Effectiveness of Structured Teaching Programme (STP) On Knowledge Regarding Bio Medical Waste Management among Staff Nurses in Indore, M.P.

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Abstract : *Hospital is a place of almighty, a place to serve the patient. Since beginning, the hospitals are known for the treatment of sick persons but we are unaware about the adverse effects of the garbage and filth generated by them on human body and environment. Now it is a well established fact that there are many adverse and harmful effects to the environment including human beings which are caused by the "Hospital waste" generated during the patient care. Health personnel should serve as a spring board to renewed activities for the health and happiness of humanity. Nurses are thus the challenge to assimilate knowledge, attitude and develop critical thinking skills necessary to apply BMW Management knowledge on self protection practices. They can apply self protection and prevention measure in the daily working in hospital. The objective of the study is to evaluate the effectiveness of STP on BMW Management among Nurses working in selected Hospitals of Indore, MP. The research design was pre experimental one group pre test post test design. Non probability convenient sampling method was used for the selection of samples. The instrument for the data collection was a structured questionnaire. Total 30 staff nurses were participated from Index Hospital, Indore, MP. Results: The mean post-test level of Knowledge is significantly higher than the mean pre test Knowledge scores that is 73.22% post test and 55.22% pre test with paired t=16.26 (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. There was significant association between the findings of post test Knowledge with demographic variables. All variables are independent except Gender. Association with Gender F= 3.78, Df= 1, 28 (P= 0.044 level of significance) was significantly associated with their post-test knowledge score and it was estimated by ANOVA test. The major findings indicated that Staff nurses had Moderate Knowledge in various aspects of BMW Management before administration of STP. Later they shown adequate knowledge in all the levels of BMW Management. Structured teaching Programme was found to be a very effective method of providing information regarding BMW management.*

Keywords: *BMW Management, Indore MP, Knowledge, Nursing Implications, Staff Nurses, Structured Teaching Programme (STP)*

I. Introduction

Hospital is a place of almighty, a place to serve the patient. Since beginning, the hospitals are known for the treatment of sick persons but we are unaware about the adverse effects of the garbage and filth generated by them on human body and environment. Now it is a well established fact that there are many adverse and harmful effects to the environment including human beings which are caused by the "Hospital waste" generated during the patient care. Health personnel should serve as a spring board to renewed activities for the health and happiness of humanity. All human activities produce waste. We all know that such waste may be dangerous and needs safe disposal. Industrial waste, sewage and agricultural waste pollute water, soil and air; it can also be dangerous to human beings and environment. Similarly hospitals and health care facilities generate lots of waste which can transmit infections, particularly HIV, Hepatitis B and C and Tetanus, to the people who handle it or come in contact with it.[1]

It was observed that health systems of poor countries are dysfunctional and it is a sad truth. Nurses, laboratory technicians, phlebotomists, who are exposed daily to hollow needle injections as well as staff who clean the used instruments, are at greater risk of occupational HIV infections than other health care workers. But safety precautions including the proper disposal and incineration of needles and the decontamination of used instruments are not routinely taken to protect the vulnerable staff.[2] It was reported that there were many blood borne diseases, known and unknown. So, safe working practices were necessary to take care at all times with all patients. The prevention of infection require proper equipment and also skilled personnel, adequate time, running water, adequate supplies, and knowledge regarding proper biomedical waste management and above all honest conscience of the staff nurses. Commitment from senior nurses, hospital managers and health care

