

Standard Infection Control Practices among Peripheral Health Care Workers: A Knowledge, Attitude and Practice Study from a Rural Haryana

Sandeep Jain¹, RB Jain², Rajesh Garg³

Abstract

Background: Globally, around 2.5% of HIV and 40% of HBV among Health Care Workers (HCWs) are attributed to occupational exposure with an overall incidence of occupational exposure to blood/body fluids among HCW as 32.3%. There exists a gap between the knowledge and practice of standard infection control practices among HCW. Failure to follow these standard protocols leads to loss of precious work hours of this skilled work force.

Methods: To know the knowledge, attitude and practice regarding standard infection control protocols, a community based, cross-sectional, analytical, non-interventional study was planned among health care workers at a Rural Community Health Centre (CHC), Dighal of district Jhajjar (Haryana). A total of 50 HCWs were included in the study. The study was conducted during the months of July–August, 2016.

Results: About 56% of HCWs were having the knowledge about the correct steps of hand washing but only 20% were actually practicing hand washing before administering injections. Only 28% of participants were correctly using hub-cutter and needle destroyers after the injection practices. It was observed that 42% of subjects were still trying to re-cap needles after the injections. 60% of subjects felt that using standard precautions was cumbersome. 74% of the subjects felt that using standard precautions was expensive. 54% of study subjects felt that it was difficult to follow stand precautions in government institutions due to logistics issues. Only 28% of the participants had received complete vaccination against Hepatitis B.

Conclusion: There exists a huge gap between the knowledge and practice of standard infection control protocols. Among most of the HCWs, the attitude was not positive towards using standard precautions despite having knowledge. Lack of initiative from the higher up officials, poor training, poor monitoring further complex the issue. Regular monitoring and supervision, capacity building of HCWs along with regular logistic supply are recommended.

Keywords: Health Care Workers, Infection control, HIV, HBV, Hand washing, Post exposure prophylaxis

¹Junior Resident, ²Professor, Department of Community Medicine, Pt. B.D. Sharma PGIMS, Rohtak.

³Associate Professor, Department of Community Medicine. M.M. Medical College, Kumarhatti, Solan (HP).

Correspondence: Dr. Sandeep Jain, Department of Community Medicine, Pt. B.D. Sharma PGIMS, Rohtak.

E-mail Id: doctor.jain.007@gmail.com

Orcid Id: <http://orcid.org/0000-0001-5891-8699>

How to cite this article: Jain S, Jain RB, Garg R. Standard Infection Control Practices among Peripheral Health Care Workers: A Knowledge, Attitude and Practice Study from a Rural Haryana. *Int J Preven Curat Comm Med* 2017; 3(1&2): 58-63.

ISSN: 2454-325X

Introduction

Standard precautions are a set of infection control practices used to prevent transmission of diseases that can be acquired by contact with blood, body fluids, non-intact skin (including rashes), and mucous membranes.¹ These measures are to be used when providing care to all individuals, whether or not they appear infectious or symptomatic.²

Globally, around 2.5% of HIV and 40% of HBV among Health Care Workers (HCWs) are attributed to occupational exposure with an overall incidence of occupational exposure to blood/body fluids among HCW as 32.3%. The average risk for HIV infection after a needle stick or cut exposure to HIV-infected blood is 0.3% (about 1 in 300).³ Estimated risk for infection after a needle stick or cut exposure to HCV-infected blood is approximately 1.8%. Health Care Workers who have received hepatitis B vaccine and have developed immunity against HBV are almost at no risk for infection. For an unvaccinated person, the risk from a single needle stick or a cut exposure to HBV-infected blood ranges from 6%–30% and depends on the hepatitis B e- antigen (HBeAg) status of the source individual.⁴ In view of non-availability of any vaccine for HIV and Hepatitis C, prevention of these two by adequate precaution is most cost effective.

Health workers are involved in different kinds of practices, such as immunization of children and pregnant women, care of pregnant women during their ante natal period (ANC) and labor, care of women during their puerperium and providing other injections during general duty practices at sub-centers and other healthcare facilities. Status of infectivity of most of the health care recipients is not known.

