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A Study to Assess the Effectiveness of Structured Teaching Programme on Biomedical Waste Management in Terms of Knowledge Among B.Sc. Nursing 1st Year Students at Riddhi Vinayak College of Nursing, Nallasopara

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***Abstract*: This study presents the effect of structured teaching programme on Biomedical Waste Management knowledge among nursing students.**

***Keywords*: Biomedical Waste Management.**

1. Introduction

The recent developments in healthcare units are precisely made for the prevention and protection of community health. Sophisticated instruments have come into existence in various operations for disease treatment. Such improvement and advances in scientific knowledge have resulted in per capita per patient generation of wastes in health care units. Waste generated in the process of health care are composed of variety of wastes including hypodermic needles, scalpels, blades, surgical cottons, gloves, bandages, clothes, discarded medicine and body fluids, human tissues and organs, chemicals etc., other wastes generated in healthcare settings include radioactive wastes, mercury containing instruments, PVC plastics etc.

2. Objectives

- To assess the pre-test and post-test knowledge level regarding biomedical waste management among B.Sc. nursing 1st year students.
- To find the association of pre-test knowledge regarding biomedical waste management with selected socio-demographic variables among B.Sc. nursing 1st year students.

3. Need of Study

World Health Organization states that 85% of hospital wastes are actually non-hazardous, whereas 10% are infectious and 5% are non-infectious but they are included in hazardous wastes. About 15% to 35% of Hospital waste is regulated as infectious waste. Inadequate management of biomedical waste can be associated with risks to healthcare workers, patients, communities and their environment. Medical waste, if not properly managed can cause dangerous infection and possess a potential threat to the surrounding environment, persons handling it and to the public. Health and environmental effects, uncertainty regarding regulations and negative perceptions by waste handles are some important concerns in health care waste management in a country

In 2015 a research study was conducted in Ranchi, Bihar about the awareness and knowledge of biomedical waste handling practices in staff nurses. In their study titled A study on knowledge and practices regarding biomedical waste management among staff nurses and nursing students of Rajendra institute of medical sciences, Ranchi they assert that although the participants who were involved in study had overall adequate knowledge and scored well in questioners, they require good and quality training to improve their current knowledge about biomedical waste and its handling.

Nagaraju B (2013) stated that unwanted materials generated during diagnosis, treatment, operation, immunization or in research activities including production of biological is termed as biomedical waste. Day to day activities in health institutions generate a lot of waste which is biological in nature and are potential sources of infection transmission especially hepatitis B &C, HIV and tetanus. Approx 1.45 kg waste is generated per patient per day in Indian hospitals it is as high as 4.5kg in developed countries. In western figures approx.15-20% of this total waste is hazardous whereas it would be much higher in India because proper waste segregation and waste disposal does not exist or not practiced.

Due to low levels of awareness among the health care staff there are chances of improper waste handling causing spread of diseases. Thus, responsiveness among healthcare workers and related staff should be improved by awareness programs and should be made mandatory to improve the biomedical waste

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management in health-care centres worldwide.

The present study was conducted to assess the knowledge among nursing students on quantities and proportions of different constituents of wastes, their handling, treatment and disposal methods in health-care settings.

4. Hypothesis

- *H1:* There will be significant difference between mean pre-test and post-test score of knowledge.
- *H2:* There will be significant association between pre-test knowledge scores of B.Sc nursing 1st year student with selected demographic variable.

5. Sample

40 B.Sc. nursing 1st year Students who are studying at Riddhi Vinayak College of Nursing, Nallasopara.

A. Sampling Technique

Convenience sampling based on inclusion criteria.

B. Inclusive Criteria

1. B.Sc. Nursing 1st year students.
2. B.Sc. Nursing 1st year students who are willing to participate.
3. B.Sc. Nursing 1st year students who are present at the time of study.

C. Exclusive Criteria

1. B.Sc. Nursing 1st year students who are not willing to participate in the study
2. B.Sc. Nursing 1st year students who are not present at that time.

6. Tool

1. A Structured questionnaire was used to find out the Socio demographic data
2. Self-structured questionnaire to assess the knowledge of biomedical waste management among B.Sc. nursing 1st year student.

7. Materials and Methods

The study was based on the conceptual frame-work of modified general system model. An evaluative research approach was adopted for study with pre-experimental one group pre-test and post-test design. A self-structured questionnaires and checklist was developed for assessing the knowledge of nursing students regarding biomedical waste management. The sample was selected by using convenience sampling technique. The data obtained from studying the subject were analysed and interpreted in terms of the objective and hypothesis. Descriptive and inferential statistic was used for data analysis.

8. Result

Most of the sample 14 (35%) belongs to age between 18-20 years. 30 (75%) were female. About 27 (67.5%) were unmarried. And maximum students 26 (65%) didn't attended any training programme.

- The effectiveness of knowledge and it was found to be significant as the obtained "t" value is 4.98 at degree of freedom 39 at $p>0.05$ level of significance which is greater than the table value 1.24.
- There is no association between the level of knowledge regarding biomedical waste management with selected demographic variable among students.

A. Interpretation

1. The present study showed that there was significant difference between mean pre-test and post-test knowledge of B.Sc. Nursing 1st year students regarding biomedical waste management hence H1 is accepted
2. There is no association between level of knowledge of B.Sc. nursing 1st year regarding biomedical waste management with selected socio-demographic variable (age), hence H2 is not accepted.

B. Implication of the Study

The finding of the present study has implication in the field of nursing practice, nursing education, nursing research and nursing administration.

1. Nursing Practice
2. Nursing Education
3. Nursing Administration
4. Nursing Research

9. Limitation

- The study was confined to small number of nursing students (40) attending Riddhi Vinayak college of nursing, Nallasopara, this limits the generalized of the finding of the study.
- The present study was limited to only one group pre-test, post-test and observation at 1day interval after administration of programme. No attempt was made to measure the retention of knowledge gained due to time constraints.
- The study sample was confined only to nursing students who were studying in Riddhi Vinayak college of nursing, Nallasopara.

10. Recommendation

- The study can be replicated on a large sample of nursing personnel selected from other colleges/school of nursing. Thereby, finding can be generalized to a larger population.
- A similar study may be conducted with an experimental research approach.
- A study can be conducted in hospital setting among doctors, nurses, lab technicians and housekeeping staffs.
- A study can be conducted in rural health care setting among medical personnel.
- A longitudinal study can be carried out to evaluate impact of knowledge regarding biomedical waste management.

- A comparative study can be carried out on nursing personnel regarding biomedical waste management in urban and rural hospitals setting.

11. Summary and Conclusion

This study deals with the summary and conclusion of the study, as well as its implication for various nursing field such as nursing education practice, administration and research followed by its limitations. This study ends with recommendation for further research in the same field.

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