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A Study to Assess the Knowledge and Attitude Regarding Biomedical Waste Management among Grade 4th Health Worker in Selected Hospital at Meerut, U.P

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I. BACKGROUND

Unregulated biomedical waste management (BMWM) is a public health problem. This has posed a grave threat to not only human health and safety but also to the environment for the current and future generations. Safe and reliable methods for handling of biomedical waste (BMW) are of paramount importance. Effective BMWM is not only a legal necessity but also a social responsibility. This article reviews the current perspectives on BMWM and rules, conventions and the treatment technologies used worldwide. BMWM should ideally be the subject of a national strategy with dedicated infrastructure, cradle-to-grave legislation, competent regulatory authority and trained personnel. Improving the management of biomedical waste begins with waste minimisation. These standards, norms and rules on BMWM in a country regulate the disposal of various categories of BMW to ensure the safety of the health-care workers, patients, public and environment. Furthermore, developing models for the monitoring of hospital health-care waste practices and research into non-burn eco-friendly sustainable technologies, recycling and polyvinyl chloride-free devices will go in long way for safe carbon environment. Globally, greater research in BMWM is warranted to understand its growing field of public health importance.

II. STATEMENT OF PROBLEM

"A study to assess the knowledge and attitude bio medical waste management among Grade 4th health worker in selected Hospital At Meerut, UP".

A. *Objectives*

1) To assess the knowledge grade 4th health worker regarding the management of Bio Medical Waste
2) To assess the attitude grade 4th health worker regarding safe management of Bio Medical Waste
3) To find out the association between knowledge level of Grade 4th health worker with selected demographic variables

B. *Hypothesis*

H1: There will be a significant association between knowledge scores on 4th grade health workers regarding bio medical waste management with their selected socio demographic variables.

III. METHODOLOGY

Quantitative research approaches that is evaluate study approach which will be used in this study assess the knowledge level of grade 4th workers and to evaluate the information assisting teaching process in the improvement of their knowledge. In the present study, the Quantitative research approach was considered appropriately. descriptive research design was be used to achieve the objectives of study. This present study will be conducted in the Chhatrapati Shivaji Subharti Hospital at Meerut UP setting will be appropriate keeping in view the objectives of the study. The target population of the present study includes 4th grade workers in selected hospital at Meerut. The sample consisted of 60 BMW area under grade 4th health workers Who full filled the inclusion criteria of the study and were willing to participate in the study were selected. Sampling is necessary it is more economical and efficient to the work with a small group of elements. A purposive sampling technique was used. The study uses the structured knowledge questionnaire for obtaining data on knowledge of Grade 4th health workers.

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A. *Result*

The questionnaire was used 20. Result of the study was adequate knowledge of 4th grade health workers regarding bio medical waste management.

B. *Conclusion*

This study shows those samples were taken by the researcher adequate knowledge when find during data collection and finally got satisfactory data regarding bio medical waste management. Hence, health 4th grade workers had adequate knowledge regarding bio medical waste management.

C. *Introduction*

Bio medical waste means any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or research activities pertaining there to or in the production or testing of biological or in health camps. Bio medical waste includes all the waste generated from health care facility which can have any adverse effect to the health of a person or to the environment in general if not disposed properly. All such wastes which can adversely harm the environment or health of a person are considered as infectious. Bio medical wastes (BMW) are generated from health care activities and have the potential to spread diseases. The board regulates BMW as per the provisions of the bio medical wastes management rules, 2016, which have laid down norms for storage, treatment and disposal of BMW. Waste produced in the health care sector can prove highly hazardous, more so in the pandemic era. if not treated, these biomedical wastes can contribute to the rapid spread of coronavirus and other infections. Biomedical waste management has recently emerged as an issue of major concern not only to hospitals, nursing home authorities but also to the environment. the bio-medical wastes generated from health care units depend upon a number of factors such as waste management methods, type of health care units, occupancy of healthcare units, specialization of healthcare units, ratio of reusable items in use, availability of infrastructure and resources etc.

D. *Problem Statement*

A study to assess the knowledge and attitude bio medical waste management among grade 4th health worker in selected hospital at Meerut, UP.

