



A Pre-Experimental Study Assess the Knowledge on Biomedical Waste Management (BMW) among GNM final year Nursing Students of Selected Colleges at Distt Mandi (H.P)

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Abstract

Knowledge regarding bio medical waste management plays a vital role in nursing students for their clinical practice.

Aim and Objectives: *The study aim to assess the knowledge of bio medical waste management among GNM final year nursing students and to find out the association between knowledge and demographic variables regarding Bio medical waste management.*

Methodology: *Pre –experimental one group pre-test-post-test design was. A total of 100 students were enrolled into the study by using convenient sampling technique. The structured closed ended questionnaire was used to assess the knowledge*

Result: *After pre-test majority of nursing students (84%) had Average knowledge regarding bio medical waste management, Poor knowledge (13%), good (3%) and excellent (none). After Post- Test majority of nursing students (57%) had excellent knowledge regarding bio medical waste management, good knowledge (31%), Average (12%) As calculated chi test was use to determine the association between the score levels and selected demographic variables and “t” test value was significant.*

Introduction

“YOU SEE THINGS AND SAY, WHY? BUT I SEE THINGS AND SAY WHY NOT”¹

Human beings or animals or in the research activities pertaining thereto or in the production or testing of biological and including categories mentioned in Biomedical waste is are any wastes generated during the diagnosis , treatment or immunization of schedule.

In the developing countries, the waste gets dumped in open areas where rag pickers and beggars in value in search of goods, risk their lives by contacting hazardous disease. Many hospitals in the developed countries are recycling or donating the scraps to the developing countries,

for instance at least 50% of the US hospitals send their single use items to the reprocesses who in turn resell them at relatively low prices after sterilizing them.

Need for the Study

Nursing as a profession is now accountable of staff and students nurses for competence and performance. 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 practice 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 large⁷.

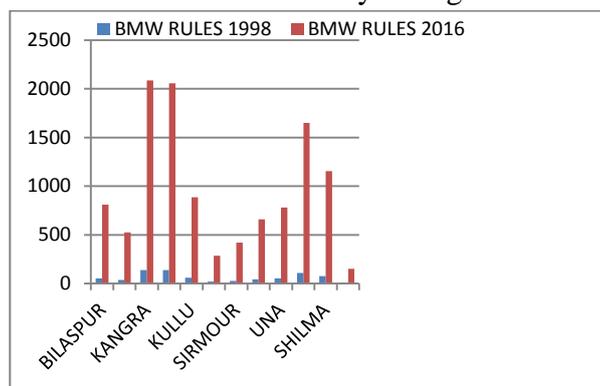


Fig 1: Bar graph showing comparison of number of health care facilities covered under BMW rules 1998 -2016

Statement of Problem

“A Pre-Experimental Study assess The Knowledge on Biomedical Waste Management (BMW) among GNM Final Year Nursing Students Of Selected Colleges At Distt Mandi (H.P)”

Objectives

- To assess the knowledge regarding bio medical waste management (BMW) among GNM final year Nursing students at Distt Mandi.(H.P)
- To find out the association between knowledge and selected demographic variables Bio-Medical Waste management.

Hypothesis

H₁ There will be significant association between knowledge and demographic variables

H₀ There will be not be significant association between knowledge and demographic variables

Assumption

- GNM final year Nursing students may have some knowledge regarding BMW
- Providing booklet will increase the knowledge of nursing students regarding BMW.

Delimitations

The GNM 3rd year student who are studying in selected nursing colleges and school of Distt Mandi (H.P)

Methodology

Research approach and design: To assess the knowledge regarding biomedical waste management among G.N.M nursing students a Pre- experimental one group pre test-post test design with Quantitative research approach.

Setting of the study: The study was undertaken Nursing colleges at Distt, Mandi H.P.

Population: The population for the study comprised G.N.M Nursing students of selected nursing colleges.

