ either by chemical or virus may lead to interruption in its function¹.

Viral Hepatitis is one of the liver diseases in which there is inflammation of liver's parenchymal cells that leads to irreversible damage to liver tissue in many cases.² Hepatitis viruses come in six different varieties (A, B, C, D, E and G). Because of the large amount of sickness and high death rate they produce, as well as the potential for outbreaks and epidemics to spread internationally, these categories are of the greatest concern. Hundreds of millions of people get chronic inflammatory disease because of Types B and C. Furthermore, these chronic inflammatory disorders cause liver parenchymal cell fibrosis and liver cancer worldwide¹.

The Hepatitis B virus (HBV) is transmitted by contaminated blood, sperm, and other bodily fluids, which can potentially be transmitted from infected moms to their newborns at the time of delivery. Transfusions of Hepatitis B virus (HBV)-infected blood and blood products, contaminated needles used during therapeutic operations, and injectable drug usage are all ways that the virus can be transmitted. Hepatitis B virus poses a great risk to healthcare providers who are exposed to accidental needle stick injuries while providing health care services to patients infected with Hepatitis B virus. Luckily, Hepatitis B infection is preventable with a safe vaccine³.

Hepatitis C virus (HCV) is primarily spread by contact with infective blood. This can also be spread using injection drugs and the delivery of Hepatitis C virus-infected blood and blood products, as well as contaminated injections during medical surgical procedures. Sexual transmission is possible as well, but it is considerably less prevalent (WHO). There is currently no vaccination available to prevent hepatitis C infection⁴.

According to the World Health Organization (WHO), more than 350 million people worldwide are chronic hepatitis B carriers

and around 170 million people are infected with hepatitis C⁵. It is further added that Hepatitis C virus (HCV) infects almost 3% of the population globally.

Viral Hepatitis C is more prevalent in poor and developing countries. In Pakistan approximately ten million people are living with Hepatitis C and the distribution of disease is not uniform, Punjab, interior Sindh and war affected areas are most infected regions in Pakistan.⁶ Hepatitis B, on the other hand, is quite common worldwide and Pakistan is no exception, with a large hepatitis B prevalence. According to a study conducted in Pakistan, Hepatitis B infection causes 31% of cases of acute viral hepatitis, 60% of cases of chronic liver disease, and 59% of cases of hepatocellular carcinoma (HCC)⁷.

Hepatitis B virus (HBV) and Hepatitis C virus (HCV) have been classified as an important occupational hazard for health care workers especially for nurses, physicians, dentists, and laboratory staff who are dealing with blood and blood products during the course of their clinical work.⁵ According to the World Health Organization, 3 million health-care workers are injured each year by needle sticks or sharp injuries, which is one of the main causes of Hepatitis B and C transmission during nursing care⁶.

Hepatitis B and C are blood borne viruses and due to close relationship with infusing medication practice, attracts high level of stigma. Many hepatitis-related stigmas arise from assumptions about afflicted individuals' conduct, which causes anguish and blame, and determine how nurses respond to people with Hepatitis B and C. People with Hepatitis B and C face a wide range of discrimination. Nurses sometimes show negative attitude towards patients infected with viral Hepatitis B and C. These discriminatory practices may be the result of a lack of awareness, which may lead to negative attitudes regarding these diseases and impair their willingness to treat these patients owing to their fear of becoming infected⁷. Even though Hepatitis B and C are widespread in Pakistan and are leading causes of death, there is very little information available about nurses' knowledge and attitudes about these infections. Nurses are the primary source of information for the public, so it's critical to assess their knowledge and attitudes about these disorders. A better understanding of health workers' knowledge and attitudes about the risk of liver disease, particularly

Received on 11-10-2022

Accepted on 07-02-2023

among nurses, will aid in the creation of suitable preventative initiatives for this demographic.

Objective of the study was to assess knowledge and attitude of charge nurses, working in tertiary care hospitals of Lahore.

