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A STUDY TO ASSESS THE EFFECT OF AWARENESS PROGRAMME ON KNOWLEDGE AND PRACTICE REGARDING BIO MEDICAL WASTE MANAGEMENT AMONG STAFF NURSES AT SHERI KASHMIR INSTITUTE OF MEDICAL SCIENCES SOURA SRINAGAR KASHMIR

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Abstract

The Bio-Medical Waste is any waste generated during diagnosis, treatment or immunization, of human beings or animals or in research activity. The awareness regarding bio medical waste is very important among health care personal particularly among staff nurses as they are at greater risk to get many fatal infections like Human immune deficiency virus, Hepatitis C virus, Hepatitis B virus and many other injuries by these infectious material. Thus the staff nurses need to be well knowledgeable and equipped with latest information, skills and practices in managing the bio medical waste and thus the study was conducted with the aim to assess the effect of awareness program on knowledge and practice regarding bio - medical waste management among staff nurses at SKIMS Soura Srinagar Kashmir. **Methodology** Quantitative research approach with pre-experimental one group pre - test post – test design was used to assess the knowledge and practice of 50 staff nurses regarding Bio -medical waste management at SKIMS Soura Srinagar Kashmir. Purposive sampling technique was used to collect data from the study subjects and data was collected using knowledge questionnaire and checklist. **Results** The study revealed that the mean pre interventional knowledge score was 24.50 and the mean post interventional knowledge scores was 44.04. The mean difference between pre and post interventional knowledge score was 19.54 with a p value of (<0.001). The mean pre interventional practice score was 13.96 and the mean post interventional score was 15.80 .The mean difference between pre and post interventional practice score was 1.34 with a p value of (<0.001). **Conclusion** The findings of the study revealed that awareness program was effective in improving the knowledge and practice scores of study subjects.

Key words

Awareness Program; Knowledge; practice; Bio medical waste management

INTRODUCTION

Expansion of health care facilities as well as the recent trend of using disposables has led to an unprecedented burden of health care related waste. Since the last three decades, unregulated handling of biomedical waste is emerging as a serious threat to human health and safety, and many researchers have documented this as a priority area[1, 2]. The Bio-Medical Waste (BMW) is any waste generated during diagnosis, treatment or immunization, of human beings or animals or in research activity. As per the recent Bio medical waste Management and handling Rules, 2016 these rules apply to all persons who generate, collect, receive, store, transport, treat, dispose or handle bio medical waste in any form including hospitals, nursing homes, clinics, dispensaries, veterinary institutions, animal houses, pathological laboratories, blood banks, Ayush hospitals, clinical establishments, research or educational institutions, health camps, medical or surgical camps, vaccination camps, blood donation camps, first aid rooms of schools, forensic laboratories and research laboratories by whatever name they are called.. The rules state that steps should be taken to ensure that such waste is handled without any adverse effect to human health and environment.[3]

The waste generated during entire course of healthcare activities is special in terms of its composition, quantity and their potential hazardous effect as compared to waste of other places, which require special attentiveness for its management.[4]

According to World health Organization, of the total amount of waste generated by health-care activities, about 85% is general, non-hazardous waste. The remaining 15% is considered hazardous material that may be infectious, toxic or radioactive. Every year an estimated 16 billion injections are administered worldwide, but not all of the needles and syringes are properly disposed of afterwards. Health-care waste contains potentially harmful microorganisms, which can infect hospital, patients, health workers and the general public. Health-care waste in some circumstances is incinerated, and dioxins, furans and other toxic air pollutants may be produced as emissions. The concern over Human immuno deficiency virus and Acquired immune deficiency virus (HIV/AIDS) and other blood borne infections has led to an increased professional and environmental activism towards this issue. In 2010 unsafe injections were still responsible for as many as 33800

new HIV infections, 1.7 million Hepatitis B infections and 318000 Hepatitis C infections. At the global level, 18 to 64 per cent of healthcare institutions are reported to have unsatisfactory Bio-Medical Waste Management (BMWM) facilities; predictors include lack of awareness, insufficient resources and poor disposal mechanisms[5].

The Need for Study

Staff Nurses are one of the main occupational groups in any health care agency. By virtue of their job responsibility they are frequently handling, dealing and exposed to biomedical waste. The awareness regarding bio medical waste is very important among health care personal particularly among staff nurses as they are at greater risk to get many fatal infections like Human immune deficiency virus, Hepatitis C virus, Hepatitis B virus and many other injuries by these infectious material.

