DOI: 10.36347/sjams.2017.v05i02.044

Scholars Journal of Applied Medical Sciences (SJAMS) **ISSN 2320-6691 (Online)**
Sch. J. App. Med. Sci., 2017; 5(2C):526-530 **ISSN 2347-954X (Print)**

(An International Publisher for Academic and Scientific Resources)
www.saspublishers.com

Original Research Article

Knowledge, Attitude, Practice regarding Hospital Waste Management among Interns & Nurses of tertiary care hospitals of Navi Mumbai

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Abstract: Hospital waste management is a burning issue and needs to be address on day to day basis. The aim is to assess the knowledge and awareness about various aspects of Bio-Medical Waste Management among interns and nursing staff working in a private hospital. 100 participants were interviewed with validated preformed, semi structure proforma. We found out that entire 100% were aware about Bio-Medical Waste; only 45% has received the training for biomedical waste management. 72% had the knowledge that regular biomedical waste record was maintained in their hospital and 93% population had the knowledge that proper segregation of biomedical waste products is done at their hospital. 60% had the knowledge about the health hazards associated with biomedical waste (HIV, Hepatitis, Needle stick injuries, Blood-borne diseases etc.). And 97% have the knowledge about the personal protective measures while handling biomedical waste products. However, only 73% population disposes sharps/needles using needle cutter, 5% disposes without needle cutter and 22% population disposes with needle covered with cap. Hence from the above data, it's evident that if the interns or nursing staff were to be duly trained for biomedical waste management and disposal through regular training sessions or by picturesque methods then, there would be significant drop in the amount of health hazards associated with biomedical waste products. The study is first of its kind since testing the knowledge of biomedical waste of Intern doctors & nursing staff in a private & municipal hospital was never done before.
Keywords: Bio medical waste, health hazards, Needle stick injuries, Personal protective measures, Interns, Nurses

INTRODUCTION

Hospital waste management is a burning issue and needs to be address on day to day basis. The term "biomedical waste" has been defined as "any waste that is generated during diagnosis, treatment or immunisation 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 [1, 2]. Bio-Medical Waste Management and Handling Rule, 1998 prescribed by the Ministry of Environment and Forests, Government of India, came into force on July 28, 1998. This rule applies to all those who generate, collect, receive, store, transport, treat, dispose, or handle biomedical waste in any manner and also to every institution that generate Biomedical waste [3].

The objective of biomedical waste management are mainly to reduce waste generation, to ensure its efficient collection, handling, as well as safe disposal in such a way that it controls infection and improves safety for employees working in the system. The waste produced in the course of healthcare activities carries a higher potential for infection and injury than any other type of waste. Inadequate and inappropriate knowledge of handling of healthcare waste may have serious health consequences and a significant impact on the environment as well. The absence of proper waste management, lack of awareness about the health hazards from biomedical wastes, insufficient financial and human resources, and poor control of waste disposal are the most critical problems connected with healthcare waste. Between 75% to 90% of the waste produced by the healthcare providers is non-risk or general and it is estimated that the remaining 10% to 25% of healthcare waste is regarded as hazardous with the potential for creating a variety of health problems. Among all health problems, there is particular concern with HIV/AIDS, Hepatitis B and C, for which there is a strong evidence of transmission through healthcare waste [4].

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 [5-7]. Adequate knowledge about the health hazard of hospital waste, proper technique and methods of handling the waste, and practice of safety measures can go a long way toward the safe disposal of hazardous hospital waste and protect the community from various adverse effects of the hazardous waste. The study is first of its kind since testing the knowledge of Intern doctors & Nursing staff in a private & municipal tertiary care hospitals, urban health centre & primary health centre simultaneously was never done before.

AIMS & OBJECTIVES

To assess the knowledge and awareness about various aspects of Bio-Medical Waste Management among interns and nursing staff.