METHODOLOGY

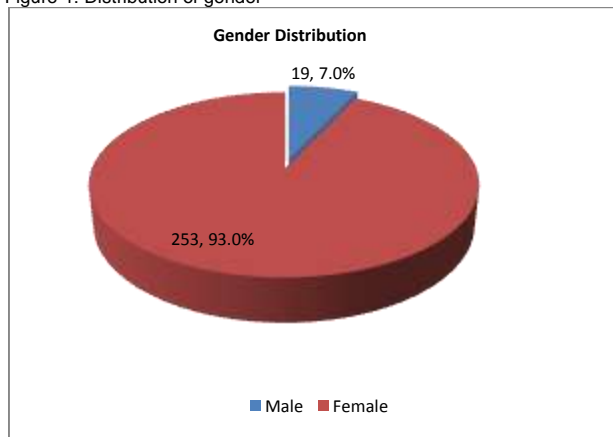
This cross-sectional descriptive study was carried out following ethical approval by enrolling 272 staff nurses working in four tertiary care hospitals of Lahore through non-probability convenient sampling. Data was collected by adopted questionnaire. Questioner tool consists of two portions first one comprised of 17 questions related to knowledge of Hepatitis B and C, while second portion have 10 questions related to attitude. Staff nurses who have more than one year of clinical experience were included. Staff nurses who had attended special training about Hepatitis B and C were excluded. A written informed consent was taken from those who have been selected for the study.

Statistical analysis: Data was analyzed by SPSS software, version 23. Results were compiled and presented as frequencies and percentages. Frequencies were computed for categorical variables. Chi-square / Fisher's exact test was used to determine the association of knowledge and attitude. A p-value ≤ 0.05 was taken as significant.

RESULTS

Two hundred and seventy-two registered nurses having more than one year of clinical experience were included in this study. Out of 272 nurses, 252 (93%) were female and 19(7.0%) were male as shown by figure-1.

Figure-1: Distribution of gender



According to experience of nurses, 143(52.6%) nurses have 1-5 years of clinical experience. 79 (29%) nurses have 6-10 years of clinical experience and 50(18.4%) nurses have more than 10 years of clinical experience as shown by table-1.

Table-1: Experience Status of the Nurses

Experience	Frequency	Percent
1-5 years	143	52.6%
6-10 years	79	29.0%
> 10years	50	18.4%
Total	272	100.0%

Results regarding different levels of awareness and knowledge for Hepatitis-B and C among nurses was shown as frequency and percentage in table-2. Majority (85.3%) nurses reported that hepatitis is a viral disease. Almost 226(83.1%) of the nurses correctly answered that liver cancer was associated with hepatitis B and C. Different responses of enrolled nurses were recorded in table-2.

Table-2: Assessment regarding different levels of awareness among subjects

Statements	Categories	Frequency	%age
Hepatitis origin of disease?	Viral origin	232	85.3
	Bacterial origin	37	13.6
	Don't know	3	1.1
Hepatitis B and C is associated with an increased risk of liver cancer?	Yes	226	83.1
	No	35	12.9
	I don't know	11	4.0
Hepatitis B and C can lead to cirrhosis?	Yes	229	84.2
	No	33	12.1
	I don't know	10	3.7
Hepatitis C is a mutation of hepatitis B?	Yes	164	60.3
	No	67	24.6
	I don't know	41	15.1
Do you wear gloves when performing invasive procedure (drawing blood of Hepatitis B and C patients)?	Always wear	157	57.7
	Sometimes wear	80	29.4
	Don't wear	35	12.9
Do you wash hands after patient contact before caring for the next patient?	Yes	18	2.1
	No	28	3.2
	Sometimes	49	5.7
Vertical transmission of Hepatitis virus may be seen in?	Hepatitis B	69	25.4
	Hepatitis D	6	2.2
	Hepatitis C	71	26.1
	Hepatitis B & C	126	46.3
Hepatitis B virus and Hepatitis C virus transfer from one person to the other by?	Un-sterilized syringes, needles, and surgical instruments	20	7.4
	Contaminated blood and blood products	18	6.6
	Unsterilized blades of the barber/ear and nose piercing	19	7.0
	All the above	215	79.0
	Is vaccination available for Hepatitis B?	Yes	242
No		23	8.5
I don't know		7	2.6

Table-3 showed that nurses knowledge towards Hepatitis B and C prevention and transmission was adequate and majority of the nurses answered correctly.