Keeping in view the above points and from researchers own clinical experience the researcher realized that , Although the staff nurses have knowledge and practice regarding bio medical waste, but bio medical waste management and handling rules are amended from time to time as of latest amendment in 2016 . So the nurse researcher felt a strong need to update the knowledge of staff nurses with the latest and current amendments in bio medical waste management and handling rules. So this study was undertaken with this aim.

Problem Statement

A Study To Assess the Effect of Awareness Program On Knowledge And Practice Regarding Bio -medical Waste Management Among Staff Nurses At SKIMS Soura Srinagar Kashmir.

Objectives

1. To asses pre-interventional knowledge scores regarding Bio -medical waste management among Staff nurses. (pre- test).

2. To asses post- interventional knowledge scores regarding Bio -medical waste management among Staff nurses . (post- test)

3. To evaluate the impact of awareness program on knowledge regarding Bio -medical waste management among Staff Nurses by comparing pre and post interventional knowledge scores.

4. To asses pre-interventional practice score regarding Bio -medical waste management among Staff nurses. (pre- test)

5. To asses post- interventional practice score regarding Bio -medical waste management among Staff nurses. (post- test)

6. To evaluate the impact of awareness program on practice regarding bio medical waste management among staff nurses by comparing pre and post interventional practice score.

7. To determine association of pre interventional knowledge scores with demographic variables Gender, professional Qualification, Years of experience of Staff nurses.

8. To determine association of pre interventional practice scores with demographic variables Gender, professional Qualification, Years of experience of Staff nurses.

Hypotheses.

1. H_1 There is a significant increase in mean post- interventional knowledge score as compared to mean pre interventional knowledge score regarding Bio -medical waste management among Staff nurses after administration of awareness program at 0.05 level of significance.

2. H_2 There is a significant increase in mean post- interventional practice score as compared to mean pre interventional practice score regarding Bio -medical waste management among Staff nurses after administration of awareness program at 0.05 level of significance.

3. H_3 There is a significant association of pre-interventional knowledge score of staff nurses with demographic variables (Gender , professional Qualification and Years of experience) at 0.05 level of significance.

4. H_4 There is a significant association of pre-interventional practice score of staff nurses with demographic variables (Gender , professional Qualification and Years of experience) at 0.05 level of significance.

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Conceptual framework

The Conceptual framework used is based on Stufflebean's evaluation model.

Materials and methods

- Quantitative research approach with pre- experimental one group pre - test post – test design was used to assess the knowledge and practice of 50 staff nurses regarding Bio -medical waste management at SKIMS Soura Srinagar Kashmir. Purposive sampling technique was used to collect data from the study subjects and tool used for study was knowledge questionnaire and checklist.The tool was divided into three sections Section1 : Demographic Data (Gender, qualification, years of experience)Section 2: Knowledge Questionnaire (consisiting of 54 items) regarding Bio medical waste and Section 3: Checklist (consisting of 20 items) to assess practice on biomedical waste management. The content validity of tool was ensured by submitting the tool to the experts in the field of medical surgical nursing , hospital infection control members ,community health nursing, child health nursing, A pilot study was conducted on 10% of total sample size. The test retest method was used to test the reliability of the tool. The scores of the tool administered at two different occasions were compared and calculated by using Karl Pearson's correlation coefficient formula. The reliability coefficient of co-relation

  of knowledge questionnaire was (r= 0.94). Inter- rater reliability of the checklist was determined by administering it to 2 staff nurses. The computed inter rater reliability was found to be (r= 0.85). Thus the tool was statistically significant and reliable.

  Results

   The data and the findings were entered in a master data sheet followed by the analysis and interpretation using descriptive statistics (i.e. frequency, percentage, mean, median and standard deviation) and inferential statistics (i.e. t-test and ANOVA) according to the objectives of the study. The results obtained were presented in the following headings: -

  Section I: Findings related to demographic variables

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Table no 1.

Variable		Frequency	%
Gender	Male	45	90
	Female	5	10
Professional qualification	G.N.M	15	30
	Post Basic Nursing	12	24
	BSC Nursing	23	46
Years of experience	<5 years.	20	40
	5-10 years.	18	36
	>10	12	24

Section2: Findings related to Knowledge regarding biomedical waste management before and after administration of awareness program.

Table no 2 .Comparison of pre and post-interventional knowledge scores of study subjects regarding biomedical waste management.