METHODOLOGY

- **SAMPLE SIZE** - 100 participants including interns and nursing staff.
- **PLACE OF STUDY** - Terna Hospital and Research Center, Nerul, Navi Mumbai; Navi Mumbai Municipal Corporation (NMMC) Hospital, Vashi, UHC, Turbhe; PHC, Ulwe.
- **SAMPLING TECHNIQUE**- Validated, pre-designed, semi-structured proforma.

  SUBJECT - The proforma had two parts, the first part contained socio-demographic variables like age, sex and faculty and the second part contained various aspects of Bio Medical Waste Management. Institutional ethics committee approval was taken. The participants were informed about the purpose of the study and their informed verbal consent was taken. They were assured about their confidentiality.
- **STUDY PERIOD**- March 2015 to May 2015
- **DATA ANALYSIS** – Using Microsoft Office Excel. Epi info version 7

RESULTS AND DISCUSSIONS

Table1: Analysis of knowledge & practices of Bio-Medical Waste among participants

Sr. No.	Questionnaire	Yes	No
1	Received training of biomedical waste	45	55
2	Knowledge about symbol	97	03
3	Knowledge about health hazards associated with biomedical waste	60	40
4	Knowledge about biomedical waste products segregation	93	07
5	Knowledge about biomedical waste categories	86	14
6	Usage of personal protective measures	97	03
7	Knowledge about colour coding of biomedical waste	55	45

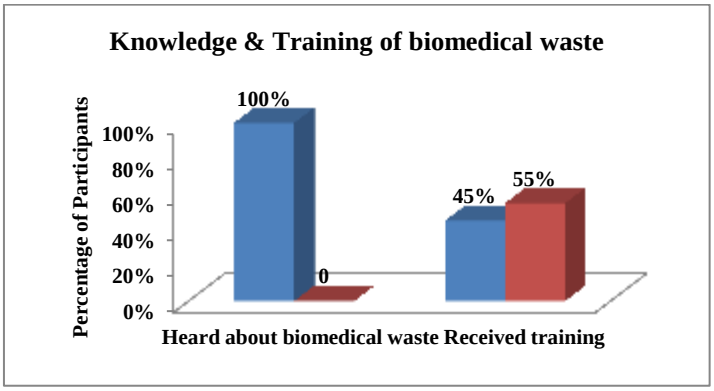

Fig 2: Knowledge and training about biomedical waste management and categories

Graph 2 shows that all the participants (100%) have heard about Bio Medical Waste Management. But only 45% have received training for the management showing the need for timely training and updating knowledge of the staff. Jena *et al.;* [8], and other researches[9, 10] in their respective studies enquired about whether they have heard about the biomedical waste management and most of them heard

about it but none of the researchers have analysed their training status.

In our study 93% participants had the knowledge of symbol  However, according to Research Foundation of Odisha – 67.5% participants know about biohazard symbol [8]. According to assessment conducted in a tertiary care hospital of West Bengal – 67.9% participants know about biohazard symbol [9]

According to the assessment regarding awareness of biomedical waste management among interns in a tertiary care hospital, Khammam – 65.2% participants know about biohazard symbol (75 participants/ 115 participants)[10]. It proves comparative excellent knowledge of the symbol. Table 1 shows that 60% participants had the knowledge regarding health hazard associated with biomedical waste & hooping 40% participants were unaware about the health hazards of biomedical waste. It is a major concern regarding their own health. Lack of knowledge causes high risk behaviour & putting their own health at stake. Participants of the research study of Jena *et al.;* [8], Basu *et al.;* [9] & Fani *et al.;* [10] had better knowledge of health hazards of biomedical waste.