workers would also help to plan training and education for the implementation of biomedical waste.[3] It is estimated that annually about 0.33 million tones of wastes are generated in India. The solid waste from the hospitals consists of bandages, linen and other infectious waste (30-35%), plastics (7-10%), disposal syringes (0.3=0.5%), glass (3-5%), and other general wastes including food (40-45%).[4] A study was conducted in Vadodara, Gujarat to evaluate the effectiveness of Structure Teaching Programme on Bio-Medical Waste Management and find out association between pre test knowledge score and selected demographic variables. The study was conducted among 60 staff nurses conveniently selected from two hospitals of Vadodara. Result of study indicate that p-value = 0.000 < 0.01 , the difference between the Pre-test and Post-test scores is highly significant at 1% level of significance this shows that the Planned teaching programmeon Bio-Medical Waste Management is effective. As evident from the table pre test score of Planned teaching programme regarding Bio-Medical Waste Management are independent from all demographic variables of samples. Furthermore tables also reveal that there is no significant association of pre test score with all demographic variables. This study concluded that structure teaching program is effective tools to improve the knowledge of staff nurses regarding bio-medical management.[5] Nurses are thus the challenge to assimilate knowledge, attitude and develop critical thinking skills necessary to apply BMW Management knowledge on self protection practices. They can apply self protection and prevention measure in the daily working in hospital. The biomedical waste cross infection can be prevented by careful self-protection knowledge and practices.

Problem Statement
"A study to evaluate the effectiveness of structure teaching programme on Knowledge regarding Bio Medical Waste Management among Staff Nurses in Indore, MP."

Objectives of the Study
1. To assess and evaluate the knowledge of staff nurses regarding BMW management before and after the administration of STP.
2. To find out the association between the post test knowledge scores of staff nurses regarding BMW management with their selected socio-demographic variables.

Hypothesis
H_1: There will be significant difference between Pre test and Post test knowledge scores of staff nurses regarding BMW Management.
H_2: There will be significant association between Post test knowledge scores of staff nurses regarding BMW Management with their selected demographic variables

II. 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 Structured teaching Programme on the Knowledge of staff nurses regarding BMW Management. The sample consists of 30 Staff Nurses of Indore, MP. In this study non probability convenient 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: Structured questionnaire to assess the knowledge 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.

III. Results
A total of 30 staff nurses working in selected Hospitals of Indore, MP

Table 1: Determination of Overall Mean Knowledge Scores Before and After Structured Teaching Programme
N=30

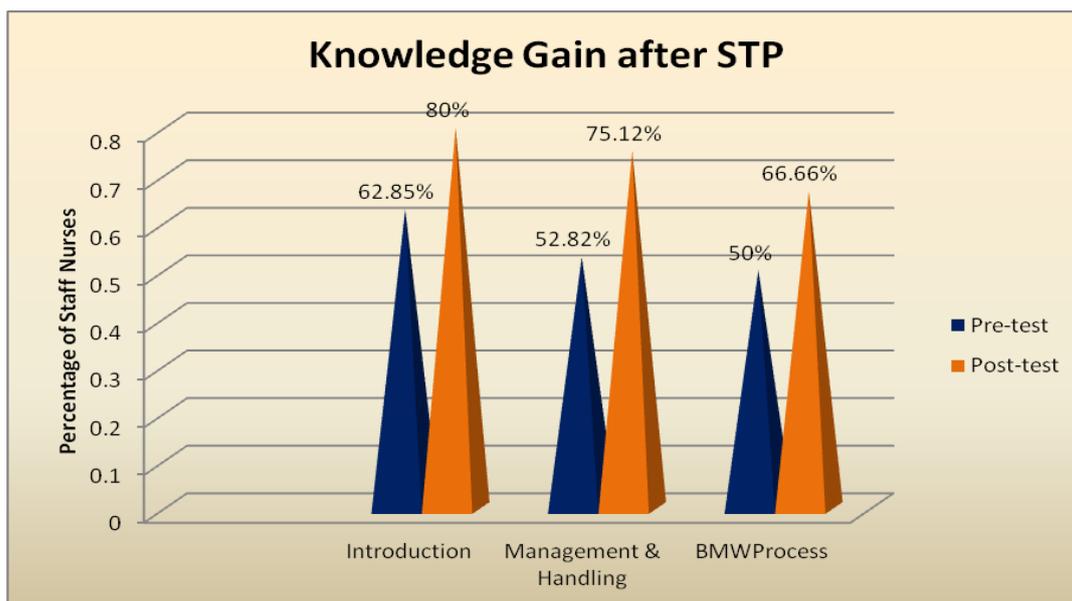| AREA	No. of Staff Nurses	Pre-test Mean± SD	Post-test Mean± SD	Student paired t-test
Overall Attitude score	30	16.26 ± 2.13	22.03 ± 2.07	**t=16.26 P<0.0001 significant**