Samples: Samples of the study were G.N.M. Nursing students of the selected colleges of Distt. Mandi H.P.

Sample Size: Sample size were 100.The samples included 40, 35 and 45 students respectively from each college.

Sampling Technique: In the present study the G.N.M. Nursing students were selected by convenient sampling.

Inclusion Criteria The following inclusion criteria are set to select the samples.

- G.N.M. final year Nursing students
- Students available at the time of data collection
- Those who have consented to participate in the study.

Exclusion Criteria Samples excluded in the present study were students,

- The study excluded the students those who had already participated in the same type of study.
- Those colleges who are not given the permission for data collection.

Description of the Tool

Section-A: The Performa for sample characteristics was developed together personal data about Nursing Student i.e. age, gender, residence, marital status, religion Education, source of information, college area Clinical area,

Previous knowledge regarding the Bio medical waste management.

Section-B: Each correct question was awarded a score of “1” and for every incorrect question a score of “0” was given. Thus, total score on structured knowledge questionnaire ranged from 0-30, maximum possible score was “30” and minimum score was “0”.

S.No.	Level of knowledge	Range of score	Percentage of score
1.	Excellent	25-30	>83%
2.	Good	20-24	66-80%
3.	Average	11-19	36-63%
4.	Poor	0- 10	<33%

Validity of the Tool

Items were judged by 7 experts for relevance, clarity and appropriateness. Modifications were done in the tool as per expert opinion.

Reliability of the Tool

Reliability was established by split half method.

The steps adopted for development of information booklet were as follows-

- Review of Literature
- Journals, Books, internet as sources used
- Opinions and suggestions from guide

The contents covered the following areas-

- Solid waste Management
- Liquid waste management
- Liquid waste management
- Laboratory waste management
- Sharps waste management

Data Collection Procedure

Formal permission for final data collection of the study was obtained from the concerned authorities of various selected colleges from Distt Mandi (H.P). The study was conducted in April, 2019.

All Students of GNM final year in selected colleges was taken subsequently by using convenient sampling techniques. Objectives of study were discussed and consent was obtained from participants of the study subjects were

assured about the confidentiality of data. On the day 1, nursing students were instructed to fill the section A selected demographic variables took 10 minutes. Pre –test assessment of knowledge was done on the same day by structured questionnaire. On the same 1st day, after pre-test one booklet each student was provided to them, it took 10 minutes. On the 15th day, 2nd post –test assessment of knowledge of nursing students regarding BMW was done using the same questionnaire and it took around 10 minutes to complete the questionnaire.

Plan for Data Analysis

- Data were analyzed as follows: Described demographic characteristics.
- Mean, SD, and mean % were used to describe area wise knowledge scores.
- Anova and Z' test used to find out association of knowledge with demographic variables

Results

The demographic characteristics of the respondents revealed that most of the students 95% belongs to 20-21 years old , about gender 100% were females ,99% were residing in hostel and 96% belongs to Hindu religion .Regarding marital status 99% of students were unmarried about education 61% of students completed secondary education and 38% completed other diploma courses . Around 89% of student had clinical practice from govt. hospital where as 11% from private hospital.

Regarding previous knowledge about BMW 90% revealed that they have knowledge about BMW in which 93% of students said that the source of information is through books about the location of student college 54% located in urban and 46% is rural area.

Table 4.1 Shows Range ,Mean, SD, mean, mean diff., t value comparison of pr- test and post- test score of nursing student

"T" Test	Mean±S.D.	Mean%	Range	Mean Diff.	"t" value	P value
Pre-test knowledge	15.16±3.67	50.50	7-22	9.840	21.287*	<0.001*
Post-test knowledge	25±3.75	83.30	13-30			

Table 4.2 Area wise Mean, Standard deviation, mean percentage, mean difference, “t” value of pre-post knowledge score.

