

Association between Knowledge and Practicing Behaviour of HCWs**Rijul Ranjan^{1*}, Varsha Chaudhary², Pawan Parashar³**¹Assistant Professor, Subharti Medical College, Meerut, U.P.²Professor, Subharti Medical College, Meerut, U.P.³Professor, Subharti Medical College, Meerut, U.P.

Received: 25-09-2023 / Revised: 23-10-2023 / Accepted: 18-11-2023

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Conflict of interest: Nil

Abstract:

Background: The term “biomedical waste” has been defined as “any waste which is generated during diagnosis, treatment or immunization of human beings or animals, or in the research activities pertaining to or in the production or testing of biologicals and includes categories as mentioned in schedule I of the Government of India’s Biomedical Waste (Management and Handling) Rules 1998”.

Objectives: To assess the practices related to Bio-Medical Waste Management

Material & Methods: The present cross-sectional study was conducted from march 2016 to February 2017 among healthcare workers of tertiary care hospitals of Meerut city. Simple random sampling was used. The written consent was taken. Data was analysed using SPSS version 19 and Pearson’s Chi square test was applied.

Results: The healthcare workers segregate BMW according to different categories and they were doing this at the point of generation (87.6% and 88.5% respectively). 88.5% HCWs did not dispose all kind of waste into garbage waste. Majority (89.2%) were following color coding for disposal of BMW. Correct practice related to disposal of Normal Waste was observed in 89.2% of HCWs. Most of the HCWs were correctly disposing category 1,6,7 and 8 of BMW (97.1%, 89.2%, 88.5% and 97.1% respectively) whereas Category 2,3,4,9 and 10 were disposed correctly by nearly three-fourth of the HCWs (72.3%, 73.9%, 72.3%, 78.0% and 78.0% respectively).

Conclusion: Practices regarding Bio-Medical Waste was also found to be satisfactory in all the Health Care Workers but lower for IV class workers.

Keywords: Biomedical waste management, hospital, healthcare workers.

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Introduction

Nature has made everything for a defined purpose. ‘Anything which is not intended for further use is termed as waste’. In the scientific and industrial era, turnover of the products is very high. With increasing need of Health Care in fast changing society, the role of hospitals/nursing homes comes to the forefront. Hospital is a residential establishment which provides short term and long-term medical care consisting of observational, diagnostic, therapeutic and rehabilitative services for a person suffering or suspected to be suffering from disease or injury and for parturient. [1]

The term “biomedical waste” has been defined as “any waste which is generated during diagnosis, treatment or immunization of human beings or animals, or in the research activities pertaining to or in the production or testing of biologicals and includes categories as mentioned in schedule I of the Government of India’s Biomedical Waste (Management and Handling) Rules 1998”. [2]

The inadequate and inappropriate practice of handling of healthcare waste may have serious health consequences and a significant impact on the

health of health care personnel, to waste workers, patients, to general public and environment as well. [3,4] Hospital waste is very infectious and hazardous and the problem is growing in medical field. [5, 6] There is substantial uncertainty around this estimate and more research and data are needed to obtain a reliable picture of this situation. [7] This biomedical waste comprises of various categories of waste like anatomical waste, cytotoxic wastes, sharps, which when inadequately segregated could cause different kinds of deadly infectious diseases. [8] If not properly managed, this can harm the surrounding environment, cause various infections and injuries to the healthcare workers, patients, their attendants and other hospital visitors. Blood and body fluids present in the bio-medical waste harbour most of the pathogenic bacteria, viruses and parasites. [9,10] Hence to prevent these harms the Biomedical Waste Management Rules directed methods for disposal of bio-medical waste. Various studies documented still convey that there are gaps in the Knowledge, attitude and practices of health care workers in the appropriate handling of bio-

medical waste.¹¹ Therefore the present study was formulated among the health care providers.

