

Knowledge, attitude and Practice among the Registered Nurses regarding universal precautions of hepatitis B working in four Hospital of Sargodha.

Munawar Begum[†], Humera Zaib **, Farhat Yasmin***, Shahgufta Shaheen****

Abstract-Registered Nurses represent a population that is at high-risk group for acquiring and spreading hepatitis B infection (HBV). The aim of this proposed study is not to replicate any of the initial work already conducted, which emphasizes the spread and treatment of viral hepatitis. The purpose of this study is to identify any knowledge, attitude and practice deficits and developmental needs of the registered Nurses working in the acute care setting.

Subjects and Methods

During Jan 2017, a descriptive cross-sectional study was conducted on Registered Nurses of four Hospital Of Sargodha. Structured questionnaires thirty different statements concerning knowledge base of HBV, attitudes as well as practices toward occupational risks of hepatitis B were distributed to 100 RN.

Results

In the present study 90% of the nurses had correct knowledge regarding vaccine for hepatitis B. Study showed good knowledge regarding spread and risk factors for hepatitis B. 95% of the nurses gave the correct answer that hepatitis B is diagnosed by hepatitis markers test. Regarding treatment, 99% said that vaccination is the choice for treatment of hepatitis B. 98% said that patient with hepatitis c can be vaccinated with HBV vaccination. Regarding the vaccination status of nurses for hepatitis B, 40% were fully vaccinated and 38 % were partially vaccinated and 22% were unvaccinated. Regarding wearing of gloves while injecting and taking blood samples 49% use gloves 30% do not use and 21% do not know.

Conclusion

This study showed that knowledge and attitude of nurses are good towards hepatitis B but practice is not sufficient as 1/4th of the nurses are unvaccinated.

Keywords: Attitude, Hepatitis B, Knowledge, practice and Registered nurses

Introduction

Hepatitis B virus (HBV) infection is one of the biggest causes of chronic liver damage and end stage liver disease in majority of low and middle income countries. Globally it is estimated that approximately 350 million individuals suffer from chronic HBV infection [1]. Annually it is known to cause more than 563,000 deaths worldwide [2]. Like many low and middle income countries going through epidemiologic transition, Pakistan also has a very high burden of HBV infection. Studies report that on an average around 2.5% of healthy individuals are HB antigen positive in the general population [3, 4], however some studies report the estimated prevalence of HBV infected individuals in Pakistan to be as high as 11% [4].

Hepatitis B virus is mainly spread through bodily fluids thus making it a disease associated with risk behaviours. High risk populations include haemophiliacs requiring regular blood transfusion, sex workers, intravenous drug abusers, spouses of infected individuals and people attending barber shops not exercising proper safety precautions [4]. However, it is also one of the biggest occupational hazards among health care providers where studies show that the prevalence of this infection is higher compared to general population. One study reports the average prevalence of HBV infection among health care workers to be 6% compared to 2.5% in the general population [4]. Similar reports are documented from other countries as well [5, 6].

Among many others, nursing profession is at high risk of contracting HBV infection mainly because patient care is primarily provided by them. Given the high prevalence of Hepatitis B in the country there is a high burden of such patients which come in contact with nurses. They are always at highest risk of needle stick injuries thus acquiring this and many other infections. In this case the most important protection is through observing precautionary protocols by the nurses which in turn depends on the level of knowledge and subsequent attitudes and practices by them. In a study from Pakistan, the authors reported that as high as 45% of healthcare workers did not consider themselves as high risk groups while only 42% healthcare workers practiced appropriate bio safety measures [7].

The standard precautionary measure protocol include hand hygiene, masks, eye protection and safe injection practices among many others. Similarly while performing high risk interactions like intubation, use of face mask, goggles, gloves and gown are recommended [8]. This study examined the level of knowledge, attitudes and practices of nurses regarding these safety practices at four hospitals of Sargodha, Pakistan.