Many nosocomial infections are caused by pathogens transmitted from one patient to another by way of Health Care Workers (HCWs) who have not washed their hands between patients or HCWs who do not practice control measures such as use of hand disinfection, glove use etc.⁵ Despite high risk of exposure, standard precautions are not practiced adequately by the Health Care Workers. Although hand washing itself is sufficient in reducing the incidence of nosocomial infections, compliance of HCWs with the recommended hand washing practices is low.⁶

The pictures at urban and rural areas are quite different. Due to comparative more availability of logistics at urban hospitals, more training avenues, more supervisory eyes, demand from the patients and

their relatives for more hygienic conditions, the attitude and practice about infection control precautions are more favorable as compared to rural settings. So keeping in view the above facts and figures, a study was planned at a rural health care set up in Haryana to understand the level of knowledge, attitudes and practices regarding standard precautions among health workers so as to know the ground realities.

Material and Methods

Study Design: A Community based cross-sectional, analytical, non-interventional study.

Study Area: The study was conducted at a Rural Community Health Centre (CHC), Dighal of district Jhajjar (Haryana).

Study Population: The study was conducted among all the Health Care Workers of the study area. These included Multi Purpose Health Worker (MPHW)- Male & female and staff nurses posted at CHC or sub-centers under the CHC. These workers were responsible for the different health care needs of the community under CHC, Dighal.

Study Size and Sample: A total of 50 HCWs were included in the study.

Study Period: The study was conducted during the month of July–August, 2016.

Study Tools and Techniques: A pre-designed, pre-tested, anonymous self-administered, semi-structured questionnaire was given to each participant. Prior informed consent was obtained from the participants. The questionnaire comprised of questions to assess the knowledge of participants regarding standard infection control precautions, their current practices and what they think about different standard precautions. The participants were explained about the purpose of study, in vernacular language also. They were told that the data collected and results obtained thereafter will be kept confidential and identity of the participants will not be revealed to anyone in any case. It was explained to them that the study results will only be used for academic and research purpose. The participants were free for not to join the study if they were not interested and they were given the option to opt out of the study in between, at any time, without giving any reason to anybody.

Statistical Analysis: Collected data were entered in Microsoft Excel and were analyzed using software

Statistical Package for Social Sciences (SPSS) version 16.0. Descriptive statistical measures such as percentage, mean were applied. Inferential statistical test (Chi-square test) will be applied to identify important relationships between variables and determine the level of significance. A p-value of < 0.05 was considered statistically significant.

Results

A total of 50 HCWs, who gave consent for the study, were included in the present study. Among them, 80% were female and 20% were male. Most of Health Care Workers enrolled in this study were Multi-Purpose Health Workers (MPHW), with 62% MPHWF and 20% MPHWM while only 18% were staff nurses.

Table 1. Knowledge and practice regarding correct steps of hand washing among HCWs (n=50)

Knowledge regarding correct steps of hand washing	
Yes	No
28 (56%)	22 (44%)
Actually Practicing	
Yes	No
10 (20%)	40 (80%)

Table 1 shows that only 56% of HCWs knew the correct steps of hand washing and only 20% were actually practicing hand washing before administrating injections.

