



A STUDY TO ASSESS THE KNOWLEDGE OF STAFF NURSES ON BMW IN THE SELECTED HOSPITALS OF KAMRUP, ASSAM.

Hospital Management

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ABSTRACT

Background Of The Study: Biomedical waste means any waste, which is generated during the diagnosis, treatment or immunization of human beings or animal, or in research activities pertaining thereto or in the production or testing of biological. Effective management of biomedical waste is not only a legal necessity but also a social responsibility to control occupational and environmental hazards. **Aim:** The aim of the present study is to assess the Knowledge of Staff Nurses on BMW in the selected hospitals of Kamrup, Assam. **Objectives:** 1. to assess the knowledge of Staff nurses on BMW in selected hospitals. 2. To find out the association between knowledge and demographic variables. **Methodology:** the study was conducted using descriptive survey research design in selected hospitals of Kamrup, Assam, with a total of 45 Staff Nurses by convenient sampling. Data was collected from 10th September 2024 to 24th September 2024 by interview with self structured questionnaire for knowledge at Tularam Bafna Hospital and Sualkuchi FRU, Kamrup, Assam. **Results:** the study findings reveal that 80% had adequate moderate level of knowledge, while 20% had moderate level of knowledge. Significant relationship was found between knowledge regarding bio-medical waste management with Age, educational qualification, year of experiences, no of training on BMW ($p < 0.05$). **Conclusions:** The knowledge of healthcare staffs specially nursing staff has greater impact on proper biomedical waste management (BMW). Staff nurses who have the direct contact with bio-medical waste during the care of the patients and other health care activities, they must be aware of the risk of infection and injury. Main emphasis must be given on training to prevent such infections by using personal protective devices and knowledge to safeguard from these injuries. The study concluded that periodic training and supervision is necessary for better healthcare waste management and implementation of guidelines for proper disposal of healthcare waste.

KEYWORDS

Bio-Medical Waste Management (BMW), Hospital, Knowledge, Staff Nurse

INTRODUCTION

Biomedical waste means any waste, which is generated during the diagnosis, treatment or immunization of human beings or animal, or in research activities pertaining thereto or in the production or testing of biological. Between 75 to 90 percent of the waste produced by the health care providers is non-risk or "general" healthcare waste, comparable to domestic waste. It comes mostly from administrative and housekeeping functions and remaining 10-25 percent healthcare waste is regarded as hazardous and may create a variety of health risk.¹

Globally, 18 to 64 percent of healthcare institutions are reported to have unsatisfactory bio-medical waste management (BMWM) facilities; due to lack of awareness, insufficient resources and poor disposal mechanisms⁵. Health facilities also need to ensure that they monitor the activities of BMW management through a committee formed at the facility.²

As per the biomedical waste (management and handling) rules 1998, prescribed by the Ministry of Environment and Forest, Government of India, any violation of the rules is punishable under the Environment Protection Act 1986. BMW management is most essential and important issue for environment safety and pollution control. Awareness regarding effective BMW management is very much important among various classes of health care workers. Knowledge concerning BMW handling and waste segregation is probably the most important and crucial point and key point for waste management.¹

Study Title: A study to assess the knowledge of Staff Nurses on BMW in the selected hospitals of Kamrup, Assam.

Objectives:

1. To assess the knowledge of Staff nurses on BMW in selected hospitals
2. To find the association between knowledge and demographic variables

Research Hypothesis:

H₁ - There will be a significant association between the Knowledge and selected demographic variables

Assumption:- Nurses have knowledge on Bio Medical Waste Management

Delimitation-The study is delimited to all the nurses present at the time of study.

- The study includes all categories of nurses.

Research Methodology

C.R. Kothari (1998)³ defines research methodology is a way to systematically solve the research problem. It may be understood as a science studying how research is done scientifically.

Research Approach: Non-experimental research design

Research Design: Descriptive research designs

Study Settings: Setting refers to the area where the study was conducted. It is the physical location and condition in which data collection takes place in a study.⁴

The Study will be conducted in Tularam Bafna Hospital and Sualkuchi FRU, Kamrup, Assam

Study Population: The population comprised of all the staff nurses working in Tularam Bafna Hospital and Sualkuchi FRU, Kamrup, Assam

Sample Size: This study sample consist of 45 nos of staff nurses working in Tularam Bafna Hospital and Sualkuchi FRU

Sampling Technique: Non-probability Convenience sampling techniques is used in the study.

Sampling Criteria: The sample size consists of 45 Staff Nurses who had fulfill the inclusion criteria-

Inclusion Criteria:

- Staff nurse who is working in hospitals.
- Staff Nurse who are able and willing to participate in study.

Exclusion Criteria:

- Staff Nurse who were on leave during period of study.