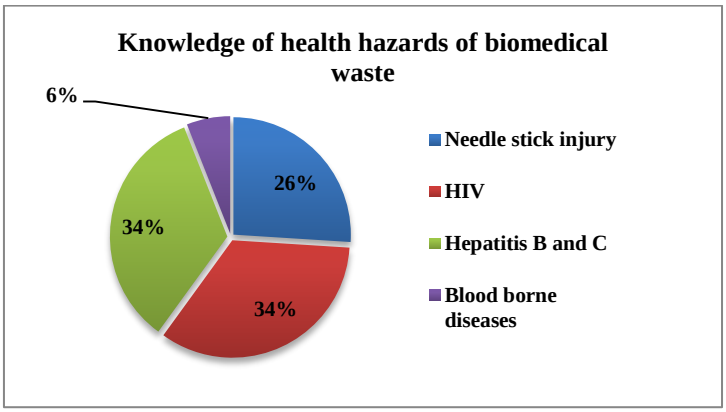

Fig 3: Knowledge of health hazards of biomedical waste

Figure 3 shows knowledge of health hazards of biomedical waste. Out of 60 participants who had the knowledge, were tasted for needle stick injuries & various diseases. Their responses regarding needle sick injuries and various diseases namely HIV, Hepatitis B& C, blood borne diseases which occur due to improper disposal of biomedical waste are displayed in the pie chart. 93% subject population have the knowledge of biomedical waste product segregation in the hospital and only 7% do not have the knowledge about the same. However, according to Research Foundation of Odisha – 30.5% participants have knowledge about BIOMEDICAL WASTE segregation at various sources (61participants/200 participants) [8]. According to assessment conducted in a tertiary care hospital of West Bengal – 78.8% participants have knowledge about segregation of biomedical waste at various sources (157 participants/ 200 participants) [9]. According to the assessment regarding awareness of biomedical waste management among interns in a tertiary care hospital, Khammam – 65.2% participants have knowledge about segregation of biomedical waste at various sources (75 participants/ 115 participants) [10]. In our study, 86% participants had knowledge about biomedical waste categories. However, lesser percentage of participants of the research study of Jena *et al.;* [8], Basu *et al.;* [9] & Fani *et al.;* [10] had knowledge about biomedical waste categories.

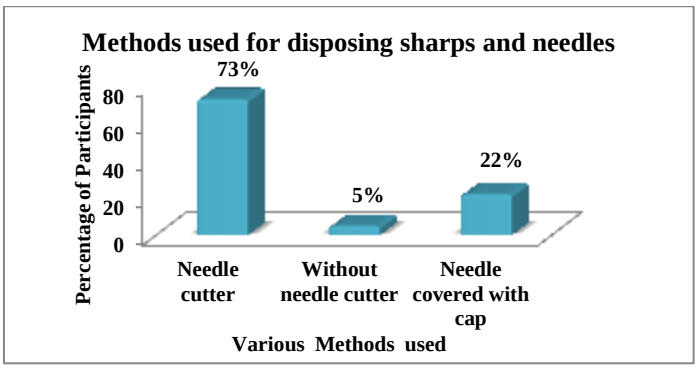

Fig 4: **Methods used for disposing sharps and needle**

Table 1 show that, 97% of the participants have used personal protective measures while handling biomedical waste products and only 3% have not used personal protective measures. Graph 4 shows that, 73% participants use needle cutter, 22% participants use needle covered with cap for disposal and 5% don't use needle cutter for disposing the sharp. The Pie chart shows that 45% subjects don't have the knowledge and only 55% subjects have the knowledge of colour coding for biomedical waste showing the great need of sensitisation & serious threat to the public health.

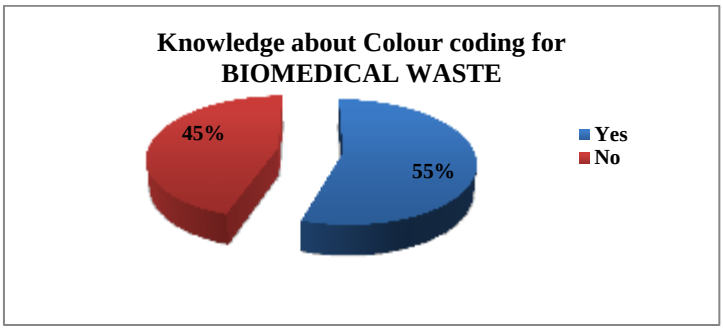

Fig 5: Knowledge of colour coding of biomedical waste

Figure 5 shows that only 55% participants knew about the colour coding of biomedical waste. 45% the total participants did not know the exact colour coding. It shows the need for sensitisation programme for biomedical waste management. According to assessment of biomedical waste management practices in a tertiary care hospital in Ludhiana, 93% have knowledge about colour coding for biomedical waste (93 participants/ 100 participants) [12].

