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KNOWLEDGE ATTITUDE AND PRACTICE REGARDING BIOMEDICAL WASTE MANAGEMENT AND HANDLING RULES AT ASSOCIATED HOSPITAL OF GOVERNMENT MEDICAL COLLEGE KATHUA

Community Medicine

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ABSTRACT

Poor waste management pose huge risk not only to the health care workers but to patients, public and is a threat to the environment as well. The present study was conducted to assess the knowledge, Attitude and Practice regarding Biomedical waste at Associated hospital of GMC Kathua. It was a Cross Sectional study conducted for a period of two months in July and August 2019.The study participants included health care workers from different sections. The study tool included close ended questionnaire pertaining to Knowledge, Attitude and Practice of Biomedical waste generated at the health care facility. The data was entered in Microsoft excel. Descriptive statistics was expressed in the form of number and percentage. Our study found satisfactory results on some aspects of knowledge pertaining to segregation of waste in Colour coded buckets, year of legislation and agency related to waste management. However, Fair knowledge was observed in most of the knowledge domain. Practice and attitude was also low among the health care workers. Training, Behavior Change Communication, Monitoring and evaluation is needed to improve the knowledge, skill and Attitude of the workers. Availability of Logistics is to be ensured for strict implementation of the waste management policy.

KEYWORDS

Knowledge, Attitude, Practice, Biomedical waste.

INTRODUCTION:

Biomedical waste is the waste generated during diagnosis, treatment or immunization of human beings or animals or in the research activities or in the production or testing of Biologicals.[1] As per WHO, 85% of waste are non hazardous and only 15 % are infectious. [2] Poor waste management poses huge risk not only to the health care works but to the patients, public and is a threat to the environment as well. Therefore, strict Adherence to the Biomedical waste management guidelines is mandatory in every setting where biomedical waste is generated.

Objective :

To assess the knowledge, Attitude and Practice regarding Biomedical waste at Associated hospital of GMC Kathua.

Methodology:

A Cross sectional study was conducted at Associated hospital of Government Medical college Kathua for a period of two months in July and August 2019.The study participants included health care workers from different sections. Prior permission was taken from Institutional Ethical Committee. The study tool included close ended questionnaire pertaining to Knowledge, Attitude and Practice of Biomedical waste generated at the health care facility. Knowledge component include assessment regarding BMW generation and legislation, Attitude and practice of health care workers on day to day basis. The data was entered in Microsoft excel. Descriptive statistics was expressed in the form of number and percentage.

RESULTS AND DISCUSSION :

99 health workers were interviewed in total. Table 1 depicts the knowledge component of Biomedical waste.58.6 % had knowledge regarding legislation of waste management. our findings are in contradiction to the results of M. W. Njiru et al where where 84 % were aware about the policies of BMW management. [3] 40.4% opined that private agency regulate waste generated at health facility.76.3 % felt that it is important to know about BMW generation, Hazard and Legislation .Only 37.4% knew about the year of legislation and 26.3 % were aware about the year of amendment. Kokila Selvaraj et al in their study found that 75 % were aware about the BMW rules. [4]K.V Radha et al found that general awareness was lacking among the hospital staff regarding BMW management. [5]39.4% knew that biomedical waste can be stored for 48 hours at health care facility. Doctors were found to have better knowledge regarding storage period of Biomedical waste as per the study findings of Shaswati Newa et Al. [6] Correct amount for preparation of bleaching powder was known to 29.2 %. 81.8 % of the respondents were aware about agency concerned with transport of Biomedical waste.34.3 % had knowledge that infectious waste constitute 50 to 60 % of total waste. Low knowledge in our study may be due to lack of training among health care workers.

Table 2 shows frequency distribution of practice of waste segregation, handling and disposal of Biomedical waste on day to day basis.70.7% had knowledge regarding segregation of waste in colour coded buckets.82.7% follow segregation of waste. The findngs are consistent with the results of study done by Shashwati Neva et al where 68 % were aware about the segregation of Biomedical Waste. [6] In contradiction, only 36.4 % use colour coded bins in the study conducted by Shubhra Bhattacharya et al.[7] Majority (54.5%) felt that waste management is done as per the guidelines. Most of them (49.4%) dispose needles and sharps in white bags. Glass, ampoules and test tube were disposed correctly by 47.4 % workers.96 % were not aware about the disposal of glass items in a study conducted by Bhavnam Srinivas et al. [8] Disposal of sharps was not followed diligently as per the findings of Patan S, Mathur P et al. [9] Cytotoxic waste were placed in yellow colored container by 33 % .The poor practice in our study can be attributed to lack of motivation, monitoring and non availability of logistics.

