



BIOMEDICAL WASTE MANAGEMENT AND ITS AWARENESS AMONG REGISTERED NURSES WORKING IN DIFFERENT HOSPITALS, UTTAR PRADESH

Nursing

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ABSTRACT

The production of waste is an ongoing process. All facets of life generate trash, but medical waste is the most hazardous or deadly. Waste produced during healthcare processes poses a higher risk of illness and injury than various kinds of waste. The aim of the study was to evaluate Registered Nurses' knowledge regarding biomedical waste management working in different hospitals of Moradabad, Uttar Pradesh. The study design was cross sectional. This study was conducted at TMU hospital of Moradabad. 108 Registered Nurses were selected by simple random sampling technique. According to the study findings, out of 108 samples, 7 (6.5%) of Registered Nurses were having adequate level of knowledge, 58 (53.7%) were having moderate knowledge and 43 (39.8%) were having inadequate level of knowledge regarding biomedical waste management. This study concluded that most of were having inadequate level of knowledge regarding biomedical waste management.

KEYWORDS

Awareness, Biomedical waste management, Knowledge, Registered Nurse.

INTRODUCTION:

BMW is any waste that is produced when diagnosing, treating, immunizing humans, as well as related to research and production. It includes both solid and liquid waste as well as its container and any intermediary products.

The management of biomedical waste is a crucial issue for all healthcare practitioners & facilities because it carries a greater risk of injury and infections compared to other kinds of waste. Prior to ultimate disposal, biomedical waste has to be treated and managed in a certain way. In hospital settings, programmes for infection control and cleanliness are fundamental to waste management. These environments generate a significant quantity of biological waste, which plays a significant role in community acquired infections.

Approximately 75% to 90% of biological waste is harmless and safe, just like another kind of municipal garbage. The remainder of 10% to 25% are hazardous and can be harmful to the environment, animals, and people. It is crucial to understand that the entire waste becomes toxic if both of these types are combined.

The likelihood of contracting several illnesses has increased as a result of hospital acquired infections, diseases spread via blood transfusions, growing rates of Hepatitis B and HIV, increasing land and water pollution, and more.

A social obligation as well as a legal need is responsible trash management. Lack of BMW handling expertise might really harm your health. Healthcare workers are not only required to learn how to properly separate and dispose of BMW, but also to have the ability to mentor others in this area. Hospitals are seen of as the starting point for the spread of illnesses because of poor BMW management and a lack of awareness. Therefore, the current study's objectives were to evaluate Moradabad registered nurses' knowledge of BMW management and to ascertain the relationship between understanding and their demographic data.

NEED OF THE STUDY:

A report from the UP-State Board, in the 2019-2020 fiscal year, 3,52,014 health care establishments generated 656 tonnes of biological waste every day. Only 590 tonnes per day of the 656 tonnes per day produced are processed and disposed of by the 208 CBWTFs and 17,206 captive treatment facilities established by health care establishments.

Direct risk of infection from garbage or from improper burning emissions and dust. According to our clinical observations, some

Registered Nurses lack the knowledge necessary to properly segregate, handle, and manage biomedical medical waste, which puts them at risk for nosocomial infections and needle stick injuries. We therefore intend to carry out research among Registered Nurses to evaluate their familiarity with BMW Management.

Investigator felt the need management. Hence the researcher planning to conduct study regarding BMW management among registered nurses.

Problem Statement:

"Biomedical Waste Management and its awareness among Registered Nurses working in different Hospitals, Uttar Pradesh"

Objectives:

1. To assess the level of knowledge regarding biomedical waste management among Registered Nurses working in different hospitals of Moradabad, Uttar Pradesh.
2. To find out the association between level of knowledge regarding biomedical waste management among Registered Nurses with their selected demographic variables.

Hypothesis:

The hypothesis was tested using a significance threshold of 0.05.

H1: There is a significant association between knowledge of biomedical waste management with their selected demographic variables among Registered Nurses.

