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A STUDY TO KNOW THE KNOWLEDGE, PERCEPTION, AND PRACTICES OF BIOMEDICAL WASTE MANAGEMENT AMONG HEALTHCARE PERSONNEL IN CENTRAL MAHARASHTRA.

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1) ABSTRACT

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. It is estimated that annually about 0.33 million tonnes of hospital waste is generated in India and, the waste generation rate ranges from 0.5 to 2.0 kg per bed per day.[1] 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.[2] The hospital waste management has diverse ramifications as it not only affects the health of patients but also of healthcare workers (doctors, nurses, sanitary staff, etc.) and general public. 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.[3–5] 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.

2) KEYWORDS: Biomedical waste, knowledge, practice, healthcare personnel.

3) INTRODUCTION

Biomedical waste (BMW) is waste-generated during diagnosis, treatment or immunization of human beings or animals, or in research activities pertaining thereto, or in the production and testing of biologicals, and is contaminated with human fluids.6 The waste produced in the course of healthcare activities carries a higher potential for infection and injury than any other type of waste.7 All BMW generated in the hospital should be disposed off strictly in accordance with Biomedical Waste Management and Handling Rule 1998. In persuasion of the aim of reducing health problems, eliminating potential risks and treating sick people, healthcare services inevitably create waste, which itself may be hazardous to health. The waste produced in the course of healthcare activities carries a higher potential for infection and injury than any other type of waste.

4) MATERIALS AND METHODS

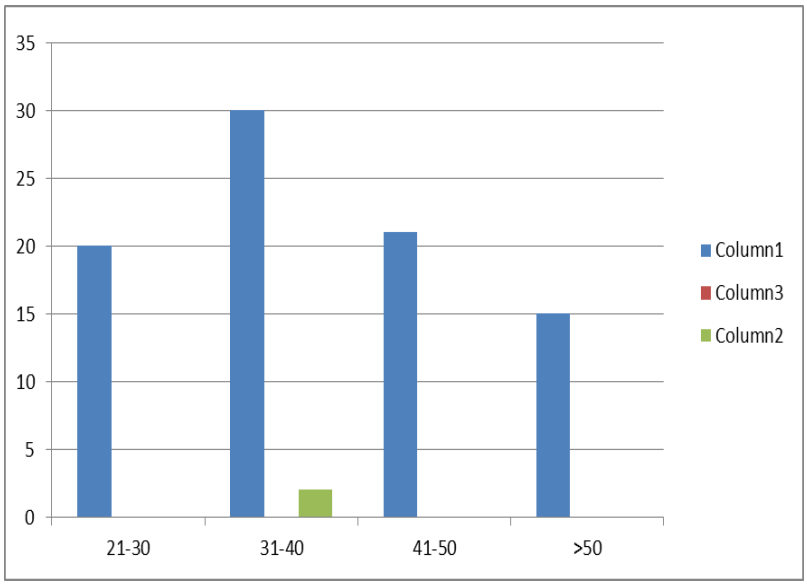
This was a cross-sectional hospital based survey carried out in a tertiary care hospital in Maharashtra over a period of 15 days. In the present study, health care providers are categorized into four; Senior Health Workers (SHW), Junior Health Workers (JHW), Laboratory Technicians and Pharmacists. The questionnaire was used for research. The authors were the investigators in this study. The questionnaire was in English, but the questions were read out in the local dialect to the participants. The relatives contributed in responses. Data collection pertained to indices of expectation and satisfaction from surgical outcome and demography.

a) Study design: Cross sectional study.
b) Study method: Questionnariae based study.
c) Inclusion criteria: Senior Health Workers (SHW), Junior Health Workers (JHW), Laboratory Technicians and Pharmacists were interviewed.
d) Exclusion criteria: No exclusion criteria.
e) No **laboratory test** used.
f) No **equipment's** used.

