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Original Research Article

A cross sectional study on adoption of standard precautions among sanitary workers, Tamil Nadu

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ABSTRACT

Background: Hospital waste is a potential reservoir of pathogenic micro-organism and requires appropriate, safe handling. Sanitary workers entail to do waste collection, handling, storage and disposal. Hence they have higher chances of exposure to numerous risk factors. The objective of the study was to assess the adoption of 'standard precautions' among sanitary workers pertaining to hand hygiene, use of personal protective equipment (PPE), prevention of needle stick/sharp injuries, handling of soiled linen and finding out the reasons for non-adoption.
Methods: A cross sectional study was done in two health care institutions in Chennai and Madurai, Tamil Nadu during January to May 2018. Institutional ethics committee approval was obtained. All sanitary workers willing to participate in the study were included. After getting informed consent, data was collected using structured questionnaire and analyzed with SPSS 20.0. Mean, frequency and percentages were calculated.
Results: Sanitary workers included in the study were 118. The overall hand hygiene was satisfactory among 35.6%. Only 62.7% were using gloves while handling waste. 54(45.8%) had NSI in last one year. Immersing soiled linen in hot water was done only by 15 (12.7%) before washing with disinfectant and autoclaving.
Conclusions: The adoption of 'standard precautions' among sanitary workers is inadequate due to lack of proper orientation.

Keywords: Standard precautions, Sanitary workers, Needle stick injury

INTRODUCTION

Health care providers come in direct contact with the blood, body fluids and contaminated items. Sanitary workers are at more risk of acquiring the hospital acquired infections. The risk of hepatitis B, C virus and HIV infections is high. Exposure can result from percutaneous injury, mucocutaneous injury, contact with non-intact skin. Compliance with standard precautions reduces the risk of exposure to blood and body fluids.[2]

Standard precautions should be followed in all health care settings irrespective of the infectious status of the patients. Standard precautions include hand hygiene, use of personal protective equipment, appropriate handling of patient care equipment and soiled linen, prevention of needle stick/sharp injuries, environment cleaning and spill management and appropriate handling of waste.[1] Proper hand hygiene is cheap, most effective, easiest and foremost method of reducing health care associated infections.[3] Personal protective equipment is designed to protect the skin and the mucous membranes of the eyes,

nose, and mouth of healthcare personnel thus reducing the risk of exposure to blood borne pathogens.[4]

According to World Health Organization, 35.7 million health care workers in the world are exposed to the risk of needle stick injuries, 2 million experience percutaneous exposures to infectious diseases each year and 4 needle stick injuries per worker within year in African, Mediterranean and Asian populations.[5] The true magnitude of the problem is difficult to assess because information has not been gathered on the frequency of injuries among healthcare personnel working in other settings (e.g., long-term care, home healthcare, private medical offices). In addition, although CDC estimates are adjusted for it, the importance of underreporting must be acknowledged. Surveys of healthcare personnel indicate that 50% or more do not report their occupational percutaneous injuries.[2]

Successful injury prevention program requires comprehensive reporting of injuries, meticulous follow-up, through education in use of new devices and accurate evaluation of safety device and program effectiveness.

Objectives

To assess the adoption of 'standard precautions' among sanitary workers pertaining to hand hygiene, use of personal protective equipment (PPE), prevention of needle stick/sharp injuries, handling of soiled linen and finding out the reasons for non-adoption.

METHODS

Study design: Cross sectional study.

Study area: Health care institutions in Chennai and Madurai.

Study period: January to May 2018 (5 months).

Selection criteria: All sanitary workers willing to participate in the study were included from the sampling frame of all sanitary workers.

Statistical analysis: Data analyzed with SPSS 20.0. Mean, frequency and percentages were calculated.

RESULTS

Sanitary workers in the study area were 132. Among them 14 refused to participate in the study, so they were not included in the study. Sanitary workers included in the study were 118. Age ranges from 21-58 years, mean age 41.8 years. Education ranges from illiterate to 12th standard. Years of experience ranges from 1-29 years with mean age of experience 13.99 years (Table 1).

Hand hygiene includes 3 components namely when to wash hands, how to wash hands and how to dry hands.[3] All of them washed their hands after handling blood and body fluids but only 94.9% washed after handling contaminated items. The overall hand hygiene was satisfactory among 35.6% only (Table 2).

Table 1: Demographic profile of the study participants.

Variables	Frequency (%)
Age (in years)	
21-30	10 (8.5)
31-40	45 (38.1)
41-50	49 (41.5)
51-60	14 (11.9)
Gender	
Male	1 (0.8)
Female	117 (99.2)
Education	
High school	3 (2.5)
Middle school	37 (31.4)
Primary school	53 (44.9)
Illiterate	25 (21.2)
Experience (in years)	
1-5	32 (27.1)
5-10	8 (6.8)
11-15	31 (26.3)
16-20	25 (21.2)
21-25	20 (16.9)
26-30	2 (1.7)

Table 2: Hand hygiene practices among sanitary workers.