Table 1: Frequency distribution of Knowledge regarding BMW Rules among Study Respondents (n = 99)

Particulars		no	Percentage
Do you know about BM Waste generation and legislation?	Yes	58	58.6
	No	14	14.1
	Not Sure	27	27.3
Which Agency regulate waste generated at health care facilities	State	39	39.4
	Private	40	40.4
	Do not know	20	20.2
Do you think it is important to know about BM Waste generation, Hazard and legislation?	Yes	76	76.3
	No	14	23
Biomedical waste (management and handling) rules were framed in	1997	5	5.1
	1998	37	37.4
	1999	29	29.3
	2000	28	28.3

Amendments to the biomedical waste management and handling rules were made in	2000	5	28.3
	2001	37	16.2
	2002	29	29.3
	2003	28	26.3
Biomedical Waste should not be stored beyond	12 hrs	37	37.4
	48 hrs	39	39.4
	72 hrs	16	16.2
	96 hrs	7	7.1
To prepare 1 liter chlorine solution (10%) how much bleaching powder in gm % needed?	400 gm	9	9.09
	500 gm	24	24.2
	33 gm	29	29.2
	Do not know	37	37.37
Who regulates the safe transport of medical waste?	J& K State Pollution Control Board	81	81.8
	Transport Corporation of India	11	11.11
	College Administration	7	7.07

Table 2: Frequency Distribution of Practice of BMW management among study Participants (n = 99)

Particulars		n	%
Do you know about color coding segregation of BM Waste?	Yes	70	70.7
	No	7	7.07
	Not sure	22	22.2
Do you follow color coding segregation of BM Waste?	Yes	81	81.8
	No	10	10.1
	Sometimes	8	8.08
Is the waste disposal practice correct in your hospital?	Yes	54	54.5
	No	29	29.9
	Don't know	16	16.1
How needles and sharps are disposed?	Black bags	3	3.03
	Yellow bags	12	12.12
	Clear Bags	35	35.5
	White Bags	49	49.4
Objects like glass, am poules, Test tubes and slides are disposed in:	Cardboard box with blue marking	47	47.4
	Black	9	9.09
	White Translucent	23	23.2
	Do Not Know	20	20.2
Cyto toxic waste is placed in which container / Bag?	Yellow	33	33.3
	Black	8	8.2
	Red	25	25.8
	Do not know.	33	33.0
The proportion of Infectious waste among total waste generated from health care facility is?	10- 20 %	30	30.3
	30 – 40 %	25	25.2
	50-60%	34	34.3
	60- 90 %	10	10.1

Table 3 shows the attitude of health workers. Responses were expressed on scale of agree, disagree and cannot comment.47.4 % disagree with the fact that safe management of waste is not an issue at all. Majority of the respondents agreed that safe management of BMW is an issue that needs to be addressed as per the findings of Ramandeep S Narang et al.[10] 63.6 % disagree that waste management is extra burden on work.85.8 % agree that training is needed.75.7 % agree that waste needs to be incinerated, treated and chlorinated by disinfectant. Contrary to our findings, Pandit et al found that knowledge attitude and practices regarding disinfection was very low. [11] A study by Alok Sharma et al among dentists reveal lack of appropriate attitude and practices of waste management . [12] 73 % agree to report the pollution control board.61.6 % felt that it is of clinical significance to label the container before filling. 60.6 % agreed that Effluent Treatment Plant needs to be constructed. Low attitude in our study may be due to lack of motivation and awareness among the study subjects.

CONCLUSION AND RECOMMENDATION:

Our study found satisfactory results on some aspects of knowledge such as segregation of waste in Color coded buckets, year of legislation and agency related to waste management. However, fair knowledge was observed in most of the knowledge domain. Practice and attitude was also low among the health care workers. Training, Behavior Change Communication, Monitoring and evaluation is needed to improve the knowledge, skill and Attitude of the workers. Availability of Logistics is to be ensured for strict implementation of the waste management policy.

Limitation:

The study has been confined to a single medical college hospital, so the generalizability of the findings is questionable. Further studies in other health care settings with larger sample size can be conducted.

Table 3: Attitude of Health care workers towards waste management

(n= 99)

Particulars		n	%
Safe management of health care waste is not an Issue at all	Agree	25	25.2
	Disagree	47	47.4
	Cannot Comment	27	27.2
Safe management of health care waste is an extra burden on work.	Agree	17	17.1
	Disagree	63	63.6
	cannot Comment	19	19.1
Do you think training to upgrade knowledge about waste management is necessary?	Yes	85	85.8
	No	10	10.1
	Cannot Comment	4	4.04
Waste to be incinerated should be treated and chlorinated by disinfectant	Yes	75	75.7
	No	15	15.1
	Cannot Comment	9	9.09
Do you think an effluent treatment plant for disinfection of infected water should be set up in hospitals?	Yes	60	60.6
	No	36	36.3
	Cannot Comment	3	3.0
Do you think it is important to report to the pollution	Yes	73	73.7
control board about a particular institution if it is not complying with the guidelines for BMW?	No	12	12.1
	Cannot Comment	14	14.1
Do you think that labeling the container before filling it with waste is of any clinical significance?	Yes	61	61,6
	No	18	18.1
	Cannot Comment	20	20.2

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