Materials and Methods

This descriptive cross/sectional study was conducted during January and December 2017 at four private hospitals of Sargodha city, Pakistan. All four hospitals were at least 150 bed facilities with more than 50 registered nurses (RNs) of both gender working in all major departments of the hospital. From these four hospitals, a total of 100 RNs were randomly selected (25 RNs from each hospital). A self administered questionnaire was distributed with explanatory letters regarding the study. The questionnaires were anonymous and coding was done for the sake of statistical analysis. Prior to the study, the investigators obtained ethics committee approval from each hospital and permission to collect data. The questionnaire consisted of 30 close ended questions where the first part covered demographic characteristics of RN (age, sex, years in hospital and self HBV vaccination). The second part contained 30 variable items focusing on nurse's knowledge, attitude and the practice. The well-structured questionnaire was developed to assess the KAP of RN regarding infectious, occupational risks of HBV.

In December 2016, a questionnaire was pre-tested during a pilot study that was conducted among 20 RN. This was done to ensure clarity, relevance, and determine the amount of time needed to answer all items. The results of the pre-test were evaluated critically, and some modifications were accordingly made. The average time needed to fill all items in the questionnaire was about 15 min. Results of a pilot study were not included in the final analysis.

Data were entered and analyzed using SPSS version 20. Frequencies and percentages were reported for all knowledge, attitudes and practices related items and also for demographic characteristics.

The study was conducted among 100 registered nurses in four private hospitals Sargodha. 56% nurses were in 26 to 29 yrs of age.25% was male and 75% were female. Only 34% nurse have been investigated with HBV.56% don't know about complete 3

doses of HBV.10% have not done HBV.30% nurses were in 01 to 04 years of service, 45% were in 4 to 7 years of service and 20% were in 07 to 10 years of service (Table 1)

Table 1 Basic data regarding the study group of Nurses

Variables	n	Percentage
Age group		
23-26	10/100	10%
26-29	56/100	56%
29-32	31/100	31%
>32	02/100	02%
Sex		
Male	25/100	25%
Female	72/100	75%
Having complete vaccination of hepatitis B (3 Doses)		
Yes	40/100	40%
No	38/100	38%
Not sure	22/100	22%
Years of Service		
01-04	30/100	30%
04-07	45/100	45%
07-10	20/100	20%
>10	05/100	05%

Table 2 Knowledge regarding spread and risk factors of hepatitis B

Knowledge	Yes	NO	Don't know
Is vaccine available for hepatitis B	90/100(90%)	3/100(3%)	7/100(7%)
Spread of hepatitis B is by blood	95/100(95%)	0 (0)	5/100(5%)
Spread of hepatitis B is by sexual contact	98/100(98%)	1/100(1%)	1/100(1%)
Spread of hepatitis B is by food	8/100(8%)	87/100(87%)	5/100(5%)
Risk factor for hepatitis B is shared needle	95/100(95%)	2/100(2%)	3/100(3%)
Risk factor for hepatitis B is unprotected sexual contact	96/100(96%)	2/100(2%)	2/100(2%)
Risk factor for hepatitis B is living with hepatitis B patient	25/100(25%)	70/100(70%)	5/100(5%)

In the present study 90% of registered nurses had correct knowledge that vaccine for hepatitis B is available to control the spread of hepatitis B, 95% said that hepatitis B spreads by blood, 98% said that is spreads by sexual contact and only 8% said that hepatitis B spreads by food thus showing good knowledge

regarding the spread of hepatitis B. With respect to risk factors 95 % said that shared needle is a risk factor for hepatitis B, 96. % said that unprotected sexual contact is a risk factor and 70 % said that living with hepatitis b patient is not a risk factor for hepatitis B. (Table 2)

Table 3 Knowledge regarding diagnosis and treatment of hepatitis B

Knowledge	Yes	No	Don't know
Diagnosis of hepatitis B is by medical history	5/100(5%)	90/100(90%)	5/100(5%)
Diagnosis of hepatitis B is by hepatitis markers test	95/100(95%)	3/100(3%)	2/100(2%)
Diagnosis of hepatitis B is by ELISA test	2/100(2%)	97/100(97%)	1/100(1%)
Treatment for hepatitis B is antiviral therapy	1/100(1%)	98/100(98%)	1/100(1%)
Treatment for hepatitis B is immunotherapy	98/100(98%)	1/100(1%)	1/100(1%)
Treatment for hepatitis B is vaccination	99/100(99%)	0(0)	1/100(1%)

Assessing the knowledge about diagnosis and treatment for hepatitis 90% gave a correct answer that diagnosis cannot be made from medical history of hepatitis B, 95% of the nurses gave the correct answer that hepatitis B is diagnosed by hepatitis markers test and 97% said that diagnosis cannot be made from

Elisa test. Regarding treatment 98% nurses said that anti-viral cannot be used to treat hepatitis B infection, 98% said that immunotherapy can be used for treatment of hepatitis B and 99% said that vaccination is the choice for treatment of hepatitis B.