Knowledge Score	Mean	Median	S.D.	Range	Max.	Min.	Mean%
Pre interventional	24.50	25.5	8.428	27	41	14	45.37
Post interventional	44.04	46	6.141	21	53	32	81.56

To test the significance, following Null hypothesis was formulated.

H0₁: **There is no significant increase in mean post interventional knowledge score as compared to mean pre interventional knowledge score regarding bio medical waste management among staff nurses after administration of awareness program at 0.05 level of significance**

Table 3

Pre & Post interventional Knowledge score	Mean ± SD	Mean- difference	t value	p value
Pre interventional score	24.50± 8.428	19.540	29.236	<0.001*
Post interventional score	44.04±6.141			
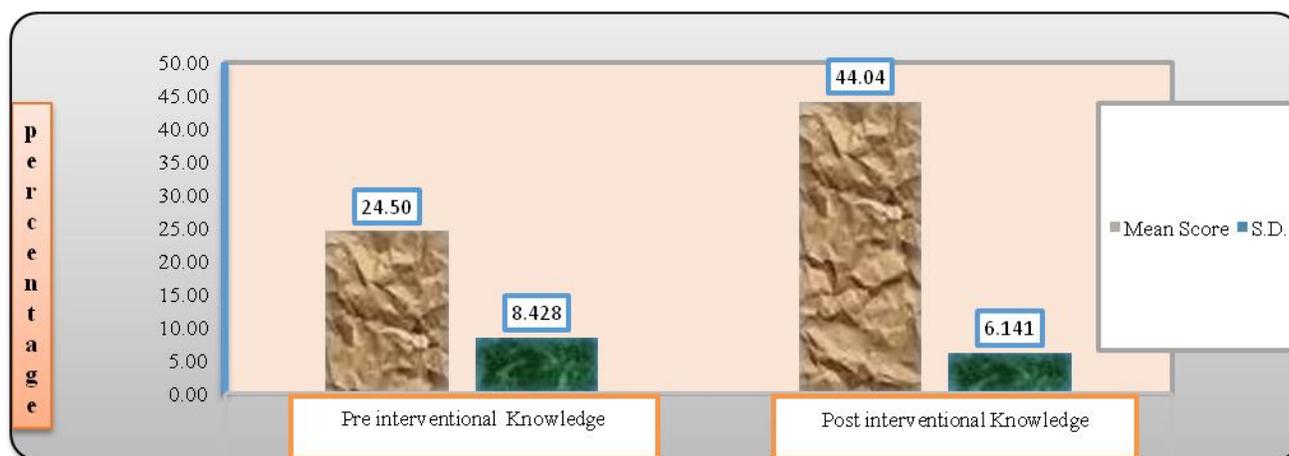
Fig no 1

The data in table 3 and fig 1 reveals that the mean difference between pre interventional and post interventional knowledge scores was found to be (19.540) at with a p value of (<0.001),which is statistically significant at 0.05 level of significance . Hence the null hypothesis stating "There is no significant increase in mean post interventional knowledge scores as compared to mean pre interventional knowledge score regarding bio medical waste management among staff nurses after administration of awareness program at 0.05 level of significance" was rejected. This indicates that the awareness program was effective in improving the knowledge of the study subjects regarding biomedical waste management.

Section:-3 Practice of Study Subjects regarding bio medical waste management.

Table no 4

practice Score	Mean	Median	S.D.	Range	Max.	Min.	Mean%
Pre interventional Score	13.96	14	3.319	13	19	6	69.80
Post interventional score	15.80	16	1.979	8	19	11	79

Comparison of pre-interventional practice scores with post-interventional practice scores regarding biomedical waste management

To test the significance, following Null hypothesis was formulated.

H0$_3$: There is no significant increase in mean post interventional practice score as compared to mean pre interventional practice score regarding bio medical waste management among staff nurses after administration of awareness program at 0.05 level of significance