E. *Objectives*

1) To assess the knowledge grade 4th health worker regarding the management of BMW.
2) To assess the Attitude grade 4th health worker regarding the management of BMW.
3) To find out the Association between knowledge level of Grade 4th health workers with selected demographic variables

F. *Operational Definition*

1) *Knowledge:* It refers to the ability of 4th grade worker to understand biomedical management by responding to the structured video assisting as devised by investigators.
2) *Bio Medical:* It relating to the activities and application on science to clinical medicine biomedical research laboratory.
3) *Waste:* In general, medical waste is the waste which is generated or produced as a result diagnosis, treatment or immunizations on human beings or animals.
4) *Waste Management:* Managing waste by multiple conservation goals. the may include waste reduction, reuse, recycling, composting, transformation, disposal, landfills and other means.
5) *Medical Waste Management:* waste which is generated or produced as a result on diagnosis, treatment or immunizations on human's beings or animals research performing in the production or testing of biological waste

G. *Hypothesis*

H_1: There will be significant association between knowledge scores on 4th grade health workers regarding bio medical waste management with their selected socio demographic variables.

H. *Assumptions*

1. Grade 4th worker will be having some knowledge regarding Biomedical Waste Management.
3. Grade 4th worker will be ~~having~~ some knowledge regarding the management of Biomedical waste .

I. Delimitations

1) The study is limited only to grade 4th worker working in a selected hospital.
2) The study is limited to grade 4th worker who are present at the time of data collection.
3) The study is limited to grade 4th worker who know to read and write English.

J. Sampling Criteria for The Selection of The Study

1) Inclusion Criteria

a) Grade 4th Health Workers group who are willing to participate in the study.
b) Grade 4th Health Workers group who are able to read and write.
c) Grade 4th Health workers group who were available at the time of data collection

2) Exclusion Criteria

a) Grade 4th Health workers those who are not willing and not available during data collection period.
b) Grade 4th Health workers who were non-cooperative to participate in the study.
c) Grade 4th Health workers who have received certificate on BMW.

K. Demographic Variables

In this study used in present, socio demographic variables such as: age, (in years), gender, qualification, educational status, years of working area, area of living, and educational program of Bio medical waste.

1) Independent Variables

In this study independent variables is information current knowledge and attitude process of BMW.

2) Dependent Variables

In this study the dependent variables is knowledge level of grade 4th health worker in Hospital, Meerut.

L. Description of The Tools

Self -Structured questionnaire consist of 2 sections:
SECTION _A: Socio demographic variables.
SECTION _B: Self Structured knowledge questionnaire on current Bio Medical Waste Management.
SECTION A: It deals with demographic data which was used to collect the characteristics of sample with an instruction to participants to put a tick mark against the appropriate choice closely represents their answers. It contains 5 items:
SECTION B: A self -structured questionnaire with 25 items was constructed to assess the knowledge of Grade 4th Health Workers group regarding current Bio Medical Waste Management.

SL.NO	NUMBER OF QUESTION
1.	Demographic - 05
2.	Questionnaire- 20

The questionnaire consists of 20 multiple choice questions. Each item had 3 to 5 choices out of which one correct answer and the remaining 3 were wrong answer; A score value of one was categorized based on % (percentage) of scores obtained.
Percentage formula: obtained marks/ total marks : 100

IV. RESULTS

A. Distribution of Demographic Variables of the Samples

This section deals with analysis of the distribution of samples according to the frequency and percentage. The selected demographic variables are Age, Gender, Qualification, area of working and area of living Frequency and percentage distribution of the sample of the above-mentioned characteristics are presented in table and diagrams.

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Table: 1 Frequency and percentage distribution of demographic characteristics of the 4th grade health workers in hospital.
N=60

Socio-Demographic Variables	Frequency	Percentage
Age In Year		
20-25	2	3.33 %
25-30	4	6.66 %
30-35	31	51.66 %
>40	23	38.33 %
Gender		
Male	24	40 %
Female	36	60 %
Transgender	00	00
Qualification		
Primary	11	18.33 %
Below Primary	7	11.66 %
Secondary	11	18.33 %
Illiterate	31	51.66 %
Are Of Working		
Medical Department	40	66.66 %
Surgical Department	7	11.6 %
Obstetric Department	7	11.66 %
Emergency	6	10 %
Area Of Living		
Urban Area	28	46.66 %
Rural Area	32	53.33 %

B. Data Presented in Table of Group Depicts

1) As per age, half of the samples 31 (52%) were in the age group between 20-25 years, whereas (38%) of the samples i.e., 23 were in the age between 25-30 years. On the other hand, equal number of samples i.e., 4 (7%) were in between 30-35 years and 2 (3%) in the >40 years of age.

