



Knowledge, attitude and practices among health care professionals of surgery wards in tertiary care hospitals of Lucknow regarding biomedical waste and its management

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ABSTRACT

Healthcare is one of the fastest growing sectors in India. The wastes generated from healthcare setups are serious threat to the environment as well as to the people associated. Hospitals are lacking the proper action to dispose these bio-medical wastes (BMW). Lack of knowledge and inadequate practices has led to the hospitals becoming the hub for spreading illness. To assess the knowledge, attitude and practice of bio-medical waste and its management among health care professionals of surgery wards in tertiary care hospitals of Lucknow. This study was an observational descriptive hospital based cross sectional study. It was conducted in surgery department of 5 tertiary care hospitals of Lucknow. Study included 250 respondents including surgeons, resident doctors, nurses and OT technicians. The study was done by using a pre tested, semi-structured questionnaire. Regarding knowledge about the BMW 94.8 % have heard of BMW while 91.6% have heard of BMW Rule/Act. 53.6 % know about all the BMW categories. Only 55.2% have received any BMW training. Only 56.4 % identified the colours correctly. This study shows that knowledge regarding BMW and its management is not adequate. Hospitals are lacking proper BMW management protocols and healthcare personnel are not practicing the BMW Rules/Act properly. To improve the overall outcome, there should be the compulsory training of health care workers and bio medical waste management rules should be implemented strictly.

Keywords: Bio-medical waste, knowledge, practice, training, colour.



INTRODUCTION

Health care is a basic requirement of human beings [1]. Healthcare is one of the fastest growing sectors in India [2]. Bio Medical Waste means any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals, or in research activities or in the production or testing of biological [3]. The wastes generated from healthcare setups are serious threat to the environment as well as to the people associated [4,5]. It poses health hazards to the doctors, health care workers, patients as well as the general community [6].

Daily activities in health institutions lead to generation of huge amount of waste which is biological in nature and are sources of infection transmission [7]. Improper handling of waste poses significant risk of infection due to various pathogens like HIV, Hepatitis B & C virus and also carries the risk of contamination of water, air & soil and thus affecting the environment and community adversely [8].

According to World Health Organization reports, 85% of hospital wastes are actually non-hazardous,

whereas 10% are infectious and 5% are non-infectious [4]. According to a report India generates around three million tonnes of medical wastes every year and this is expected to increase eight per cent annually [9, 10]. With the increasing health care facilities and increasing waste generation, it is the duty of every person associated with a health care to take all steps to ensure segregation, safe handling & disposal of bio-medical waste so as to reduce the hazards to the people and the environment. Improper clinical solid waste management practice impacts both directly and/or indirectly to healthcare staffs, patients and hospitals environment [11]. The Ministry of Environment and Forests of the Government of India has formed the Biomedical Waste (Management and Handling) Rules [12, 13]. But despite this, hospitals are severely lacking the proper action to dispose these bio-medical wastes (BMW). Lack of awareness and inadequate knowledge has led to the hospitals becoming the hub for spreading illness.

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MATERIAL AND METHODS

This study was an observational descriptive hospital based cross sectional study. It was conducted in surgery department of 5 tertiary care hospitals of Lucknow. The study group included 250 respondents. Out of them 65 were surgeons, 130 were resident doctors, 30 nurses, 25 OT technicians. The study was done by using a pre tested, semi-structured questionnaire. The study included details of various socio-demographic variables and other details regarding knowledge, attitude and practice for bio medical waste handling and its management.

RESULTS

The data are present in the tables below. Majority of the participants were under 50 years of age. Out of them 81.2% were males and 18.8 % were females. 52 % were resident doctors while surgeons were 26%. Regarding their working experience, 68.8 % had an experience of between 1 to 10 years (Table-1).

