

# Effectiveness of Structured Teaching Programme on Knowledge Regarding Bio-Medical Waste Management among G.N.M. Students in Selected School of Nursing

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## ABSTRACT

**Aim:** to assess the effectiveness of Structured Teaching Programme on knowledge regarding Bio-Medical Waste Management among G.N.M. Students in selected School of Nursing.

**Objectives:** (i) To assess the pre and post test level of knowledge regarding Biomedical Waste Management among GNM students. (ii) To assess the Effectiveness of structured teaching programme on knowledge regarding biomedical waste management among GNM students. (iii) To find out the association between the post test level of knowledge score of GNM students with their selected socio demographic variables.

**Methodology:** A Pre experimental one group pre and post test research design was carried out in this study. 60 samples were selected by using non probability purposive sampling technique. The pre and post test level of knowledge was assessed by using structured knowledge questionnaires.

**Results:** The findings of the study shows that in level of knowledge, pre test mean was 7.0 with the standard deviation of 2.9 and the post test mean was 12.5 with the standard deviation of 5.5. The knowledge 'T' value is 3.27. The paired t test value shows that there was statistical significance between pre and post test knowledge at  $p < 0.001$  level.

**Conclusion:** The study concluded that structured teaching programme had been highly effective in improving the knowledge among GNM students regarding Biomedical waste management.

**Keys Words:** Biomedical Waste, Biomedical Waste Management, STP.

## INTRODUCTION

“Bio medical waste” is any waste, which is generated during diagnosis, treatment or immunization of human beings. This waste is also generated during research activities or in the production or testing of biological material.

Health care personnel including doctors, nurses and paramedical staffs are the guardians of the community. It is the duty of the entire health care establishment to ensure speedy recovery of their patients by maintaining clean and infection free surroundings. Basic sanitation and cleanliness have always been mandatory requirements in the health care establishment. Collection and disposal of biomedical waste, often ignored, are directly responsible for the spread of diseases in the community, specifically among health care personnel.

Improper hospital waste management has serious impact on the environment. The government of India reacted to global concern and notified the biomedical waste management rules in 1998. This rule is applicable to every hospital, nursing home, veterinary institution, animal house that generate biomedical waste.

Health care workers need to understand the difference between biomedical waste and other waste connected with the hospital. Hospital waste refers to all waste, biological or non biological that is discarded.

The quantity of bio medical waste generated will vary depending on the hospitals, colleges and practices and the type of care being provided. According to WHO, 85 percentage of the hospital waste are actually non hazardous, 10 percentage are non infectious and the remaining 5 percentage are non infectious but hazardous consisting of chemical, pharmaceutical, radioactive materials. In India 0.5-2 kg per patient per day waste is generated and the percentage of infectious waste is much higher that is 30-60 percentages. This is because of improper segregation methods resulting in collection of biomedical waste in a mixed form.

The nurses spend maximum time with patients in the ward than any other member of the health team, increases their exposure and risk to the hazards present in hospital environment, mainly biomedical waste. They need to be well equipped with latest information, skills and practices in managing this waste besides reducing hospital-acquired infections to protect their own health. They are also responsible for preventing risk due to waste to the other members of health team and community at large.

Nurses are the largest occupational group in any health care agency. By virtue of their jobs responsibility they are frequently exposed to biomedical waste. The nurse's risk of exposure to health hazard. It is clear that without their active participation waste management would be a dream to avoid this, nurses at the start of their profession, that is, while they are at the level of students, should be made aware of the health hazard of biomedical waste and the scientific ways of handling it this could be done best by a Structured teaching programme.

The waste produced in the course of healthcare activities carries a higher potential for infection and injury than any other type of waste. Inadequate and inappropriate knowledge of handling of healthcare waste may have serious health consequences and a significant impact on the environment as well. So, investigator himself felt that awareness through teaching programme is effective way for GNM internship students to equip themselves with latest information about knowledge of biomedical waste management, which help them to work effectively in the hospital.

### **STATEMENT OF THE PROBLEM**

“A Study to assess the effectiveness of Structured teaching programme on knowledge regarding Bio-Medical Waste Management among G.N.M. Students in selected School Of Nursing at Villupuram”.

### **OBJECTIVES OF THE STUDY**

1. To assess the pre and post test level of knowledge regarding Biomedical Waste Management among GNM students.
2. To assess the Effectiveness of structured teaching programme on knowledge regarding biomedical waste management among GNM students.
3. To find out the association between the post test level of knowledge score of GNM students with their selected socio demographic variables.

### **HYPOTHESIS**

- H<sub>1</sub>: There will be significant increase in post test knowledge scores than the pre test knowledge score on biomedical waste management among GNM students.
- H<sub>2</sub>: There will be significant association between the posttest level of knowledge on biomedical waste management among GNM students with selected Socio-demographic variables.

