

# Occupational hazards among sanitary staff in hospital



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## Occupational Hazards among Sanitary Staff Working at Tertiary Care Hospitals of Karachi

### Abstract

Improper waste management increases the risk of occupational hazard among staff working in hospital. The aim of this cross-sectional study was to identify awareness and practices associated with occupational hazards among the sanitary staff working at tertiary care hospitals. The study was conducted at 2 government hospitals in Karachi, from October 2012 to January 2013. An anonymous, self-descriptive questionnaire was used to collect data. Among 106 participants, only 39% ( $n = 41$ ) received training on managing hazardous waste. Moreover, only 51% ( $n = 54$ ) were able to differentiate between hazardous and non-hazardous waste. Around, 69% ( $n = 73$ ) respondents had provision of Personal Protective Equipment (PPE) whereas; only 36% ( $n = 38$ ) were compliant with it. Two third of the participants reported that they have encountered injury from hospital waste. Fisher's Exact Test revealed that use of PPE is associated with education, experience, training and awareness. The study revealed great need of awareness about health hazards among sanitary staff working at hospitals along with provision of facilities.

**Keywords:** Occupational Hazards, Personal Protective Equipment, Waste Management, Sanitary Staff.

Hospital waste serves to be the most hazardous waste material which can lead to life threatening infectious diseases. Poor and improper handling of waste increases the risk of exposure to pathogenic organisms. <sup>1</sup> Waste  
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material generated from hospitals are considered as hazardous hence, it needs to be treated cautiously. <sup>2</sup>

In developing countries, there is scarce awareness and knowledge about proper management of hospital waste. <sup>3</sup> All staff working at hospital is prone to acquire infections. However, sanitary staffs are at greater risk. <sup>4</sup> A number of diseases can be transmitted via contact with hazardous hospital waste including Acquired Immunodeficiency Syndrome (AIDS), hepatitis B, and hepatitis C. <sup>5</sup> Therefore, training of sanitary staff working at healthcare facilities is essential. <sup>4</sup>

All healthcare facilities needs to prepare their own policies to ensure proper management of hospital waste and provision of staff safety. <sup>6</sup> Appropriate management of hospital waste is based upon hospital administration, policies, finance, staff training, and active participation of staff. <sup>7</sup> The staff responsible for handling hospital waste needs to be provided with all essential PPE. <sup>8</sup> This study focuses on awareness of occupational hazards among sanitary staff working at government hospitals in Karachi.

The study was conducted at two tertiary care government hospitals of Karachi from October 2012 till January 2013. It was a cross sectional survey conducted on 106 participants that had given consent and who had minimum of 3 months of experience. The survey was conducted through a structured questionnaire and data was analyzed through SPSS.

Among 106 participants 71% (  $n = 75$ ) were male and 29% (  $n = 31$ ) were females. Mean age of participants was 40. 23 (  $\pm 9.5$  SD). As displayed in Table 1, among all participants 62% had work experience of more than 5 years. Majority (  $n = 36$ , 34%) of the participants had received secondary education. Participants who had done intermediate (  $n = 23$ , 22%) were working as shift supervisors. Job responsibility of participants included dusting and cleaning wards (  $n = 41$ , 39%), collection of hospital waste (  $n = 32$ , 30%), segregation of hospital waste (  $n = 18$ , 17%), and disposal of waste material (  $n = 15$ , 14%).

Table 1

*Demographic Profile of Study Participants*

Demographic Profile	N (%)
Gender	75 71
Male	31 29
Female	<1 year
Work Experience	1-5 years
	5-10 years
	> 10 years
Education Level	
	Illiterate

Primary

Secondary

Intermediate

Job Responsibility

Dusting and

Cleaning

Waste Collection

Segregation of

Hazardous Material

Waste Disposal

15 14

25 24

32 30

34 32

24 23

23 22

36 34

23 22

41 39

32 30

18 17

15 14

During job tenure, only 41 (39%) staff received formal training on handling hospital waste and preventing health hazards by following standard precautions. However, 54 (51%) of the respondents were aware about hazardous and non-hazardous waste products. Among all participants, only 19 (18%) underwent medical inspection and 67 (63%) of them received Hepatitis-B vaccination. However, among recipients of Hepatitis-B vaccine, only 37 (35%) received complete vaccination i. e. all 3 doses of Hepatitis-B.

On inquiring about availability of PPE, 73 (69%) responded that PPE are provided by hospital whereas, only 38 (36%) of the respondents were using PPE. Among all participants, 87 (82%) were compliant with hand washing.