Material & Methods:

The present cross-sectional study was done among healthcare workers with the objective to assess their practice regarding biomedical waste management. The study was conducted from March 2016 to February 2017. Ethical approval for the study was taken from institutional ethical committee of Subharti Medical College, SVSU, Meerut. Simple random sampling was used for selection of hospitals. Out of the two tertiary care hospitals in the city one was selected randomly and from the list of 150 bedded hospital in the city one was selected randomly. After that list of all the health care workers (nursing staff, OT technician, lab technician and fourth class) were procured from respective hospitals. Two visits were made in both the hospitals. Health care workers who were present on these two visits and give consent were included in the study. Each category of Health Care Worker was attended separately and two visits for each category was made for collection of data. Prior permission

was taken from the concerned authority and arrangement was made to gather the workers at pre-decided date, time and place. Those who were left due to duty etc were attended on second visit. The purpose and objectives of the study was explained to the Health Care Workers prior to data collection and they were assured about the confidentiality of the responder. Data was collected on predesigned pretested semi structured questionnaire which included details of socio-demographic variables like age, sex, education, designation and other details about knowledge of Health Care Workers regarding Biomedical Waste Management. Before filling the questionnaire, each question was explained to the Health Care Workers so that they could understand the questionnaire completely and could answer properly. Single observer demonstrated the questionnaire to all workers.

Completion of questionnaire was assured at the time of collection. Data was coded, entered and analysed using SPSS version 19 and suitable test was applied.

Results:

Table 1: Distribution of study population according to their practice related to segregation of biomedical waste

	Freq	%
Segregate BMW According to Different Categories		
YES	275	87.6
NO	39	12.4
Segregation Of BMW at the Point of Generation		
YES	278	88.5
NO	36	11.5
Total	314	100

According to this table majority of the healthcare workers segregate BMW according to different categories and they were doing this at the point of generation (87.6% and 88.5% respectively).

Table 2: Distribution of study population according to their practice related to disposal of waste

	Freq	%
Do You Dispose All Kinds of Waste into Garbage Waste		
YES	36	11.5
NO	278	88.5
Do You Follow Color Coding for Disposal of Normal Waste from The Hospital		
YES	280	89.2
NO	34	10.9
Following Color Coding for BMW Disposal		
YES	280	89.2
NO	34	10.8
Total	314	100

This table shows that 88.5% HCWs did not dispose all kind of waste into garbage waste. Majority (89.2%) were following color coding for disposal of BMW. Correct practice related to disposal of Normal Waste was observed in 89.2% of HCWs.

Table 3: Distribution of study population according to their practice related to disposal of BMW according to color code

	Freq	%
CATEGORY 1		
CORRECT	305	97.1
INCORRECT	9	2.9
CATEGORY 2		
CORRECT	227	72.3
INCORRECT	87	27.7
CATEGORY 3		
CORRECT	232	73.9
INCORRECT	82	26.1
CATEGORY 4		
CORRECT	227	72.3
INCORRECT	87	27.7
CATEGORY 5		
CORRECT	261	83.1
INCORRECT	53	16.9
CATEGORY 6		
CORRECT	280	89.2
INCORRECT	34	10.8
CATEGORY 7		
CORRECT	278	88.5
INCORRECT	36	11.6
CATEGORY 8		
CORRECT	305	97.1
INCORRECT	9	2.9
CATEGORY 9		
CORRECT	245	78
INCORRECT	69	22
CATEGORY 10		
CORRECT	245	78
INCORRECT	69	22
Total	314	100

According to this table most of the HCWs were correctly disposing category 1,6,7 and 8 of BMW (97.1, 89.2, 88.5 and 97.1% respectively) whereas Category 2,3,4,9 and 10 were disposed correctly by nearly three-fourth of the HCWs (72.3%, 73.9%, 72.3%, 78.0% and 78.0% respectively).

