

A Study to Assess the Effectiveness of Structure Teaching Programme on Knowledge Regarding Biomedical Waste Management among First Year UG Nursing Students from Selected Nursing Colleges, Chandrapur

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Abstract:- Introduction : Nurses play important role in prevention of infection in hospital and community setting by proper handling , treatment and disposal of biomedical waste. Hence they need to be well trained about management of biomedical waste. This study has conducted by setting objectives, to assess effectiveness structure teaching programme on knowledge regarding biomedical waste management among first year UG nursing students and to find out association of post test knowledge score with selected demographic variables. **Material and method :** this study has been conducted on 40 under graduate nursing students by using simple random technique. Pretest data has been collected by using structured questionnaires of 20 items on biomedical waste management (BMW) , followed by structure teaching programme on BMW and then post test was conducted on 7th day after administrating structure teaching programme. Effectiveness of structure teaching programme was assessed by using t- test and one way ANOVA was used to find out association of post test knowledge score with selected demographic variables **Result :** maximum sample 22 (40%) had average knowledge in pretest and 16 (40%) sample had good knowledge where only 2 (5%) samples were with poor knowledge in pretest. The post test score has shown maximum 34 (85%) samples were with excellent knowledge and 5 (12.5%) sample's score was good and only 1 (2.5%) sample were with average knowledge. Calculated t-value was found to be 16.13 for overall knowledge regarding biomedical waste management which is greater than table t value at 0.05 level of significance. Post test knowledge score has not shown any significant association with selected demographic variable. **Conclusion:** The study concluded that structure teaching programme is effective and beneficial method to improve the knowledge of first year UG nursing students regarding biomedical waste management .

I. INTRODUCTION

Biomedical waste is any kind of waste material which containing infectious material in the form of solid or liquid. This waste generated during the diagnosis , treatment and immunization of human and animals.¹ Biomedical waste produce in large amount on everyday basis, in hospital settings, labs and other health care premises. There is near about 0.33 million tons of hospital waste produced in India. According to WHO the production rate of waste per bed per day is 0.5 to 2.0.^{2,3}

Contrary to other kind of waste biomedical waste is highly hazardous and which leads to contamination or injury. It is very necessary to have safe and reliable method for handling of biomedical waste. The main cause of spread of disease is improper collection and disposal of biomedical waste.⁴ It is a responsibility of entire health care team to ensure speedy recovery of clients by maintaining infection free surrounding and environment. By taking this all issues in consideration there is the need to increase awareness among all health care fraternities about hazards of biomedical waste.⁵

Nurses provide wholistic care and spend their maximum time with patient in particular department. Hence they are more prone to get exposed and get risk of biomedical waste hazards.⁶

Therefore there is special need to create awareness about biomedical waste hazards and management of biomedical waste among all nursing fraternities. To protect nurse's and client's health nurses need to be well equipped with latest technology , information and practices to manage biomedical waste.⁷

Hospital administrative department and educational institutes related to health care department play an important role to spread awareness among health care professionals.

First year nursing students are new commers in nursing profession and they must required to be skilled in management of biomedical waste while working in hospital and community setting in order to render quality care to the patients. Structure teaching programme is one of the effective method to improve knowledge of students and develop skill between them about concern topic.

Hence we felt to develop structure teaching programme on biomedical waste management along with structured questionnaires , for first year undergraduate nursing students to assess their basic knowledge and to spread awareness about management of biomedical waste among them.

➤ Objectives

- To find out the effectiveness of structure teaching programme on knowledge regarding biomedical waste management among first year UG nursing students.
- To find out the association of post test knowledge score with selected demographic variables.

II. MATERIAL AND METHOD

Probability simple random technique used to select 40 undergraduate nursing students. The study was conducted in 2023. One group pre test post test design was adopted. Approval to conduct study was obtained from concern authority and ethical committee. Informed consent from samples has been taken. Both pretest and post test data was collected by using structured questionnaires of 20 items on biomedical waste management.