With regard to separate collection of hazardous waste from non-hazardous waste, 47 (44%) of the respondents said that they collect waste separately. However, only 21 (20%) of the participants reported that they carry hazardous and non-hazardous waste separately. Majority (  $n = 88$ , 83%) were using open containers for carrying waste material.

Around 69 (65%) of the participants responded that they have encountered injury from hospital waste. Among them, 2 (2%) encountered needle stick injury, 30 (28%) experienced sharp injuries, 24 (23%) came in contact with blood and body fluids, and 14 (13%) got other types of injury. Only 18 (17%) of the participants didn't experienced any illness, however 21 (20%)

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experienced gastrointestinal tract problems, 28 (27%) suffered from respiratory disorders, 14 (13%) got eye infections, 11 (10%) came in contact with skin diseases, and 14 (13%) encountered blood borne diseases.

With regard to compliance of using standard precaution 34 (32%) of the participants always use gloves, only 7. 5% of the participants always use apron, and 31 (29%) always use masks.

The Fisher's Exact test revealed a significant association between experience and use of PPE ( $P = 0.027$ ). Similarly, highly significant association has been identified between training and compliance with use of PPE ( $P < 0.001$ ). In like manner, awareness about hazardous material also had significant association with compliance ( $P < 0.001$ ) of PPE. Moreover, education was also found to be significantly ( $P < 0.001$ ) associated with compliance of PPE. However, association between gender and use of PPE ( $P = 0.078$ ), was found to be insignificant (see Table 2).

Table 2

*Association between Compliance with Use of PPE and Demographic Characteristics*

Factors	Compliance (%)	Non-compliant (%)	P-value
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## Experience

e

&lt;1 year

2 (5.3)

1-5 years

6 (15.8) 13 (19.1)

5-10

years

12 (31.6) 19 (27.9) 0.

&gt; 10

20 (29.4) 0.27\*

years

18 (47.4) 16 (23.5) \*

Gender

44 (64.7) 0.07

Male

31 (81.6) 24 (35.3)

Female

7 (18.4)

Education

Illiterate

Primary

4 (10.5)

Secondary

4 (10.5) 20 (29.4)

y

10 (26.3) 19 (27.9) &lt;0.

Intermediate

3) 26 (38.2) 0.001\*

ate

20 (52.3) 3 (4.4)

Training

6)

of PPE

Received 31 (81.6) 10 (14.7) &lt;0.

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Not

Received 6)

Awarenes 7(18. 4) 58(85. 3) 001\*

s about 32(84. 22(32. 4) <0.

Hazardou 2) 001\*

s Material 46(67. 6) 6(15. 8)

Aware

Not aware

\* Significant

\*\* Fisher's Exact Test applied due to low cell count

Generation of waste at hospitals demands for it proper disposal to avoid hazardous consequences associated with it. It is the prime responsibility of hospital to maintain clean and healthy environment to reduce infections associated with hospital wastes. <sup>6</sup> Therefore, it is essential to provide appropriate training to ensure staff safety. <sup>9</sup> In current study, less than half of the respondents received training and around half of the respondents displayed awareness about hazardous waste material. The study also displayed an association between training as well as awareness about hazardous waste with compliance to PPE use. Similarly, available evidences in the field also suggests that training of staff along with regular follow-ups can foster compliance with appropriate waste management practices. <sup>10</sup>

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Available literature also suggests that for appropriate management of hospital waste and safety of hospital staff, continuous training programs needs to be organized. <sup>8</sup>

Current study revealed that only 18% of the sanitary staff went through medical inspection and around 35% of the staff received complete doses of hepatitis B vaccination. In contrast, previous study on sanitary staff working in tertiary care hospital of Rawalpindi reported that none of the sanitary staff went through medical checkup or received any vaccination before or during job tenure. <sup>4</sup>

The findings of current study revealed that availability of PPE was inadequate. However, it is essential to provide continuous supply of PPE and to bring change in attitude of staff towards use of PPE. The efforts of providing training, creating awareness, and providing personal protective equipment will not be of worth if staff will not comply with the appropriate waste handling and management strategies. Our study also demonstrated that only one third of the respondents were using available PPE. However, non-compliance with appropriate management of hospital waste makes sanitary staff prone to infections. <sup>10</sup>

Hence, efforts need to be made for providing training and creating awareness among sanitary staff for handling hazardous hospital waste. Moreover, organization should develop relevant policies and protocols to ensure appropriate handling and disposal of hospital waste. Organizations should also take initiatives for conducting medical inspection and vaccinating

all hospital staff including sanitary staff. Availability of PPE should be adequate and staff needs to be encouraged to use PPE. Evidence based interventional research can be conducted to ensure appropriate handling of hazardous hospital waste for preventing sanitary staff from infectious diseases.

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