## MATERIAL AND METHODS

A Pre experimental one group pre and post test research design was carried out in this study.60 samples were selected by using non probability purposive sampling technique. The pre and post test level of knowledge was assessed by using structured knowledge questionnaires.

## RESULT AND DISCUSSION

### Percentage and Distribution of pre and post test level of knowledge regarding Biomedical waste management among

### GNM students at selected school of Nursing

Table 1.1: Distribution of pre test Level of Knowledge on Biomedical Waste Management among GNM Students. N=60

LEVEL OF KNOWLEDGE	FREQUENCY (N)	PERCENTAGE (%)
Inadequate	40	67%
Moderately adequate	18	30%
Adequate	2	3%

Table 1.1 shows that in the pre test out of 60 samples, 40 (67%) of them had inadequate knowledge, 18(30%) had moderately adequate knowledge, and 2(3%) of them had adequate knowledge regarding Biomedical waste management.

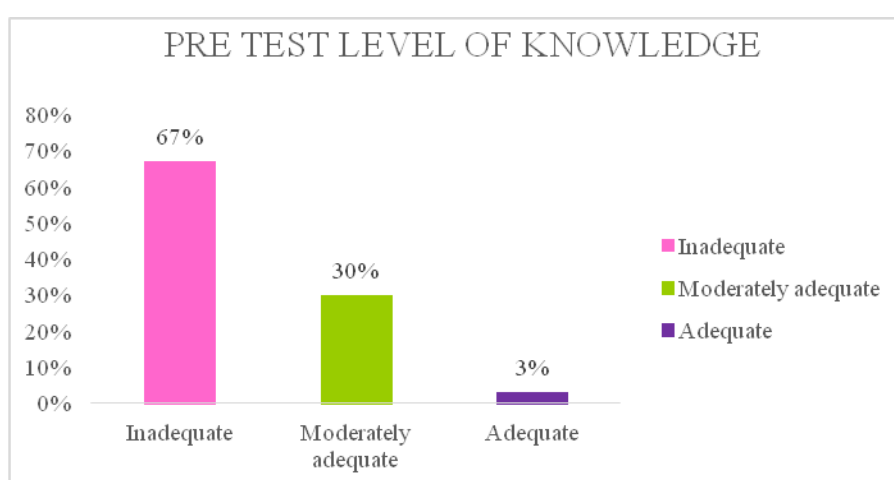


Figure 1.1: Shows Pre Test level of knowledge among GNM Students

Table 1.2: Distribution of post test Level of Knowledge on Biomedical Waste Management among GNM Students. N=60

LEVEL OF KNOWLEDGE	OF	FREQUENCY (N)	PERCENTAGE (%)
Inadequate	0	0	0%
Moderately adequate	43	72%	72%
Adequate	17	28%	28%

Table 1.2 shows that in the post test out of 60 samples, 43 (72%) of them had moderately adequate knowledge, and 17(28%) of them had adequate knowledge and none of them had inadequate knowledge regarding waste management among GNM students.

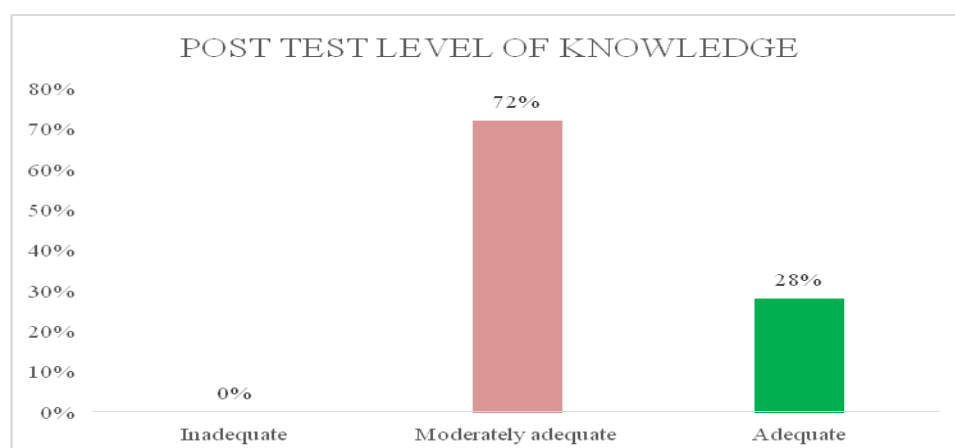


Figure 1.2 Shows Post Test level of Knowledge among GNM Students

**Table 1.3: Distribution of mean and standard deviation of effectiveness of STP on Knowledge on Biomedical waste management among GNM students in Pre and Post Test. N=60**

Knowledge in Different aspects	Pre test	Post test	Paired value	t-test
Mean	7.0	12.5	t=3.27	
Standard deviation	2.09	5.5		

**Table 1.3** shows that in the pre test, the mean value was 7.0 with the standard deviation of 2.09. In the post test mean

value is 12.5 with the standard deviation of 5.5. The paired t test value shows that there was statistical significance between pre and post test knowledge at  $p < 0.001$  level. It indicates that structured teaching programme had been highly effective in improving the knowledge among GNM students regarding Biomedical waste management.

