

ORIGINAL RESEARCH**A quasi-experimental study to assess the effectiveness of structured teaching programme on knowledge and attitude regarding the biomedical waste management among B.S.C. Nursing 3rd year and 4th year students of Desh Bhagat University, Mandi Gobindgarh, Punjab****¹Sukhmanpreet Kaur, ²Priyanka Chaudhary, ³Deepak K. Shandily**¹Ph.D Scholar & Assistant Professor, ²Associate Professor, ³Vice Principal, Desh Bhagat University, Mandi Gobindgarh, Punjab, India**Correspondence:****Sukhmanpreet Kaur**

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Abstract

A Quasi-Experimental Research Design was used to conduct the study. Study was conducted in Desh Bhagat University School of Nursing, Mandi Gobindgarh. 50 students were selected by convenient sampling technique. Socio demographic questions and multiple choice questionnaires were used to assess the knowledge and attitude of nursing students. The study findings revealed that majority of students (66%) has moderate knowledge and (17%) has inadequate knowledge regarding Biomedical Waste Management. The findings of the study shown that there is moderate as well as inadequate knowledge on Biomedical Waste Management among 3rd year and 4th year nursing students.

Introduction

Biomedical waste is generated from biological and medical sources and activities, such as the diagnosis, prevention or treatment of diseases. There is a need for better segregation of biomedical waste in households and hospitals. The main steps to take in order to handle the process of medical waste disposal from start to finish are collection & segregation, storage & transportation, and finally treatment & disposal. The need of proper hospital waste management system is an essential component of quality assurance in hospitals. The reason due to which there is great need of management of hospitals waste such as: Risk associated with hazardous chemicals, drugs to persons handling wastes at all levels. This study is carried out in order to assess the knowledge and attitude of Biomedical Waste Management among 3rd year and 4th year nursing students.

Objectives

- To assess pre-test knowledge and attitude among B.Sc nursing 3rd and 4th year students regarding Bio Medical Waste.
- To administer structured teaching programme (STP) to the B.Sc nursing 3rd and 4th year students regarding Bio Medical Waste.
- To assess post-test knowledge and attitude among B.Sc nursing 3rd and 4th year students regarding Bio Medical Waste.
- To determine the effectiveness of structured teaching programme in terms of gain in knowledge score.

Methodology

A quasi experimental study was conducted among 50 B.Sc Nursing students of Desh Bhagat University School of Nursing, Mandi Gobindgarh, Punjab by using convenient sampling technique. Personal choice networking information questionnaire were used to collect the data from the study subjects. The reliability of tool was found to be 0.80 for knowledge regarding Biomedical Waste Management. Ethical permission granted from Institutional ethical committee. Data has been collected within 15 days time period in month of October 2021.

Findings of Study

Findings related to sample characteristics of Nursing students:

The baseline data of the Nursing students found that majority of the respondents were male i.e. 66 per cent, the majority of the respondents i.e. 94 percent were within the age group of 20-25, the majority of the respondents i.e. 58 per cent were having the nuclear family composition, The majority of the respondents i.e. 64 per cent were from urban areas, similarly the majority of the respondents i.e. 50 per cent were getting the information from the internet.

Table 1 Pre-test and Post-test knowledge and attitude scores regarding Biomedical Waste Management among B.Sc. nursing 3rd year and 4th year students.

Components	Test	Mean	SD	Range	Mean difference	Paired t Test	P value
Knowledge scores	Pre test	8.67	3.72	14-2	18.69	17.6*	P < 001
	Post test	27.36	2.97	28-20			
Attitude scores	Pre test	0	0	0	9.35	34.75*	P < 001
	Post test	9.35	1.33	14-9			