METHODS AND MATERIAL:

Research Approach:

For the present study, a Quantitative research approach was chosen. Research Design was Cross- sectional research design.

VARIABLES

Research Variable: -

Knowledge regarding bio medical waste management.

Demographic Variable: -

These are Age, Religion, Education, working experience, Residence, Marital Status, Area of work.

POPULATION

In this study population was Registered Nurses.

Target Population:

Registered Nurses who worked at several hospitals in Moradabad, Uttar Pradesh.

Accessible Population:

Registered Nurses on duty at TMU Hospital in Moradabad, Uttar Pradesh, made up the accessible population.

SAMPLE

Registered Nurses working at the TMU hospital in Moradabad, Uttar Pradesh, were the study's sample.

SAMPLE SIZE

In this study the sample size was 108 Registered Nurses.

SAMPLING TECHNIQUE:

In order to select the samples for this particular research, a simple Random Sampling Technique (Lottery Method) was applied.

This Study Includes:

1. Registered Nurses who were available during collection of data.

Exclusion Criteria: -

1. During the collection of data, Registered Nurses were on vacation.
2. Registered Nurses who had completed any short-term course on BMW.

Method Of Data Collection:

Assessment of knowledge regarding BMW and its awareness by administering research tool.

DEVELOPMENT OF RESEARCH TOOL:

On the basis of develop framework to achieve the objectives of the study, A self-Structured knowledge Questionnaire was prepared to assess the level of knowledge.

There were two research tools involved-

1. Demographic data
2. Self-structured knowledge questionnaire

DESCRIPTION OF THE TOOL

Tool is separated in 2 parts.

Section I: Demographic data

It has seven components. (Age, Religion, Education, Residence, Marital Status, Experience, Area of work)

Section II: Self-structured knowledge questionnaire regarding BMW with 30 items.

RESULT AND FINDING:**Section A: Frequency And Percentage Distribution Of Registered**

Table 2: Chi-square Value Demonstrating The Relationship Between Knowledge Score And Selected Demographic Variables.

Sr. No.	Demographic-variables	Inadequate Knowledge (0-15)	Moderate-Knowledge (16-22)	Adequate Knowledge (23-30)	Total	χ^2 calculated values	df	P value	Inference
1.	Age in years								
	18-25 years	30	29	2	61	7.2	4	.125	NS
	26-33 years	12	26	5	43				
	34-40 years	1	3	0	4				
2.	Religion								
	Hindu	22	39	4	65	7.5	6	.27	NS
	Muslim	16	10	2	28				
	Christian	5	6	1	12				
	Other	0	3	0	3				
3.	Education								
	GNM	28	21	0	49	14.54	2	.001	S
	B.Sc. Nursing / PB B.Sc. Nursing	15	37	7	59				
4.	Marital Status								
	Unmarried	29	34	2	65	3.9	2	.14	NS
	Married	14	24	5	43				
	Divorced	0	0	0	0				
	Widow	0	0	0	0				
5.	Place of Residence								
	Rural	27	36	1	64	6.2	2	.04	S
	Urban	16	22	6	44				
6.	Working Experience								
	Less than 2 years	24	19	0	43	13.38	4	.01	S
	3-5 years	13	23	6	42				

Nurses According To Demographic Variables

The most of Registered Nurses 61 (56.5%) were in the age 18-25 years, 43 (39.8%) were 26-33 years age group, 4 (3.7%) were 34-40 years age group, as per religion most of 65 (60.2%) were Hindu, 28 (25.9%) were Muslim, 12 (11.1%) were Christian and 3 (2.8%) were others, as per education most of Registered Nurses 59 (54.6%) were B.Sc. Nursing/ PB BSc. Nursing and 49 (45.4%) were GNM, as per marital status majority Registered Nurses 65 (60.2%) were unmarried, 43 (39.8%) were married, as per area of residence 64 (59.3%) were belongs to rural area and 44 (40.7%) were belongs to urban area, as per working experience 43 (39.8%) Registered Nurses were having less than 2 year, 42 (38.9%) were having 3-5 years and 23 (21.3%) were having 6-8 years, as per area of work 27 (25%) Registered Nurses were from ICU, 15 (13.9%) were from Emergency ward, 56 (51.9%) were from general ward and 10 (9.3%) were from others department.

