(RESEARCH ARTICLE)

A descriptive study to assess the knowledge on biomedical waste management among health team member in selected hospital, Mangalore

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Abstract

A descriptive designs were used to gain more information about characteristics within a particular field of study on knowledge of health team members regarding biomedical waste management in selected hospitals, Mangalore, overall 40 samples were participated in the study. Probability stratified random sampling technique is used to select the sample for the study.

Result: Analysis of base line characteristics of subjects reveals that among the health team members 60% belong to the age group of 20-25 years,92.5% are females ,30% are MBBS/PG,55% have 0-2 years of experience,72.5% are working in wards,50% are underwent training programme and 50% are not underwent training programme. Assessment of knowledge of health team members regarding biomedical waste management reveals the majority 72.50% of health team members has good knowledge and 25% of health team members have average knowledge and 2.50% have excellent and 0% has poor knowledge. The study is supported by similar study conducted in Mangalore, Karnataka on assessing the knowledge and practices of health care providers in handling biomedical waste. Knowledge of health team members had significant association between knowledge regarding biomedical waste management.

Conclusion: The management of waste remains a challenge for the nation at large.it is our responsibility as individual, institutions, companies and organization to play our much needed roles in order to arrest situation. The agency shall continue to work rigorously hand in glove with all stakeholders. Safe and effective management of waste is not only a legal necessity but also a social responsibilities. So try to reduce the waste generation, use recyclable products, individual awareness and participation, communicate about work place hazards.

Keywords: Descriptive study; Knowledge; Biomedical waste; Management; Health

1. Introduction

According to Bio-Medical Waste (Management and Handling) Rules 1998 of India, biomedical waste (BMW) means any wastes solid, fluid or liquid waste including its containers and any intermediate product which are generated during the diagnosis, treatment and immunization of human beings or animals or in research activities pertaining thereto or in the production or testing of biologicals[1]. In present scenario, population explosion and advances in medical facilities with the introduction of sophisticated instruments have increased the waste generation per patient in tertiary health care units[2]. The cause mortality data from India and other developing countries show that infectious diseases are the most common cause of deaths[3]. Improper biomedical waste management has the potential to spread infections leading to development of resistant organisms and bringing these resistant hospital organisms to the doorstep of the community. But among all health problems, there is a particular concern with HIV/ AIDS, Hepatitis B and C for which there is a strong evidence of transmission through health care wastes. Though legal provisions (Biomedical Waste Rules 1998) exist to mitigate the impact of hazardous and infectious hospital waste in the community, still these provisions are yet to be

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fully implemented especially in India where the level of awareness is found to be unsatisfactory in comparison to the global scenario[4].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 health care wastes[5].

2. Material and methods

2.1. Research approach

The research approach adopted for the study is quantitative research approach as the researcher aimed at assessing the knowledge of health team members regarding biomedical waste management.

2.2. Research design

Descriptive designs are designed to gain more information about characteristics within a particular field of study on knowledge of health team members regarding biomedical waste management in selected hospitals, Mangalore, a non-experimental descriptive design is found to be appropriate

2.3. Setting of the study

Setting is the physical location and conditions in which the data collection takes place in a study. The present study is conducted at hospital Mangalore. The setting is selected for feasibility of conducting the study and availability of samples.

2.4. Sample and sample size

A sample is a subset of population selected to participate in a research study. A sample of 40 health team members in selected hospital in Mangalore.

2.5. Sampling technique

Sampling is a process of selecting a portion of the population to represent the entire population. Probability stratified random sampling technique is used to select the sample for the study.

2.6. Development of the tool

An instrument is a device used to measure the concept of interest in a research project. The instrument selected in a research should be ,as far as possible ,be the vehicle that could best obtain data for drawing conclusions ,which are pertinent to the study In this study the researcher used a structured knowledge questionnaire, which is prepared on the basis of an intense search of related literature.

3. Results and discussion

3.1. Data collection procedure

Data collection is the precise and systematic gathering of information relevant to the research purpose or specific objectives, questions or hypothesis of a study. Administrative permission is obtained from the Principal, K Pandyarajah Ballal College of Nursing, Mangaluru Permission is taken from Medical surgeon of selected hospital Informed consent is obtained from the participantsData is collected on 16/07/2019. The sample consisted of 10 health team members. Background information is collected using Sociodemographic Proforma. Knowledge regarding biomedical waste management is assessed by using structured knowledge questionnaire. The data is collected and recorded systematically on each subject and organized in a way that facilitates computer entry.