Table no 1 show the comparison of overall knowledge of Staff nurses before & after STP. On an average Staff nurses improved their knowledge from 16.26 to 22.03 after STP, total questions were 30 . The difference between pre and post- test Knowledge score is t=16.26 at P<0.0001 level of significance and it was significant. By conventional criteria, this difference is considered to be extremely statistically significant. Statistical significance was calculated by using student's paired't' test.

Table 2: Knowledge difference between Pre test and Post test in Percentage

N=30

Knowledge Categories	% of Pre-test Knowledge	% of Post-test Knowledge	% of Knowledge gain
Introduction,Objectives and Source of BMW	62.85%	80%	17.15%
Management and Handling of BMW Management	52.82%	75.12%	22.3%
BMW Management Process	50%	66.66%	16.66%
OVER ALL	**55.22%**	**73.92%**	**18.7%**

Table no 2 shows the comparison of knowledge gain on BMW Management before & after STP. In all the aspects, Staff nurses improved their knowledge after the administration of STP. Over all 18.7% of knowledge gain is the net benefit of this study, which indicates the effectiveness of STP.

Figure 1 Multiple Pyramid diagram shows the Comparision of Pre test and Post test Knowledge scores on BMW Management

Table No. 3 : Association between the post test knowledge scores of staff nurses regarding BMW management with their selected socio-demographic variables. N=30

Demographic Variables		Frequency	Mean	S.D.	ANOVA test and P value
Age	21-25 years	14	21.71	2.23	F= 0.34
	26-30 years	14	22.28	2.09	Df= 2,27
	31-35 years	2	22.50	0.70	P= 0.740
					Not significant
Gender	Male	20	22.20	2.30	**F= 3.78**
	Female	10	21.70	1.56	**Df= 1,28**
					P= 0.044
					Significant
Religion	Hindu	22	22.18	0.45	F= 0.708
	Muslim	3	20.66	1.20	Df= 2,27
	Christian	5	22.20	0.86	P= 0.502
					Not significant
Educational Qualification	G.N.M.	22	22.18	1.91	F= 0.200
	Post Bsc.Nursing	3	21.66	3.78	Df= 2,27
	Bsc. Nursing	5	21.60	2.07	P= 0.820
					Not significant
Income	Between 5000-10000 Rs	23	22.17	2.05	F= 0.443
	Between 10001-15000 Rs	7	21.57	2.22	Df= 1,28
					P= 0.511
					Not significant
Experience	Up to 1 year	3	23.00	2.64	F=0.369
	After 1-2 years	9	21.55	1.94	Df= 3,26
	After 2-3 years	7	22.00	2.23	P= 0.776
	More than 3 years	11	22.18	2.13	Not significant

Inservice education	1-2 classes	5	21.40	1.14	F= 0.550
	None of these	25	22.16	2.21	Df= 1,28 P= 0.465 Not significant
Source of information	News paper and books	2	22.50	0.70	F= 0.734
	Internet	3	20.66	0.57	Df= 2,27
	Any other specify	25	22.16	2.21	P= 0.490 Not significant

Table no 3 shows the association between post test knowledge scores of staff nurses regarding BMW management with their selected socio-demographic variables. Results indicate that all variables are independent except Gender. Association with Gender $F= 3.78$, $Df= 1,28$ ($P= 0.044$ level of significance) was significantly associated with their post-test knowledge score. This association was statistically significant and it was calculated using ANOVA Test.

IV. Nursing Implication
The findings of the study will help the investigator in the following ways:
➢ Gaining more knowledge regarding BMW Management.
➢ Encourage the staff nurses to improve their knowledge 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, discuses and conduct research studies so as to enable the nurse to make data based decision and health teaching rather than intuitive decisions.

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

Acknowledgements

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