2) As per gender difference, majority of the sample were females i.e. 36 (60%) where as 24 were males i.e. (40%).

3) As per qualification, majority of the samples (31) 51.66% belongs to illiterate, whereas only 11 (18.33%) belongs to secondary. Below primary followed by 7 (11.66%) and 11 (24%) belongs to Primary group.

4) As per the area of working, majority of the samples 40 (67%) working in medical department, 07 (12%) working in obstetrics and surgery department where as only 6 (10%) working in emergency area.

5) As per the area of living, 32 (53%) 4th grade health workers were from rural area followed by 28 (47%) from urban area.

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C. Section: II

To Associate the Knowledge Score of 4th Grade Health Workers regarding Bio Medical waste Management with selected socio-demographic variable

S.N	Socio Demographic variables	knowledge assessment		χ^2 value		Df	Level of significance at 0.05
		Moderate knowledge (4-7)	Adequate knowledge (8-10)	Calculated value	Table value	Df	
1.	Age in years			664.5	7.82	3	Significant
	20-25 years	2	0				
	25-30 years	4	0				
	30-35 years	21	10				
	>40 years	13	10				
2.	Gender			23.13	3.84	1	Significant
	Male	18	6				
	Female	22	14				
3.	Qualification			29.17	7.82	3	Significant
	Belowe Primary	5	2				
	Illitrate	15	16				
	Primary	9	2				
	Secondry	11	0				
4.	Area of practice			152.06	7.82	3	Significant
	Emergency	0	6				
	Medical	33	7				
	OBG	2	5				
	Surgical	5	2				
5.	Area of living			11.94	3.84	3	Significant
	Rural	16	16				
	Urban	24	4				

*At 0.05 level of significance

1) To Assess the knowledge grade 4th health worker regarding the Management of BMW.

The findings of the present study revealed that out of total population 60, majority of samples i.e., 40 (66%) have good adequate knowledge, 20 (34%) have moderate knowledge.

Objective 2:

2) To find out the association between knowledge level demographic variables.

The findings of the present study show that was a significant association of knowledge found between gender. These findings revealed that knowledge was significantly associated with gender, qualification, working area and living area.

Objective 3 :

3) To Assess the Attitude Grade 4th Health Worker Regarding Safe BMW.

The findings of the present study revealed that sample attitude towards samples out of total population 60, majority of samples i.e., 40 (66%) have good adequate knowledge, 20 (34%) have moderate knowledge.

V. IMPLICATION OF THE STUDY

The findings of the present study have implication for the nursing practice, nursing education, nursing administration, and nursing research.

A. Nursing Practice

The findings of this study reveals that there is a need to understand about bio- medical waste management i.e. grade 4th health workers should have to be equipped with the knowledge and skills needed to support the individuals.

B. Nursing Administration

Administration should facilitate the development and the implementation of the strategies to improve the level of knowledge. we are administration should plan and organize education programme for the grade 4th health workers and motivating them to improve level knowledge regarding selected bio medical waste management i.e. infectious, sharps, solid, soiled and their management.

C. Nursing Research

The study reveals that the grade 4th health workers working in chattarpati Shivaji Subharti Hospital, Meerut, UP. Samples have adequate knowledge regarding selected bio medical waste management i.e. infectious, sharps, solid, soiled and their management. it emphasizes a great need for conducting research related to assess level of knowledge regarding selected bio medical waste management i.e. infectious, sharps, solid, soiled among large scale of population.

The findings of the study can be utilized for conducting a follow up study among the study group to find out the level of knowledge regarding selected bio medical waste management i.e. infectious, sharps, solid, soiled and their management among grade 4th health workers.

D. Limitations

The Study was limited to Grade 4th Health Workers Working In Chatar Pati Shivaji Subharti Hospital , Meerut, UP.

VI. RECOMMENDATIONS

1) A similar study can be repeated on large samples to validate and generalize the result.
2) A similar study can be conducted in difficult settings.
3) A descriptive study can be conducted among male ,female and transgender grade 4th health workers.

