

Knowledge and practice on biomedical waste management among health care providers



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ABSTRACT:

Proper handling and disposal of bio-medical waste is very essential. Unfortunately, laxity and lack of adequate knowledge and practice on bio-medical waste disposal leads to staid health and environment apprehension.

Aim: To assess the knowledge and practice of bio-medical waste management among the health care providers working in Chettinad Hospital and Research Institute, Kelambakam, Kanchipuram (D.T), with the view to prepare informational booklet.

Methods: In the present study, health care providers are categorized into four; Senior Health Workers (SHW), Junior Health Workers (JHW), Laboratory Technicians and Pharmacists. Periodical visits were made to analyse knowledge and practice about biomedical waste management among health care providers of Chettinad Hospital and Research Institute, Kelambakam, Kanchipuram (d.t), by using questionnaires.

Conclusion: Findings from this study revealed the lack of knowledge and awareness of bio-medical waste management even among health workers. This has led to the poor practice of biomedical waste handling and management, hence exposing themselves and the public in general to health and environment hazards.

Key words: Bio-medical waste, Waste management, Knowledge, Practice, Health care providers.

INTRODUCTION:

Unwanted materials generated during diagnosis, treatment, operation, immunization or in research activities including production of biologicals is termed as biomedical waste. Day to day activities in health institutions generate a lot of waste which is biological in nature and are potential sources of infection transmission, especially hepatitis B and C, HIV, and tetanus. Approximately 1.45 kgs waste is generated per patient per day in Indian hospitals. It is as high as 4.5 kgs in developed countries. According to western figures, approximately 15-20% of this total waste is hazardous, whereas, it would be much higher in India because proper waste segregation and waste disposal methods either does not exist or not practiced. Many Indian newspapers and magazines have reported that re-use of disposable syringes, needles, catheters, bags, drug vials, bottles, and intravenous drip sets are picked

up by rag pickers and purchased by duplicators, recycled, replaced without proper treatment. Highly infected human tissues are just thrown in municipal dustbins, further disposed at landfill site, which contribute to air pollution. The incinerators used by some of the hospitals pollute the environment because of improper segregation of the wastes used in incinerators. Such practices of waste management are posing serious threat of diseases to the close by residence. To protect the environment and health of the community, the Ministry of Environment and Forestry has notified 'Bio-medical waste (management and handling) Rules 1998'. All hospitals, clinics, nursing homes, community health centers, primary health centers, slaughter houses and laboratories have to ensure safe disposal and environmentally sound management of waste produced by them as specified in the rules for proper disposal of bio-medical waste.

It is the responsibility of head of the health care facility to safeguard the health of workers involved in handling, transportation, and disposal of bio-medical waste besides ensuring safety to the community and environment. Any violation of the rules by any person is punishable with fine or imprisonment under the Environment protection Act 1986.

Statement of the problem: A study to assess the knowledge and practice on biomedical waste management among health care providers working in selected tertiary hospital, Kanchipuram district, Tamilnadu, India.

Objectives:

- ❖ To assess the level of knowledge and practice regarding biomedical waste management among health care providers.
- ❖ To find out the association between the level of knowledge regarding biomedical waste management among health care providers with their socio demographic variables.
- ❖ To find out the association between the practice regarding biomedical waste management among health care providers with their socio demographic variables.

METHODOLOGY: A quantitative descriptive survey design was adopted for this study. The study subjects were health care providers posted in general wards in Chettinad hospital and Research Institute, at Kelambakkam, Kanchipuram district.

120 health care providers were selected by using non probability convenience sampling technique. Semi structured questionnaire was used to assess the knowledge of health care providers .The study period was one month, March, 2011. The data entry and analysis was done, using the Microsoft excel. Results were presented as percentage, mean and standard deviation of knowledge scores.

Ethical Clearance: There was no drug administration or invasive procedure involved in the study. A written permission was obtained from the institutional authority and ethical committee. Written informed consent was obtained from mothers who participated in the study and Confidentiality and anonymity of the subjects was maintained throughout the study.

Results: The data was organized, tabulated, analyzed and interpreted by using descriptive and inferential

statistics based on the objectives of the study. The findings were presented in the following sections.

