

An Experimental Study to Evaluate the Effectiveness of STP on Attitude of Staff Nurses Regarding Bio Medical Waste Management at Selected Hospitals of Indore, M.P

Sheikh Javed Ahmad¹, Dr. MS. Vinsi²

¹PhD Scholar, Sri Jagadish Prasad Jhambarmal Tibrewala University, Jhunjhunu, Rajasthan, India

²Principal, Bombay Hospital College of Nursing, Indore, Madhya Pradesh, India

***Corresponding author**

Amunga Caroline Noel

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Abstract: Everyday nearly one tonne of bio-medical waste are getting mixed with municipal waste posing serious health hazards in Indore, M.P. This City generates around 3 tonnes of bio-medical waste per day out of which only 2 tonnes of it is getting disposed properly, while one tonne mainly generated from dispensaries and clinics are mixing with MSW of the city. Training of the various healthcare professionals with respect to biomedical waste management is incorporated in curricula as well as job orientation programs. However, evidence from various parts of India suggests that, gaps in knowledge and lacunae in attitudes and practices are still prevalent to a worrying extent among the various categories of healthcare professionals. This being a matter of concern, a study was conducted to evaluate the effectiveness of STP on staff nurses attitude with respect to biomedical wastes in selected Hospitals of Indore, M.P. The research design was pre experimental one group pretest posttest design. Non probability convenient sampling method was used for the selection of samples. The instrument for the data collection was a 5 point Likert scale for attitude. Total 30 staff nurses were involved from Index Hospital, Indore, and MP. Results: The mean posttest level of attitude is significantly higher than the mean pretest attitude scores that is 91.67% posttest and 54.17% pretest with paired $t = 43.43$ (at $P < 0.0001$ level of significance) and it is significant. By conventional criteria, this difference is considered to be extremely statistically significant. Statistical significance was calculated by using student's paired 't' test. Overall 37.5 percent of attitude gain is the net benefit of this study, which indicates the effectiveness of structured teaching programme. The major findings indicated that Staff nurses had Unfavourable (Negative) attitude in various aspects of BMW Management before administration of STP. Later they shown Favourable (positive) attitude in all the categories of BMW Management. Structured teaching Programme was found to be a very effective method of enhancing favourable attitude regarding BMW management among staff nurses.

Keywords: Experimental study, BMW Management, Indore MP, Attitude, Staff Nurses, Structured Teaching Programme (STP).

INTRODUCTION

Nursing personnel play a critical role in healthcare waste segregation in the hospitals. Their knowledge, attitudes, and practices regarding healthcare waste management are vital for the prevention of healthcare waste related hazards. Although there is an increased global awareness among health professionals about the hazards and also appropriate management techniques, the level of awareness in India is found to be below par [1].

At present with advancement of medical science most of the hospitals/nursing homes are now

equipped with latest instruments for diagnosis and treatment of various diseases. One of the most important aspects associated with hospitals is the safe management of the wastes; generated from these establishments, which contains human anatomical wastes blood, body fluid, disposable syringe, used bandages, surgical gloves, Blood bags intravenous tubes etc. The Bio-medical waste generated from various sources has become a problem and much attention is being given worldwide to find out solution of this problem. The main concern lies with the hospital waste generated from large hospitals/nursing homes as it may pose deleterious effects due to its hazardous nature.

Bio-medical wastes, if not handled in a proper way, is a potent source of diseases, like AIDS, Tuberculosis, Hepatitis and other bacterial diseases causing serious threats to human health. Owing to the discussed potential threats this waste needs prime attention for its safe and proper disposal [2].

Everyday nearly one tonne of bio-medical waste are getting mixed with municipal waste posing serious health hazards in Indore, M.P. This City generates around 3 tonnes of bio-medical waste per day out of which only 2 tonnes of it is getting disposed properly, while one tonne mainly generated from dispensaries and clinics are mixing with MSW of the city. Asad Warsi of Hostech Eco Management Pvt Ltd, company which is into business of disposing bio-medical waste, said every hospitals and dispensaries generates bio-medical waste as well as municipal waste, so segregation of bio-medical waste at origin point is very import. Unfortunately it is not done at dispensaries spread across the city. City has 287 hospitals and over 1300 dispensaries, many of which are located in residential complex. Hospitals of the city pay to agency for collection and disposal of bio-medical waste and Indore Municipal Corporation (IMC) provides them a dedicated service for collection and disposal of municipal waste. But dispensaries and clinics are not taking segregation of waste seriously [3].