Section B: Frequency And Percentage Distribution Of Level Of Knowledge On Biomedical Waste Management Among Registered Nurses.

Table 1: Registered Nurse's Knowledge Regarding Biomedical Waste Management n=108

Level of Knowledge	Frequency(f)	Percentage (%)
Adequate (23-30)	7	6.5
Moderate (16-22)	58	53.7
Inadequate (0-15)	43	39.8
Total	108	100

Bar graph demonstrate that level of knowledge, 6.5% Registered Nurses have adequate knowledge, 53.7% Registered Nurses have moderate knowledge, and 39.8% Registered Nurses have inadequate knowledge about BMW.

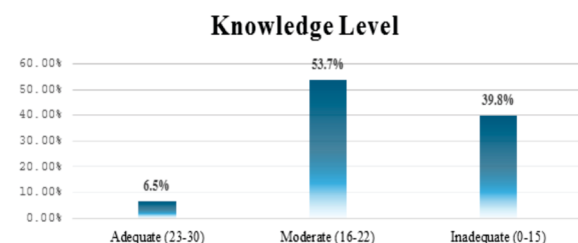


Fig. 1 Distribution of registered nurse's knowledge regarding biomedical waste management

Section C: The Relationship Between Level Of Knowledge Among Registered Nurses With Their Selected Demographic Variables.

	6-8 years	6	16	1	23				
7.	Area of work								
	ICU	7	17	3	27	9.8	6	.13	NS
	Emergency ward	9	4	2	15				
	General ward	24	31	1	56				
	others	3	6	1	10				

S' Significant

NS: Not significant

The association between registered nurses' knowledge levels and the selected demographic variables was examined using the chi-square test. Age's obtained chi-square value ($\chi^2 = 7.2$, $p > 0.05$), religion ($\chi^2 = 7.5$, $p > 0.05$), Education ($\chi^2 = 14.54$, $p < 0.05$), marital status ($\chi^2 = 3.9$, $p > 0.05$), place of residence ($\chi^2 = 6.2$, $p < 0.05$), working experience ($\chi^2 = 13.38$, $p < 0.05$) and area of work ($\chi^2 = 9.8$, $p > 0.05$). This demonstrates a correlation of knowledge with place of residence, education, and working experience and there is no association was established with age, religion, marital status, and area of work. Hence hypothesis H₁ is partially accepted.

IMPLICATION OF THE STUDY:

Nursing Education.

- Nursing Educator should provide information to Registered Nurses regarding BMW management.
- Encourage the Registered Nurses to attend CNE to update their knowledge related to BMW management.

Nursing Practice

- Modern practice demands evidence-based methods. It is possible to modify and enhance nursing practice based on evidence.
- Infection control nurse should inspect the hospital time to time on regular basis and control the errors during the management of Biomedical waste.

Nursing Administration

- Nurse administrators have an important role in continually upgrading nurses' knowledge on BMW management and effective practice.
- The primary aim of nursing administration should be to conduct some education programs for registered nurses, such as workshops and seminars, as a part of in-service training, with an emphasis on distributing knowledge regarding BMW-related information.

Nursing Research

The results of the present study will assist nursing professionals and Registered Nurses in further research to ascertain the value of different pedagogical approaches for boosting registered nurses' knowledge about BMW management.

CONCLUSION

The study concluded that the level of knowledge related to BMW among Registered Nurses was generally moderate. There was significant association between the level of knowledge with certain demographic variables like education, residence and working experience.

Conflicts Of Interest - The author declares that they have no conflicts of interest.

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