Variables

1. **Research Variable:** Knowledge of BMW
2. **Demographic variable:** Age, Educational qualification, Year of work experience, Training on BMW, no of training on BMW

Data Collection Procedure

The research tool was developed in English after an extensive of literature and experts opinion. The tool was divided into of two parts. Part I- Demographic data

Part II- Structured knowledge questionnaire

Tool I: Demographic characteristics of Staff Nurse

This was developed by the investigator. It includes demographic variables such as Age, Educational qualification, Year of work experience, Training on BMW, no of training on BMW

Tool II: Assessment of Knowledge is done by using structured knowledge Questionnaire. There were total 25 MCQ questionnaire prepared and administered to the Study participants. There was 1 score given for each positive answer. The total score was 25. Hence the knowledge level of staff nurse is categorized as Poor knowledge (<8) Good (8-16) and very Good Knowledge (17-25)

Data Collection And Analysis:

Study was conducted from 10th September 2024 to 24th September 2024 at Tularam Bafna Hospital and Sualkuchi FRU, Kamrup, Assam.

Before conducting the study prior permission was taken from Medical Superintendent of Tularam Bafna Hospital and Medical Superintendent Sualkuchi FRU, Kamrup, Assam

The data was collected for a period of 2 weeks, 10th September 2024 to 24th September 2024, Signature was taken on the informed consent from 45 numbers of subjects. Once the consents were received from the Staff Nurses, data were collected by giving structured knowledge questionnaire.

The collected data was organized and interpreted using descriptive and inferential statistics Frequency and percentage were used to analyze the data for descriptive statistics. The data was coded and analyzed as per objectives of the study under the following headings

Data Collection & Analysis

The collected data was organized and interpreted using descriptive and inferential statistics Frequency and percentage were used to analyze the data for descriptive statistics

Section A: Demographic Performa in terms of frequency and percentage : the data are categorized in terms of Age, Educational qualification, Year of work experience, Training on BMW, no of training on BMW.

Table 1: Shows the frequency and percentage distribution of Demographic Characteristics of Staff Nurses. N=45

Demographic Characteristics	Frequency	Percent
1.Age in years		
20-30	7	15.6
30-40	11	24.4
31-35	9	20.0
36-40	8	17.8
41-45	10	22.2
2.Educational qualification		
ANM	5	11.1
GNM	21	46.7
Pb.Bsc Nursing	1	2.2
Bsc Nursing	18	40.0
Msc Nursing	0	0.0
3.Year of work experience		
6 month - 1year	7	15.6
1 year-2year	9	20.0
3year-4year	14	31.1
5 year or more	15	33.3
4.Training on BMW		
Yes	45	100.0
No	0	0.0
5.No. of training on BMW		
One	19	42.2
Two	18	40.0
Three	5	11.1
More than three	3	6.7

Table 1 shows Majority of the subjects were 11(24.4%) in the age group of 30-40 years, most of the subject's educational qualification were GNM 21(46.7%), Majority 15(33.3%) had 5 year and more than 5 years of experience. Most of the 45 (100%) Staff Nurse had training on

BMW. Majority 19(42.2%) of staff nurses had done 1-2 times training.

Section B: Description of Assessment of knowledge On BMW of Staff Nurses

This section deals with the level of knowledge of Staff Nurses computed in frequency and percentage distribution, mean, standard deviation and knowledge score. The knowledge scores on BMW are categorized as Inadequate, Moderately Adequate and Adequate and depicted in table 2

Table 2: Distribution of level of knowledge regarding biomedical waste management among Staff nurses n=45.

Knowledge Score	Frequency	Percent	Mean± SD
Inadequate Knowledge(<8)	0	0	20.0±3.98
Moderately adequate knowledge(8-16)	9	20	
Adequate Knowledge(>16)	36	80	

Table 2: shows that that majority 80% of Staff Nurses had Adequate knowledge, 20% Staff Nurses had Moderately adequate knowledge.

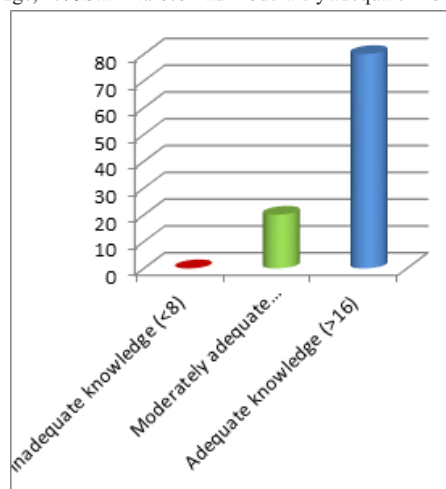


Fig: Bar graph representing level of knowledge regarding biomedical waste management among staff nurses n=45

Section C: Chi-Square to determine the association between knowledge on BMW with selected demographic variables e.g. Age, Educational qualification, Year of work experience, no of training on BMW.

