

Comparison of Knowledge and Attitude between Student Nurses and Nursing Staff on Biomedical Waste Management in Tertiary Care Research Hospital, Puducherry - A Cross Sectional Survey

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Abstract: *Inappropriate Biomedical Waste (BMW) Management pose serious health hazard to the man and ecosystem and thus contribute various pathogenic diseases and pollution to the Mother Nature. Many hospital follows improper, haphazard, indiscriminate segregation of biomedical waste which leads to contamination of biomedical waste with general waste. Unpleasant smell, growth and multiplication of rodents, various vectors, insects and worms leads to cholera, malaria, typhoid, tetanus and needle stick injuries pose risk of HIV and AIDS, various viral diseases and plague. Beside this various problems such as recycling of hospital needles, syringes, bottles pose serious health risks to the common people as well as rag pickers. A typical hospital bio medical waste consists of 10-25% of infectious materials such as needles, syringes, gloves, cotton, organs and tissues, blood products etc, remaining 75 %to 90% of waste is of general in nature. Mismanagemet of hospital waste during collection will render all waste to be infective. Good collection of waste eliminate cross infection among waste. Hence this study to assess the knowledge and attitude about biomedical waste management among nursing students and nursing staff in tertiary care research hospital. Descriptive cross sectional research design was used in this study. A convenient sampling technique was employed to collect data from 100 samples, which was divided into two groups nursing students-50 and nursing staffs -50. A standardized self-report questionnaire was adopted from siddarth et al (2017). There was satisfactory awareness about biomedical waste management between nursing students and staffs but the nursing students have less awareness compared to staffs. This study reveals that there should be more focus on biomedical waste management among student nurses by way of seminar and conference to have more knowledge.*

Keywords: *Biomedical waste, Hospital waste, Waste disposal, Nursing students, Nursing staff.*

1. INTRODUCTION

Health care is one of the largest growing sector in India in terms of job creation and revenue share .Rapid expansion of health care sector, privatization, emergence of corporatization, using of more disposable products in health sector pose serious challenges for the management of bio medical waste. The unique threat in bio medical waste is that when mixed with non bio medical waste, the hazards multiples and pose serious health consequences.

According to Biomedical Waste (Management and Handling) Rules, 1998 of India can be defined as "Any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in the production or testing of biological.

Many hospital follows improper, haphazard, indiscriminate segregation of biomedical waste which leads to contamination of biomedical waste with general waste. The problems due to improper biomedical waste management are multifold. Unpleasant smell, growth and multiplication of rodents, various vectors, insects and worms leads to cholera, malaria, typhoid, tetanus and needle stick injuries pose risk of HIV and AIDS, various viral diseases and plague. Beside this various problems such as recycling of hospital needles, syringes, bottles pose serious health risks to the common people as well as rag pickers.

A typical hospital bio medical waste consists of 10-25% of infectious materials such as needles, syringes gloves, cotton, organs and tissues, blood products etc, remaining 75 %to 90% of waste is of general in nature. Mismanagemet of hospital waste during collection will render all waste to be infective .Good collection of waste eliminate cross infection among waste.

2. METHODOLOGY

A descriptive cross sectional research design was used in this study. Convenient sampling technique was employed to select sample. Self-report tool was distributed among students and staffs whom are available and reachable at the time of data collection till 50 samples were reached from each group. After getting consent the tool was administered to them and collected back. The tool was adopted from Siddarth et al (2017) without any modification. Right answer carries 1 mark, wrong answer was awarded 0 marks. The scoring pattern was divided into GOOD (>12 marks), FAIR (7-12), POOR (<7)

3. RESULTS

All the 100 samples completed the test and given back the forms. There were nil attrition. On evaluation of the results revealed that 74 percent of nursing staff had good knowledge and attitude about BMW management, 16 percent had fair knowledge and 10 percent had poor knowledge and attitude about BMW management. On the contrary only 60 percent of nursing student had good score, 20 percent had fair and 20 percent had poor score.

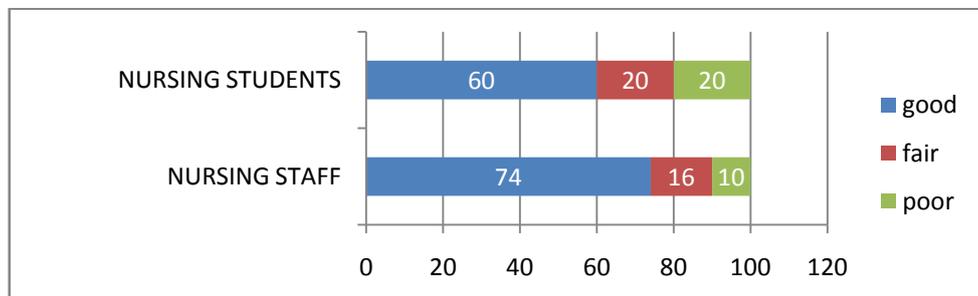


Chart -1: Overall scores of nursing staff and students

Table 1.1: knowledge about colour coding classification of BMW disposal between Nursing Staffs and Students

Sl.No	Colour Classification	Nursing Staff	Nursing Students
1.	BLACK	50(100%)	43(86%)
2.	BLUE	48(96%)	41(82%)
3.	YELLOW	49(98%)	38(76%)
4.	RED	49(98%)	42(84%)

Table 1.1 explains about understanding of different system of colour coding of bio-medical waste management between nursing students and staffs. Overall nursing staffs had very good knowledge about BMW colour coding compared to student nurses.

Table 1.2: Assessment of attitude regarding BMW disposal between nursing staffs and students

SLNO	Attitude	Nursing Staff	Nursing Students
1.	BMW disposal as health hazards	50(100%)	43(86%)
2.	Follow BMW disposal	41(92%)	38(76%)
3.	Likelihood of training in BMW	43(96%)	37(74%)
4.	Never noticed charts near dustbin*	0(0%)	10(20%)
5.	BMW disposal as extra burden*	5(10%)	0(0%)

*Depicts negative attitude

Table 1.2 explains about assessment of attitude regarding BMW disposal between nursing staffs and students. Nursing staffs have more positive attitude regarding BMW waste management compared to nursing students

4. DISCUSSION

This self report questionnaire was conducted to assess the knowledge and attitude about bio medical waste management .among nursing students and staffs .the scoring was categorized into good, fair and poor. As expected nursing staff scored well compared to the nursing students. About 74 percent of nursing staff had overall good knowledge as compared to 60 percent of nursing students. This study correlates with study done by R.P mitral

(2011) as 73.3 percent and sunganya (2016) reported 77 percent of nursing staff had reported good knowledge of BMW management. Study reported by Rekha et al (2017) 17 percent of nursing student only had good knowledge, But in our study it was 60 percent. In our study most of the samples had positive attitude about BMW management in both groups. It is interesting to note that 10 percent of the nursing staff have expressed that BMW management was an extra burden .this may be due to work pressure and understaffing of that particular unit.

Compared to nursing staff, students had less knowledge on BMW management this can be rectified by giving special focus and hands on training on BMW management and nursing curriculum should give proper importance to the BMW management and ill effects of improper waste disposal.

5. CONCLUSION AND RECOMMENDATION

Within the limit of the present study, it can be concluded that;

- Nursing staff have more knowledge compared to the students regarding BMW management.
- Both groups had positive attitude on BMW management.
- Special training should be imparted to nursing students to improve their knowledge and skills in BMW management.
- Nursing curriculum should give more focus on BMW management.
- Special committee to be formed in all health care institution to monitor and implement safe collection and disposal of bio medical waste.

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