Hand hygiene components	Frequency (%)
After handling blood	118 (100)
After handling body fluids	118 (100)
After handling contaminated items	112 (94.9)
After removing gloves	108 (91.5)
Rubbing of hands while washing	72 (61.0)
Drying of hands	45 (38.1)
Overall	42 (35.6)

Personal protective equipment should be used by the sanitary workers while handling waste. Almost all of them did not use full gear of PPE (Table 3). Reason for inappropriate use of PPE was some were allergic to gloves (2.5%) and in adequate supply (100%).

Table 3: PPE use while handling waste.

PPE	Frequency (%)
Gloves	74 (62.7)
Mask	52 (44.1)
Hair cover	17 (14.4)
Shoe cover	Nil

About 76 (64.4%) of the sanitary workers sustained needle stick injuries in their work tenure and 54 (45.8%) had NSI in last one year. Majority of them had injury less than 5 times 45 (83.3%), some 6 (11.1%) had injury 6-10 times, and 3 (5.6%) had >10 times. Majority of them sustained injury while cleaning (51.9%) due to hypodermic needle (72.2%) in their fingers (81.5%). This shows that inappropriate practicing sharp waste among other health care workers in the institutions. Majority of the injuries (53.7%) were not brought to the notice of the authorities (Table 4).

Table 4: Injury and reporting details.

Variables	Frequency (%)
Item caused injury	
Syringe needle	39 (72.2)
Venflon	1 (1.9)
Glass items	14 (25.9)
Circumstances	
While collecting waste	26 (48.1)
While cleaning	28 (51.9)
Parts affected	
Fingers	44 (81.5)
Foot	10 (18.5)
Report to authority	
Yes	25 (46.3)
No	29 (53.7)

The soiled linen should be immersed in hot water, washed with disinfectant and should be sent for autoclaving before sending to OT.[1] Immersing in hot water was done only by 15 (12.7%) of sanitary workers. Reason for not practicing was irregular supply of hot water. However, washing with disinfectant and autoclaving before sending to OT was done by all sanitary workers (100%).

DISCUSSION

In the present study, 54 (45.8%) had NSI in last one year which is much higher when compared to CDC data, in which percutaneous injuries among house keeping in various studies ranges from 5-17%.[2]

In a study done by Chahar et al the incidence of the percutaneous NSI in the last six months among the respondents was about 30% and around 95% of the NSI were reported to the respective supervisors and hospital officials as per protocol, but the reporting rate was much low in the present study.[6] This could be because not much training and reinforcement is given to the sanitary workers.

In study done by Radha et al, sanitary staff accounted for about 41.6% of the NSI and none reported the incident.[7] All the injury occurred during collection, transport and laundry, which was similar to the present study.

In the present study, 76 (64.4%) of the sanitary workers sustained needle stick injuries in their work tenure and 54 (45.8%) had NSI in last one year which is comparable with the study done at the same centers among doctors and nurses, 68.3% had NSSI during their carrier, 35.3% in last one year which could be because of the training which has been given.[8]

In the present study, the hand hygiene practices were satisfactory among 35.6%. Only 62.7% were using gloves while handling waste. Immersing soiled linen in hot water was done only by 15 (12.7%) before washing with disinfectant and autoclaving. Overall the adoption of standard precaution was not up to the mark probably because of the literacy status of the workers.

Not many studies are available for comparing the results of the study particularly regarding hand hygiene practices and handling of soiled linen.

CONCLUSION

Formal training programs for the sanitary workers is not in place when compared to the other health care workers in most of the places, which makes them work in hazardous environments resulting in exposure to various dreadful infections.

Recommendations

Formal training on adoption of standard precaution has to be given at the inception and periodic reinforcement has to be done. Further studies have to be taken up to develop the insight regarding prevention and control of nosocomial infections.

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REFERENCES

1. World Health Organization: Practical Guidelines for Infection Control in Health Care Facilities. SEARO and WPRO Publication No. 41; 2004.
2. CDC: workbook for designing, implementing and evaluating a sharps injury prevention program. Available at: https://www.cdc.gov/sharpssafety /pdf/sharpsworkbook_2008.pdf Accessed on 1 February 2019.
3. Archanalakshmi PA, Stanly M, Paul CM. Adoption of hand hygiene practices among health care providers. Int J Res Med Sci. 2015;3:2807-9.
4. Ravichandran H, Brundha MP. Awareness about Personal Protective Equipments in Hospital Workers (Sweepers and Cleaners). Res Int J Pharm Sci Rev Res. 2016;7:28-9.
5. Rapiti E, Prüss-Üstün A, Hutin Y. Sharps injuries: assessing the burden of disease from sharps injuries

to health-care workers at national and local levels. Geneva, World Health Organization. WHO Environmental Burden of Disease Series, 2005: 11.
6. Chahar P, Mohanty VR, Aswini YB, Yadav V, Grover S. Needle stick injury reporting behavior and risk perception among sanitation staff in tertiary care hospitals in Delhi. Int J Adv Res. 2010;4(9):1943-8
7. Radha R, Khan A. Epidemiology of Needle Sticks Injuries among The Health Care Workers of A Rural Tertiary Care Hospital-A CrossSectional Study. Natl J Community Med. 2012;3(4):589-94.
8. Archana LPA, Ashrof R, Meriton SA, Christina MP, Gladius JH. A cross sectional study on needle stick and sharp injuries among health care providers in tertiary centers, Tamil Nadu. Int J Community Med Public Health. 2018;5:982-6.

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