Training of the various healthcare professionals with respect to biomedical waste management is incorporated in curricula as well as job orientation programs. However, evidence from various parts of India suggests that, gaps in knowledge and lacunae in attitudes and practices are still prevalent to a worrying extent among the various categories of healthcare professionals [4]. This being a matter of concern, a study was conducted to evaluate the effectiveness of STP on staff nurses attitude with respect to biomedical wastes in selected Hospitals of Indore, M.P.

Problem Statement

“An experimental study to evaluate the effectiveness of STP on Attitude of staff nurses regarding Bio Medical Waste Management at selected Hospitals of Indore, MP.”

Purpose of the Study

To assess and evaluate the attitude of staff nurses regarding BMW before and after the administration of STP

Hypothesis

H₁: There will be significant difference between Pretest and Posttest attitude scores of staff nurses regarding BMW Management.

REVIEW OF LITERATURE

A cross sectional study was conducted in Lucknow to assess the knowledge, Attitude and practice of bio-medical waste management among the health care personnel in selected primary health care centres. A total of 89 health care personnel comprising of doctors, nurses, health workers, laboratory technicians, pharmacists and class IV workers were interviewed with a pre-designed and pretested semi-structured questionnaire. Results revealed that about 35.0% of the staff nurses, 56.2% of paramedical staff and none of the class IV workers had complete knowledge about colour coding and segregation of bio medical waste. As compared to other health care personal, only 18.8% of class IV workers had heard about universal precautions, while 45.4% were concerned about needle stick injury. The study revealed lack of knowledge and attitude about bio-medical waste management amongst primary healthcare workers which results in inadequate handling and management, thereby exposing them as well as the general public to health and environmental hazards [5].

A descriptive study was conducted in Ludhiana to determine the Knowledge and Attitude of Students regarding Bio Medical Waste Management. Questions are distributed to 380 students of Shaheed Kartar Singh Sarabha, College of Nursing and Shaheed Kartar Singh Sarabha Ayurvedic Medical College Ludhiana, Punjab. The results showed that there was a below average level of knowledge regarding biomedical waste management among the students. It was surprising that 27.6% had well, only 1.8% had excellent knowledge regarding biomedical waste management. Majority (95.8%) had positive attitude regarding biomedical waste management. This study concludes that there is a need for creating awareness among students regarding biomedical waste management among the students [6].

A study was conducted to train and evaluate health care workers on biomedical waste management rules & regulations and occupational safety, followed by post-training assessment. This study was planned for health care workers (HCW) over a period of nine months (May 2013 – January 2014). Results revealed that a total of 459 HCW including doctors, nurses, technicians, and nursing assistants attended the training. The impact of training was most prominent among the nurses who scored an average of 86.7% marks followed by doctors (82%), technicians (72.6%) and nursing assistants (66.3%). This study concludes that Training of health care workers (HCW) imparts knowledge, brings positive attitude and improves practices related to management of biomedical waste. Health care related activities generate waste which should be managed

scientifically and in an environment friendly manner [7].

A cross sectional study was conducted in Allahabad to assess knowledge, attitude, and practices of doctors, nurses, laboratory technicians, and sanitary staff regarding biomedical waste management among hospitals (bed capacity >100). Medical personnel included were doctors (75), nurses (60), laboratory technicians (78), and sanitary staff (70). Results revealed that Doctors, nurses, and laboratory technicians have better knowledge than sanitary staff regarding biomedical waste management. This study concludes that the importance of training regarding biomedical waste management needs emphasis; lack of proper and complete knowledge about biomedical waste management impacts practices of appropriate waste disposal [8].

METHODOLOGY

The research approach adopted for this study was evaluative in nature. The target population of the study is made up of staff nurses who are working in the selected Hospitals of Indore, MP. A pre-experimental single group pre-test post-test design was used to assess the effectiveness of STP on the attitude of staff nurses regarding BMW Management. The sample consists of 30 Staff Nurses of Indore, MP. In this study non probability purposive sampling technique was used for selection of samples. The instrument for the data collection was a structured questionnaire and had two parts: A: Socio-demographic data, B: 5 point likerts scale to assess the attitude of staff nurses regarding BMW Management. The data obtained was analyzed by using descriptive and inferential statistics in terms of frequency, percentage, mean, standard deviation, paired‘t’ test and Chi-square test. The anonymity and confidentiality of the study subjects was maintained throughout the study.

RESULTS & DATA ANALYSIS

Table-1: Pretest attitude score on different aspects of bmw n=30

Statements	No. of questions	Min –Max score	Pre-test Attitude	
			Mean score	%
Positive statements	10	10 -50	25.12	50.2%
Negative statements	10	10 -50	29.05	58.1%
OVER ALL	20	20 -100	54.17	54.2%

Table no.1 shows, Staff nurses pre-test percentage of Attitude in each aspects of BMW before administration of STP. In positive statements with a

mean score of 25.12 and 50.2 %. In negative statements with a mean score of 29.05 and 58.1 %.Nurses were having average Attitude on both aspects.