Table no 5

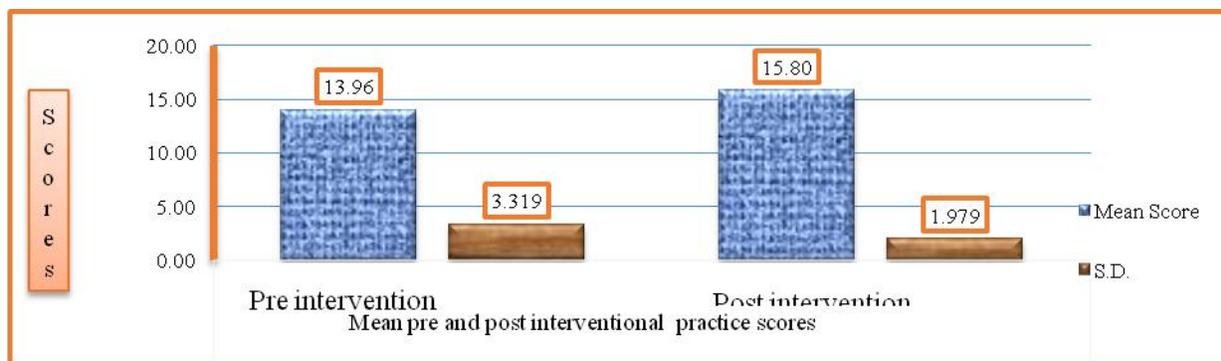| Pre & Post-interventional practice score	Mean ± SD	Mean-difference	t value	p value
Pre interventional score	13.96± 3.319	1.34	4.916	<0.001*
Post interventional score	15.80± 1.979			

Fig.2

It is evident from the data presented in table 5 , fig 2 that (Mean ±SD) of post interventional practice score (15.80 ± 1.979) was higher than (Mean ±SD) of pre interventional practice score, (13.96 ± 3.319) with mean difference (1.34) with a p value of (< 0.001) which was found to be statically significant (p<0.001).

The post-interventional practice score were significantly higher than their pre-interventional practice scores. The mean difference was a true difference not a chance. This indicates that the awareness program was significantly (p<0.001) effective in improving the practice regarding biomedical waste management among study subjects.

The above findings support the research hypothesis (H_2) which states that there is a significant increase in mean post interventional practice score as compared to pre interventional mean practice score regarding biomedical waste management among staff nurses after administration of awareness program at 0.05 level of significance. Hence null hypothesis (H_{02}) was rejected.

Section 4 Association with demographic variable

H_{04}: There is no significant association of pre-interventional practice scores of staff nurses regarding biomedical waste management with demographic variables (Gender, professional qualification, years of experience) at 0.05 level of significance

Table no 6

Demographic Variables		Frequency				Association				
Variables		Poor	Average	Good	Chi test	Table Value	Df	P Value	Result	
Gender	Female	18	22	5	1.867	5.991	2	0.393	NS	
	Male	1	4	0						
Qualification	GNM	14	1	0	30.870	9.488	4	0.000	*	
	Post basic BSc	4	7	1						
	BSc Nursing	1	18	4						
Years of Experience	>5 Years	4	13	3	7.494	9.488	4	0.112	NS	
	5-10 Years	7	9	2						
	<10 Years	8	4	0						

*= Significant: NS = Not significant

Table no 7

Demographic Variables		Frequency			Association				
Variables	Opts	Poor	Average	Good	Chi test	Table Value	Df	P Value	Result
Gender	Female	4	20	21	1.362	5.991	2	0.506	NS
	Male	1	1	3					
Qualification	GNM	1	9	5	8.122	9.488	4	0.087	NS
	Post Basic Bsc	3	5	4					
	Bsc Nursing	1	7	15					
Years of Experience	>5 Years	0	8	12	5.952	9.488	4	0.203	NS
	5-10 Years	2	8	8					
	<10 Years	3	5	4					

NS = Not significant

The above findings support the hypothesis (H_{04}) stating that "There is no significant association of pre-interventional practice score of staff nurses regarding biomedical waste management with demographic variables (Gender, professional qualification, years of experience). Hence null hypothesis H_{04} was accepted.

Discussion Among the total study subjects (N=50) majority 26 (52 %) had average level of knowledge, 19(38%) had poor level of knowledge and only 5 (10%) had good level of knowledge regarding bio medical waste management. The findings of study were consistent with the findings of the study conducted by Nagaraju B, Padmavati GV, Purnik DS, Shantharaj M Sampulatha SP[70]- 2013 to assess the knowledge and practice on bio-medical waste management among the health care providers (n=120) working in Primary health centers of Bagepalli Taluk karnatka India with the view to prepare informational booklet . It was found that 24%were having good level of knowledge, 65%having adequate knowledge and 10% were having poor level of knowledge. So the present study findings revealed that in pre interventional assessment of knowledge majority of staff nurses has average level of knowledge which emphasis that there was a need to improve their knowledge regarding bio medical waste management . Among the total study subjects (N=50) none of study subjects 0 (0%) had poor level of knowledge 7 (14 %) had average level of knowledge and majority of study subjects 43 (86 %) had good level of knowledge regarding biomedical waste management. The findings of study were similar with the findings of study conducted by Ahmad Mohmad Elnour, Mayada Mohmad Reda , Mohmad Darwish El Borgy , Nureldin Elthahir Fadlella, Aleya Hanefy Mohmaud[7]-2015, impact of health education on knowledge and practice of hospital staff with regard to health care waste management at White Nile State Sudan(n=200) . The result (pos test **)** revealed that majority of study subjects (56%) had good level of knowledge 34 % had fair level of knowledge and only 10 % had poor level of knowledgeIn this study, the comparison of pre and post interventional knowledge score of study subjects regarding biomedical waste management was done, The mean post interventional knowledge score (44.04 ± 6.141) of staff nurses regarding Biomedical waste management was significantly higher than that of the mean pre-test knowledge scores (24.50 ± 8.428), With a mean difference of (19.540) and with a p value of (<0.001) This indicated that awareness program was effective in enhancing the knowledge of staff nurses regarding bio medical waste management. The findings of

