Original Article

Knowledge regarding biomedical waste management among RHOs (Resident house officers) in a tertiary care centre

Manoj Dudi*, Rupa Sharma**, Manish Jain*

*Resident, **Associate Professor, Department Of Community Medicine, RNT Medical College, Udaipur, Rajasthan.

DOI: 10.5455/jrmds.2015336

ABSTRACT

Background: Proper segregation and safe disposal of BMW is a responsibility of health care personals. As RHOs are going to be one of the important components of health care system, they should have sufficient knowledge on biomedical waste management. Besides house job is the time when a resident doctor spends most of his time dealing with patients and BMW in wards, hence, an attempt is made to assess the knowledge of resident doctors regarding segregation and disposal BMW.

Aim: To assess the knowledge about various aspects of BMW management among RHOs of a tertiary care hospital, Udaipur.

Materials and Methods: A hospital based cross-sectional observational study carried out among 115 RHOs in a medical college and attached hospitals in Udaipur, Rajasthan from July 2014 to October 2014, using pre-designed questionnaire. Data was analyzed using Ms Excel and epi- info 7 software.

Results: Majority of the study population were in the age group of 25 to 30 years.Majority of respondents were aware of BMW (94.78%) and its health hazards(86.9%) but only about half of them (67.82%)had correct knowledge regarding handling rules for BMW. Only 26.1% had correct knowledge regarding final disposal of BMW.

Conclusion: Although respondents bear good awareness of BMW and its health hazards but correct knowledge of BMW management needs strengthening. This emphasizes the importance of training regarding BMW management. Lack of proper and complete knowledge about biomedical waste management affects practices of appropriate waste disposal and jeopardizes the health and environment.

Key words: knowledge, biomedical waste (BMW), resident house officers (RHOs), segregation

INTRODUCTION

The term “biomedical waste” has been defined as “any waste that 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 mentioned in schedule I of the Government of India’s Biomedical Waste (Management and Handling) Rules 1998” [1,2].

The BMW rule applies to all those who generate, collect, receive, store, transport, treat, dispose or handle BMW in any manner and also to every institution that generate BMW. The bio medical waste should be segregated at source into color coded bags or containers and its collection and proper disposal should be a significant concern for both medical personnel and general community [3]. Among all health problems, there is a particular concern for HIV/AIDS, Hepatitis B and C, for which there is a strong evidence of transmission through healthcare waste. Inadequate and inappropriate knowledge of handling of healthcare waste may have serious health consequences and a significant impact on the environment as well. However, lack of awareness has led to the hospitals becoming a hub of spreading disease rather than working towards eradicating them.

It is estimated that annually about 0.33 million tons of hospital waste is generated in India and, the waste generation rate ranges from 0.5 to 2.0 kg per bed per day [4]. Wherever, generated, a safe and reliable method for handling of biomedical waste is essential. Effective management of biomedical waste is not only a legal necessity but also a social responsibility. Although, there is an increased global awareness among health professionals about the hazards and also appropriate management

techniques but the level of awareness in India is found to be unsatisfactory [4-6].

Adequate knowledge about the health hazard of hospital waste, proper techniques and methods of handling the waste, and practice of safety measures can go a long way towards the safe disposal of hazardous hospital waste and protect the community from various adverse effects of the hazardous waste.

Hence the safe handling and disposal of biomedical waste has gained attention of not only health care providers but also public health administrators in order to have healthier societies. With this background, this study was conducted with the main objective of assessing knowledge of junior doctors (RHOs) regarding biomedical waste management.

As RHOs are going to be one of the important components of health care system, they should have sufficient knowledge on biomedical waste management. Besides, house job is the time when a resident doctor spends most of his time dealing with patients and BMW in wards; hence they should have proper and sufficient knowledge on biomedical waste management. Therefore, awareness about various aspects of biomedical waste management needs to be assessed frequently.

MATERIAL AND METHODS

This was a cross-sectional descriptive observational study carried out among RHOs (junior doctors) in R.N.T. medical college and associated group of hospitals in Udaipur, Rajasthanfrom July 2014 to October 2014. Total 117 RHOs joined as first year residents in institution. Out of 117, 115 RHOs were respondents. The participants were explained about the purpose of the study and informed verbal consent was taken. Study tool was a pre-designed, pretested semi-structured questionnaire. They were assured about their confidentiality and anonymity. The questionnaire included basic details of the participants like age, sex and working experience and their knowledge of bio medical waste handling and its management. Data was compiled, tabulated and analyzed using MS Excel 2010 and epi-info version 7 software.

RESULTS

Almost half (46.1%)of the study population were in the age group of 25 to 30 years. Majority of them (52.2 %) were males. 47.8% had past work experience of one to five years and 45.2% were trained in BMW Management (Table 1). Almost all 109 (94.8%) had heard about BMW. Majority of the study population 82.6% knew about color-coded bags for Segregation of BMW (Table 2). Segregation at source, the golden rule of BMW was known to 75 (65.2%) of the RHOs in the study. Among the study participants 86.9% had knowledge regarding the potential of transmission of diseases because of improper disposal of BMW. Only 26% of the RHOs had knowledge regarding final disposal of BMW and 76.6% knew that there was a hospital policy for BMW Management (Table 2).

