



ORIGINAL RESEARCH PAPER

Nursing

A STUDY TO ASSESS THE KNOWLEDGE ON BIOMEDICAL WASTE AMONG STAFF NURSES WORKING IN VPIMS, LUCKNOW, UP.

KEY WORDS: Knowledge, Biomedical Waste Management, Staff Nurse

Prof. Ravikumar B.R

Prof., PhD Scholar, Vice-Principal, Hind Institute of Medical Sciences, School and College of Nursing, Mau, Atariya, Sitapur, UP.

Mrs. Ekata Ravikumar*

Assistant professor, Hind Institute of Medical Sciences, School and College of Nursing, Atariya, Sitapur, UP. *Corresponding Author

ABSTRACT

As staff nurses plays a major role in care of patients among all health care personnel and hospital management. So it is essential for them to have thorough knowledge regarding biomedical waste management; to prevent various kinds of injuries, infection and hazards to patients and health care personnel. Hence present study was undertaken to assess the knowledge on biomedical waste among staff nurses working in VPIMS, Lucknow. The objective of the study to assess the existing level of knowledge regarding biomedical waste management among staff nurses. A non experimental descriptive study was used, 30 staff nurses were selected by convenient sampling. The knowledge regarding biomedical waste management was assessed by using structured knowledge questionnaire. The result of the study revealed that 66.67 % staff nurses had inadequate knowledge, 33.33% had moderate knowledge and none of staff nurses had adequate knowledge.

INTRODUCTION

Let the wastes of "The sick" not contaminate the lives of "the healthy"

The waste produced in the course of health care activities carries a higher potential for infection and injury than any type of waste. Therefore, it is essential to have safe and reliable method for its handling. Inadequate and inappropriate handling of health care waste may have serious public health consequence and a significant impact on environment. [1]

Biomedical waste or hospital waste means any waste generated during health care research testing or related procedures as human beings or animals conducted in hospital clinics, Laboratories or similar establishments. This is far more dangerous and offensive than domestic waste. It contains infectious and other hazardous material that may injure, infect or otherwise harm patient's visitors, hospital personnel & public large in several ways. [2]

The objectives of bio medical waste management are to prevent harm resulting from waste, minimize its volume, retrieve reusable materials, and ensure safe and economical disposal. The different steps in waste management are reduction, reuse, segregation, storage, transportation and treatment. [3]

National legislation is the basis for improving health –care waste disposal practices in any country. Bio medical waste (management and handling) rules, was implemented for first time and it was published by Govt. of India, under Section 6 & 25 of Environmental Protection Act 1986 on 20/7/98 and appeared in official gazette of India on 27/7/98. Later, Ministry of environment and forest (MOEF), Govt. of India has notified the new draft biomedical waste (management and handling) rules, 2011 under the environment (Protection) act, 1986 to replace the earlier bio-medical waste (management and handling) rules, 1998.

SOURCES OF BIOMEDICAL WASTE

- **Major Sources**
- Government hospitals/private hospitals/Nursing homes/dispensaries, Primary health centers, Medical colleges and research centers/paramedic services, Veterinary colleges and research centers, Bloodbanks/mortuaries/autopsy centers, Biotechnology institutions and Production units.
- **Minor Sources**
- Physicians/dental clinics Animal houses/slaughter houses, Blood donation camps, Vaccination centers, Acupuncturists/psychiatric clinics/ cosmetic piercing, Funeral services and Institutions for disabled persons.

SCHEDULE - I

Color coding and type of container for disposal of bio-medical wastes handling rules-2011

Color Coding	Type of Waste Category	Treatment options as per Schedule -I
Yellow	Anatomical waste, contaminated swab and dressing	Incineration/ deep burial
Red	contaminated with blood, and body fluids including cotton, dressings, soiled plaster	Autoclaving/ Microwaving/ Chemical Treatment
Blue/White translucent	syringes, scalpels, blades, glass, catheters, intravenous, tubing's	Autoclaving/ Microwaving/ Chemical Treatment and destruction/ shredding.
Black	Discarded Medicines and Cytotoxic drugs, Chemical Waste	Disposal in secured landfill

The main advantages of various treatment and disposal options are

Prevent and minimize waste production. Reuse or recycle the waste to the extent possible. Treat waste by safe and environmentally sound methods, and Dispose off the final residue by landfill in confined and carefully designed site.