Table-2: pretest level of attitude score on bmw N=30

Level of Attitude	No. of Staff nurses	Percentage %
Unfavorable attitude	19	63.3%
Moderately favorable attitude	11	36.7%
favorable attitude	0	0.0%
Total	30	100%

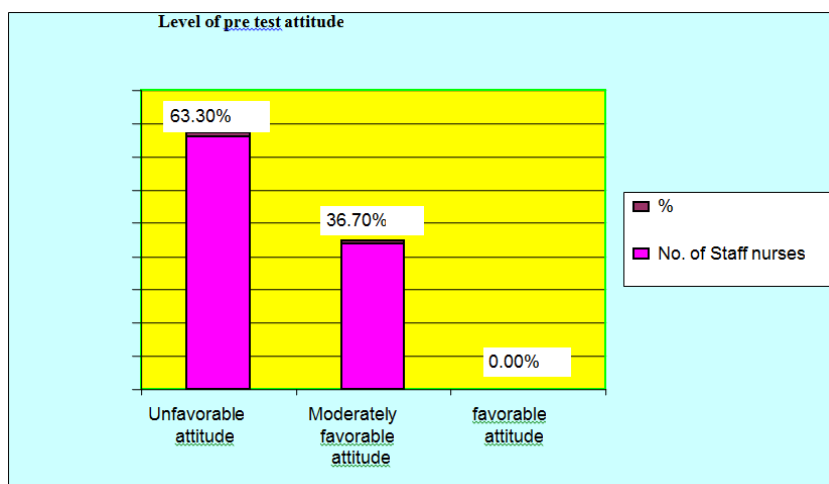


Fig-1: Multiple bar diagram showing level of pre-test attitude

Table no.2 and figure no.1 shows the Staff nurses pre-test level of Attitude on BMW before Structured Teaching Programme. In pretest 63.3% of

the staff nurses are having unfavorable Attitude and 36.7% of them having moderately favorable Attitude and none of them having favorable Attitude.

Table-3: Posttest attitude score on different aspects of bmw N=30

Statements	No. of questions	Min –Max score	Posttest Attitude	
			Mean score	%
Positive statements	10	10 -50	46.00	92.0%
Negative statements	10	10 -50	45.67	91.3%
OVER ALL	20	20 -100	91.67	91.7%

Table No.3 shows, Staff nurses post-test percentage of Attitude in each aspects of BMW after administration of STP. In positive statements with a

mean score of 46 and 92 %. In negative statements with a mean score of 45.67 and 91.3 % .They are having adequate favorable Attitude on both aspects.

Table-4: Posttest level of attitude score on bmw N=30

Level of Attitude	No. of Staff nurses	Percentage %
Unfavorable attitude	0	0.0%
Moderately favorable attitude	2	8.3%
favorable attitude	28	91.7%
Total	30	100%

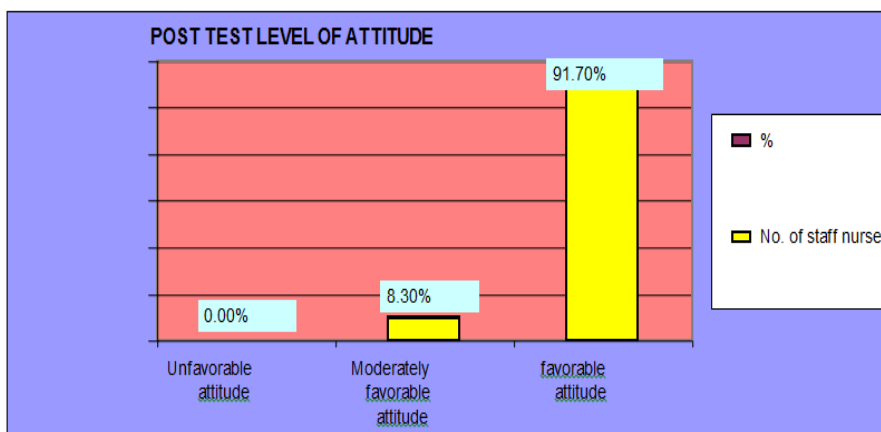


Fig-2: Mmultiple bar diagram showing level of post-test attitude

Table no.4 and Fig No.2 shows the Staff nurses post-test level of Attitude on eye donation after Structured Teaching Programme. In post-test 91.7% of

the staff nurses are having favorable Attitude and 8.3% of them having moderately favorable Attitude and none of them having Unfavorable attitude.