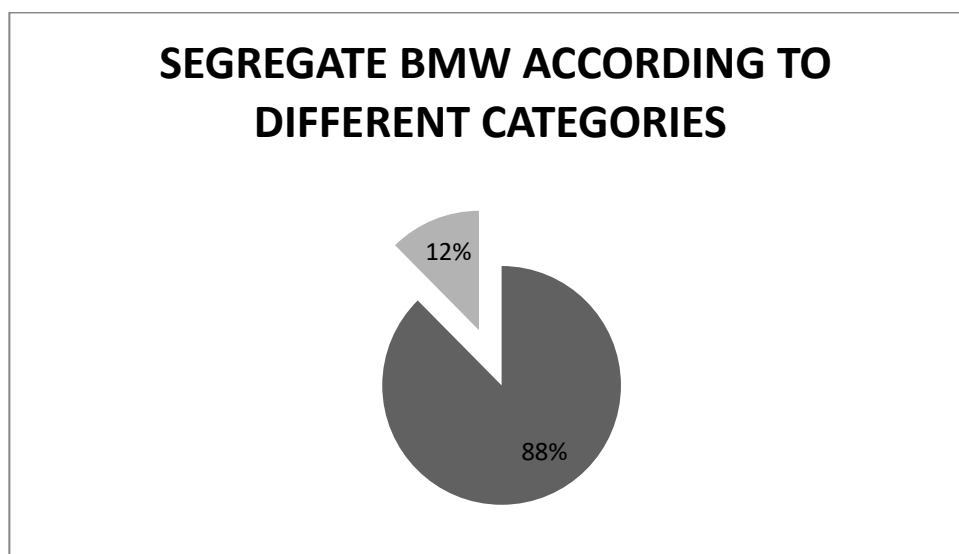


Figure 1: Distribution of hcws according to their practice related to segregation of bmw according to different categories

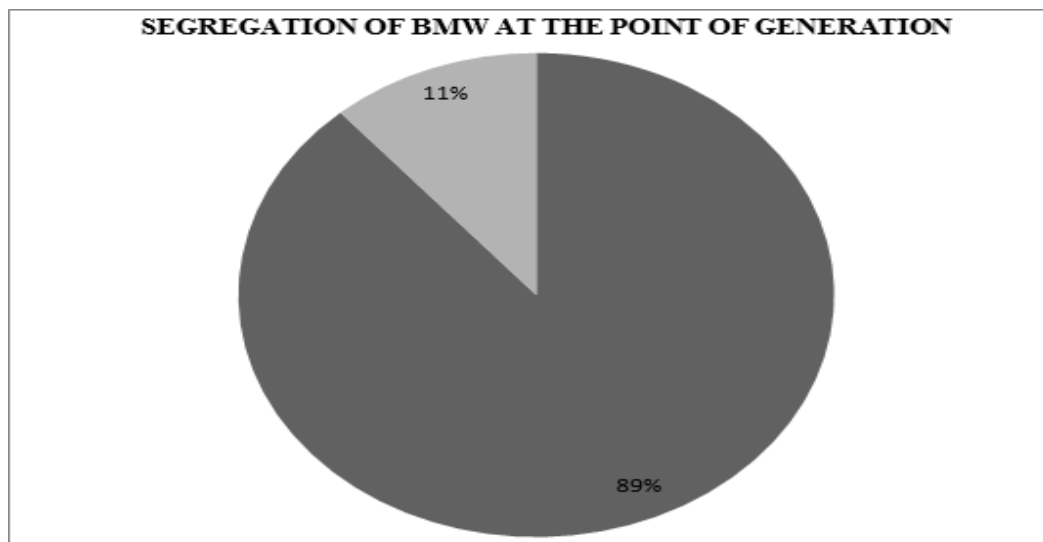


Figure 1a: Distribution of hcws according to their practice related to segregation of bmw according to different categories

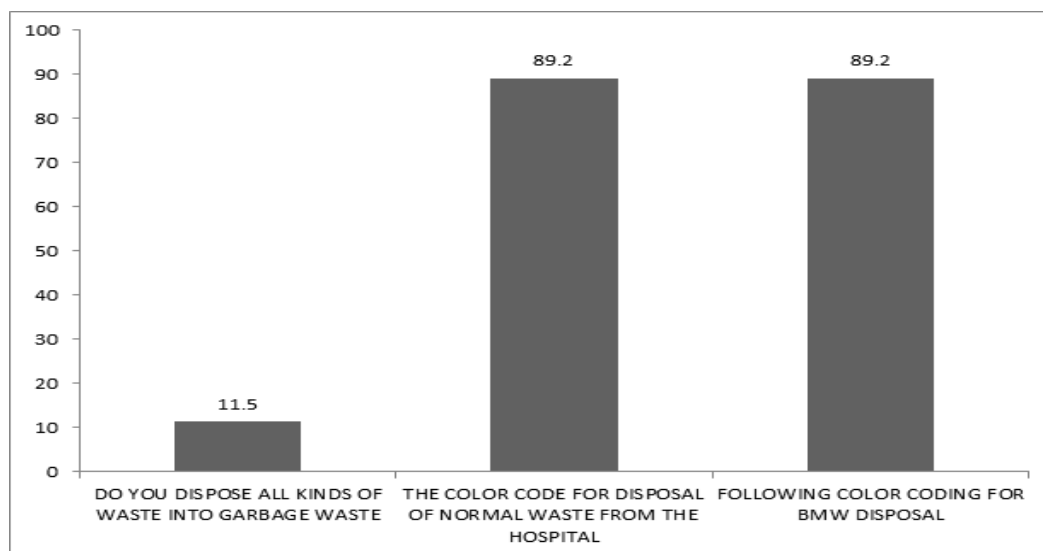


Figure 2: Distribution of hcws according to their practice related to disposal of waste of bmw according to color code

