

Original Article

Hepatitis B and C related knowledge, attitudes and practices of health care workers in Azad Kashmir, Pakistan – A potentially disastrous area

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Abstract

Background: Azad Kashmir, Pakistan is a potentially dangerous area for earthquake disasters. Knowledge, attitude and practices (KAP) of health care workers (HCW's) in this region is essential to prevent the spread of Hepatitis B (HBV) and Hepatitis C (HCV) in case of disaster.

Methodology: This descriptive observational prospective study was carried out to assess the HCW's KAP regarding HBV and HCV in major hospitals of Muzaffarabad, Azad Kashmir, Pakistan. A validated study questionnaire was distributed among 320 HCW's of Combined Military Hospital (CMH) and Abbas Institute of Medical Sciences (AIMS), Muzaffarabad, to assess KAP of HCW's regarding HBV and HCV. All HCW's of CMH and AIMS, Muzaffarabad were included in the study. While HCW's of these hospitals with HBV and HCV infection were excluded from the study. Analysis was done in Microsoft Excel and Graphs were generated for KAP of health care workers.

Results: In the knowledge component, all health care workers know about parenteral transmission of Hepatitis B & C (100%) but their knowledge regarding non-parenteral transmission is incorrect (65.62% and 31.2%). Knowledge about prevention status after Hepatitis B vaccine is also incomplete (40.62%). Hepatitis B & C related attitude in health care workers is acceptable. Overall practice regarding Hepatitis B & C spread is acceptable but half of the health care workers have knowledge regarding the use of immunoglobulins after Hepatitis B & C infection and regarding continuity of work after accidental exposure to Hepatitis B or C (43.75% and 28.12%).

Conclusion: Our study found gaps in the KAP of HCW's. The shortcomings found in KAP of HCW's needs to be addressed through regular educational programs in order to prevent the spread of HBV and HCV in the studied.

Keywords

Hepatitis C, Hepatitis B, Immunoglobulins, Knowledge, Attitude



Introduction

Hepatitis B and C viruses are documented globally as a significant hazard for health care worker¹. The knowledge of HCW's about body substance isolation (BSI), standard operating procedures as per World Health Organization (WHO) guidelines is important in preventing the spread of HBV and HCV infections. Previous studies have demonstrated that KAP of HCW's about HBV and HCV infections are inadequate². Studies have shown a positive relationship between the prevention of any disease and KAP of that population³. Our study determines KAP of HCW's in Azad Kashmir, Pakistan that poses a potential risk of rampant spread of both hepatitis B and C in the event of a disaster, like an earthquake of 2005, killing millions of people.

In the event of a disaster, mass casualties and injured people were handled by local and international organizations with limited resources hence the level of their KAP, regarding different diseases is important to prevent the further spread of diseases like HBV and HCV infections⁴. Mass casualties in a disaster can serve as the source for the spread of HBV and HCV viruses⁴. Many studies were done to check the prevalence of HCV and HBV among different regions of Pakistan⁴. A survey conducted by Pakistan Medical and Research Council from July 2007 to May 2008 showed the prevalence of HBV and HCV was 2.5% to 5%, the HBV was found more common among the males as compared to females⁴. Another small study showed a significant variation of prevalence among different areas of the country⁵.

Province wise HBV prevalence is highest in Baluchistan (4.3 %) while Sind, Punjab and Khyber Pakhtoonkhwa showed a prevalence of 2.5%, 2.4% and 1.3% respectively⁴. HCV was highest in Punjab (6.7%) followed by Sindh (5.0%), Balochistan (1.5%) and Khyber Pakhtoonkhwa (1.1 %) ⁶. Naz et al., conducted

a study in Muzaffarabad which reported that subjects were mostly male and very few were females⁷. Similarly, a study carried out by Sarwar et al., in collaboration with district headquarter hospital, Kotli, Azad Kashmir reported that most of the subjects were found positive for both HBV and HCV⁸.

About 10% of the world's population is affected by HBV, making it a significant public health care problem⁹. As per WHO (world health organization) report of 2009, each year about 2 billion people are affected by HBV, more than 350 million suffer from chronic infection and more than a million die due to cirrhosis or HBV related hepatic cancer⁹⁻¹¹. Almost 150 to 200 million people are infected worldwide with HCV¹². Due to occupational exposure to HBV and HCV infected materials, especially infected blood, body fluids exposure or infected hollow needle stick injury, HCW's are at high risk of acquiring HBV or HCV infection^{9,11&13}.