Sr no.	Area		Mean	S.D	Mean %	Mean Diff.	t Value	P value
1	(A-miscellaneous question)	Pre	4.04	1.7	40.4	3.78	16.4	<0.001*
		Post	7.82	1.8	78.2			
2	(B-solids waste)	Pre	2.98	1.05	59.6	1.39	10.8	<0.001*
		Post	4.37	0.82	87.4			
3	(C-liquid waste)	Pre	3.70	1.21	61.7	0.98	7.7	<0.001*
		Post	4.68	0.60	78			
4	(D-sharps waste)	Pre	2.97	1.24	42.4	1.34	8.1	<0.001*
		Post	4.31	1.01	61.6			
5	(E-Laboratory waste)	Pre	1.47	1.07	18.4	2.35	13.6	<0.001*
		Post	3.82	1.67	47.8			
	Overall knowledge	Pre	15.1	3.76	50.5	9.84	21.2	<0.001*
		Post	25.0	3.6	83.3			

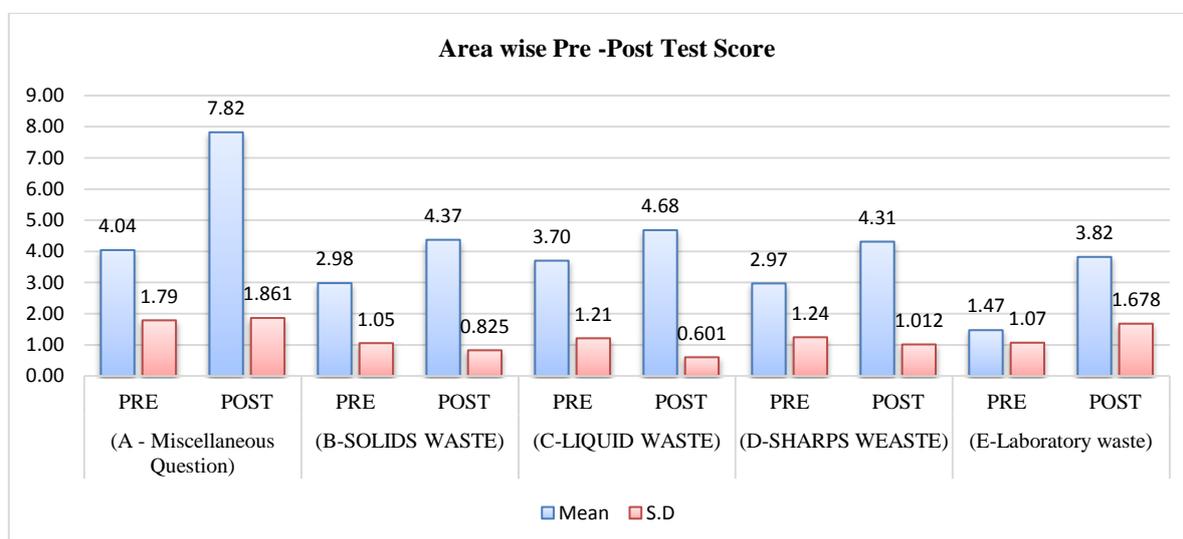


Figure no. 4.1 Bar graph showed score of the nursing students mean and SD value according to the area

Association between knowledge scores and selected demographic variables

that the association between the level of score and socio demographic variable. Based on the 2nd objectives used to Chi-square test used to associate the level of knowledge and selected demographic variables. The Chi-square value shows that there is significance association between the score level and demographic variables (Religion, In which hospital going to Clinical Practice, Previous Knowledge regarding Bio Medical Waste. Source of Information). There is no significance association between the level of

scores and other demographic variables other variables. The calculated chi-square values were less than the table value at the 0.05 level of significance

Recommendations

- 1) A replication of the present study can be conducted with large subjects.
- 2) A study can be done by observing the practice of hospital waste disposal among health care provider
- 3) A similar study can be conducted in various health care setting.

- 4) A comparative study can be done between private and public health care centre.

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