VII. CONCLUSION

The following conclusion is drawn on the basis of the findings of the study. the findings showed that the grade 4th health workers working in chattarpati Shivaji Subharti Hospital, Meerut are having adequate knowledge regarding selected Bio Medical Waste Management i.e. infectious, sharps, solid, soiled and their management. findings also show that there is a significant association between knowledge level of grade 4th health workers working in chattarPati shivaji Subharti hospital , Meerut, UP and their demographic variables. hence it is concluded that the knowledge level of grade 4th health workers working in ChattarPati shivaji Subharti Hospital , Meerut, UP, is average regarding Bio Medical Waste Management i.e. infectious, sharps, solid, soiled and their management.

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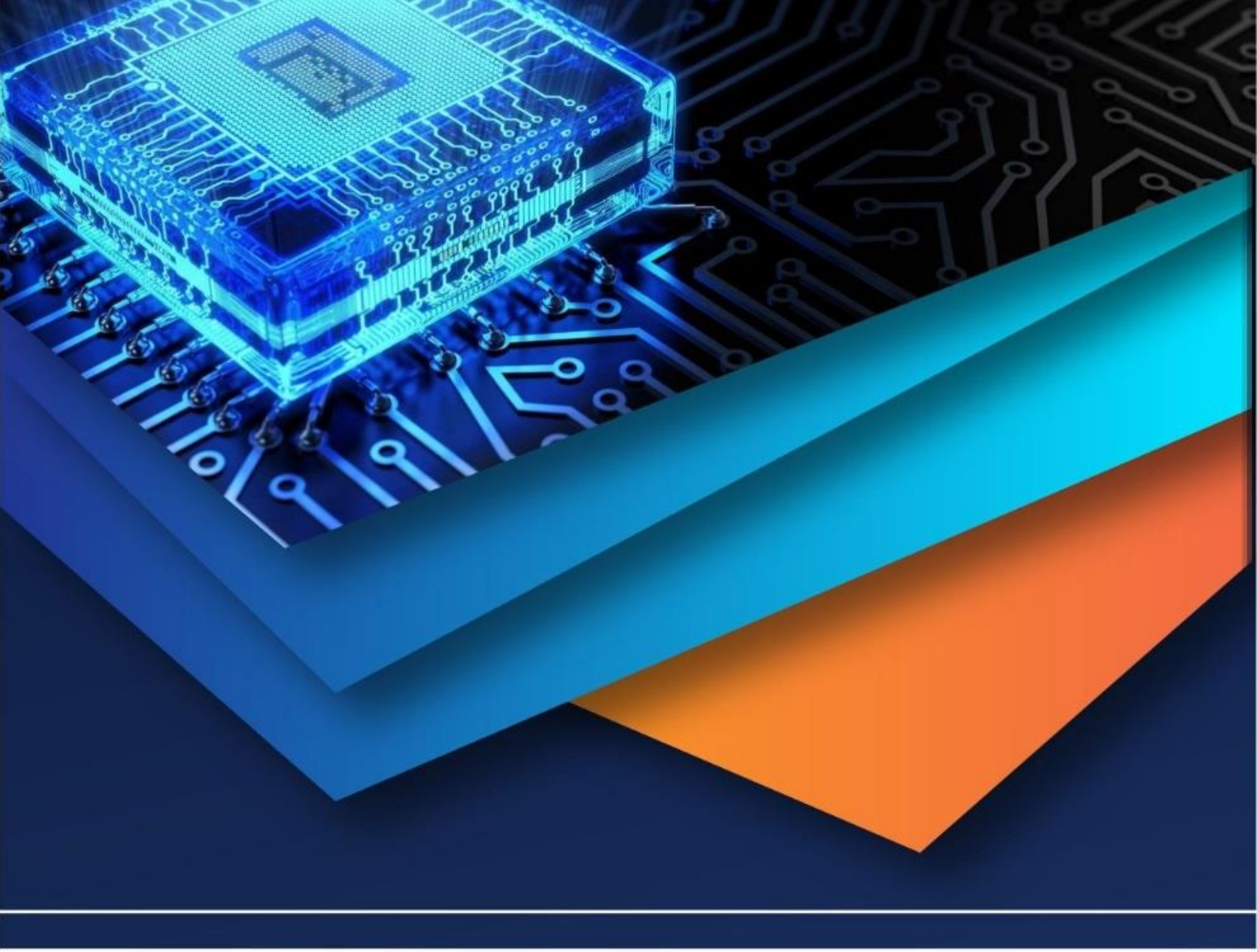

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