Table 1: Basic profile of the study population (N=115)

Sr. No	Characteristics	No (%)
1	**Age in years**	
	25 – 30	53(46.1%)
	30 – 34	27(23.5%)
	>34	20(17.4%)
2.	**Sex**	
	Males	60(52.2%)
	Females	55(47.8%)
3.	**Past Work Experience**	
	Up to one year	38(33.1%)
	1 year to 5 years	55(47.8%)
	More than 5 years	22(19.1%)
4.	**Received training on BMW Management**	
	Yes	52(45.2%)
	No	63(54.8%)

Table 2: Knowledge among RHOs regarding Bio-medical waste, itsHealth Hazards and Management (N=115)

KNOWLEDGE	YES	NO
Heard about bio-medical waste	109(94.8%)	6(5.2%)
Heard about BMW rule	78(67.8%)	37(32.2%)
Know about bio-hazard symbol	75(65.2%)	40(34.8%)
Know all Categories of BMW	60(52.2%)	55(47.8%)
Know the Color coding of bags and bins	95(82.6%)	20(17.4%)
Segregation at source	75(65.2%)	40(34.8%)
Various methods of disposal	30(26.1%)	85(73.9%)
Health hazards due to BMW	100(87.0%)	15(13.0%)
Is there any BMW disposal policy in this hospital	88(76.6%)	27(23.4%)

(Figures in parentheses showing percentage)

DISCUSSION

In this study, the RHOs (junior doctors) were assessed about their knowledge regarding BMW management. Our study showed that 94.78% of the study population had heard about BMW and 67.82% knew about BMW (Management and Handling) rule 1998, whereas Mausami Basu et al [7] in West Bengal observed quite high number of interns (94.4%) with knowledge of rules, these findings are in contrast to our study findings. Only half(52.22%) of the participants know correct categories of BMW, Mausami Basu et al [7] had almost similar observation (55.9%) in their study done in west Bengal. In another study conducted by Suwarna Madhukumar et al [8] in Bangalore, proportion was only 38.5%. Despite being doctors, only 65.21% of the our study participants knew about the bio-hazard symbol , this is similar with a study conducted among interns by Mausami Basu et al [7] in West Bengal,(67.9%) . This indicates need for sensitization. Majority (65.21%) of the RHOs in our study had correct knowledge regarding Segregation of BMW at source but on the other hand knowledge regarding various methods of final disposal of BMW was reported by only 26% participants in our study, these findings are similar to the study conducted among doctors by Rekha Sachan et al [9] in Lucknow.

CONCLUSION

The RHOs are aware of BMW and it's health hazards, but on the other hand knowledge regarding BMW Management Rules, Bio Hazard symbol, categorization of waste and its disposal needs strengthening. Lack of proper and complete knowledge about biomedical waste management impacts practices of appropriate waste disposal.

RECOMMENDATIONS

1. The resident doctors should be trained in BMW management soon after they join the PG course, time to time assessment of knowledge and skills needs to be emphasized, and this can be done through PG seminars on BMW Management in all specialties.
2. Information about the risks linked to BMW should be displayed by posters and protocols giving instructions for segregation should be displayed on the wall above the waste disposal bins.

REFERENCES

1. Government of India, Ministry of Environment and Forests. Bio-Medical Waste (Management and Handling) Rules. Gazette of India. 1998 (27 Jul). Available from: http://envfor.nic.in/legis/hsm/biomed.html.
2. Government of India, Ministry of health and family Welfare (MoHFW). National Guidelines on hospital waste management based upon the bio-medical waste (management and handling) rules, 1998. New Delhi: MoHFW;2002.
3. Central Pollution Control Board. Environmental Standard and Guidelines for Management of Hospital Waste. CPCB, Ministry Of Environment And Forest, New Delhi,1996. P. 850-1.
4. Rao PH. Report: Hospital waste management--awareness and practices: A study of three states in India. Waste Manage Res 2008;26:297–303.
5. Yadavannavar MC, Berad AS, Jagirdar PB. Bio-medical Waste Management: A study of Knowledge, Attitude and Practices in a Tertiary Health Care Institution in Bijapur. Indian J Community Med 2010;35(1):170-1.
6. Kishore J, Goel P, Sagar B, Joshi TK. Awareness about biomedical waste management and infection control among dentists of a teaching hospital in New Delhi, India. Indian J Dent Res 2000;11:157–61.
7. Basu M**,** Das P**,** Pal R. Assessment of future physicians on biomedical waste management in a tertiary care hospital of West Bengal.J Nat Sci Biol Med 2012;3(1):38–42.
8. Madhukumar S, Ramesh G. Study-about-awareness-and-practices-about-health-care-waste-management-among-hospital-staff-in-a-medical-college-hospital-bangalore. IJBMS 2012;3(1):7-11.
9. Sachan R et al. Assessment of the knowledge, attitude and Practices regarding Biomedical Waste Management amongst the Medical and Paramedical Staff in Tertiary Health Care Centre. International Journal of Scientific and Research Publications 2012;2(7):1-6.

Corresponding Author:

Dr. Manoj Dudi
1/311, Housing board,
Jhunjhunu, Rajasthan.
Email: drmanojdudi@gmail.com

Date of Submission: 09/07/2015
Date of Acceptance: 04/08/2015

How to cite this article: Dudi M, Sharma R, Jain M. Knowledge regarding biomedical waste management among RHOs (Resident house officers) in a tertiary care centre. J Res Med Den Sci 2015;3(3):185-7.

Source of Support: None
Conflict of Interest: None declared