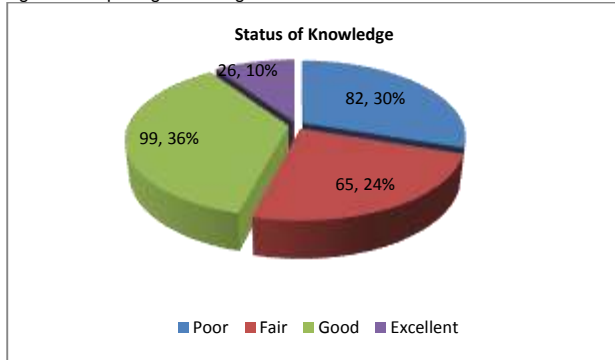
Table-3: Frequency of Correct Response by Nurses

Statements	Correct	Wrong
Hepatitis is disease of which origin	232 (85.3%)	40 (14.7%)
Hepatitis B and C is associated with an increased risk of liver cancer	226 (83.1%)	46 (16.9%)
Hepatitis B and C can lead to cirrhosis	229 (84.2%)	43 (15.8%)
Hepatitis C is a mutation of hepatitis B	67 (24.6%)	205 (75.4%)
Do you wear gloves when performing invasive procedure (drawing blood of Hepatitis B and C patients)?	157 (57.7%)	115 (42.3%)
Do you wash hands after patient contact before caring for the next patient?	122 (44.9%)	150 (55.1%)
Do you recap needles after use before disposing of them in a sharp container?	65 (23.9%)	207 (76.1%)
Vertical transmission of Hepatitis virus may be seen in	126 (46.3%)	146 (53.7%)
Is vaccination available for Hepatitis B?	242 (89.0%)	30 (11.0%)

Almost 82(30.1%) nurses indicated poor knowledge, 65(23.9%) nurses indicated fair knowledge, 99(36.4%) nurses indicated good knowledge and 26(9.6%) nurses indicated excellent knowledge as shown in figure-2.

Most 64(23.5%) nurses showed Negative attitude, and 208(76.5%) nurses showed " Positive attitude" as shown in table-4.

Figure-2: Depicting knowledge status of nurses



Chi-square test was used to determine the relationship of experience with knowledge level among nurses. 47.6% of nurses

with 1 – 5 years' experience had good to excellent knowledge, 58.2% nurses with 6 – 10 years' experience had good to excellent knowledge whereas 22% of nurses with >10 years' experience had good to excellent knowledge. This difference was found to be statistically significant (p value= 0.001).

Table-4: Attitude of nurses towards Hepatitis B and C

Attitude Status	Frequency	Percentage
Negative	64	23.5%
Positive	208	76.5%

Chi-square test revealed that there was significant relationship between professional education and knowledge level among nurses (p value= 0.008). 40.4% of nurses having diploma in nursing had good to excellent knowledge, 62.3% nurses having BSN degree had good to excellent knowledge whereas 48.8% of nurses having Post RN degree had good to excellent knowledge.

Table-5: Relationship between Experience and Knowledge among Nurses

Experience	Knowledge Status				p-value
	Poor	Fair	Good	Excellent	
1-5 years	36 25.2%	39 27.3%	57 39.9%	11 7.7%	0.001*
6-10 years	21 26.6%	12 15.2%	34 43.0%	12 15.2%	
> 10years	25 50.0%	14 28.0%	8 16.0%	3 6.0%	

*Statistically significant

Table-6: Relationship between Professional Education and Knowledge among Nurses

Professional Education	Knowledge Status				p-value
	Poor	Fair	Good	Excellent	
Diploma in Nursing	65 36.5%	41 23.0%	59 33.1%	13 7.3%	0.008*
BSN (Generic Nursing)	6 11.3%	14 26.4%	23 43.4%	10 18.9%	
Post RN	11 26.8%	10 24.4%	17 41.5%	3 7.3%	

DISCUSSION

Hepatitis B and C are blood borne diseases with global health concern. Health care providers are at great risk to contract these infections by sharp hospital instruments during their day-to-day routine. Nurses play a vital role in the care of patients suffering from Hepatitis B and C. Nurses updated knowledge and positive attitude regarding patients infected with Hepatitis B and C are the major concern in the prevention and transmission of disease. Lack of knowledge of these bloods borne diseases might lead to low compliance with the safety measures among nurses.⁸ Hepatitis B and C related stigma is common in health care setting. The major cause of stigma includes misconceptions about ways of transmission of infection and the fear of infection⁹.