HCV spread is related to blood transfusion, intravenous drug use, blood-to-blood contact and use of unsterilized medical equipment¹⁴. As per universal precautions, body fluids and blood of all patients are considered infectious for HBV and HCV³. Hepatitis B vaccine is effective in preventing HBV infection in HCW's and other individuals¹¹. Pre-exposure HBV vaccination is the most effective way of preventing HBV⁹. Health care workers should maintain the immunity level of >10mIU/mL for HBV and their respective hiring agencies should provide the opportunity to have hepatitis B vaccination.

Methodology

This descriptive observational prospective study was carried out from 1st November to 31st December 2016. The study was carried out at Combined Military Hospital (CMH) and Abbas Institute of Medical Sciences (AIMS), Muzaffarabad, Azad Kashmir,

Pakistan. All HCW's of CMH and AIMS, Muzaffarabad were included in the study. While HCW's of these hospitals with HBV and HCV infection were excluded from the study. Total 320 HCW's of CMH and AIMS Muzaffarabad were enrolled voluntarily in the study. A validated study questionnaire to assess KAP of HCW's regarding HBV and HCV was distributed among the study participants. Data analysis was done using Microsoft Excel

and Graphs were generated for knowledge, attitudes and practices of health care workers.

Results

Out of 320 HCW's 230 (71.87%) were nurses, 47 (14.68%) were doctors, 30 (9.37%) were technicians and 13 (4.06%) were others including pharmacists.