The analysis of the data was mainly classified as Section-I

Table 1: Frequency and percentage distribution of socio demographic variables of Health care providers

Demographic variables	Fre (f)	Per (%)
Age (in yrs)		
21-30	35	29
31-40	31	26
41-50	35	29
≥ 51	19	16
Gender		
Male	43	36
Female	77	64
Qualification		
MPHW/ ANM	101	85
DMLTC	10	8
D.Pharm	09	07
Position		
Senior Health Worker	12	10
Junior Health Worker	89	75
Laboratory Technician	10	8
Pharmacist	09	07
Total years of experience		
0-5	39	33
6-10	28	23
11-15	18	15
≥ 16	35	29

The data presented in the Table-1 shows that the majority of the subjects, 35 (29%) belonged to age group 21-30 years and 41-50 years. Maximum number of subjects 77 (64%) were females. Majority of the subjects 101 (85%) were qualified as a MPHW/ANM, and 89 (75%) were Junior Health Worker. The maximum number of subjects 39 (33%) were having 0-5 years of experience.

Section-II

Frequency and percentage distribution of level of knowledge and practice of bio-medical waste management among health care providers.

The majority of subjects 79 (65%) had average knowledge and 29 (24%) had good knowledge. Majority of subjects 63 (53%) had average practice and 42 (35%) had good practice.

Section-III

Table -2: Mean and standard deviation of level of knowledge and regarding bio medical waste management among health care providers:

OVERALL SCORES	MEAN	S.D
Knowledge	15.25	3.47
Practice	14.01	4.39

Table 2: shows the distribution of knowledge and practice scores. The knowledge was distributed with a mean of 15.25 and S.D. 3.47 and the Practice has mean of 14.01 with S.D. 4.39 .

Section-IV

Association between Level of knowledge and practice of bio - medical waste management and Socio. Demographic Variables of health care providers:

Table 3: Association between knowledge scores and selected demographic variables:

Demographic variables	Good	Average	Poor	Chi-square
Age (in years)				
21-30	09	22	04	C = 3.255
31-40	05	24	02	T = 12.592
41-50	10	22	03	NS
≥ 51	05	11	03	
Gender				C = 0.089
Male	11	28	04	T = 5.991
Female	18	51	08	NS
Qualification				
MPHW/ANM	21	69	11	C = 6.034
DMLTC	03	06	01	T = 9.488
D.Pharm	05	04	00	NS
Designation	01	09	02	C = 7.454
Senior Health Worker	20	60	09	T = 12598
Junior Health Worker	03	06	01	NS
Laboratory Technician Pharmacist	05	04	00	
Total year of experience				
0-5	10	25	04	C = 11.24
6-10	07	19	02	T = 12.592
11-15	03	14	01	NS
≥ 16	09	21	05	

Table - 4: Association between practice scores and selected demographic variables:

Demographic variables	Good	Average	Poor	Chi-square
Age (in years)				
21-30	10	22	03	C = 6.463
31-40	09	15	07	T = 12.592
41-50	14	18	03	NS
≥ 51	09	08	02	
Gender				C = 0.374
Male	16	21	06	T = 5.991
Female	28	42	09	NS
Qualification				
MPHW/ANM	33	54	14	C = 3.478
DMLTC	04	06	00	T = 9.488

0	0	0	0	0	0	0	0	0	0	0	0	0
D.Pharm	05	03	01	NS								
Designation	06	05	01	C = 5.339								
Senior Health Worker	27	49	13	T = 12598								
Junior Health Worker	04	06	00	NS								
Laboratory Technician Pharmacist	05	03	01									
Total year of experience												
0-5	12	24	03	C = 16.865								
6-10	04	17	07	T = 12.592								
11-15	06	09	03	NS								
≥ 16	20	13	02									

Results show that there is no significant association found for any of the selected socio-demographic variables as stated in the objective. Total years of experience is 16.865 and was more than tabulated value. Hence there is significant association between practice and total year of experience.

Conclusion: It is important that all health care providers should have proper knowledge to practice bio-medical waste management in better way to protect self, the community and more importantly the environment.

Recommendations:

- ❖ A similar study should be conducted for health care providers of the whole district to make a generalized conclusion.
- ❖ Comparative studies can be done in private and public sectors of health care providers regarding biomedical waste management.
- ❖ Comparative study may be done in different categories of health care providers.

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