Table 4 Attitude regarding hepatitis B

Attitude	Yes	No	Don't know
Should hepatitis B patients be allowed to work	95/100(95%)	3/100(3%)	2/100(2%)
Should hepatitis B patients be isolated	2/100(2%)	97/100(97%)	1/100(1%)
Should patients affected with hepatitis C be vaccinated for hepatitis B	98/100(98%)	1/100(1%)	1/100(1%)
Should hepatitis B patients be allowed to have unprotected sex	2/100(2%)	98/100(98%)	-----
Should newborns born to affected mothers be vaccinated	97/100(97%)	2/100(2%)	1/100(1%)
Should hepatitis B patients be hospitalized for full duration of treatment	2/100(2%)	97/100(97%)	1/100(1%)
Should hepatitis B patients be allowed to exercise	99/100(99%)	1/100(1%)	-----

Regarding the attitude among the nurses towards hepatitis B, 95% believed that hepatitis B patients should be allowed to work and 97% said they should not be isolated and 98% of the nurses gave the correct answer that patients suffering from hepatitis C should be vaccinated 98% agreed that hepatitis B patients should not be allowed to have unprotected sexual contact 97% of the nurses

also agreed that newborns born to hepatitis B affected mothers should be vaccinated and 99% of the nurses agreed that there is no need for hospitalization of hepatitis B patients for the full duration of treatment and 99% said that they should be allowed to exercise. (Table4)

Table 5 Practice Regarding universal precautions of hepatitis B

Regarding the practice among the nures towards hepatitis B 40% nurses have been vaccinated with 03 doses of HBV vaccination, nurses answer was yes for the availability of gloves, 50% avoid

49% uses sterile gloves while injecting or drawing blood, 30%

Practice	Yes	No	Don't know
Vaccinated with Hepatitis B vaccine (3doses)	40/100(40%)	38/100(38%)	22/100(22%)
Use of sterile gloves while injecting or drawing blood	49/100(49%)	30/100(30%)	21/100(21%)
Measures taken after contact with Hepatitis B Case	30/100(30%)	60/100(60%)	10/100(10%)
Availability of sterile gloves	50/100(50%)	40/100(40%)	10/100(10%)
Avoid needle/sharps injury	50/100(50%)	40/100(40%)	10/100(10%)
Use of sterile equipments	70/100(70%)	20/100(20%)	10/100(10%)
Recap needles after use	45/100(45%)	45/100(45%)	10/100(10%)
Avoid casual sex or/and multiple sexual partners	90/100(90%)	2/100(2%)	8/10(10%)
Proper disposal of sharps, needles and blood	50/100(50%)	40/100(40%)	10/100(10%)

needle/sharp injury, 70% were used sterile equipments,45% recapped needles after use, 90% avoid casual sex and multiple sexual partners only 50% of nurses disposed of sharps, needles and blood

Discussion

This study assessed the level of knowledge, attitudes and practices of nurses regarding HBV infection in four different hospitals of Sargodha, Pakistan. With respect to the knowledge regarding spread of HBV infection, majority of nurses showed excellent knowledge with scores in almost all domains over 90% correct answers. However, major concern in this regard was the number of nurses not knowing the causes of HBV spread. As high as 7% of nurses did not know that vaccine against HBV infection is available and 5% of nurses did not know that it is spread by contaminated blood and blood products.

