

Knowledge, attitude and practices of janitors for blood born infections in hospital setup at CMH Rawalpindi Cantt

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Abstract

Background: The waste generated while providing services to the patients, has potential to affect health of human beings and especially the health of health care workers and janitors who directly come across to them.

Objective: To assess knowledge, attitude and practices of janitors regarding hospital waste.

Methodology: Study design: Cross sectional study. Study Subjects: The study was carried out among Janitors. Sample size:50 janitors. Sampling Technique: Non Probability Purposive Sampling. Place & Duration of study:1st January to 30th June 2017. Outpatient Department of Combined Military Hospital and Military Hospital Rawalpindi Cant. A structured questionnaire was constructed, which contained variables like age, gender, knowledge about segregation of solid waste, use of color coding box, use personal protection equipment and training regarding collection and disposal of waste. Data was entered and analyzed using SPSS version 20.0.

Results: Most of the respondents 19(38%) were of age group 26-35 years, 18-25 years were 16 (32%), 36-45 years were 12(25%), above 46 years of age were 3(5%). The gender distribution showed males were 39(78%). In this study, 84% of the janitors had knowledge of blood borne infectious diseases which can be transmitted through needle stick injury or broken glass specimen tubes injury however 16% had no knowledge about blood borne infectious diseases.

Conclusion: In this study, study subjects showed that adequate training for janitors and health staff should be done to save them from blood borne infectious diseases and promoting their health.

Key Words: Janitors, Hospital Waste, Blood Borne Infection, Health Facilities

Introduction

Injection therapy is widely used all over the world.¹ After injection, the syringes are unsafely disposed. These unsafe syringes later on become a life threatening risk for the spread of fatal infectious diseases like hepatitis B and C, along with HIV/AIDS.^{2,3} There are about 315 000 cases of hepatitis C, the hepatitis B infections amount to 1.7 million cases and HIV infections, 33 800 new cases.^{1,3} It is estimated that every year, all over the world about 16 billion injections are used.¹ The rate of developing these infectious diseases like HIV, HCV and HBV is not the same. The susceptibility greatly varies.⁴ It is due to immunity to these diseases differs greatly, depending on the individual immunity status that whether it is immune or non-immune. If the needles are Hb(e)Ag-positive, then more than 30% of the patient may develop the disease due to needle pricks of these contaminated syringes, while average risk of spread of HIV will be 0.3% and 1.8% risk will be for getting HCV infection.⁵ This risk is higher when HIV infection in the patient

will be at terminal stage. The risk for other infections is still higher if the apparent blood is present on the contaminated needle. The risk is higher if this contaminated syringe is inserted directly into vein or artery.² The health care waste is comprising on different types of waste material like heavy metals mercury, radioactive substances, and the genotoxic material from the oncology department.⁶ All these types are bio-hazardous to health care workers. This waste and all other types of bio-hazardous waste has been labelled by World Health Organization (WHO) as special waste. On this basis some categories of this special waste is more dangerous as compared to other waste generated from other departments. Among these the most dangerous and harmful waste are those which are genotoxic, pharmaceutical, pathological and sharps wastes.³

The health care workers who are working in health setups they are exposed to a large number of pathogens. In a study, it was found that they were exposed to about 26 types of viruses as compare to normal population.⁴ All these pathogens get entry into their bodies either through percutaneous pricks

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or through mucosal surfaces as during working in the hospitals, accidentally the blood or the secretions of the diseased patients are spilled over into the conjunctivae of their eyes or abraded skin and mucous membrane.⁵ The proportion to these exposure is different in accordance to the prevalence of the diseases and prevailing infectious organism in the society. It has been found that the most common pathogen infectivity is of HBV that is 6 to 30%, the infectivity of HCV is after that and it is 1.8% to 3%. The infectivity of HIV is approximately 0.3%.⁴

For the prevention of the spread of these infections in health care setting and for formulating a policy and making planning, the potential risk have to be evaluated.⁶⁻⁹ If the hospital waste is disposed according to guidelines and protocol, it can diminish the risk of infection transmission.¹¹⁻¹³ This may provide the worker a safe and healthy environment safeguarding his health and saving him from these fatal infectious diseases. On the other way if the hospital waste is not disposed in a safe manner, it can increase the risk manifold among the workers.^{5,14} This study had been conducted to assess the knowledge, attitude and practices of janitors for blood born infections in tertiary care hospital setup.