Tab-1: Demographic profile of the participants

Character	Number	%
Age		
21- 30	153	61.2
31- 50	85	34
>50	12	4.8
Sex		
Male	203	81.2
Female	47	18.8
Working status		
Surgeons	65	26
Resident doctor	130	52
Nurses	30	12
OT technicians	25	10
Working in hospitals since		
Less than 1 yr	30	12
1- 10 yrs	172	68.8
More than 10 yrs	48	19.2
Received any training for BMW management		
Yes	138	55.2
No	112	44.8

Knowledge and awareness about bio medical waste management and other particulars related to BMW act, handling and management are presented in table below. Regarding knowledge about the BMW 94.8 % have heard of BMW while 91.6% have heard of BMW Rule/Act. 53.6 % know about all the BMW categories. Only 55.2% have received any BMW training. 72.8 % know that different colour bags are used for BMW disposal but only 56.4 % identified the colours correctly. Among all only 54.8 % provided with colour coding at workplace. Detailed information regarding practice of BMW handling and management given in table below.

Tab-2: Knowledge about Bio Medical Waste and its management among health care personnel

Knowledge	Number	%
Heard about Bio Medical Waste (BMW)		
Yes	237	94.8
No	13	5.2
Heard about BMW Rule/Act		
Yes	229	91.6
No	21	8.4
Know about Bio Hazard Symbol		
Yes	181	72.4
No	69	27.6
Know all BMW management categories		
Yes	134	53.6
No	116	46.4
Received any training for BMW management		
Yes	138	55.2
No	112	44.8
Is any BMW management disposal policy there in present hospital		
Yes	144	57.6
No	106	42.4
Does BMW transmit any disease		
Yes	212	84.8
No	38	15.2
Are different coloured bags used to dispose BMW		
Yes	182	72.8
No	68	27.2
Any guideline provided for colour coding at work area		
Yes	137	54.8
No	113	45.2
Identified all coloured bags used for BMW collection		
Yes	141	56.4
No	109	43.6
Identified methods for BMW management		
Yes	128	51.2
No	122	48.8

DISCUSSION

The present study was conducted among health care professionals of including surgeons, resident doctors, nurses and OT technicians of surgery department of 5 tertiary care hospitals of Lucknow. Majority of the participants have heard about the BMW and its management rule but only 55.2% have actually received training for BMW management. Only 53.6 % know about the categories of BMW correctly. According to 51.6 % there is no proper record maintenance at workplace.

Tab-3: Practice of health care personnel regarding Bio Medical Waste (BMW) and its management

Practice	Number	%
Maintaining BMW records at work place		
Yes	121	48.4
No	129	51.6
Segregation of BMW done at work place		
Yes	139	55.6
No	111	44.4
Disinfection of BMW done before disposal at work place		
Yes	146	58.4
No	104	41.6
Using personal protective measures while handling BMW		
Yes	177	70.8
No	73	29.2
Proper storage facility provided for collecting BMW at work place		
Yes	156	62.4
No	94	37.6
Provided with hub cutter for needles and syringes		
Yes	141	56.4
No	109	43.6
Practicing correct method for collecting used disposable plastic items		
Yes	138	55.2
No	112	44.8
Practicing correct method for collecting soiled dressings/plaster casts/linen		
Yes	176	70.4
No	74	29.6
Practicing correct method for collecting sharps and needles		
Yes	153	61.2
No	97	38.8
Any record available for injuries related to BMW		
Yes	119	47.6
No	131	52.4

According to 55.6 % segregation of BMW is being done at their workplaces while 58.4 % said that disinfection of BMW is done. Only 56.4 % had hub cutter for needles and syringes.

The knowledge regarding biomedical waste corresponds with the educational level of different staffs working in the surgery wards. Although the overall knowledge of participants was good but still

they need a quality training to improve their knowledge regarding BMW and its management. Despite having knowledge the practices regarding BMW is not good. To improve overall knowledge and practice related to BMW management and its handling there should be the implementation of bio medical waste management rules very strictly. It can be made compulsory for health care facilities to get their staff trained from accredited training centres. Training should be a continuous process instead of being a one time act.

CONCLUSION

This study shows that knowledge regarding BMW and its management is not adequate. Hospitals are lacking proper BMW management protocols and healthcare personnel are not practicing the BMW rules/Act properly. The above study concludes that there is an urgent need to increase the awareness about rules, regulations and procedures regarding proper management of BMW. There should be cooperation from all sections of employees of health care institutions so as to implement BMW act properly.

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