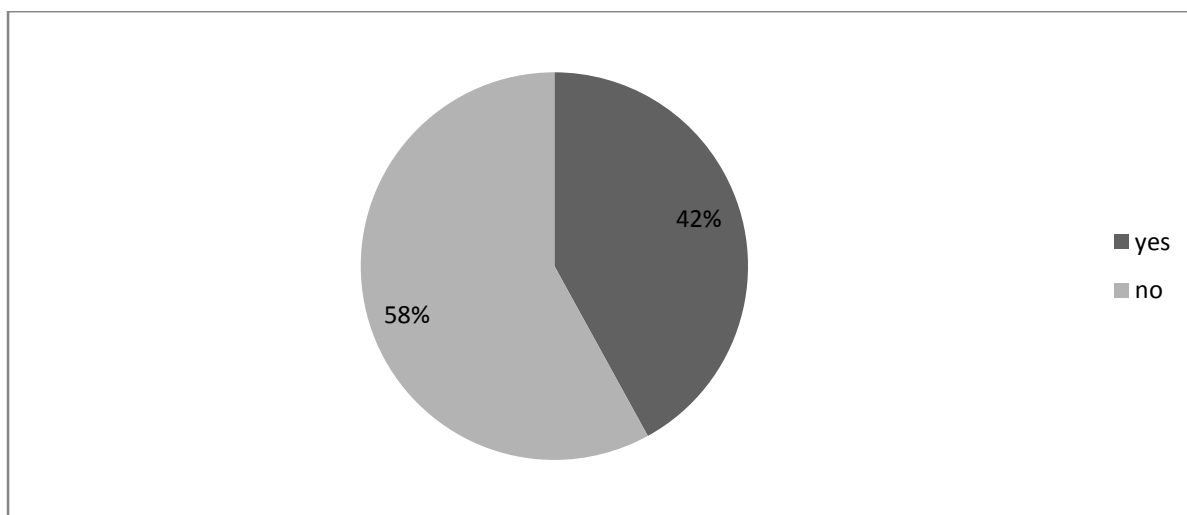


Figure 1. knowledge regarding strongest infection transmitted via needle stick injuries

Only 42% of the subjects were aware that the strongest infection (i.e. which carries the highest risk of transmission) transmitted through needle stick injuries was Hepatitis B (Figure 1).

60% of subjects felt that using standard precautions was cumbersome. 74% of the subjects felt that using standard precautions was expensive. 54% of study subjects felt that it was difficult to follow stand

precautions in government institutions due to shortage of supply of gloves, soaps etc on the most of occasions.

When asked about the HBV vaccination status, only 28% of the subjects had received complete vaccination against Hepatitis B (Figure 2).