Nurses not only have to provide quality care to their patients but also provide education related to disease process in collaboration with health care team. Therefore, they should have comprehensive knowledge related to pathology of disease. Optimal level of knowledge related to causative organism of Hepatitis B and C have solid role in uprooting the infection among health care providers and patients in a health care setting. In the present study 85% nurse were aware about the causative organism of Hepatitis. A study revealed that majority (90.9%) of the participants were aware about the causative agent of disease¹⁰. Another study conducted in Southeast Brazil revealed the similar results that majority (90.2%) of the participants had knowledge of the causative organism¹¹.

Needle prick injury is one of the ways to have transmission of blood borne diseases like Hepatitis B and C, especially when health care providers recap syringes after administration of drug. A study conducted in Rumania demonstrated that health care providers were 3.7 times more prone to have needle prick injury

when they recapped needles before disposing off in sharp containers.¹² In the present study 43.8% participants always and 32.4% participants sometime (collectively 76.2%) were recapping needles before disposing them off in the sharp containers. A study showed that 95% of the nurses were recapping needle before disposing them off in sharp containers. Therefore, they were more prone to risk of having this infection in their clinical practice. This might be due to negligent behavior of nurses, lack of awareness and shortage of affective medical waste containers in hospital setting¹³.

Hepatitis B is a preventable disease, and its vaccination is available that is about 95% effective in preventing disease and its complications. In the present study 89% participants were aware about the existence of vaccine against Hepatitis B. The finding of the current study is congruent with the study conducted in India¹⁴, which reported that 87.3% nurses were aware about the existence of vaccine against Hepatitis B. These findings are also similar with the study finding conducted in Nigeria where 86.8% nurses were aware of Hepatitis B vaccine¹⁵.

Health care providers are sometime feeling reluctant while caring for patients infected with viral Hepatitis B and C because of the fear of being infected with these kinds of diseases. Though occupational blood born infections are common in health care setting, by having adequate knowledge regarding its transmission, one can protect himself by adopting standard precautions.¹⁶ In present study 79% participants have correctly answered the ways of transmission of disease. Present study findings are supported by study where majority of the health care providers had good knowledge of standard precautions related to blood borne diseases¹⁵.

Education has positive association with the knowledge of the health care providers. In the present study more educated

participants have more knowledge related to disease prevention and transmission where P value = 0.008. These findings were in contrast with the study, which presented insignificant association between knowledge and education. It might be because of lack of in-service educational program¹⁷.

Limitations: Sample size was not big enough to detect any significant association between socio-demographic characteristics and level of disease spread. Practice gap was not assessed that can reveal a definite and clear picture of health care providers measures regarding prevention and transmission against Hepatitis B and C.

CONCLUSION

We concluded that beside a sub optimal level of knowledge of viral Hepatitis B and C, nurses have been willingly providing care to their clients with positive attitude. There is a huge burden of blood borne diseases like Hepatitis B and C in the country and its incidence and prevalence have been increasing due to poorly maintained health care facilities. Despite these facts, health care providers, especially nurses have been trying to manage and are providing care of these infected patients with good knowledge and positive attitude. Thus, health care policy makers, including hospital administrators and nursing leaders must plan for educational activities to enrich educational status of nurses that would directly affect their attitude towards caring these patients.

Authors' Contribution: SJ&MG: Conception and design of work, **SK&RM:** Collecting and analyzing the data, **AK&MH:** Drafting the manuscript.

Conflict of Interest: None to declare

Financial Disclosure: None

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