METHODOLOGY AND APPROACH

A Non experimental descriptive study was conducted to assess the existing level of knowledge on biomedical waste management among the staff nurses, 30 staff nurses were selected by convenient sampling techniques. 30 Structured knowledge questionnaires were used to collect data from the participants. Tools were validated by subject experts and reliability of the tool was found 0.80 and calculated by split half method.

Written permission was obtained from the hospital superintendent and written consent was obtained from the participants, after giving assurance to the study participants regarding the confidentiality of the collected data. Structured questionnaires were administered and data was collected. The collected data was analyzed by using descriptive and inferential statistics.

RESULT AND DISCUSSION

Out of 30 samples distributed according to age, 56.67 % of staff nurses were in the age group of 16-25 years, 30% were in the age group of 26-35 years and 10% are in age group of 36-45 and only 3.33% were of above 46 years of age. According to gender,

86.67% were females and remaining 13.33% were males. According to professional qualification where the majority of the staff nurses 70 % were having qualification of G.N.M, 20% having B.Sc. Nursing, 6.67% having other Nursing qualification and 3.33% having P.G in Nursing. According to previous clinical experience, majority of the staff nurses 83.33% had previous practical experience in hospital and 16.67% of staff nurses is not having previous practical experience regarding Biomedical waste Management.

TABLE1.1: Frequency and Percentage of knowledge level regarding biomedical waste management.

N =30

Knowledge Level	Category	Respondents	
		f	%
Inadequate	< 50 % score	20	66.67
Moderate	51-75 % score	10	33.33
Adequate	> 75 % score	0	0
Total		30	100

The table, no.1.1 shows knowledge regarding biomedical waste management among staff nurses. Where 66.67% of staff nurses had inadequate knowledge regarding Biomedical waste Management, 33.33% had moderate knowledge and none of the staff nurses had adequate knowledge regarding biomedical waste management.

TABLE – 1.2: Mean Knowledge scores of Respondents on biomedical waste management.

N=30

Aspects	Range	Respondents Knowledge		
		Mean	Mean (%)	SD
Knowledge	9-19	15.17	50.57%	2.66

The table no. 1.2 reveals that the mean of knowledge was 15.17; the mean percentage score in aspect of knowledge on biomedical waste Management was 50.57% and its Standard Deviation was 2.66.

Fishers exact probability test and chi-square test was used to find out the association between the level of knowledge and demographic variables. It revealed that there was no significant association between knowledge level and demographic variables.

CONCLUSION

There is much room for improvement in protecting the health care workers from biomedical waste in which nurses are at higher risk. So an effective and goal oriented frequent training programme and awareness programme regarding biomedical waste management is an important way to improve knowledge and practices of staff nurses and other health care workers regarding biomedical waste management. It can also be stressed that proper waste management procedures should be included as a mandatory part of academic curricula for nursing students and all health care workers.

FUTURE SCOPE OF THE STUDY

The findings of the study have mark able implications in nursing services, nursing administration, nursing education and nursing research. The findings of the study can play an important role in educating the staff nurses, during basic nursing education courses; students may be given clinical assignments regarding biomedical waste management. Nursing administrators should take part in the health policy making and developing protocols of the hospital regarding biomedical waste management, also concentrate on the proper selection, placement and effective utilization of the nurses in all areas by giving proper guidance.

This study motivates other researchers to conduct further studies to evaluate the practices of prevention of biomedical waste management and its management.

ACKNOWLEDGEMENT

We would like to thank all participants; they have given consent

for participating in the study. We also thankful to all the editors and publisher of articles, journals and books from that literature were reviewed and supported this study.

SOURCE OF FUNDING- Self ETHICAL CLEARENCE

The proposed study was conducted after the Permission from Hospital Superintendent of the private hospital. The consent of each staff nurses was obtained before data collection, after giving assurance to the study participants regarding the confidentiality of the data collected.

REFERENCES

1. Park. K (2013). Preventive and social medicine publisher 1167. Premnager, Nagpur, Jabalpur, 482001 (India).
2. Paniker's andanantha narayan.(2010).Textbook of microbiology for nurses. India. Himayat nagar, Hyderabad, universities press.
3. Paniker's andanantha narayan.(2010).Textbook of microbiology for nurses.India.Himayatnagar, Hyderabad, universities press. Pg no. 281.
4. Dr.Anish khanna..Knowledge, attitude practices about biomedical waste management among healthcare personnel.
5. Sharma A,Sharma V,Sharma S,etal, Awareness of biomedical waste management among health care personnel in Jaipur,India.Available on <http://www.ncbi.nlm.nih.gov/pubmed/2347457>