- H₁:** There is a significant association between Knowledge on BMW with selected demographic variable

Table 3: Shows that the association between knowledge on BMW with selected demographic variables

Demographic Variables	Knowledge		Chi Square (χ^2)	P value	Remarks
	Moderately adequate knowledge(8-16)	Adequate Knowledge(>16)			
1.Age in years			13.294	0.010*	
20-30	0	7			
30-40	1	10			
31-35	1	8			
36-40	1	7			
41-45	6	4			S
2.Educational qualification			13.690	0.003*	
ANM	3	2			S
GNM	5	16			
Pb.Bsc Nursing	1	0			
Bsc Nursing	0	18			
3.Year of work experience			10.308	0.016*	
6 month - 1year	0	7			S
1 year-2year	1	8			
3year-4year	1	13			
5 year or more	7	8			

4.No. of training on BMW					
One	4	15	2.138	0.544	
Two	3	15			NS
Three	2	3			
More than three	0	3			

NS-Non-Significant, S-Significant at 0.05 level

The data presented in above table 3 shows that the association between knowledge on BMW with selected demographic variables e.g. Age, educational qualification, year of experiences, no of training on BMW. Chi-square test is applied to test the association and the test is performed at 5% level of significance. Among all demographic variables there is significant association of knowledge level on BMW with age (chi square=13.294 $p=0.0.10(p<0.05)$). Elder nurses seems to have more knowledge on BMW), educational qualification (chi square=13.690 $p=0.0.003(p<0.05)$). Hence more the qualification of the staff nurses better is the knowledge about BMW) and year of experiences (chi square=10.308 $p=0.0.016(p<0.05)$), Staff nurses with more years of experience tend to have better knowledge on BMW. Hence research hypothesis H_1 is accepted for these variables.

DISCUSSION

The present study intended to assess the Knowledge on BMW among Staff Nurses in the selected hospitals of Kamrup, Assam. To achieve the objectives of the study, Descriptive Quantitative approach and Descriptive Survey Research Design is adopted. Non-probability convenience sampling technique is used to select sample. The data are collected from 45 Staff Nurses .The results of the present study showed that majority of the subjects were 11(24.4%) in the age group of 30-40 years, most of the subject's educational qualification were GNM 21(46.7%), majority 15(33.3%) had 5year and more than 5 years of experience, most of the 45 (100%) Staff Nurse had training on BMW and majority 19(42.2%) of staff nurses had done 1-2 times training. Findings of majority 80% of Staff Nurses had adequate knowledge, 20% Staff Nurses had moderately adequate knowledge.

Finding from a study conducted in Siliguri also shows that 50% of staff nurses were having a good knowledge, 20% of them had poor knowledge. Significant relationship was found to be exist between knowledge regarding bio-medical waste management with qualification and the duration of their clinical practices ($p<0.05$).⁵

Another study conducted in Srinagar revealed that majority of the respondents (88%) were females and only 12% were males; half of the Respondents were having senior secondary as them educational qualification (52%), 1/4th of the respondents were having secondary as their educational qualification, only 4% were post graduates. The study depicted that 50% of the respondents have GNM qualification, 31% are graduate, 14% have MPHWD diploma and 5% have post basic nursing professional qualification. Regarding the experience, the study depicted that 88% of respondents have 0-10 years of experience, 9% have 11-20 years experience; only 3% have 21-30 years experience. The study also revealed that only 11% respondents have attended in-service Programme on BMW and majority of the respondents i.e. 89% have not attended any in-Service programme on BMW. Most of the respondents (87%) have average knowledge while as 8% have good knowledge and 5% have poor level of knowledge.⁶

Strengths Of The Present Study: The study was carried out in an appropriate manner following all the necessary steps. This study was carried out to customize the questionnaire and validate it.

Limitation Of The Present Study: The current study is conducted in two Health institute only and was included and limited number of participants were interviewed.

CONCLUSION

BMW is hazardous and can be injurious to humans or animals and deleterious to environment. Effective management of BMW is everyone's responsibility. All individuals exposed to hazardous healthcare waste are potentially at risk, including those who generate the waste or those who handle it especially health care professionals.

Staff nurses who have the direct contact with bio-medical waste during the care of the patients and other health care activities, they must be aware of the risk of infection. Main emphasis must be given to teaching to prevent such infections by using personal protective

devices. The study concluded that periodic training and supervision is necessary for better healthcare waste management and implementation of guidelines for proper disposal of healthcare waste. Staff immunization and periodic health checkups of the staff should be mandatory. . Safe and effective management of biomedical waste is not only a legal necessity but also a social responsibility. Regular training sessions regarding separation, storage, transportation, and disposal of BMW should be conducted by the administration.

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