Methodology

The study was carried out in the Outpatient Department of Combined Military Hospital and Military Hospital Rawalpindi Cantt. This was a cross sectional study, questionnaire-based survey. The duration of study was 06 months from 1st January to 30th June 2017 and sample size was 50. Non probability purposive sampling was used. Approval from hospital ethical committee was taken. All Janitorial staff who has given the verbal informed consent were taken after explaining the purpose of study and use of data for research and publication. Sample size were 50 enrolled as per inclusion criteria by convenient sampling. Patient's knowledge, attitude and practices were noted by taking brief history. Date was analyzed by using SPSS version 20.

Results

In this study, 38% of the respondents were of age group 26-35 years, age group 18-25 years were 32%, age group 36-45 years were 25% and above 46 years of age were 5%. The gender distribution

showed males (78%). Regarding having knowledge that blood borne infectious diseases can be transmitted through needle stick or broken glass specimen tubes injury in hospitals; 84% of the janitors had knowledge of blood borne infectious diseases, which can be transmitted through needle stick injury or broken glass specimen tubes injury, however 16% had no knowledge about blood borne infectious diseases.

Out of 84% respondents having the knowledge of blood borne infectious diseases, 87% had also knowledge about the name of one disease (only Hepatitis) which can be transmitted through needle stick injury or broken glass specimen tubes in hospitals; however 13% had no knowledge about blood borne infectious disease. In this study, 86% of the janitors were familiar about risks of contracting blood borne infectious diseases in hospitals while 14% were not aware of risks of contracting blood borne infectious diseases in hospital setup.

Table I: Source of Knowledge

Source of Knowledge	Frequency	Percentage
Paramedical staff	19	38
Senior members	4	8
Doctors	9	18
Ward in charge	6	12
Peer groups	12	24
Grand total	50	100

Among the sanitary workers/janitors 38% acquired knowledge of blood borne infectious diseases by paramedical staff, 8% in Durbars (Monthly gatherings by Commandant of the hospital), 18% by Doctors. (Table I) In this study, 79% of sanitary workers/janitors had knowledge of avoiding oneself from contracting blood borne infectious diseases which can be transmitted through needle stick injury or broken glass specimen tubes in hospitals; however 21% of sanitary workers/janitors had no knowledge about it.

There were 28% of the sanitary workers/janitors who knew about the potential causes of blood borne infectious diseases which can be transmitted through needle stick injury or broken glass specimen tubes in hospitals, however 72% no knowledge of causes of blood had borne infectious diseases. In this study, 66% of sanitary workers/janitors had knowledge of impact of blood borne infectious diseases which can

be transmitted through needle stick injury or broken glass specimen tubes on human health. About 34% of sanitary workers had no knowledge about any health impacts due to blood borne infectious diseases. Out of 67% of sanitary workers having knowledge of impacts of blood borne infectious diseases on human health, 24% were able to narrate these impacts while 76% were unable to explain adverse health impacts of infectious diseases on human body.

Table II: Knowledge about Health Impacts

Knowledge about Health Impact	Frequency	Percentage
Having Knowledge	33	66
Having no Knowledge	17	34
Grand Total	50	100

Among the sanitary workers/janitors, 18% had been screened for Hepatitis B, Hepatitis C and HIV while 82% were never screened for blood borne infectious diseases. Among the sanitary workers/janitors families, 6% were screened for Hepatitis B, Hepatitis C and HIV while 94 % families of janitors were never screened for blood borne infectious diseases. Among sanitary workers/janitors, 95% were willing to go through the screening tests for Hepatitis B, Hepatitis C and HIV while 5% didn't agreed for any such screening procedures.

Among sanitary workers/janitors, 49% were willing to go through the vaccination process whereas 51% showed lack of interest for any vaccination process. In this study, 98% of the janitors/sanitary workers were willing to go through the free vaccination process against blood borne infectious diseases while 2% still didn't agreed for any such vaccination process. In this study, 90% sanitary workers/janitors were willing to adopt safety measures against contracting blood borne infectious diseases; however 10% showed reluctance toward following such safety measures.

Out of 87% sanitary workers/janitors, who believed that their hospitals were maintaining a safe environment by informing / educating its staff members against spread of blood borne infectious diseases, 63% were practicing measures so as to avoid contracting blood borne infectious diseases however 37% sanitary workers were not following or practicing such safety measures and

88% of sanitary workers/janitors never went through screening test against blood borne infectious diseases while 12% had gone through some preliminary screening tests. In our setup 26% of staff has got training.