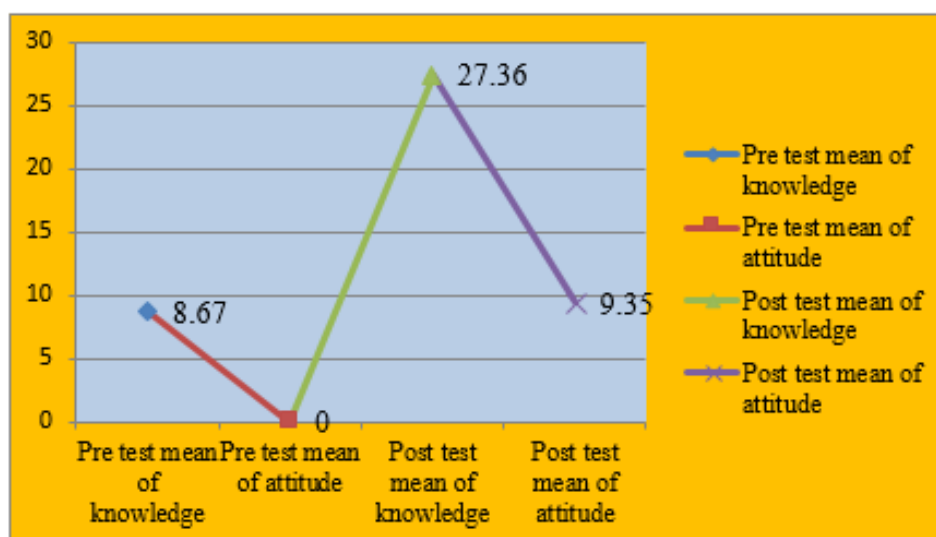


Fig 1 Comparison of Pre-test and Post-test mean knowledge score of the study of sample.

Table 2 Association between Post-test scores of B.Sc. nursing 3rd year and 4th year students with their selected demographic variables.

S.No	Variables	Pre Test Score			Chi square	df	P value	Significant
		Adequate	Moderate	Inadequate				
1	Age				1.166	8	14.43	NS
	15-20	0	0	0				
	20-25	12	36	0				
	25-30	1	1	0				
	30-35	0	0	0				
2	Gender				0.234	2	6.89	NS
	Male	8	20	0				
	Female	5	17	0				
	Other	0	0	0				
3	Source of information				2.125	2	6.89	NS
	Books	5	15	0				
	Journals	0	0	0				
	Internet	7	23	0				
	Others	0	0	0				
4	Type of family				1.544	6	13.43	NS
	Nuclear	7	27	0				
	Joint	1	15	0				
	Extended	0	0	0				
5	Area of living				3.178	8	14.43	NS
	Rural	1	13	0				
	Urban	7	29	0				

The study found that after Structured Teaching Programme mean score was 27.36 with standard deviation of 2.97, the mean difference found was 18.69, range lies between 28-20, Paired t-test value was 17.6, P value found as $P < 0.01$.

The study found that after Structured Teaching Programme mean score was 9.35 with standard deviation of 1.33, the mean difference found was 9.35, range lies between 14-9, Paired t-test value was 34.75, P value found as $P < 0.01$.

Similar findings were noted in a study conducted by Sowmya. V (2013) on Bio medical waste management among health care personnel working at PHC'S of Anekal Taluk. The sample size comprised of 78 health care personnel's selected through complete enumeration (Simple Random sampling). Knowledge was assessed by a structured questionnaire and practice was assessed by observational checklist and data was analyzed using descriptive and inferential statistics. Results 125 shows that the health care personnel had moderately adequate knowledge regarding biomedical waste management. The current system of practice of biomedical waste management at primary health centers was neither too satisfactory nor unsatisfactory but was as per the guidelines to a certain extent. The problems faced were almost common in all the primary health centers.

Discussion

A questionnaire based on World Health Organization (WHO) recommendations was used to survey the selected private and public teaching hospital ($n = 16$). Site visits and personnel observations were also included in the data. It was spatio-statistically analyzed using descriptive statistics, Krushkal-wallis and Fisher's exact tests. The findings revealed that the lack of HWM practices in all surveyed hospitals ($p > 0.05$), besides statistical difference ($p < 0.017$) in waste generation/day. But the performance of private teaching hospitals (50%) was found better in terms of HWM personnel and practices. In surveyed hospitals, only nine hospitals (56.3%) were found with the incinerator facility while rest of the hospitals (43.7%) practiced open dumping.

Current study found that before Structured Teaching Programme mean score was 8.67 with standard deviation of 3.72, the mean difference found was 18.69, range lies between 14-2, Paired t-test value was 17.6, P value found as $P < 001$.

Basavaraj, T.J., Shashibhushan et. al. (2021) conducted a study in the pandemic of COVID-19, because the awareness of healthcare workers in regards with biomedical waste (BMW) management is crucial in this pandemic. This study is therefore conducted to assess the knowledge, attitude and practices in BMW management among health care workers in our institution. The study concluded that there have to be regular training programmes on biomedical waste management and its hazards for all the healthcare workers including group D workers.

Limitations of study

The study was confined only to the 50 Nursing students of Desh Bhagat University School of Nursing. Personal choice networking information questionnaire towards Nursing students constructed by the investigator used to collect the information. And only limited samples was studies as there was limited time available for data collection.

Conclusion

After the detailed analysis, this study leads to the following conclusion:

In context of assessing the effectiveness of structured teaching programme on knowledge and attitude regarding the biomedical waste management was found that there was significant increase in the knowledge and attitude among the respondents after the structured teaching programme. The knowledge and attitude score of the respondents before structured teaching programme has been considerably increased after providing the structured teaching programme as mentioned in the results and discussion of the study.

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