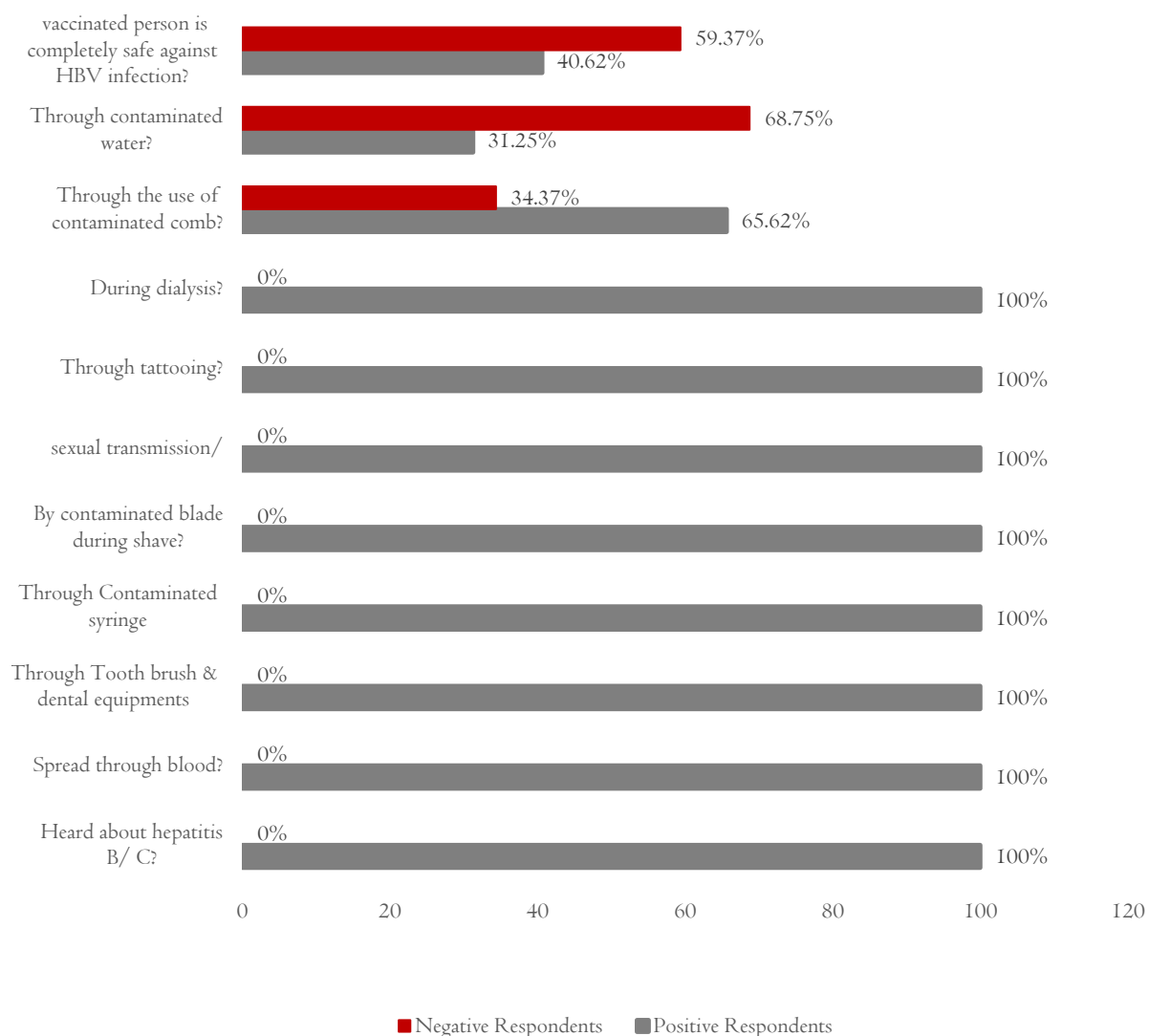


Figure I: Knowledge of health care workers regarding the spread of Hepatitis B and C in disaster

The knowledge of HCW's is appropriate for most of the questions but they lack knowledge regarding non-parenteral transmission of HBV and HCV. About 65.62% of HCW's believe that HBV and HCV can spread through the use of the contaminated comb. A significant proportion of HCW's responded that HBV and HCV spread through contaminated water. Among all 40.62%, HCW's believe that persons vaccinated for HBV are completely safe from getting HBV infection.

