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Original Article

A Study on Assessment of Knowledge, Attitude and Practices regarding Biomedical Waste Management among Health Care Professionals in a Hospital

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Abstract

Biomedical waste (BMW) generated in our nation on a day to day basis is immense and contains infectious and hazardous materials. Biomedical waste comprises human & animal anatomical waste, treatment apparatus like needles, syringes, and other materials used in health care facilities in the process of treatment and research. It is crucial on the part of the employees to know the hazards of the biomedical waste in the work environment and make its disposition effective and in a scientific manner. It is critical that the different professionals engaged in the healthcare sector have adequate Knowledge, Attitudes and Practices with respect to biomedical waste management. To ascertain the levels of and the expanse of gaps in knowledge, attitudes and practices among doctors, post graduates, staff nurses, laboratory technicians and house-keeping staffs in a SMS hospital in Jaipur, Rajasthan. A cross sectional study was carried out using questionnaire as the study tool among the health care professionals in a hospital. The study demonstrated gaps in the knowledge amongst all the cadres of the study respondents. The knowledge in relation to BMW Management including the hospital BMW protocols was more desirable among doctors, but practical facets were better in nurses and the lab technicians. Knowledge, Attitude and Practice amongst the different cadres of staff members were found to be significant statistically.

Keywords : Attitude; Biomedical Waste; Healthcare personnel; Knowledge; Practice

Introduction

Health care waste is a unique category of waste by the quality of its composition, source of generation, its hazardous nature and the need for appropriate protection during handling, treatment and disposal. Mismanagement of the waste affects not only the generators, operators but also the common people too.

The amount of waste generated in India is estimated to be 1-2 kg per bed per day in a hospital. 85% of the hospital waste is non-hazardous whereas 15% is infectious or hazardous. Mixing of hazardous results in contamination and makes the entire waste hazardous and this biomedical waste encompasses wastes like anatomical waste, cytotoxic wastes, sharps, which when inadequately segregated could cause different kinds of deadly infectious diseases like Human immunodeficiency virus(HIV) hepatitis C and B infections, etc, and also cause disruptions in the environment, and adverse impact on ecological balance. The amount of waste generated in India is estimated to be 1-2 kg per bed per day in a hospital. 85% of the hospital waste is non-hazardous whereas 15% is infectious or hazardous. Mixing of hazardous results in contamination and makes the entire waste hazardous.

Adequate knowledge amongst the health care employees about the biomedical waste management rules and regulations, and their understanding of segregation, will help in the competent disposal of the waste in their respective organizations.

Acceptable management of biomedical waste management begins from the initial stage of generation of waste, segregation at the source, storage at the site, disinfection, and transfer to the terminal disposal site plays a critical role in the disposal of waste. Hence adequate knowledge, attitudes and practices of the staff of the health care institutes play a very important role.

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Studies documented from different parts of the country; still convey that there are gaps in the Knowledge, lacunae in the attitudinal component and inconsistency in the practice aspects which are matters of concern among the health care professionals. With this background, the study was carried out to assess the current knowledge, attitude and practices of the health care workers like doctors, post graduates, interns, staff nurses, laboratory technicians and house-keeping staff in a tertiary care teaching hospital with regard to the management of BMW.

Objectives

1. To assess the levels of knowledge, attitudes and practices among doctors, post graduates, interns, staff nurses, laboratory technicians and housekeeping staff in the different departments of a hospital.
2. To assess the gaps in knowledge, attitudes and practices among these health care workers in the different departments of a hospital.

Methodology Research design : Cross-sectional study.

Study setting : SMS hospital Population: different cadres of staff working in the different departments of the hospital.

Sample size - different cadres of staff **472**.

Materials and Methods : The tool used for the study was a pretested, semi-structured closed ended questionnaire which encompassed 42 questions on Knowledge, Attitudes and Practices. The questions on attitude were related to matters like, was biomedical waste hazardous, its management additional burden on their work or if their appropriate management burden on the finances of the hospital, and also on legislative measures for waste management. The questions on practice appraised if the study respondents had received any training on biomedical waste management, if they were immunized against hepatitis B and if disinfection of sharps were carried out at the point of generation. The study tool consisted of 12 questions assessing the knowledge with yes/no/not sure responses, 10 questions assessing the attitude with agree/disagree/no comment as answers and 20 questions assessing the practices with yes/ no responses. The participants filled up the selfadministered questionnaires without scope for undue help The questionnaire was adapted from English to local language by an experienced professional who is involved in translating of health survey questionnaires to accommodate the housekeeping staff.