Table -5: Comparison of pretest and posttest average attitude score on bmw before and after administration of stp N=30

Attitude	Pretest		Posttest		Student's paired t-test
	Mean	SD	Mean	SD	
Positive attitude	25.12	4.05	46.00	2.92	t=30.24 P=0.001 significant
Negative attitude	29.05	3.08	45.67	1.87	t=34.73 P=0.001 significant
OVER ALL	54.17	4.22	91.67	4.25	t=43.43 P=0.001 significant

Table no 5 shows the comparison of attitude on BMW before & after Structured Teaching Programmed. In all the aspects, staff nurses improved their attitude after the administration of structured

teaching programme. The difference between pre and post- test attitude score is large and it is significant. Statistical significance was calculated by using student's paired 't' test.

Table-6: Attitude gain after structured teaching programmer n=30

Attitude assessment	% of Pretest attitude	% of Posttest attitude	% of attitude gain
Positive Statements	50.2%	92.0%	41.8%
Negative Statements	58.1%	91.3%	33.2%
OVER ALL	54.2%	91.7%	37.5%

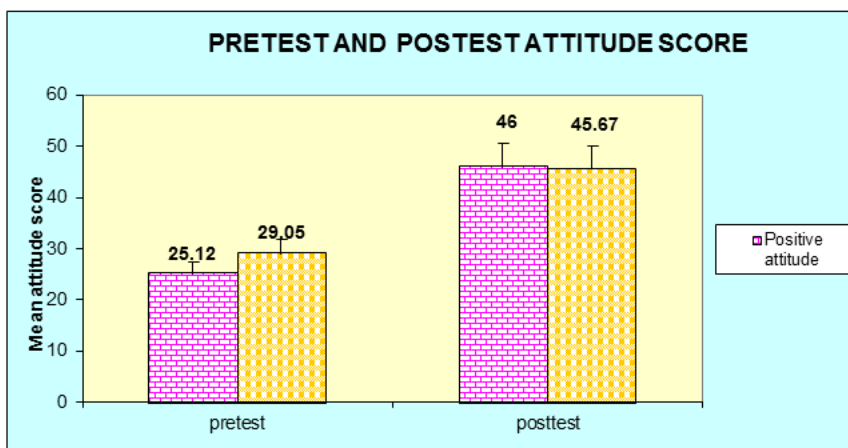


Fig-3: Multiple bar diagram indicates the distribution of pretest and posttest attitude scores of staff nurses.

Table no 6 and figure no.3 shows the comparison of attitude gain on BMW before & after Structured Teaching Programme. In all the aspects, staff nurses improved their attitude after the administration of structured teaching programme. Overall 37.5 percent of attitude gain is the net benefit of this study, which indicates the effectiveness of structured teaching programme.

NURSING IMPLICATION

The findings of the study will help the investigator in the following ways:

- Developing positive attitude regarding BMW Management.
- Encourage the staff nurses to improve their favourable attitude regarding BMW Management in their working Environment.

The finding of the study can be used in the following areas of nursing profession.

Nursing practice

Nurses are the key persons of the health team, who play a major role in health promotion and maintenance. The nursing personnel need to prepare instructional material which should be simple, clear and understandable that can be studied at their own with other health team members. Health teaching is an integral part of community health services and community. The nurses have a major role in helping the fellow health team members regarding prevention of Bio medical waste hazards and motivating for effective BMW Management.

Nursing Education

As a nurse educator, there are abundant opportunities for nursing professionals to educate the nursing students regarding the Bio medical waste management. The study emphasizes significance of short term in- service education programme for nurses related to Bio medical waste management. Nursing personnel working in special care setting and in community areas should be given in-service education.

Nursing administration

Nursing administrators should take interest in motivating the nursing personnel especially nurses in various hospitals and in community setting to improve their professional knowledge and skill by attending the health conference, workshops, seminars and training program on Bio medical waste management. Necessary administration support should be provided to conduct several activities.

Nursing research

Research provides nurses credibility to influence decision making, policy and protocol formulation regarding Bio medical waste management. Findings of the present study suggest that educators and administrators should encourage nurses to read, discuss and conduct research studies so as to enable the nurse to make data based decision and health teaching rather than intuitive decisions.

CONCLUSION

As the part of the study 30 Staff nurses were given the STP. The programme helps the Staff nurses to improve their favourable attitude on BMW Management. This will ultimately help to reduce the number of infections and hazards of Bio medical waste. The findings of the study indicate that there is improvement in positive attitude of Staff nurses which indicate that the STP is an effective in improving the attitude of the staff nurses.

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