3.2. Plan for analysis of data

Data analysis is conducted to reduce, organize and give meaning to the data. Analysis technique in quantitative research includes descriptive and inferential statistics. Organizing the data in the master sheet. Frequency and percentage of data will be calculated for describing the demographic variable Mean, mean percentage, and standard deviation will be used to present the knowledge scores regarding biomedical waste management. Chi- square test and Fisher's exact test will be used to find the association between knowledge of health team members on biomedical waste management with selected demographic variables. Analyzed data will be presented in the form of tables and figures.

3.3. Organization of the findings

The data collected from the subjects have been organized and presented under the following headings:

- Section 1: Description of demographic characteristics of the health team members
- Section 2: Analysis of knowledge of health team members regarding bio medical waste management.
- Distribution of participants according to knowledge scores.
- Section 3: Association between knowledge of health team members regarding bio medical waste management with selected demographic variables. Association between knowledge regarding bio medical waste management with selected demographic variables.

3.3.1. Section1: Description of demographic characteristics of the health team members

Thispartdealswithdistributionofparticipantsaccordingtotheirdemographiccharacteristics. Data is analyzed using descriptive statistics and is summarized in terms off requency and percentage.

Table 1 Frequency and distribution of subjects according their age N = 40

Sl. no	Age	Frequency	Percentage
a	20-25 years	24	60%
b	26-31 years	4	10%
c	32-38 years	5	12.5%
d	39-45 years	4	10%
e	Above 45 years	3	7.5%

Table 1 reveals that most of subject (60%) are belongs to age group of 20 – 25 years,12.5% belongs to 32 – 38years,10%belongs to 26 – 31years,39 – 45years and 7.5% above 45 years.

Table 2 Frequency and distribution of subjects according their gender N=40

Sl.no	Gender	Frequency	Percentage
a	Male	3	7%
b	Female	37	93%

Table 2: reveals that most of the subjects (93%) are females and 7% are males.

Table 3 Frequency distribution of subjects according to their educational qualification N=40

Sl.no	Educational qualification	frequency	Percentage
a	MBBS/PG	12	30%
b	BSC/PBSC Nursing	7	17.5%
c	General nursing	9	22.5%
d	Primarye ducation	9	22.5%
e	MLT	3	7.5%

Table 3 reveals that most of the subjects (30%) are MBBS/PG, 22.5%are GNM and Primary education, 17.5% are BSC/PBSC Nursing and 7.5% are MLT.

Table 4 Frequency and distribution of subjects according to their year of working experience N=40

Sl.no	Year of working experience	Frequency	Percentage
a	0 – 2 years	22	55%
b	3 – 5 years	6	15%
c	6 – 10 years	10	25%
d	Above 10years	2	5%

Table 4: reveals that most of the subjects (55%) have working experience of 0 – 2 years,25% are having experience of 6 – 10 years,15% are having experience of 35 years and 5% are having experience of above 10 years.

Table 5 Frequency and distribution of subjects according to their area of work N=40

Sl.no	Area of work	Frequency	Percentage
a	OT	1	2.5%
b	Casuality	2	5%
c	Wards	29	72.5%
d	ICU	3	7.5%
e	OPD	2	5%
f	Laboratory	3	7.5%

Table 5 reveals that most of the subjects (72.5%) are work at wards, 7.5% are works at ICU and laboratory, 5% are works at casuality and OPD and 2.5% are works at OT.

Table 6 Frequency and distribution of subjects according to attendence in training programme N=40

Sl.no	Attending training programme	Frequency	Percentage
a	Yes	20	50%
b	No	20	50%

Table 6 shows that the subjects 50% attended training programme on biomedical waste management and 50% not attended training programme on Biomedical waste management.