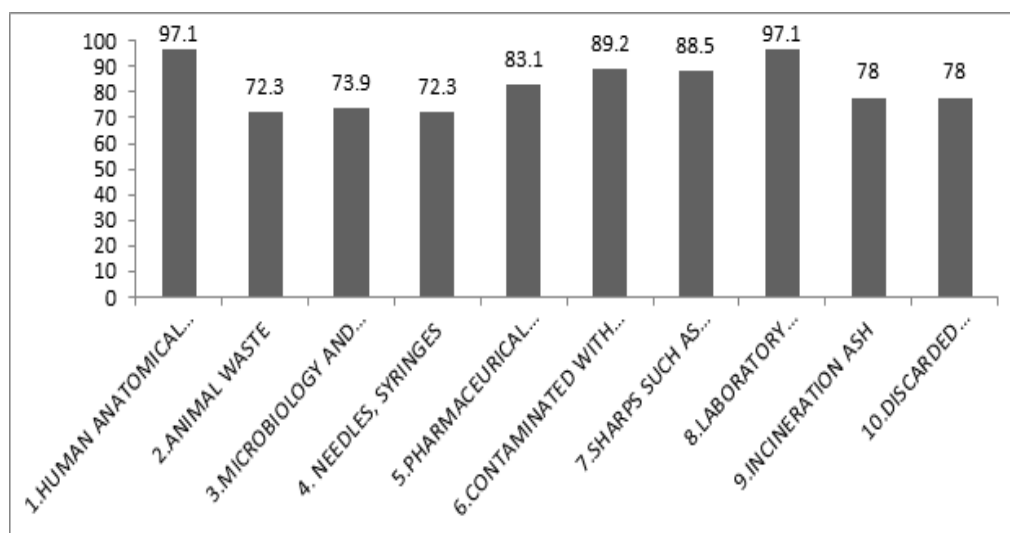


Figure 3: Distribution of hcws according to their practice related to disposal

Discussion:

In our study the practice of segregation of BMW according to different categories was 97.3% in Nursing Staff and 96.2% in Lab Technician, while it was 100.0% in OT Technician and 28.9% of IV class workers whereas Sehgal et al (2015)⁴ reported in their study that the practice of segregation of BMW according to different categories was 100.0% in Nursing Staff, Lab Technician and IV class workers. Sanjeev R et al (2014)⁵ reported in their study that the practice of segregation of BMW according to different categories was 68.6% in HCWs.

In the present study 88.5% HCWs said No for the practice of disposal of all kinds of waste into general garbage among HCWs whereas Sanjeev R et al (2014)⁵ reported in their study that the practice of disposal of all kinds of waste into general garbage among HCWs said No was 81.8%.

In the present study almost all the Nursing Staff (99.1%) and most of the Non-Nursing Staff (92.1%) had correct practice of category 1. The difference was found to be statistically significant. Majority of the Nursing Staff (89.8, 88.9, 85.3 and 84.9% respectively) had correct practice related to category 5,6,9 and 10 whereas nearly two-third of the Non-Nursing Staff (66.3, 65.2, 59.6 and 60.7% respectively) correctly dispose BMW according to color code. The difference was found to be statistically significant. Three-fourth of the Nursing Staff (77.3%) and nearly two-third of Non-Nursing Staff (59.6, 65.2, 59.6 and 65.2%) had correctly dispose category 2, 3,4 and 8. The difference was found to be statistically significant. Incorrect practice related to category 2,3,4,5,8,9 and 10 was found to be more among class IV HCW (73.4, 62.2, 73.4, 64.4, 62.2 and 73.3% respectively).

Conclusion:

The present cross-sectional study was conducted among health care workers of tertiary care hospitals of Meerut city with the objectives to assess practice regarding Biomedical waste Management. Practices regarding Bio-Medical Waste was found to be satisfactory in all the Health Care Workers except for IV class workers.

Source of funding: Self

Ethical clearance: Ethical clearance was taken from the ethical committee of Subharti Medical College.

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