CONCLUSION

The knowledge & practice of biomedical waste management was assessed among the interns & nursing staff of tertiary care hospitals, urban health centre & primary health centre. Entire 100% were aware about Bio-Medical Waste Management. Only 45% has received the training for biomedical waste management. Out of the 100% study population, 72% have the knowledge that regular biomedical waste record is maintained in their hospital and 93% population have the knowledge that proper segregation of biomedical waste products is done at their hospital. Only 60% have the knowledge about the health hazards associated with biomedical waste (HIV, Hepatitis, Needle stick injuries, Blood-borne diseases etc.). 97% have the knowledge about the personal protective measures while handling biomedical waste products. However, only 73% population disposes sharps/needles using needle cutter, 5% disposes without needle cutter and 22% population disposes with needle covered with cap.

Hence from the above data, it is evident that if the interns or nursing staff were to be duly trained for biomedical waste management and disposal through regular training sessions or by picturesque methods then, there would be significant drop in the amount of health hazards associated with biomedical waste products. The present study shows that there is good knowledge about the biomedical waste management and its disposal but need for sensitisation & repeated training for biomedical waste management since in spite of knowledge they lag behind in the practice.

ACKNOWLEDGEMENT

We are thankful to our Dean and Head of Community Medicine of Terna Medical College and Terna Hospital and Research Centre, Navi Mumbai, Nerul for helping us to conduct this study. We extend our thanks to Mr. Abhiram Behera for statistical assistance, interns Harshita, Ayesha & Sadaf for their timely help.

REFERENCES

1. Available at: http://envfor.nic.in/legis/hsm/biomed.html Government of India, Ministry of Environment and Forests. Bio-Medical Waste (Management and Handling) Rules. Gazette of India. 27/07/98.
2. National Guidelines on Hospital Waste Management Government of India, Ministry of Health and Family Welfare:2002
3. Environmental Standard and guidelines for management and handling waste. CPCB Central Pollution Control Board, Ministry of Environment and Forest; 1996.
4. Safe management of waste from Health Care activities. Geneva: WHO; 1999
5. Pandit NB, Mehta HK, Kartha GP, Choudhary SK. Management of bio-medical waste: Awareness and practices in a district of Gujarat. Indian J Public Health. 2005 Oct 1; 49(4):245-7.
6. Hanumantha Rao P. Report: Hospital waste management—awareness and practices: a study of three states in India. Waste management & research. 2008 Jun; 26(3):297-303.
7. 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 journal of dental research: official publication of Indian Society for Dental Research. 1999 Dec; 11(4):157-61.

8. Basu M, Das P, Pal R. Assessment of future physicians on biomedical waste management in a tertiary care hospital of West Bengal. Journal of Natural Science, Biology and Medicine. 2012 Jan 1; 3(1):38.
9. Basu M, Das P, Pal R. Assessment of future physicians on biomedical waste management in a tertiary care hospital of West Bengal. Journal of Natural Science, Biology and Medicine. 2012 Jan 1; 3(1):38.
10. Madhavi KV, Reddy BC, Ravikumar BP. Awareness regarding biomedical waste management among interns in a tertiary health care hospital, Khammam. J Evol Med Dental Sci. 2013 Jul 22; 2:5360-5.
11. Bala S, Narwal A. Awareness of Bio-medical Waste Management among Dental College and Hospital Employees-A Panoramic View. Journal of Oral Health & Community Dentistry. 2013 Jan 1; 7(1).
12. Mathew SS, Benjamin AI, Sengupta P. Assessment of biomedical waste management practices in a tertiary care teaching hospital in Ludhiana. Healthline, Journal of Indian Association of Preventive and Social Medicine. 2011; 2(2):28-30.