Strata	Participants
Doctors	55
Post Graduates	83
Interns	29
Staff Nurses	172
Laboratory Technicians	37
House Keeping Staff	96
Total	**472**

Results : The results were evaluated across 3 domains for all the cadres of the study population.

Knowledge score : The knowledge regarding general information about HCW was assessed, the mean score was highest in doctors (10) followed by nursing staff (9.3) and least in housekeeping staff (7.5). This is found to be statistically significant.

The mean attitude score was 9.20 for the nurses and 9.18 out of 10 for the doctors. Favorable attitude was shown by most of the study respondents towards biomedical waste management. The best attitudes were displayed by the nurses showed, subsequently by doctors, interns, postgraduates, the laboratory technicians, and housekeeping staff (in order). It was concerning that the lacuna in this domain was that biomedical waste management was considered as additional burden on work.

The mean practice score was 17.30 for the nurses and 16.50 for the housekeeping staff and 15.27out of 20 for the doctors, in the study. Though greater number of the study respondents displayed favorable biomedical waste management practices, it was noted that the nurses had the best practices, followed housekeeping staff, doctors, technicians, interns and junior residents (in order)

Conclusions

1. Overall, the knowledge, attitudes and practices towards biomedical waste management among the study respondents was satisfactory. 2. Knowledge, attitudes and practices toward biomedical waste management were better among the nurses and doctors than the other cadre of staff. 3. Knowledge, Attitudes and Practices of the study respondents are dependent on the cadre that they belong too.

Recommendations

- The right practices laboratory waste management must ensure the safety of patients and staff, limiting the environmental impacts and control waste disposal budget.

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- Training programs need to focus on empowering the healthcare professionals on biomedical waste management with broad scope and practical knowledge in all aspects.
- The ethical requirements and the institutional level policies form the directional pathway for the practical components in the organization.
- The right practices and other activities of BMW management and its ramifications in the form of avoiding of injuries, importance of vaccinations and following of universal precautions can be achieved when adequately supported by IEC (information, education and communication) strategies like handouts, stickers, charts, celebrations of various days like hand hygiene day and other days etc can help in bettering the practices of the employees of the organizations.
- Training the staff with checklists and regular inspections can bring about accountability in the staff. All health care professionals regardless of their designation, experience and qualification, designation must be included in these interventions, so that it can avoid cross infections among the professionals and patients in the health care sector.

References

01. Tenglikar.P.V, Kumar. A.G, Kapate.R et al, Knowledge, Attitude, and Practices of Health Care Waste Management amongst Staff of Nursing Homes of Gulbarga City. Journal of Pharmaceutical and Biomedical Sciences, 19(19) 1-3 (2012).
02. Manasi S (2017) Challenges in biomedical waste management in cities: a ward level study of Bangalore. Adv Recycling Waste Manag 2(1):1-8
03. Patil AD, Shekdar AV. Health-care waste management in India. J Environ Manage. 63:211-20 (2001).
04. Prem Nath A, Prashanthini V, Visvanathan C. Healthcare waste management in Asia. Waste Management; 30: 154-61 (2010).
05. Lakshmikantha H. Report on waste dump sites near Bangalore. Waste management; 26(6): 640- 50 (2006).
06. Pattnaik S, Reddy MV. Assessment of Municipal Solid Waste management in Puducherry (Pondicherry), India. Resources, Conservation and Recycling. 54:512-20 (2010).
07. Radha R. Assessment of existing knowledge, attitude, and practices regarding biomedical waste management among the health care workers in a tertiary care rural hospital. Int J Health Sci Res; 2(7):14-19 (2012).
08. erma LK, Mani S, Sinha N, Rana S. Biomedical waste management in nursing homes and smaller hospitals around Delhi. Waste Management; 28: 2723-34 (2008).