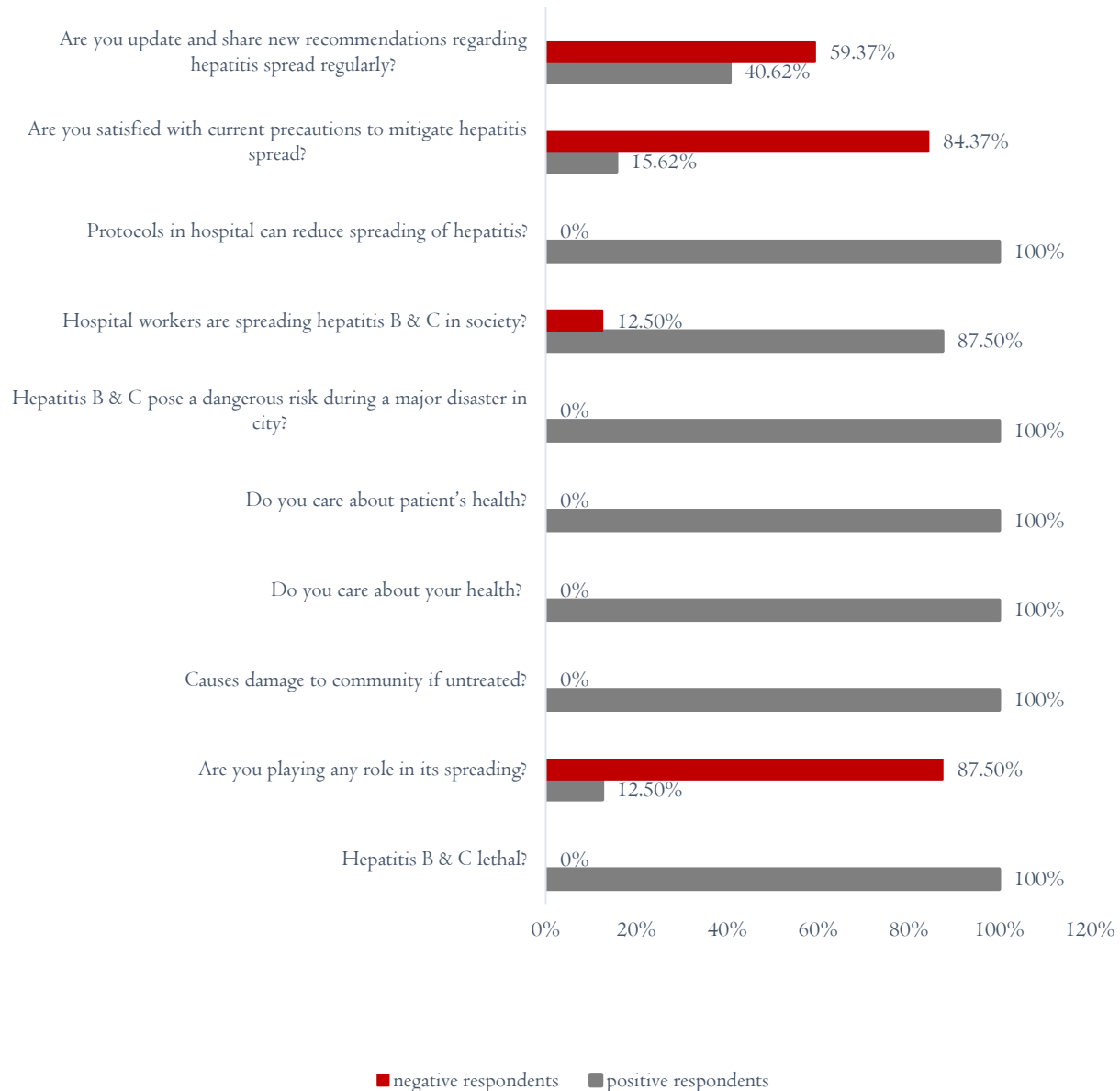


Figure 2: Attitude of healthcare workers regarding the spread of the Hepatitis C and B in disasters

Most of the HCW's are not satisfied with current precautions regarding HBV and HCV in their hospitals (84.37%), with 59.37% know that they are not updated about the new recommendations preventing the spread of HBV and HCV. Some of HCW's (12.50%) believe that they have no role in the spread of HBV and HCV spread (Figure 2).

