

## Research Article

# Effectiveness of the structured teaching programme regarding bio-medical waste management among nursing students

## Abstract

**Background:** Hospitals produce waste which is increasing over the years in its amount and type. The hospital waste, in addition to the risk of the patients and personnel who handle them also poses a threat to public health and environment. The absence of proper waste management, lack of awareness about the health hazards from, biomedical wastes, insufficient financial and human resources and poor control of waste disposal are the most critical problems connected with healthcare waste. Therefore, this study has been conducted with an objective to assess the knowledge regarding Bio- Medical waste management among B.Sc and ANM students.

**Methods:** A study was conducted on 60 nursing students of B.Sc nursing 1st year and Auxiliary Nursing 1st year students of VVM Institute of Nursing District Kangra, Himachal Pradesh selected by convenience sampling technique. Knowledge assessed by using a structured questionnaire analysis was done using both descriptive and inferential statistics.

**Results:** The findings of the study revealed that the mean pre-test knowledge score was 10.43 and mean-post knowledge score was 16.66. It was found that there was a statistically significant association of knowledge with selected socio demographic variables like education, working status, habitat and previous knowledge regarding bio medical waste.

**Conclusion:** Thus the study concluded that in pre-test majority of the students were having average level of knowledge and in post-test majority of the students were having excellent knowledge. Thus, structured teaching programme was found effective to improve the knowledge regarding Bio-Medical waste management among nursing students.

**Keywords:** nursing students, Bio-Medical waste management, knowledge

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## Introduction

According to Biomedical waste management rules, 1998 of India, "Any waste which is generated during diagnosis, treatment or immunization of human beings and animals or in research activities pertaining there or in production of testing of biologicals.<sup>1</sup> Inadequate biomedical waste management will cause environmental pollution, unpleasant smell, growth and multiplication of vectors like insects, rodents, worms it may leads to the transmission of diseases like typhoid, cholera, hepatitis, and AIDS through injuries from syringes and needles contaminated with humans. Adequate knowledge about the health hazard of hospital waste, proper technique and methods of handling the waste, and practice of safety measures can go a long way toward the safe disposal of hazardous hospital waste and protect the community from various adverse effects of the hazardous waste.<sup>2</sup>

Health and safety of the nursing staff is cardinal feature of biomedical waste management. Nurses spend maximum time with patients in the wards, they need to be well equipped with latest information, skills and practices in managing this waste beside reducing hospital acquired infections to protect their own health.<sup>3</sup> As nursing students are going to be one of the important components of the health care system, they should have proper and sufficient

knowledge on biomedical waste management. Hence, awareness through teaching programme is effective way for nursing students to equip themselves with latest information about skills and practices in biomedical waste management, which help them to work effectively in hospital.

## Methods

Descriptive study was carried out on 60 nursing students of VVM Institute of Nursing, Nurpur. After taking informed consent 60 nursing students were selected by convenience sampling technique. Knowledge was assessed using structured questionnaire.

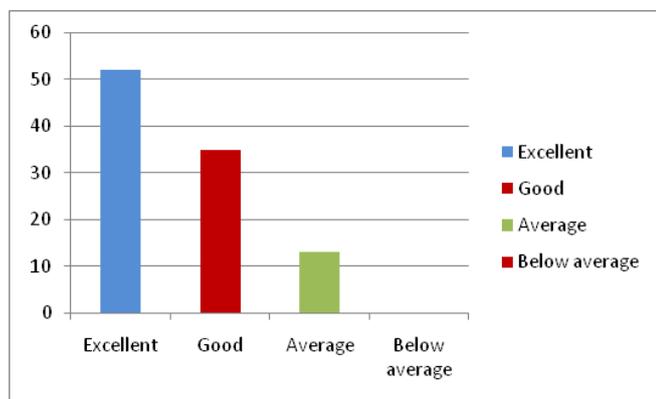
**Inclusion criteria:** Nursing students who were studying in B.Sc nursing 1st year and ANM 1st year.

## Results

Figure 1 & Figure 2 revealed that (22) 36.6% nursing students were having below average score (28) 46.6% nursing students were having average knowledge score, (8) 13.3% nursing students were having good knowledge score, (2) 3.3% nursing students were having excellent knowledge score.



**Figure 1** Percentage distribution of pre-test knowledge score of nursing students regarding Bio-Medical waste management.



**Figure 2** Percentage distributions of post-test knowledge score of nursing students regarding Bio-medical waste management.

Figures revealed that in post-test 0% nursing students were having below average score, (8) 13.3% nursing students were having average knowledge score, (21) 35% nursing students were having good knowledge score, (31) 51.6% nursing students were having excellent knowledge score.

Table 1 depicts that the mean pre-test knowledge score was 10.433 and mean post-test knowledge score was 16.66. The t value was 15.579\*\*\* was significant at p value of 0.001.

**Table 1** Effectiveness of structured teaching program regarding bio-medical waste management among nursing students

Nursing students	Pre-test knowledge	Post-test knowledge	't'	'p'
	Mean±S.D	Mean±S.D	Df	
	10.433±3.09	16.66±2.32	59	15.579*** 0.001

Significant at p=0.001

NS, Non significant at p<0.001

## Discussion

In the present study it was found that in pre-test, 3.3% nursing students had excellent, 13.3% nursing students had good knowledge, 46.7% nursing students had average knowledge, 36.7% nursing

students had below average scores and in post-test, 51.7% nursing students had excellent knowledge, 35% nursing students had good knowledge, 33.3% nursing students had average scores.

Similar study conducted by Veena R, in this study it was found that the pre-test mean score was only 49.5% whereas the post-test mean score was 86.6%.

Another supported study conducted by B Nagaraju et al.,<sup>4</sup> in this study it was found that 65% had average level of knowledge, while 24% had good knowledge and 53% had average level of practice while 35% had a good practice level.

## Conclusion

In pre-test majority of nursing students 46.6% were having average level of knowledge while in post-test majority of nursing students 51.6% were having excellent level of knowledge. Thus, in post-test knowledge score is more than pre-test knowledge score. Thus, structured teaching programme was found effective to improve the knowledge regarding Bio-Medical waste management among nursing students.

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## Declarations

### Funding

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### Conflict of interest

None declared.

### Ethical approval

The study was approved by the Institutional Ethics Committee.

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