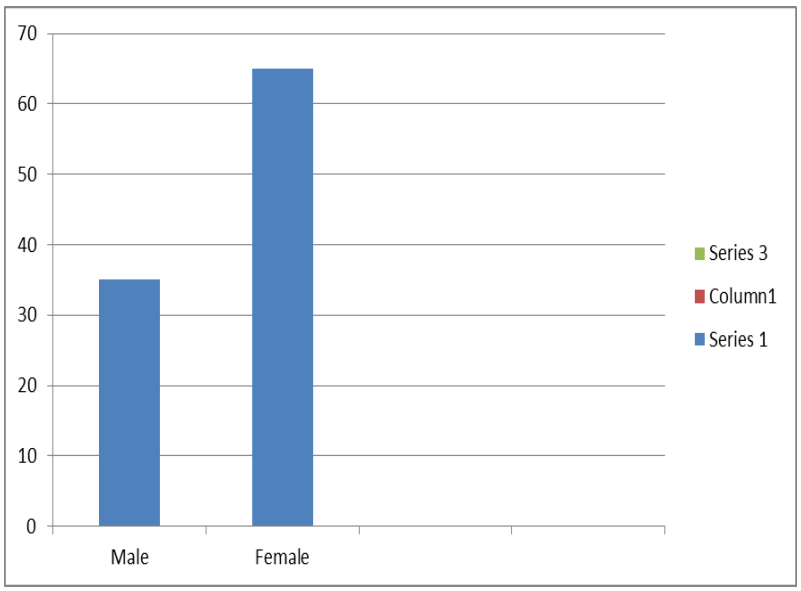
5) RESULTS

TABLE 1: Distribution of health care providers according to their socio-demographic variables

Demographic variable	Percentage.
Age	
21-30	20
31-40	30
41-50	21
>50	15
Gender	
Male	35
Female	65
Designation	
Senior health worker	20
Junior health worker	60
Laboratory technician	10
Pharmacist	10



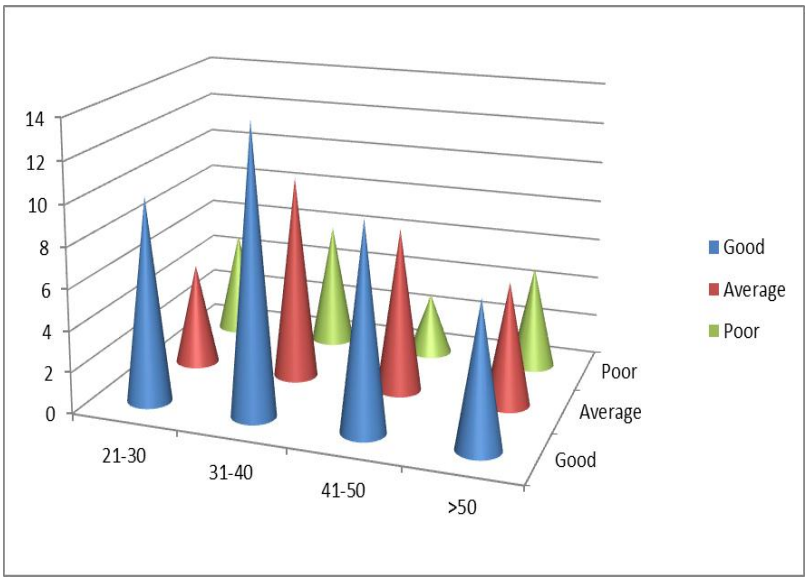
GRAPH 1: Age Graph



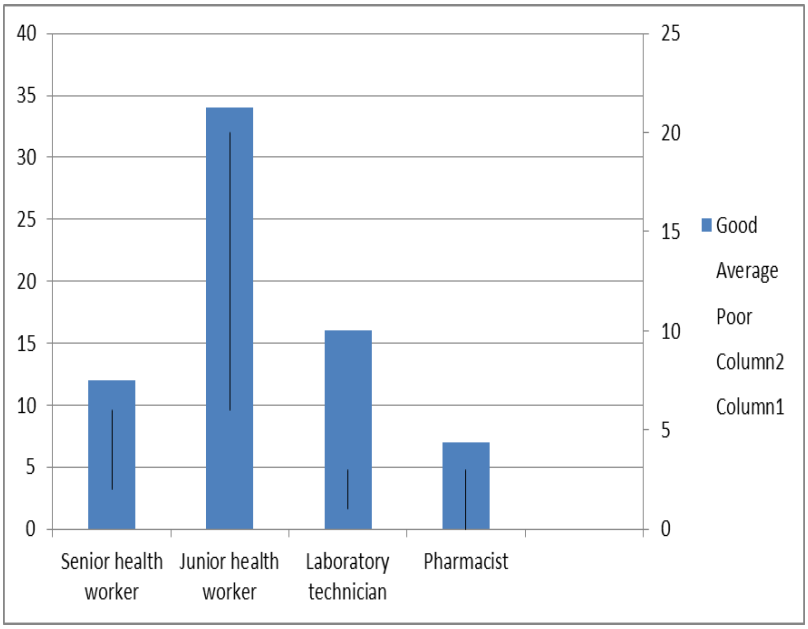
GRAPH 2: Male: female ratio.