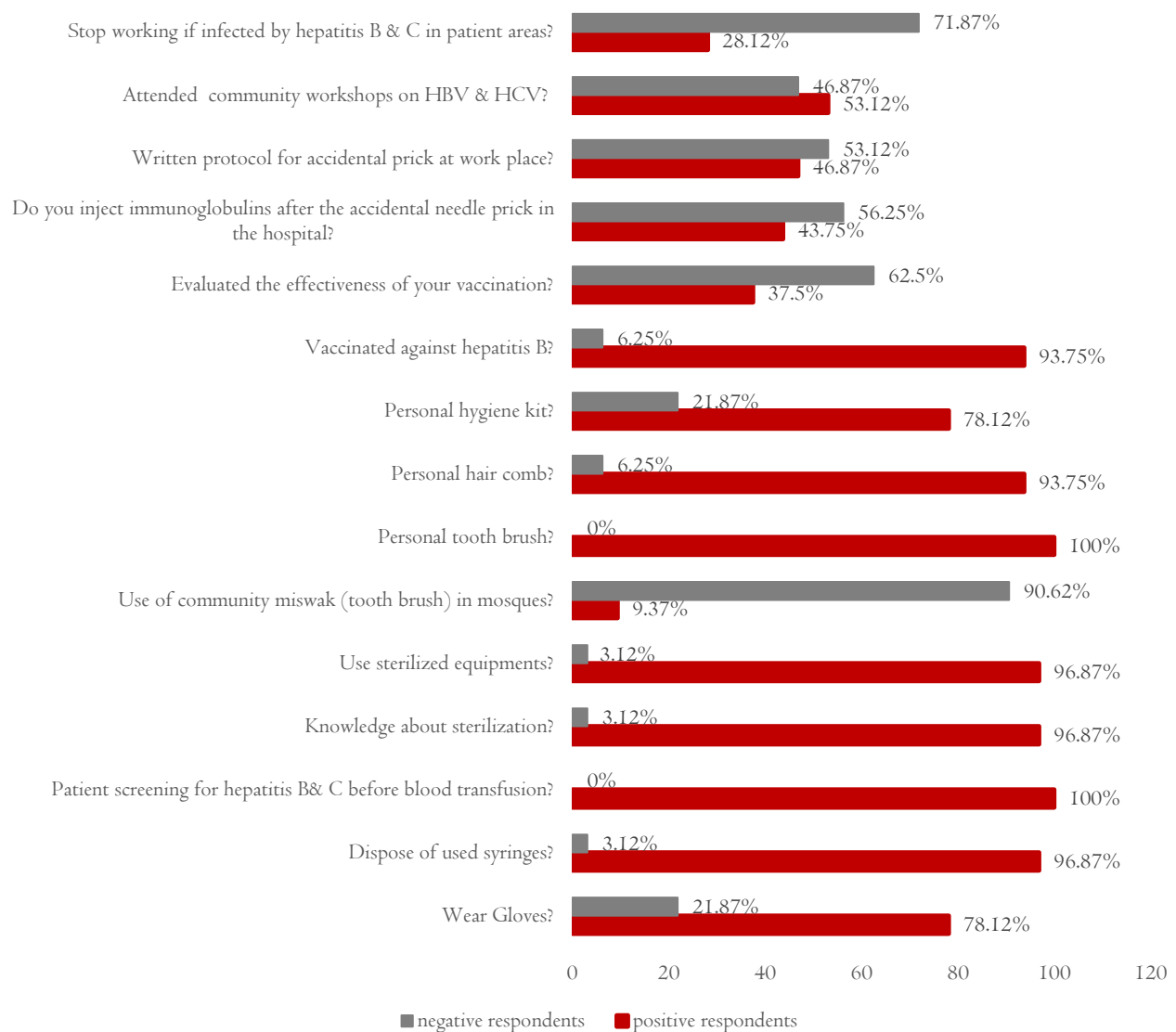


Figure 3: Practices of healthcare workers regarding the spread of Hepatitis B and C in disasters

Almost all (93.75%) HCW's are vaccinated for HBV. About 56.25% HCW's responded that they do not inject immunoglobulins after accidental prick from HBV positive donor patient. The possible reasons for low immunoglobulin use are its high cost or non-availability in one of the hospitals. About 53.12% of HCW's had no community workshops regarding prevention of HBV and HCV. Majority of the HCW's (71.87%) intended to continue to work even if they get infected with HBV or HCV infected patient.

Discussion

Several studies have shown that HCW's are at higher risk of having HBV infection as compared to the general population¹⁵. Vaccination and adequate knowledge of

HBV transmission routes help in reduction of HBV infection¹⁰.

A study done by Jayakiruthiga et al showed a majority of respondents, 91%, 92.5% and

89.5% respectively, know that Hepatitis B can be transmitted sexually, through blood and through contaminated instruments¹⁶ which is very near to the response to the same question i.e. 100% in our study (Figure 1). Our study showed that 34.37% of HCW's believe that HBV and HBC spread through contaminated water (Figure 1) which is almost similar (37.4%) to the results of a study done by Noman ul haq et al., regarding the same question for HBV transmission¹⁷.

A study similar to our study was conducted by Gunson et al in 2003, reported that infection control and prevention of HCW's depends upon the long term maintenance of immunity of HCW's¹⁸. It protects HCW's and prevents the spread of disease from affected HCW to the patient¹⁸. In Karachi, most of the tertiary care hospitals did not provide training to their HCW's about knowledge of safe injection practice, universal precautions (UP) and body fluid isolation (BSI). However, we cannot generalize our results in comparison to this study as there exists a vast difference in the sample size.

Our study showed, that almost all of the HCW's were immunized for Hepatitis B (Figure 3). Nasir et al., noted that most doctors, 33% paramedics, 37% of nurses were not aware of the fact that they are among the high-risk group¹⁹. Participant of our study 45% were also considered unaware (Figure 3). In Karachi 86% of the HCW's were completely immunized, out of those not immunized, 9% found vaccine too expensive and 15% were expected for free vaccine provided by the respective healthcare employer. Other Studies were established at Lahore and Athens reported immunized HCW's 49% and 57% respectively^{20&21}. These studies are comparable with the present study in the sense of knowledge of vaccination. But the

percentile of knowledge about vaccination in our study is different (Figure 3). Our study showed that most of the HCW's (93.75%) are vaccinated for Hepatitis B. The present study is much more variable as compared to these studies because of hepatitis C knowledge and practices of HCW's as well as knowledge and practices of hepatitis B. It is to be noted that 75% of HCW's did not follow safe injection practices (Figure 3). Safe practices were not followed in body substance isolation procedures (68%) (Figure 1). About 90% HCW's not followed the appropriate aseptic technique and 81% were using improper sterilization techniques (Figure 2).