**TABLE 1.4: Association between post test knowledge on Biomedical waste management among GNM student nurses with the selected demographic variables. N=60**

S.No	Demographic variables	Level of knowledge			Chi square	P value
		Inadequate	Moderately adequate	Adequate		
1	Age in years	<19 years	0	34	0.082	p = 0.999 df = 6 NS
		20 years	0	9		
		21 years	0	0		
		22 years & above	0	0		
2	Sex	Male	0	2	1.944	p = 0.746 df = 4 NS
		Female	0	41		
		Trans gender	0	0		
3	Occupation of Parents	Farmer	0	38	7.259	p = 0.297 df = 6 NS
		Government worker	0	2		
		Private worker	0	3		
		Profession	0	0		
4	Family income per month	< 5000	0	20	0.286	p = 0.990 df = 6 NS
		5001-10,000	0	17		
		10,001-20,000	0	6		
		>20,000 & above	0	0		
5	Education of Parents	No formal education	0	2	0.990	p = 0.985 df = 6 NS
		Primary & High School	0	40		
		Higher Secondary	0	1		
		Graduate	0	0		
6	Religion	Hindu	0	29	0.492	p = 0.997 df = 6 NS
		Muslim	0	3		
		Christian	0	11		
		Others	0	0		
7	Type of family	Joint family	0	13	0.781	p = 0.940 df = 4 NS
		Nuclear family	0	14		
		Extended family	0	16		

The chi-square test revealed that there was no significant association between post test level of knowledge with age, sex, occupation of parents, family income, education of parents and family type at  $p < 0.05$  level.

## DISCUSSION

The first objective of the study was to assess the level of pre and post test

knowledge regarding Biomedical waste management among GNM students.

The percentage distribution of level of pretest knowledge on Biomedical waste management among GNM students..

In the pre test out of 60 samples, 40 (47%) of them had in adequate knowledge, 18(30%) had moderately adequate knowledge, and 2(3%) of them had adequate knowledge regarding Biomedical waste management.

In the post test out of 60 samples, 43 (72%) of them had moderately adequate knowledge, and 17(28%) of them had adequate knowledge and none of them had in adequate knowledge regarding waste management among GNM students.

The second objective of the study was to assess the effectiveness of structured teaching programme regarding knowledge on Biomedical waste management among GNM students.

The overall knowledge aspect in the pre test, The mean value was 7.0 with the standard deviation B.Sc of 2.09. In the post test mean value is 12.5 with the standard deviation of 5.5. The paired t test value shows that there was statistical significance between pre and post test knowledge at  $p < 0.001$  level. It indicates that structured teaching programme had been highly effective in improving the knowledge among GNM students regarding Biomedical waste management. Hence hypothesis H1 has been accepted.

The findings of this study was supported by, Amar Ullaha( 2015 ): A pre-experimental study was conducted on effectiveness of planned teaching programme on biomedical waste management among 120 IVth year. nursing students of three nursing colleges in Hyderabad. The pre-test questionnaire was given to assess knowledge. The pre-test mean score was only 49.5% whereas the post-test mean score was 86.6% and was highly significant ( $t = 22.56$ ,  $p < 0.001$ ). The study concluded that STP was effective in improving the knowledge of the nursing students.

The findings of this study was supported by, Leena Deepthi ( 2014 ): An evaluative study was conducted on effectiveness of planned teaching programme on biomedical waste management among 150 staff nurses working in hospitals of Mangalore. The pre-test questionnaires designed to assess knowledge, the pre-test knowledge score was 13.25, whereas the post-test mean score was 32.75 and highly significant at the level

of  $p < .001$ . The post-test mean score increased to 32.75% ( $p < .001$ ) which shows the effectiveness of STP.

The third objective was to associate the selected demographic variables of GNM students with post test knowledge on Biomedical waste management.

The chi-square test revealed that there was no significant association between post test level of knowledge with age, sex, occupation of parents, family income, education of parents and family type at  $p < 0.05$  level.

## CONCLUSION

The findings of the study shows that in level of knowledge, pre test mean was 7.0 with the standard deviation of 2.9 and the post test mean was 12.5 with the standard deviation of 5.5. The knowledge 'T' value is 3.27. The paired t test value shows that there was statistical significance between pre and post test knowledge at  $p < 0.001$  level. It indicates that structured teaching programme had been highly effective in improving the knowledge among GNM students regarding Biomedical waste management.

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