A Study to Assess the Knowledge and Practice among B.Sc Nursing Students, on Biomedical Waste Management in Selected Nursing College, Bhubaneswar, Odisha

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ABSTRACT

Hospital waste is a hazardous cocktail which is unavoidably concentrated close to patients who are vulnerable people and accessible to the general population because of the setting of hospitals mainly in towns and cities. Least educated health care workers come in to contact with most of the hazardous and infectious wastes. It is therefore necessary to take a strategic view at the bio medical management if pollutions in health care practice have to be eliminated without compromising safety or care. Objectives: To assess the knowledge and practice of B. SC Nursing 2nd year students regarding Biomedical waste management. Methodology: A quantitative research approach, non-experimental descriptive research design was used for the present study. The study was conducted among B. Sc Nursing 2nd year students of Kalinga Institute of Nursing Science (KINS), Bhubaneswar. Simple random sampling technique was used for select the sample. Result: The most of the students have moderate knowledge (52%) and practice (76%) on biomedical waste management. This study concluded that the knowledge of students were not adequately and also need to practice more on biomedical waste management.

KEYWORDS: *Knowledge, Practice, Biomedical waste management*

INTRODUCTION

The Bio-medical waste (BMW) means "any solid/liquid waste including its container and any intermediate product, which is generated during the diagnosis, treatment or immunization of human beings or animals.

The waste produced in the health Centre and health care activities centre are the very infectious substances for human and animals. The appropriate management of health care waste is then a crucial component of environmental health protection, and it should become an integral feature of health care services.

Bio-Medical waste has been a growing concern because of recent incidents of public exposure to discarded blood, Vials, needles, empty medicine bottles and syringes, particularly from the municipal garbage bins and disposal sites.

A clean hospital and good housekeeping have a direct effect on health and patients health condition also keep good if the biomedical waste Management is good.

OBJECTIVES OF THE STUDY

1. To assess the knowledge and practice of B. Sc Nursing 2nd year students on biomedical waste management.
2. To find out the association between knowledge and practice among B.Sc. Nursing 2nd year students on biomedical waste management with selected demographic variables.

RESEARCH METHODOLOGY

For this present study quantitative research approach and Non-experimental descriptive research design was used for this study. The study was conducted among50 B.Sc Nursing 2nd year students of Kalinga

Institute of Nursing Sciences in august 2017. After taken the permission from Institutional ethical committee, informed consent was taken from the sample and data was collected by using simple random sampling technique(lottery method).The demographic tool including (age, gender, family income, previous knowledge about biomedical waste and sources of knowledge). Knowledge questionnaire to assess the knowledge and checklist to assess the practices. Data were analyzed by using descriptive and inferential statistics including frequency, percentage, mean and standard deviation.

Inclusion criteria:
➢ Students who are available during data collection.
➢ Students who are under the age group of 20-23 years.

Exclusion criteria:
➢ Students who are not willing to participate in the study.
➢ Students who are below the age group of 20 years.

➢ Students who are absent were during data collection.

SCORING KEY:
The score was interpreted as follows for assessment of knowledge:
➢ Inadequate knowledge - <50%
➢ Moderate knowledge - 51-75%
➢ Adequate knowledge - >75%

The score was interpreted as follows for assessment of practice:
➢ Poor - <50%
➢ Average - 51-75%
➢ Good - >75%

RESULTS:
Demographic characteristics:
The most of the B.Sc Nursing 2nd year students 40(80%) were age between 20-21years, 46(92%) were female, 23(46%) were family income >20,000 rupees, 45(90%) had previous knowledge regarding biomedical waste management and 35(70%) were source of knowledge was health care workers.

Table 1 Frequency and percentage distribution of B.Sc Nursing 2nd year students

n=50

Demographic variables	Frequency (n)	Percentage (%)
Age in year		
20-21	40	80%
22-23	10	20%
Gender		
Male	4	8%
Female	46	92%
Family income per month		
<10,000 rupees	8	16%
10-15,000 rupees	10	20%
15001-20,000 rupees	9	18%
>20,000 rupees	23	46%
Previous knowledge		
Yes	45	90%
No	5	10%
Source of knowledge		
Electronic media	7	14%
Publishing media	8	16%
Health care workers	35	70%

The knowledge of mean and SD (10.86±1.78) and practice of mean and SD (7.93±1.28).

Table 2 Mean and standard deviation of Knowledge and practice on biomedical waste management

n=50

Sl. No	Area	Mean	Standard Deviation(SD)
1.	Knowledge	10.86	1.78
2.	Practice	7.93	1.28