Large group of the HCW's did not have any sense of protective measures while handling the infected patients¹. In comparison, the present study stated that 100% of individuals know well about the use of safe new syringes and 310(96.87%) use sterilization processes for their instruments (Figure 1). This percentile is bigger as compared to the study of Mashaal et al., 2015¹. It might be due to the difference in population size and education of the targeted population. A study was conducted by Zafar et al., 2008 in a tertiary care hospital of Karachi Pakistan and he concluded that out of 80 participants, 36 (45%) reported having a needle stick injury at least once during their clinical practice and the frequency of needle stick injury (NSI) was significantly higher among doctors (72%) as compared to nurses (29%) (OR = 6.3; p<0.001)²². The most common reason identified for NSI among both doctors and nurses was stress/being overburdened (41%) followed by carelessness (38%)²². The majority of the injuries occurred while injecting or drawing blood samples (53%) followed by surgery and suturing (17%) and recapping syringes (11%). While the present study focused on

the knowledge attitude and practices of health care workers. The population size of the present study is higher than the study of Zaffer et al 2008²². These two studies are also different from each other because Zaffer et al 2008 focused on the injuries of health care workers in different ways during their practices²². Our study showed some gaps in KAP of HCW's of AJK about HBV and HCV infections as shown by other studies of different demographic areas². This gap in KAP needs to be addressed with educational courses of HCW's for the prevention of HBV and HCV infection as there is a direct relationship between the prevention of disease and KAP of that population³.

Conclusion

Our study found gaps in knowledge, attitude and practices of HCW's. Health care workers had knowledge about parenteral transmission of Hepatitis B & C but their knowledge regarding enteral transmission was incorrect. Knowledge about prevention status after the Hepatitis B vaccine was also incomplete. Hepatitis B & C related attitude in health care workers was appropriate. In practice component, half of the health care workers didn't have knowledge regarding the use of immunoglobulin after Hepatitis B & C infection and regarding continuity of work after accidental exposure to Hepatitis B or C. The shortcomings found in KAP of HCW's needs to be addressed through regular educational programs in order to prevent the spread of HBV and HCV in the studied region.

Conflicts of Interest

None.

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References

1. Mashaal Quddus, Musarrat Jehan, Nafisa Hassan Ali. Hepatitis–B Vaccination Status and Knowledge, Attitude and Practice of High Risk Health Care Worker Body Substance Isolation, J Ayub Med Coll Abbottabad 2015; 27(3).
2. Habib F, Khan DK, Shan EA, Bhatti F, Zafar A. Knowledge and beliefs among health care workers regarding hepatitis B infection and needle stick injuries at a tertiary care hospital, Karachi. J Coll Physicians Surg Pak. 2011; 21(5):317–318.
3. Mes n YM, Kibret KT. Assessment of knowledge and practice towards hepatitis B among medical and health science students in Haramaya University, Ethiopia. PLoS One. 2013; 8(11):1–6.
4. H Qureshi, KM Bile, R Jooma, SE Alam and HUR Afridi. Prevalence of Hepatitis B and C viral infections in Pakistan: findings of a national survey appealing for effective prevention and control measures. East. Mediterr. Health J. 2010(16):S15-23.
5. Ali, S. A., R. M. Donahue, H. Qureshi and S.H. Vermund. Hepatitis B and hepatitis C in Pakistan: Prevalence and risk factors. Int. J. Infect. Dis. 2009, 13: 9-19.
6. Choudhary, I. A., S. A. Khan and Samiullah. Should we do Hepatitis-B and C screening on each patient before surgery. Pak J Med Sci. 2005, 21: 278–280.
7. Naz, S., M. Ahmad and H. Asghar. Prevalence of Hepatitis 'B' Among Combined Military Hospital (CMH) Muzaffarabad., Int. J. Agric. Biol. 2002; 4:227-230.