study were consistent with the study conducted by Joyti shrivastav[8]-2015 on knowledge regarding bio medical waste management among staff nurses at Sir Sundar Lal Hospital Bnaras Hindu university Varanasi .The pretest knowledge score was (17.0 ± 2.25) and post test knowledge was (21.94 ±1.20) with a mean difference of (4.94). The result revealed that there was significant increase in post test knowledge as compared to pretest knowledge and was statistically significant (P<0.001). Hence it was observed that planned teaching program was effective in improving the knowledge of staff nurses. The findings of present study were also consistent with findings of study conducted by Akthar Chesfeeda[9]-2015 on effectiveness of planned teaching program on knowledge regarding safe disposal methods of bio medical waste among staff nurses at SKIMS Medical College Bemina Srinagar Kashmir .it was found that mean post test knowledge scores (25.7± 2.4) of the staff nurses regarding safe disposal methods of Biomedical waste was significantly higher than that of the mean pre-test knowledge scores (15.9± 2.8) , p<0.05. This indicated that planned teaching programme was effective in enhancing the knowledge regarding safe disposal methods of biomedical waste.

Regarding practice 24 (48 %) of study subjects had good level of practice , 21 (42 %) had average level of practice and only 5 (10 %) of study subjects had poor level of practice The findings of study were similar with the findings study conducted by Ahmad Mohmad Elnour ,Mayada Mohmad Reda , Mohmad Darwish El Borgy , Nureldin Elthahir Fadlella , Aleya Hanefy Mohmaud[7]-2015 ,impact of health education on knowledge and practice of hospital staff with regard to health care waste management at White Nile State Sudan (n=200) . The result (pre test) showed that 42% of study subjects had good level of practice before the educational intervention program and55% and 3% had fair and average level of practice respectively.Regarding post test practice of biomedical waste management none 0 (0%) of study subjects had poor level of practice ,13 (26%) had average level of practice and majority of study subjects 37 (24%) had good level of practice .The findings of study were similar with the study conducted by Ahmad Mohmad Elnour ,Mayada Mohmad Reda , Mohmad Darwish El Borgy , Nureldin Elthahir Fadlella ,Aleya Hanefy Mohmaud[7]-2015 ,impact of health education on knowledge and practice of hospital staff with regard to health care waste management at White Nile State Sudan(n=200) . The result (**pos test)** revealed that Regarding post test practice majority of study subjects 55 % had good level of practice ,

42 % had fair level of practice and only 3 % had poor level of practice .The mean post test practice score (15.80 ± 1.979) of staff nurses regarding Biomedical waste management was significantly higher than that of mean pretest practice scores (13.96 ± 3.319)with a mean difference of (1.34) This indicated that awareness program was effective in enhancing the knowledge and practice of staff nurses regarding bio medical waste management. The findings of study were similar with the study conducted by Ahmad Mohmad Elnour ,Mayada Mohmad Reda , Mohmad Darwish El Borgy , Nureldin Elthahir Fadlella ,Aleya Hanefy Mohmaud [7]-2015 ,impact of health education on knowledge and practice of hospital staff with regard to health care waste management at White Nile State Sudan(n=200) .The result revealed that there was a significant relation between pretest and post test practice score in interventional group (Z=2.652) and p value (0.008) which was statiscally significant (p<0.05) indicating that health education was effective in improving practice of staff nurses regarding health care waste management.