In this study, 86% sanitary workers were willing to educate their colleagues and family members about adverse health impacts of the blood borne infectious diseases while 14% showed indifferent attitude toward dissemination of any such information. In this study, 76% of the respondents agreed for screening tests and vaccination against blood borne infectious diseases as measures to avoid spread of blood borne infectious diseases while 24% were not ready to follow such measures. In this study, 88% sanitary workers/janitors were not familiar with measures to be taken if someone contract blood borne infectious disease, while 12% respondents had some knowledge of few precautionary measures.

Out of 12% sanitary workers/janitors, who were familiar with safety measures to be taken if someone contract blood borne infectious disease, 83% were unable to narrate the proper safety measures to be taken if one is suffering with blood borne infectious disease, however 17% sanitary workers narrated some precautionary measures if someone contract blood borne infectious disease, whereas, 94% sanitary workers/janitors were ready to practice measures to avoid blood borne infectious diseases on being informed however 6% still showed indifferent attitude for maintaining preventive practices.

Discussion

The role of the hospital is not only to relieve the sick but also responsible on a much larger scale to take measures related to the waste being generated there, as it produces direct effect on the health care workers, patients of that hospital, nearby communities and environment. Therefore it is the responsibility of the establishment to take appropriate measures in this regard when collecting, storing and final disposal of waste.⁶

WHO has very discretely mentioned the importance of human aspect in this world of technology. For any system of treatment to work effectively and efficiently it requires a skilled, well trained staff that will be able to provide what is required for smooth operation of system with protection to the working staff, the patients and community.^{7,8,9} It also concludes that positive attitude and behavior of staff is the key element. As many research work shows that the main

problem lies with ineffective functioning, is unaware from risks and untrained staff with bad practices.⁷ In our study population, the 38% respondents were (38%) of age group between 26-35 years, between age group 18-25 years were 32% and between group 36-45 years were 25%, above to 46 years of age were (5%), these study result are similar with another study conducted in tertiary care hospital of Muzaffarabad showing the following results 114 participants with mean age of 33 years (min 25-max 41 years).⁸

Assessment of management system revealed that 56% of workers did not receive any form of training in the handling of hazardous waste while in our setup 26% of staff has got training. Among the 54 participating health facilities in Nigeria selected from a total of 65 registered health facilities in the state showed that 22(40.7%) were trained and 32 (59.3%) were not.¹¹

Another study of 567 sample size in India showed that 29.8% have received training for biomedical waste management in last 5 year period in that 20.8% were nursing staff, 2.9% laboratory technicians, 3.7% interns and 2.8% were doctors, respectively.¹⁰ Another study in India shows that among their 140 HCW 65 were trained while 75 were not.¹² Around 54% of them did not use any safety equipment or clothing. The majority (81%) of staff employed for handling these wastes in the hospitals did not have appropriate personal protective equipment (PPE), including overall gowns, protective boots, and gloves. It is important to note that the lack of suitable and sufficient protective equipment, the lack of knowledge regarding the correct usage of equipment, and the lack of pertinent understanding of the personnel regarding the benefits of using protective equipment expose personnel to serious dangers.¹²

Among the participants only 55.1% felt it is necessary to take vaccination against hepatitis B and 52.2% agreed that Hepatitis-B immunization prevents transmission of hospital acquired infection. A study of India shows following results 86.9% have received one or two doses of hepatitis B of which 70.7% were fully immunized against hepatitis B. Of the fully immunized 22.1% were nursing staff, 9.5% laboratory technicians, 19.4% interns and 19.7% doctors, respectively.¹³ It is one of the most important parts of healthcare waste management rule, yet low proportions of the participants especially, nurses, pharmacist,

laboratory technician and health attendant were positively disposed towards putting them to correct use. Comparable low knowledge was equally reported by some other studies. Study in Delhi showed the following results regarding Knowledge about the correct color coding for BMW disposal in doctors²³ (76.7%), nurses²⁴ (80%), 30 (100%) lab staff and Sanitary staff²⁴ (80%).¹⁴

Conclusion

It has been observed that regarding hospital waste, the recommendations laid down as by WHO are not being followed in true letter and spirit. The results of our study has revealed that hospital administration has little concerned with hospital waste disposal. The hospital disposal is supposed to be the responsibilities of janitors and poor effort is given about their training, use of personal protection equipment, segregation of waste and its proper disposal either through incineration or deep burial methods.

Authors Contribution: IS: Interpretation of data, revising and final approval. **HUF:** Conception and design of work, drafting and final approval. **MAR:** Acquisition and analysis of data, revising and final approval. **MHC:** Design of work, revising and final approval. **SZ:** Design of work, revising and Final approval. **SA:** Design of work, conception, revising and final approval.

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