Results show that the most of the nursing students had moderate knowledge 52% on biomedical waste management and 76% was doing good practice.
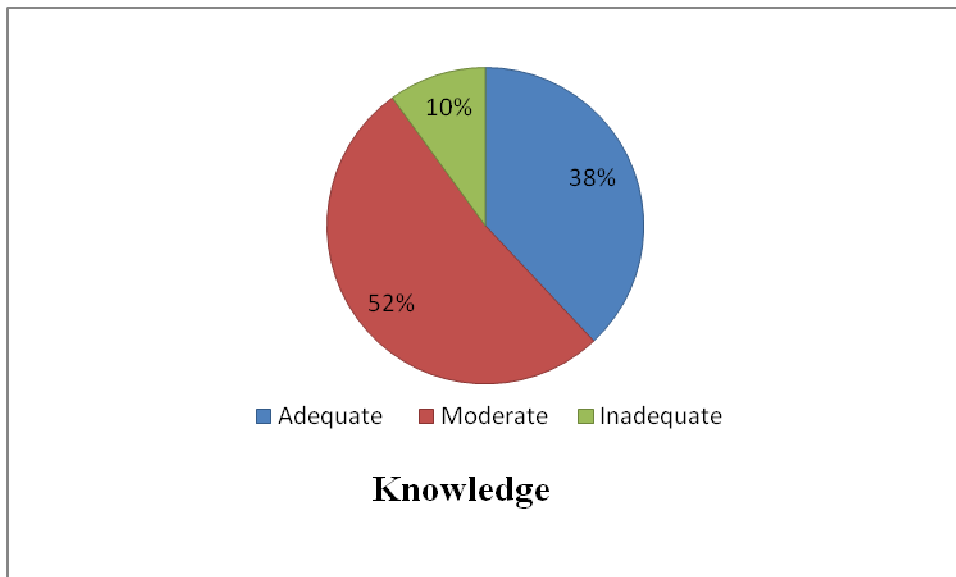
Figure 1. Pie diagram showing percentage distribution of knowledge among B.Sc Nursing 2nd year students on biomedical waste management
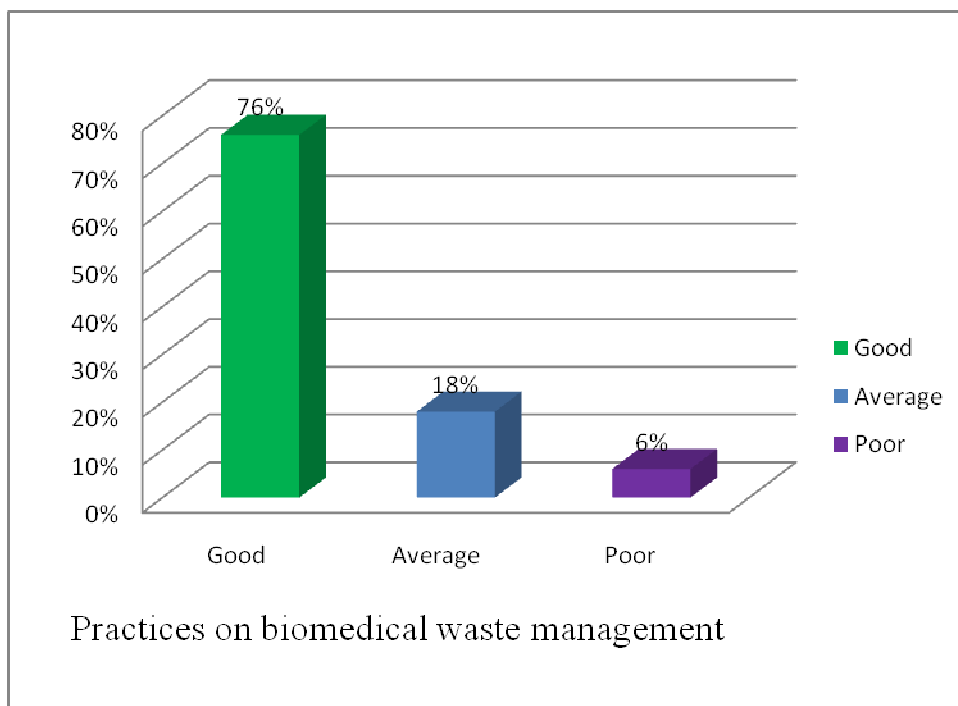

Figure 2. Bar diagram showing percentage distribution of practice among B.Sc Nursing 2nd year students on biomedical waste management.

ASSOCIATION BETWEEN KNOWLEDGE AND PRACTICE WITH SELECTED DEMOGRAPHIC VARIABLES

The association between knowledge and practice with the demographic variables likes age, previous knowledge and Sources of knowledge were shows that no statistical significant at 5% level of significance (p≤0.05). So the knowledge and practice of the B.Sc Nursing 2nd yr students were not associated with the selected demographic variables, so that the null hypothesis is accepted.

DISCUSSION

This study shows that the maximum of the B.Sc Nursing 2nd year students were 40(80%) were age between 20-21years, gender 46(92%) were female, had previous knowledge 45(90%) and source of knowledge 35(70%) were Health are workers. The majority of students had moderate knowledge (52%) and good practice (76%) on biomedical waste management.

Study conducted by the Z. Alshahr N, Fussi N, AL Shaiban H, AL Arbash H, Mahmood S, 2021. The most of the health care workers were males (59.1%) and (44.7%) were aged between 18-29 years. The mean and standard deviation of knowledge (11.42±4.33) and (5.62±3.96) for practice. The majority agreed that the prevention of hospital acquired infection is one of their important tasks. The

(55.1%) of health care workers equipments properly disinfected. Another study conducted by the VinodDhengle C, 2019, most of the Nursing officers(50%) had average knowledge, (26.7%) had poor knowledge and (23.3%) had good knowledge on biomedical waste management.

CONCLUSION

In this study showed that the 52% had moderate knowledge and 38% had adequate knowledge and 10 % had inadequate knowledge among B.Sc Nursing 2nd Year students about Biomedical waste Management. Majority of the B.Sc Nursing 2nd Year students 76 % had good practice, 18% had average practice and 6 % had poor practice on Biomedical waste Management.

So this study reveal that the 38 % students had adequate knowledge and 10% had inadequate knowledge and 6% had poor practice on Biomedical waste Management.

REOMMENDATIONS

- ➢ The experimental study can be conducted among nursing students.
- ➢ A similar study can be conducted among health care workers with large sample size.
- ➢ A study can be conducted in different setting among paramedical staff.

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