Table 7 Mean, median, Standard deviation, Mean percentage of total knowledge scores of health team members regarding biomedical waste management. N=40

Knowledge regarding biomedical waste management	Maximum possible score	Mean	Median	SD	Mean %	Level of knowledge
Overall	25	15.35	15	2.62	38.3	Good

The data in table 7 depicts that the health team members have good knowledge regarding biomedical waste management. The mean score of the subject is 15.35, median is 15 and SD IS 2.62.

*3.3.2. Section 3: Association between knowledge regarding biomedical waste management and **selected demographic variables N=40***

Table 8 Selected Demographic variable and knowledge regarding biomedical waste management

Variables	Median(<15)	Median(>15)	X2value	df	Inference
Age					
20-25yrs	13	11			
26-above	1	15	9.66	1	Significant
45 yrs					
Gender					
Male	2	1	2.92	1	Not significant
Female	11	26			
Educational qualification					
MBBS	10	9	6.66	1	Significant
GNM	3	18			
Year of experience					
0-2	11	11	6.80	1	Significant
3- above 10	2	16			
Area of work					
Ward	10	19	0.12	1	Not significant
ICU	3	8	0.12		
Training programme					
Yes	2	18	9.22	1	Significant
No	2	9			

Data presented in table 8 reveals that chi square values are less than the table value at 0.05 level of significance in gender and area of work. The chi square values are more than the table value at 0.05 level of significance in age, educational qualification, and year of experience and training programme. Hence the research hypothesis is accepted in age, educational qualification, year of experience, and training programme. Research hypothesis is rejected in gender and area of work. And the null hypothesis is accepted in gender and area of work.

So it can be concluded that there is significant association between knowledge regarding biomedical waste management and selected demographic variables.

4. Conclusion

The management of waste remains a challenge for the nation at large. it is our responsibility as individual, institutions, companies and organization to play our much needed roles in order to arrest situation. The agency shall continue to work rigorusly hand in glove with all stake holders. Safe and effective management of waste is not only a legal necessity but also as ocial responsibilities. O try to reduce the waste generation, use recyclable products, individual awareness and participation, communicate about workplace hazards.

On the basis of the study, following conclusions have been drawn:

- Majority of the health team members belonged to the age group between 20-25 years.
- Majority of the health team members belonged to MBBS/PG.

- Majority of the health team members have good knowledge on 'bio medical waste management'. None of the health team members have poor knowledge regarding biomedical waste management.
- The significant association of knowledge regarding bio medical waste management among health team members.
- Finally, all the demographic variables of health team members are found to be independent of the knowledge regarding biomedical waste management.

Compliance with ethical standards

Acknowledgments

We are grateful to Dr. Priya Ballal, Managing Trustee, K. Pandyarajah Ballal Nursing Institute, College of Nursing for providing us an opportunity to do our basic degree inK. Pandyarajah Ballal Nursing Institute, College of nursing and for all the facilities extended to us for this study. Our heartfelt thanks to Prof. (Ms) Kaini Cecilia, Principal, K. Pandyarajah Ballal Nursing Institute College of Nursing for her inspiration, encouragement, constant support as well as for providing all the facilities for the successful completion of the study. We express our sincere gratitude to our guide, Mrs. Sonia Sebastian, Head of the Depatrment, Obstetrics and Gynaecological Nursing, KP and yarajah Ballal College of Nursing for her inspiring guidance, sustained patience, valuable suggestions, continued support and constant encouragement through out the research study. Her guidancea nd keen interest has helped us a great deal during this research work. We extend our heart felt thanks to Mrs. Lolita Pinto, Asisstant Lecturer and our coguide for her helpful in making constant support, encouragement, personal interest, timely advice and comments which were this study are warding one.

Statement of informed consent

Data collection is the precise and systematic gathering of information relevant to the research purpose or specific objectives, questions or hypothesis of a study.

For collecting data the following steps are taken:

- Administrative permission is obtained from the Principal, K Pandyarajah Ballal College of Nursing, Mangaluru
- Permission is taken from Medical surgeon of selected hospital Informed consent is obtained from the participants

Data is collected on 16/07/2019. The sample consisted of 10 health team members. Background information is collected using Sociodemographic Proforma. Knowledge regarding biomedical waste management is assessed by using structured knowledge questionnaire. The data is collected and recorded systematically on each subject andorganized in a way that facilitates computer entry.

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