Table 1: Distribution of sample based on overall knowledge level regarding biomedical waste management N=40

Sr. No	Knowledge level	Pre test		Post test	
		F	%	F	%
1.	Poor (0 – 5)	2	5	0	0
2.	Average (6 – 10)	22	55	1	2.5
3.	Good (11 - 15)	16	40	5	12.5
4.	Excellent (16 - 20)	0	0	34	85
	TOTAL	40	100	40	100

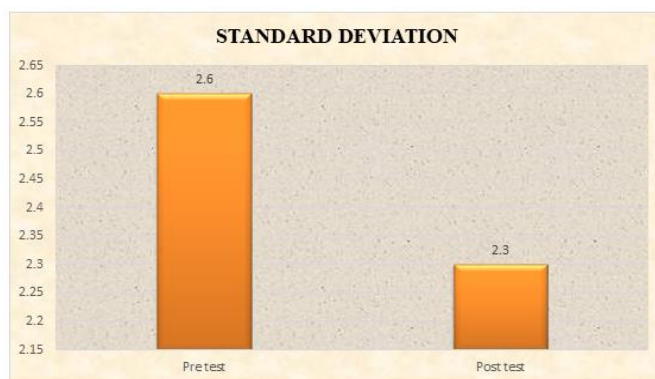
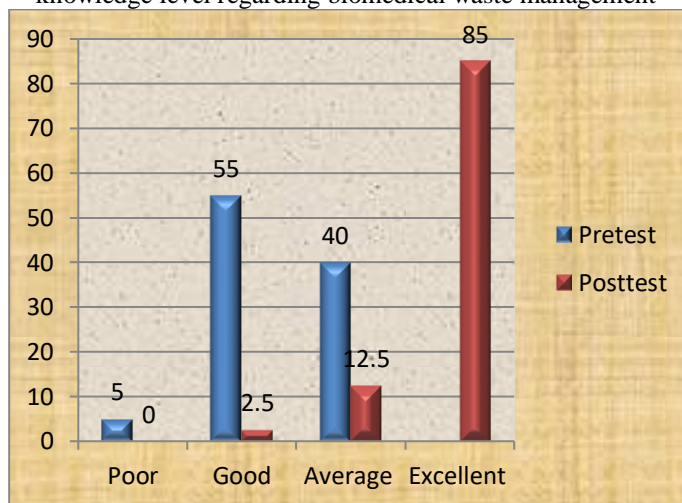
Table no. 1 and graph no.1 depict that the maximum samples 22 (55%) and 16 (40%) were having average and good knowledge respectively in pretest. Whereas, knowledge level about biomedical waste management has increased in post test after structure teaching programme and maximum 34 (85 %) sample’s knowledge reached to excellent level in post test and 5 (12.5%) samples were in category of good knowledge score. In pretest only 2 (5%) samples were found with poor knowledge and in posttest only 1 (2.5%) samples found with average knowledge.

➤ Sample Selection Criteria

- Inclusion criteria
First year undergraduate nursing students
- Exclusion criteria
First year undergraduate nursing students who will not give consent to be enrolled in the study were excluded from the study.

III. RESULT

Graph no. 1.: Distribution of sample based on overall knowledge level regarding biomedical waste management



Graph no. 2. : Effect of structure teaching method on overall knowledge of sample

Table no. 2. : Effect of structure teaching method on overall knowledge of sample N= 40

Comparison of knowledge		Mean	S.D.	M.D.	SEMD	t value	P value	Significance at 5%
Overall knowledge	Pre test	9.7	2.6	7.1	0.44	16.13	<0.00	Yes
	Post test	16.8	2.3					

Table no. 2 and graph no. 2 explain the effect of structure teaching programme on overall knowledge of sample regarding biomedical waste management. The value of 't' value was found to be 16.13 for overall knowledge, Calculated t value is greater than table t value (2.02) for degree of freedom 39 at 0.05 level. It indicates that there is significant mean difference between pre-test and post test knowledge score. Post test mean is higher (16.8) than pre-test mean (9.7) and mean difference is found to be 7.1.

Association of post test knowledge score and selected demographic variables, 'age', 'gender', 'type of family' and 'previous knowledge regarding topic' calculated by using one way ANOVA. Based on the 'F' test for unpaired sample the calculated 'F' value for Pre STP knowledge score for, 'age' is 2.05, 'gender' : 0.42, 'type of family' : 3.48 and 'previous knowledge regarding topic' is 0.70 and The post STP knowledge score had shown no significant association with any selected demographic variables.

IV. RECOMMENDATION

1. Similar study can conducted on large sample for generalization of result.
2. Similar study can get conducted on GNM and ANM students.
3. Study can get conducted for novice nurses in hospital setting to provide quality care to the patient.

V. CONCLUSION

The study concluded that undergraduate nursing students had some what knowledge regarding biomedical waste management which increased to excellent level after structure teaching programme, this is shown that structure teaching programme is effective method to improve knowledge of undergraduate nursing students regarding biomedical waste management. We found that there is no any association of selected demographic variables with pots test score of sample regarding biomedical waste management.

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