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ASSESSMENT OF THE KNOWLEDGE, ATTITUDE AND PRACTICES ABOUT BIOMEDICAL WASTE MANAGEMENT AMONGST THE CLINICIANS IN SEMI URBAN AREA OF MAHARASHTRA.

Microbiology

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ABSTRACT

Bio medical waste poses a threat to public health and environment. Globally, there is increased awareness among health care professionals about hazards and appropriate management techniques, the level of awareness in our area is not known. So, the present study was conducted to assess the awareness, practices as well as attitude assessment towards waste management among 40 clinicians. A Cross sectional study was conducted using pre-tested structured questionnaire. The study showed that 70% of the practitioners have not undergone any orientation / training in BMW management. 87.5% doctors have knowledge about colour code. Most health care professionals 92.5% were segregating bio-medical waste. Knowledge about the correct method of bio-medical waste management was insufficient. From our study we conclude that there is still a need for programs that not only impart knowledge to the Doctors but also motivate them to actively practice, proper bio-medical waste management.

KEYWORDS

Introduction:

The term "biomedical waste" is defined as any waste that is generated during diagnosis, treatment of human beings or animals or in the research activities and includes categories mentioned in schedule I of the Government of India's biomedical waste management and handling rules 1998. [1,2]

BMW is a burning issue today. Improper waste management practices can lead to health hazards to patients as well as the medical personnel. Though all hospital waste has the potential to transmit infection, it is estimated that 80–85% of hospital waste is non-infectious. Only 10% waste is infectious and 5% is other hazardous waste. [3] If the infectious component gets mixed with the general non-infectious waste, the entire bulk of hospital waste potentially becomes infectious. Any carelessness in the management of wastes generated in a hospital tends to spread infections. Thus improper waste management practices are a serious problem not only to the hospital staff but also to society.

To combat this problem, the government of India has formulated the Bio-medical waste management and Handling rules (1998). These rules lay down clear methods for disposal of Bio Medical Waste. Pollution control boards of every state have been given the task of authorizing and implementing the rule. [1] Accordingly all hospitals every concerned health personnel are expected to have proper knowledge, practice and capacity to guide others for waste collection and proper handling techniques.

The clinicians play a key role in any health care establishment. They are involved in diagnosis treatment, and immunization of patients thus generating biomedical waste. Poor waste management practices can lead to infections amongst patients and health care staff.

Although there is increased global awareness among health care professionals about hazards and appropriate management techniques, in India the level of awareness has been found to be unsatisfactory [4,5]

Most common problems connected with health care waste are lack of awareness about the health hazards from biomedical waste, insufficient financial resources and poor waste disposal, absence of proper waste management. [6]

The hazards of exposure to bio-medical waste can range from gastroenteritis, respiratory and skin infections to more deadly diseases such as HIV /AIDS and hepatitis. Biomedical waste is the source of contamination of land and water resources, if not rendered harmless before its burial on land or disposal in water. Biomedical waste emits harmful gases which lead to atmospheric pollution when treated by open burning or burning in incinerators [5]. In India, 2 million new hepatitis B cases, 4 million new hepatitis C cases and 30000 HIV positive cases occur every year due to needle prick injuries. [7]

Therefore, the present study was conducted to assess the awareness regarding the waste management policy, waste management practices as well as attitude assessment towards waste management and to suggest possible remedial measures if required.

AIMS AND OBJECTIVES:

1. To assess the awareness regarding waste management policy amongst clinicians.
2. To assess the waste management practices and attitude towards waste management amongst clinicians

MATERIAL AND METHODS:

This cross-sectional study was undertaken during November 2017 to January 2018 to assess the knowledge, attitude and practices among 40 clinicians practicing in and around Talegaon Dabhade. Written informed consent was taken from all the participants before the data was collected. The study was carried out with the help of a pretested self-administered questionnaire containing questions on knowledge, attitude, and practices regarding bio-medical waste management.

Before administering the questionnaire, the purpose of the study was explained to all participating clinicians. Confidentiality of the participants was maintained. The percentage of yes and no answers for each question was calculated.

Statistical analysis:

Data was analyzed on a computer using SPSS (Statistical Package for Social Sciences) version 15.0. Descriptive statistics like percentage, mean, and SD (standard deviation) were computed for data presentation.

RESULT:

Table 1: The study participant's profile

The participant's profile		
Age group	Total no. (n =40)	Percentage
20-30	14	35%
31-40	16	40%
41-50	6	15%
>51	4	10%
Gender		
Male	26	65%
Female	14	35%
Education Level		
Postgraduate	30	75%
Undergraduate	10	25%
Work Experience		
1-5	21	52.5%
6-10	7	17.5%
11-15	6	15%
16-20	3	7.5%
21-25	1	2.5%
>25	2	5%

As, far as the demographic profile is concerned, 75% of the participants belonged to the age group below 40 years. Majority of the participants (65%) were males. 75% of the participants were postgraduates. More than 50% had work experience between 1-5years and only 5% had an experience of more than 25 years.