Regarding the diagnosis of HBV infection, we found mixed results with high level of accuracy in knowledge in some domains while poor level of knowledge in others. Ninety seven percent of nurses reported that HBV infection cannot be detected using ELISA. Similarly, 98% of the nurses reported that antiviral treatment of HBV infection is not available. This lack of

knowledge shows a flaw in the theoretical training system of nurses especially in the light that in terms of skills these nurses are very competent. What actually lack are the proper education and routine and refresher training courses for them to keep them updated not only with the standard safety protocols but also better

treatment and care of the patients. As knowledge directly affects the attitudes and hence practices, we noticed that 40% of the nurses reported to be vaccinated with complete course of HBV vaccine. A little less half of the nurses reported to use sterile gloves while performing vein puncture. This could most probably be the result of unavailability of gloves in the facilities as 50% reported the lack of sterile gloves. Furthermore, half of these nurses reported that they do not take special safety precautions to avoid needle stick injuries. Fifty percent of the nurses did not take proper measures to dispose sharps, needles and blood. This malpractice could be the result of high patient burden as seen from the fact that over 150 bedded hospitals have around 50 RNs.

Our findings show a little better level of knowledge among nurses regarding HBV infection and standard safety protocols compared to those reported from other countries of the region. In a study conducted among nurses in Iran, it was reported that more than half of the nurses had poor knowledge regarding HBV infection spread [9]. A study conducted in Nepal reported adequate level of knowledge among dialysis nurses regarding HBV infection spread and proper counseling to the patients [10]. Elamin S and co workers from Sudan reported serious gaps in knowledge regarding HBV infection spread and treatment and safety protocols while dealing with patients with HBV infection [11].

A similar study from Pakistan reported similar findings where the knowledge regarding spread of the infection was adequate in most domains however proper safety practices were lacking [12] . The results of the study show the dire need of updating the knowledge

and training of nurses in terms of standard safety communicable infection .protocols while dealing with patients not just with HBV infection but with other communicable infections

IJSER

References

1. Schweitzer, A., et al., *Estimations of worldwide prevalence of chronic hepatitis B virus infection: a systematic review of data published between 1965 and 2013*. The Lancet, 2015. **386**(10003): p. 1546-1555.
2. Ott, J., et al., *Global epidemiology of hepatitis B virus infection: new estimates of age-specific HBsAg seroprevalence and endemicity*. Vaccine, 2012. **30**(12): p. 2212-2219.
3. Qureshi, H., et al., *Prevalence of hepatitis B and C viral infections in Pakistan: findings of a national*

- survey appealing for effective prevention and control measures.* 2010.
4. Ali, S.A., et al., *Hepatitis B and hepatitis C in Pakistan: prevalence and risk factors.* International journal of infectious diseases, 2009. **13**(1): p. 9-19.
 5. Mueller, A., et al., *Prevalence of hepatitis B virus infection among health care workers in a tertiary hospital in Tanzania.* BMC infectious diseases, 2015. **15**(1): p. 386.
 6. Kateera, F., et al., *Hepatitis B and C seroprevalence among health care workers in a tertiary hospital in Rwanda.* Transactions of the Royal Society of Tropical Medicine and Hygiene, 2015. **109**(3): p. 203-208.
 7. Quddus, M., M. Jehan, and N.H. Ali, *HEPATITIS-B VACCINATION STATUS AND KNOWLEDGE, ATTITUDE AND PRACTICE OF HIGH RISK HEALTH CARE WORKER ABOUT BODY SUBSTANCE ISOLATION.* J Ayub Med Coll Abbottabad, 2015. **27**(3): p. 664-8.
 8. Organization, W.H., *Guidelines for the Prevention Care and Treatment of Persons with Chronic Hepatitis B Infection: Mar-15.* 2015: World Health Organization.
 9. Joukar, F., et al., *Nurses' Knowledge toward Hepatitis B and Hepatitis C in Guilan, Iran.* Open Nurs J, 2017. **11**: p. 34-42.
 10. Manandhar, D.N., et al., *Knowledge and Practice of Hemodialysis Amongst Dialysis Nurses.* JNMA J Nepal Med Assoc, 2017. **56**(207): p. 346-351.
 11. Elamin, S., et al., *Staff knowledge, adherence to infection control recommendations and seroconversion rates in hemodialysis centers in Khartoum.* Arab J Nephrol Transplant, 2011. **4**(1): p. 13-9.
 12. Kumar, A., A.K. Khuwaja, and A.M. Khuwaja, *Knowledge practice gaps about needle stick injuries among healthcare workers at tertiary care hospitals of Pakistan.* J Ayub Med Coll Abbottabad, 2012. **24**(3-4): p. 50-2.

IJSER