8. Sarwar, J., W. Ahmad, M. Saleem, F. Jamshed, N. Gul and M. Idrees. Frequency of hepatitis b in asymptomatic patients of District Headquarter Hospital Kotli, Azad Kashmir. *J. Ayub Med. Coll. Abbottabad*. 2010; 22(4): 139-142.
9. Abeje G, Azage M. Hepatitis B vaccine knowledge and vaccination status among health care workers of Bahir Dar City Administration, Northwest Ethiopia: a cross sectional study. *BMC Infect Dis*. 2015; 15:30.
10. Adekanle O, Ndububa DA, Olowookere SA, Ijarotimi O, Ijadunola KT. Knowledge of Hepatitis B virus infection, immunization with hepatitis B vaccine, risk perception, and challenges to control hepatitis among hospital workers in a Nigerian Tertiary Hospital. *Hep Res Treat*. 2015; 1-6.
11. Hamissi J, Tabari ZA, Naja K, Hamissi H, Hamissi Z. Knowledge, attitudes and practice of hepatitis B vaccination among Iranian dentists. *Int J Collab Res Intern Med Public Health*. 2014; 6: 199-206.
12. Mohd, H. K., J. Groeger, A. D. Flaxman and S. T. Wiersma. Global epidemiology of hepatitis C virus infection: new estimates of age-specific antibody to HCV seroprevalence. *Hepatology (Baltimore, Md.)*. 2013, 57(4): 1333-1342.
13. Hassan M, Awosan KJ, Nasir S, Tunau K, Burodo A, Yakubu A, Oche MO. Knowledge, risk perception and hepatitis B vaccination status of healthcare workers in Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria. *J of Public Health Epidemiol*. 2016; 8(4):53-59.
14. Coppola N, Pascalis S, Onorato L, Calo F, Sagnelli C and Sagnelli E. Hepatitis B virus and Hepatitis C virus infection in healthcare workers. *World J Hepatol* 2016; 8(5): 273-281.
15. Geberemichael A, Gelaw A, Moges F, Dagnew M. Seroprevalence of hepatitis B virus infections among health care workers at the Bulle Hora Woreda Governmental Health Institutions Southern Oromia, Ethiopia. *J Environ Occup Sci*. 2013; 2(1):9-14.
16. S. Jayakiruthiga, R. Rajkamal, S. Gopalakrishnan R. Umadevi. Knowledge, attitude and practices concerning hepatitis B infection, among medical students in urban area of Chennai, Tamil Nadu. *Int J Community Med Public Health*. 2018; 5(8):3635-3638.
17. Ul Haq N, Hassali MA, Shafie AA, Saleem F, Farooqui M, Haseeb A, Aljadhey H. A cross-sectional assessment of knowledge, attitude and practice among Hepatitis-B patient in Quetta, Pakistan. *BMC Public Health*. 2013, 13:448.
18. Gunson RN, Shouval D, Roggendorf M, Zaaïjer H, Nicholas H, Holzmann H, de Schryver A, Reynders D, Connell J, Gerlich WH, Marinho RT, Tsantoulas D, Rigopoulou E, Rosenheim M, Valla D, Puro V, Struwe J, Tedder R, Aitken C, Alter M, Schalm SW, Carman WF; European Consensus Group. Hepatitis B virus (HBV) and hepatitis C virus (HCV) infections in health care workers (HCWs): guidelines for prevention of transmission of HBV and HCV from HCW to patients. *J Clin Virol*. 2003; 27(3):213-230.
19. Nasir K, Khan KA, Kadri WM, Salim S, Tufail K, Sheikh HZ, Ali SA. Hepatitis B vaccination among health care workers and students of a medical college. *J Pak Med Assoc*. 2000; 50(7):239-243.
20. Ali NS, Jamal K, Qureshi R. Hepatitis B Vaccination Status and Identification of Risk Factors for Hepatitis B in health care workers. *J Coll. Physicians Surg. Pak* 2005; 15(5):257-260.
21. Younis BB, Khan GM, Akhter P, Chaudary MA. Vaccination against hepatitis B Among doctors at teaching hospital in Lahore. *Pak J Med Sci*. 2001; 17:229-232.
22. Zafar, S., N. Aslam, N. Nasir, R. Meraj, V. Mehraj. Knowledge, attitudes and practices of health care workers regarding needle stick injuries at a tertiary care hospital in Pakistan. *J Pak Med Assoc*. 2008, 58(2): 57-60.