The present study results revealed that there was a significant association of pretest knowledge score with professional qualification (p=0.000) as a variable while as no association of pre-test knowledge score was found with other demographic variable gender and years of experience (p=0.393)and (p=0.112) respectively ,The findings of study were similar to the study conducted by Manish Patidar ,Pavan Kumar Jain , Ravindra H.N[10]-2014 who conducted a study to assess the effectiveness of structured teaching programe on bio medical waste management among staff nurses at two hospitals of Vadodra . The study revealed that there was no significant association of knowledge with gender and years of experience as variable (p=0.600) and (p=0.265) respectively , but there was significant association of knowledge with educational qualification as variable (p = 7.846).The present study results revealed that there was no association found between ,pre test practice scores with any of demographic variable (gender, professional qualification and years of experience) of staff nurses (p=0.506), (p=0.087),(p=0.203) respectively The findings of study were also consistent with the study conducted by Nagaraju B, Padmavati GV , Purnik DS, Shantharaj M Sampulatha SP [6]-2013 to assess the knowledge and practice on bio-medical waste management among the health care providers (n=120) working in Primary health centers of Bagepalli Taluk karnatka India with the view to prepare informational

booklet .it was found that there was no association between practice with demographic variables except for years of experience

Recommendation

Keeping in view the findings of present study, the following recommendations were put forward for further research

- A similar study can be replicated on larger sample in a different setting to validate the findings and for generalization.
- A similar study can be conducted on other staff of hospitals like doctors and paramedical staff.
- A similar study can be conducted using true experimental design.
- A similar study can be under taken by using other teaching strategies like self-instructional module practical demonstrations, skill development program, etc.
- Other exploratory or comparative studies on the same topic can also be conducted.
- A self instructional module can be developed based on the learning needs of the nursing student.

Conclusion:

The following conclusions were drawn on the basis of the findings of the study.The staff nurses were having average level of knowledge in pre intervention regarding bio medical waste management and thus there is a need for educating the staff nurses. The mean post interventional knowledge and practice scores increased after administration of awareness program indicating that awareness program was effective in improving knowledge and practice of staff nurses. Except for professional qualification there was no significant association of pre interventional knowledge score with other demographic variables (gender and years of experience) and also no association was found between pre interventional practice scores with any of demographic variable (gender, professional qualification and years of experience) indicating that demographic variable probably do not have any effect on knowledge and practice of staff nurses regarding bio medical waste management. Therefore study concluded that awareness program is effective in increasing the knowledge and practice of staff nurses regarding bio medical waste management.

REFERENCES:

1. Mostafa GM, Shazly MM, Sherief WI. Development of a waste management protocol based on assessment of knowledge and practice of healthcare personnel in surgical departments. Waste Manag. 2009; 29: 430–9.

2. Razdan P, Cheema AS. Bio-medical waste management system. Indian j of med res,2014 ;139(1):141-53 .

3. Government of India ministry of Environment, Forest and Climate change, Notification .*Gazette of India, Extraordinary,* Part II, Section 3, Sub-section (i) 2016 ;.1-37.

4. Tenglikar PV, Kumar GA, Kapate R, Reddy S and Vijayanath V. Knowledge Attitude and Practices of Health Care Waste Management amongst Staff of Nursing Homes of Gulbarga City. Journal of Pharmaceutical and Biomedical Sciences ;19 (19) : 1-3.

5. World Health Organization (WHO). Wastes from health-care activities. Factsheet No. 253, November. 2011 http://www.who.int/ mediacentre/ factsheets/ fs253/en

6. Nagraju B, PG, Padmavati GV,Puraink DS ,Shantharaj MP ,Sampulatha SP International Journal of medicine and Bio medical research 2013; 2(1) www.ijmbr.com

7. Ahmad Mohmad Elnour , Mohmad Reda , Mohmad Darwish El Borgy , Nureldin Elthahir Fadlella ,Aleya Hanefy Mohmaud. impact of health education on knowledge and practice of hospital staff with regard to health care waste management at White Nile State Sudan. int j health sci . 2015 ; 9(3): 315–31.

8. Joyti Shrivastav Knowledge of staff nurses regarding bio medical waste management IO journal of nursing and health sciences 2016; 5(7) : 60-5 www.iosrjournals.org

9. Akthar Chesfeeda .Knowledge regarding safe disposal methods among staff nurses at SKIMS medical college Srinagar .MSc[dissertation].SKIMS Deemed university Srinagar Kashmir 2015.

10. Patidar Manish , Kumar Pava , Ravindra HN , effectiveness of structured teaching program on bio medical waste management IOSR journal of nursing and sciences . 2014; 3 (3) : 60-5 www.iosrjournals.org

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