Table no 2: Awareness and attitude about waste management policy.

A. Waste management policy knowledge	**Yes**	**NO**
Aware of authorization about State Pollution control Board	33 (82.5%)	7 (17.5%)
B.The participant's training in hospital waste management		
	Yes	**No**
Training undergone in hospital waste management	12 (30%)	28 (70%)
Like to attend the training programme on waste disposal in future	28 (70%)	12 (30%)
C: The participant's knowledge regarding biomedical waste management		
Waste Management Knowledge	**Yes**	**No**
Awareness about disposal of sharps and needles	40 (100%)	0 (0%)
Awareness about Using protective Gloves	40 (100%)	0 (0%)
Awareness of immunization of Hepatitis B	40 (100%)	0 (0%)

A- When the participants were asked about knowledge regarding waste management policy, 82.5% participants were aware about authorization from state pollution control board.

B- Only 30% (12) participants had undergone a formal training programme in Biomedical waste management, however almost 70% were keen to attend a training programme.

C- As far as awareness was concerned, all the participants were aware about proper disposal of sharps, use of protective gloves and immunization against Hepatitis B.

Table no 3: The participant's practices regarding biomedical waste management

D. Waste Management Practices	**Yes**	**No**
Segregation of Waste	37 (92.5%)	3 (7.5%)
Labeling of biohazard symbol	37 (92.5%)	3 (7.5%)
Knowledge about colour code	35 (87.5%)	5 (12.5%)
Liquid disposal	31 (77.5%)	9 (22.5%
Register maintained	30 (75%)	10 (25%)
System for reporting and recording accident and diseases to the committee	22 (55%)	18 (45%)

In the above table, we can see that, more than 92% of the clinicians were segregating the waste and knew about the biohazard symbol. 87.5% had correct knowledge about colour code. More than 75% were aware about liquid disposal and about maintenance of register. However, only 55% were aware about system for reporting of and recording of accident and diseases to the committee.

Table no 4: The participant's attitudes towards biomedical waste management

E. Attitude Assessment	Agree	Disagree
Waste management is a team work	38 (95%)	2 (5%)
Safe management of BMW is extra burden on work	2 (5%)	38 (95%)
safe management efforts by hospital increases financial burden on management	10 (25%)	30 (75%)
Training orientation for safe management is not necessary	0 (0%)	40 (100%)

When the participants were assessed about the attitude, 95% agreed that waste management is team work and safe management of Biomedical waste does not place an extra burden. However, 75% participants felt that it increases financial burden on the hospital. All the participants felt that training orientation was necessary.

DISCUSSION:

The present study was conducted among the clinicians to find out the awareness and existing practices regarding biomedical waste management. Awareness among health care workers is essential for the adequate management of biomedical waste.

Almost all the doctors were quite aware about hazards and method of prevention of hazards of biomedical waste management and handling (100%). In our study, 82.5% clinicians were having knowledge about State Pollution control Board which is better as compared to the study done in Delhi where only 46% were aware of legislation[8]

The knowledge regarding segregation is important to prevent the mixing of hazardous and non-hazardous or domestic waste which has to be disposed off with municipal waste. In the present study 92.5% doctors were practicing segregation of waste and were labeling infectious and noninfectious waste. Practice of segregation Bio Medical Waste was more in our study when compared to the study done by Hanumantha Rao (70%). [5]

In our study 87.5% clinicians had proper knowledge of colour coding which was less as compared to the study done in Lahore in a private hospital which showed that the segregation and colour coding of BMW were 100%. [9]

Liquid disposal practices were followed properly by 77.5% of clinicians. Awareness about disposal of sharps and needles were 100% among study participants but only 55% participants knew about system for reporting and recording accidental pricks and diseases to the committee.

Benefits of Biomedical waste management can be achieved only through team work. In our study, we noted that 95% of participants were of this belief and that safe management of biomedical waste is not an extra burden on everyday work. Every participant believed training orientation for safe management is necessary**.**

CONCLUSION:

In our study we found that the participants had good knowledge, positive attitude and they practiced Biomedical waste management as per the guidelines given which are promising signs. But to further improve and to maintain sufficiently high levels of awareness and practices, they should be constantly motivated. There should also be regular training programmes in Biomedical Waste Management for the clinicians so that they can update themselves with the new rules and also any other recent advances.

Conflicts of Interest:

There are no conflicts of interest.

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