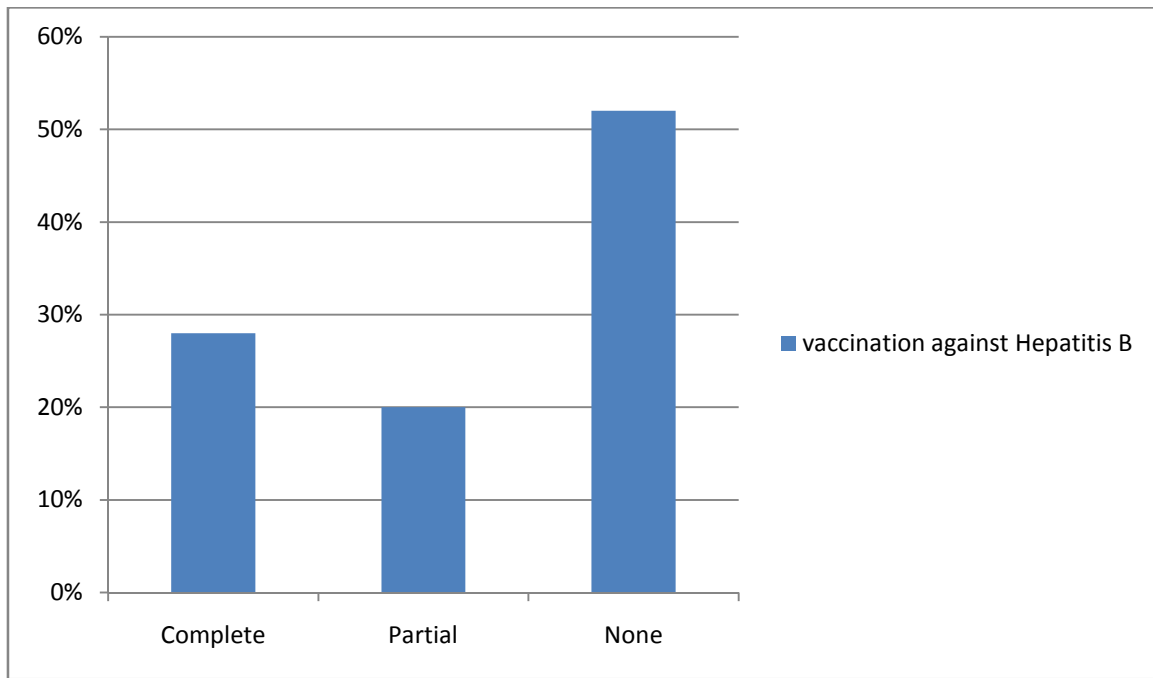


Figure 2.Vaccination against Hepatitis B

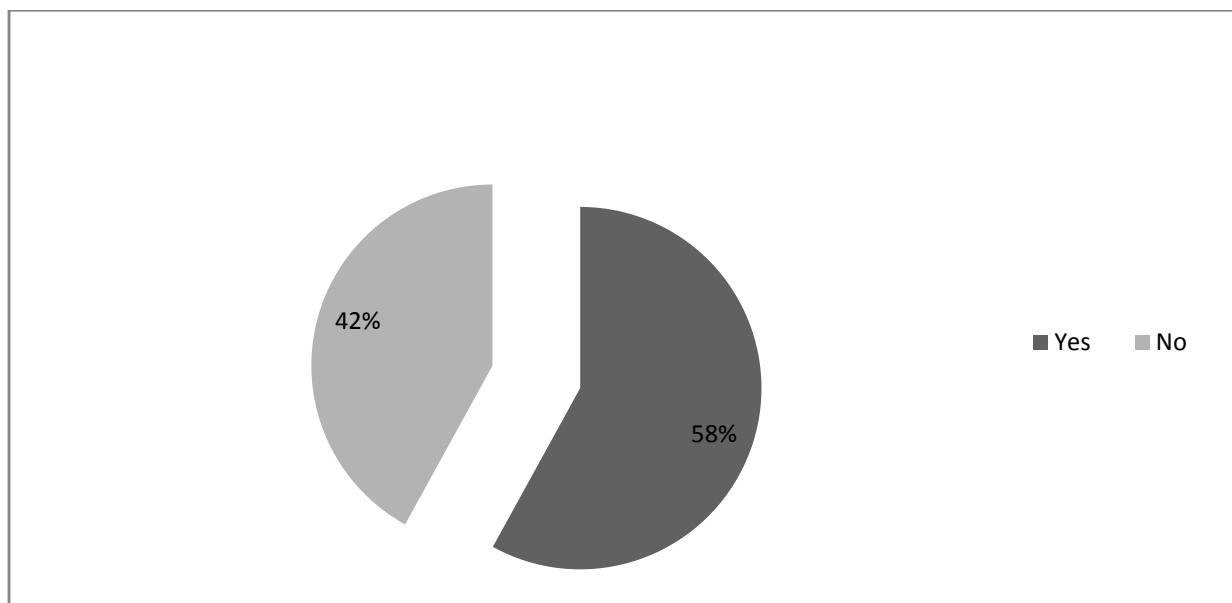


Figure 3.Awareness regarding Post Exposure Prophylaxis

Figure 3 depicts that 58% of the respondents were aware about the Post Exposure Prophylaxis (PEP) and name of the diseases it helps in protection from. But they were not sure about the concerned person or authority they should contact for PEP in case of accidental needle stick injury.

Only 28% of participants were correctly using hub-cutter and needle destroyers after the injection practices. It was observed that 42% of subjects were still trying to re-cap needles after the injections. As far as use of gloves while giving injections, none of the

participants affirmed the use of gloves, except in case the recipient is known HIV or HBV case. All the respondents who were involved in conducting deliveries were using sterile gloves while conducting delivery. 40% of the subjects were not having adequate knowledge to follow correct steps in wearing sterile gloves. When asked about the use of gloves in examining patients, none of the subjects used gloves unless handling secretions or blood. None of the workers practiced washing hands in between examining two patients unless hands got soiled.

Discussion

The HCWs enrolled under present study were involved in different types of patient care such as patient examination, wound dressings, injections, conducting deliveries, post natal care, vaccination of children and pregnant ladies etc. Hence they were exposed to variety of clients from different age groups and different back grounds. As it is very difficult to assess the HIV, HBV or HCV status of all the patients and their status are usually not known, the HCWs are always at risk of acquiring these diseases while providing care to these patients.

In present study 60% of subjects felt that using standard precautions was cumbersome. 74% of the subjects felt that using standard precautions was expensive. 54% of study subjects felt that it was difficult to follow stand precautions in government institutions due to shortage of supply of gloves, soaps etc on the most of occasions. This indicates that rural health set ups are ignored by the higher health officials.

In a study conducted by Suchitra JB et al only, 2% nurses reported it as cumbersome and 14% expensive while among ward aides, universal precautions was found cumbersome by 26%. and expensive by 74%.⁷ Such a big difference could be due to different settings of the two studies. While our study was conducted in periphery health care institutes in a rural setting, this studies was conducted at a tertiary care hospital.