TABLE 2: Association between knowledge scores and selected demographic variables

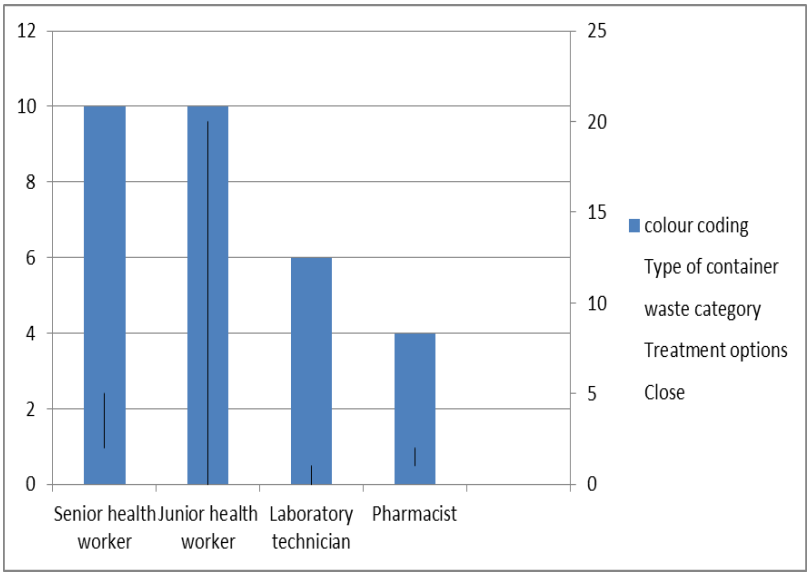
Demographic variable	Good	Average	Poor
Age	–		
21-30	10	5	5
31-40	14	10	6
41-50	10	8	3
>50	7	6	2
Gender			
Male	20	9	6
Female	32	20	13
Designation			
Senior health worker	12	6	2
Junior health worker	34	20	6
Laboratory technician	16	3	1
Pharmacist	7	3	0



GRAPH 3: Age and Knowledge scores.



GRAPH 4: Designation and Knowledge score.



GRAPH 5: Designation and knowledge regarding colour code.

6) DISCUSSION

Maximum number of health care providers 51% were between the age group of 21-30 years and 41-50 years, 30% were between the age group of 31-40 years and 15% were 51 years and above. Majority of health care providers were females. The study also revealed that majority of health care providers 99 (83%) did not undergo any in-service education regarding bio-medical waste management. The assessment of knowledge of health care providers regarding bio-medical waste management revealed that majority 84% had an overall average level of knowledge, while 16% respondents had a poor knowledge. 20% were senior health worker, 60% were junior health worker, 10& were laboratory assistant, 10% were pharmacist. Majority of them have knowledge regarding biomedical waste management.

7) CONCLUSION

The findings of the study have implications for medical education, service, administration and research. Knowledge retention has its limit and practices are dependent on knowledge, hence periodical in service education is the solution to the proper bio-medical waste management. It equips health care providers with essential knowledge, skill and attitude for the protection of self from the infectious or non infectious waste while working in the health centers. It also helps the health care providers to protect the community from hazardous waste. Care givers and support personnel, housekeepers and transport personnel must have periodic educational updates on bio-medical waste management. Adequate supplies and equipments should be available in all the departments to take care of waste properly. Various research activities have to be undertaken to know the hazards of improper bio-medical waste management and its prevention among health care providers. The researcher provides information, which helps to focus on health hazards and lays foundation upon new knowledge which is based on the nursing research. Though there were many studies done on bio-medical waste management researcher found scarcity in effective practices of it. So, investigator recommends periodic research on bio-medical waste management and role of nurses. However, from this study, no broad generalization could be made due to the small size of sample and limited area of setting. A similar study should be conducted for health care providers of the whole district to make a generalized conclusion. Also, comparative studies can be done in private and public sectors of health care providers regarding bio-medical waste management. Comparative study may be done in different categories of health care providers. Finally, studies to evaluate the effectiveness of informational booklet should be done. Managing hospital waste requires effective knowledge among the people who produce the waste, not just those who handle it. There is an urgent need for raising awareness on BMWM among the hospital staff in all health-care setups.

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9) CONFLICT OF INTEREST

No conflict of interest involved so ever.

10) SOURCE OF FINDING

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