In present study we observed that 42% were trying to recap needles after the use. In a study conducted by Kakizaki et al, it was observed that almost 3 quarters of respondents reported not to recap needles after use.⁸ Sharma et al also reported that most of the injuries (34.0%) occurred during recapping.⁹ In another study by Goel et al, almost half (47.7%) of the percutaneous injuries occurred during blood sample collection and during IV cannulation (31.1%). Recapping and detachment of the needle after use were responsible for 72 injuries (15.1%) only.¹⁰ Another study reported that 35.88% of the respondents recap needles sometimes, 28.83% never recap, 19.41% recap most of the time and 15.88% recap all of the time.¹¹

In the present study, about 58% of the respondents were aware about the Post Exposure Prophylaxis (PEP) but in a study by Muralidhar et al, only 40 % of the HCWs knew about the availability of PEP services

in the hospital and 75 % of exposed nursing students did not seek PEP.¹²

Conclusion and Recommendations

In the present study, it was observed that overall knowledge regarding standard precautions was low. The attitude was not positive towards using standard precautions among most of the workers despite having knowledge. The practice was further lower and was also incorrect among most of the workers. It is recommended that the gaps should be fulfilled by repeated refresher trainings of HCWs regarding standard precautions. Monitoring and supervision of the practices of HCWs and on-site trainings by trained medical officers is also recommended. There is a need to strengthen the logistics supply chain to rural health set ups.

Conflict of Interest: None

Reference

- Centers for Diseases Control and Prevention. Recommendations for prevention of HIV transmission in health-care settings; Morbidity and mortality weekly report supplements 1987; 36 (SU02).
- Bureau of Communicable Diseases, Wisconsin Division of Public Health Infection Control and Prevention-Standard Precautions. Available from: <https://www.dhs.wisconsin.gov/ic/precautions.htm> (as accessed on 6th Jan, 2017).
- Heptonstall J, Porter K, Gill ON. Occupational transmission of HIV: Summary of published reports-December 1995. London: Public Health Laboratory Service, Communicable Disease Surveillance Centre, 1995. (as accessed on 26th Nov, 2016).
- Centers for Diseases Control and Prevention. Infection Control. Frequently Asked Questions-Blood borne Pathogens - Occupational Exposure. Available from: https://www.cdc.gov/oralhealth/infectioncontrol/faq/bloodborne_exposures.htm (as accessed on 6th Jan, 2017).
- Ocran I, Nii D, Tagoe A. Knowledge and attitude of healthcare workers and patients on healthcare associated infections in a regional hospital in Ghana. Asian Pacific Journal of Tropical Disease. 2014; 4 (2): 135.
- Sodhi K, Shrivastava A, Arya M, Kumar M. Knowledge of infection control practices among intensive care nurses in a tertiary care hospital. Journal of Infection and Public Health. 2013; 6 (4): 269.

7. Suchitra JB, Lakshmi DN. Impact of education on knowledge, attitudes and practices among various categories of health care workers on nosocomial infections. *Indian J Med Microbiol* 2007; 25: 181.
8. Kakizaki et al. Needle stick and sharps injuries among health care workers at public tertiary hospitals in an urban community in Mongolia. *BMC Research Notes* 2011; 4: 184.
9. Sharma R, Rasania S K, Verma A, Singh S. Study of prevalence and response to needle stick injuries among health care workers in a tertiary care hospital in Delhi, India. *Indian J Community Med* 2010; 35: 74-7.
10. Goel V, Kumar D, Lingaiah R, Singh S. Occurrence of needles tick and injuries among health-care workers of a tertiary care teaching hospital in North India. *J Lab Physicians* 2017; 9: 20-5.
11. Beker J, Bamlie T. Needle stick and sharp injuries and associated factors among nurses working In Jimma University Specialized Hospital, South West Ethiopia. *J Nurs Care* 2015; 4: 291.
12. Muralidhar S, Singh PK, Jain RK, Malhotra M, Bala M. Needle stick injuries among health care workers in a tertiary care hospital of India. *Indian J Med Res* March 2010; 131; 405-410.

Date of Submission: 07th Mar. 2017

Date of Acceptance: 07th Mar. 2017