

Knowledge, attitude and Practices about Biomedical Waste management among Nursing Professionals of SKIMS Medical College Hospital Bemina-A Cross Sectional study

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Abstract: *Nursing professionals form the backbone of any hospital. Nurses play a vital role in imparting health services in all level viz, protection, prevention, promotion and treatment. Their level of awareness regarding biomedical wastes can go a long way towards safe disposal of hazardous hospital waste & protect the community from its various adverse effects. In this connection a cross sectional study was done among 50 staff nurses regarding knowledge, attitude and practices regarding biomedical wastes and the results show a higher level of awareness and attitudes as well as practices regarding biomedical waste management except for the injury report which is as low as 30%. The study highlights the importance of training regarding biomedical waste management needs.*

Key words: *Biomedical waste management, knowledge, Practices*

I. Introduction :

Health care services produce biomedical waste (BMW), which is defined as waste generated during diagnosis, treatment or Immunization of Human beings or animals or in research activities pertaining thereto or in the production & testing of biological & is contaminated with body fluids⁽¹⁾. Majority of this waste (75-80%) is noninfectious but 20-25% of it is hazardous, which is a potential health hazard to health workers, public, flora & fauna⁽²⁾. It is estimated that about 0.33 million tones of hospital waste is generated in India & the waste generation rate ranges from 0.5 to 2kg/bed/day⁽³⁾. Though legal provisions (Biomedical Waste (management & Handling) rules 1998)⁽⁴⁾ exist to decrease the health impact of hazardous waste generated, yet absence of proper waste management, lack of awareness about health hazards, financial & human resource constraints & poor control of waste disposal are the most critical problems⁽⁵⁾. Although an increased global awareness among health professionals about the hazards & also appropriate management techniques exist but the level of awareness in India is found to be unsatisfactory⁽⁶⁾. Nursing professionals form the backbone of any hospital. Nurses play a vital role in imparting health services in all level viz, protection, prevention, promotion and treatment. Their level of awareness can go a long way towards safe disposal of hazardous hospital waste & protect the community from its various adverse effects. With this background, the study was conducted to assess the knowledge, attitude & practices about biomedical waste in nurses of SKIMS Medical college Hospital.

II. Methodology

The SKIMS Medical College hospital is a teaching Hospital with bed strength of about 300. Around 115 nurses are working in the hospital in various departments & around various shifts. A random sample of 50 nurses was taken and a pretested, predesigned questionnaire was circulated among them after taking consent. The nurses' were informed that the participation was voluntary & anonymous. The study was done from August 2012 to December 2012. The data was entered in Microsoft excel and SPSS 17 was used for analysis of the same. All data forms underwent scrutiny for logical inconsistencies, skip patterns & missing values and errors were identified for correction. The percentages and their 95% confidence intervals (CIs) have been being presented.

III. Results :

Analysis of data revealed that knowledge regarding biomedical waste rules, color coding of waste containers, segregation of waste at source, disinfection of hospital waste before disposal & transmission of diseases through biomedical waste was very good among the nursing staff of this hospital. The values being more than 70%. The details are depicted in [table 1](#).

The attitude of the nurses towards segregation of infectious and non infectious wastes was positive with 80% in favor of implementation.

Regarding practices related to biomedical wastes 70% practiced the disposal in specified color coded bins, while as 72% made disposal of sharps in puncture proof containers but only 30% were reporting the injuries due to improper disposal of sharps. The details are depicted in [table 2](#).

Table 1: Knowledge regarding biomedical waste management

Knowledge regarding	N=50	c.1 (95%)
Biomedical waste management rules	46(92%)	81.6-97.2
Color coding for waste containers	46 (92%)	81.6-97.2
Segregation of waste at source	41(82%)	70.4-90.9
Disinfection of hospital waste before Disposal	37(74%)	61.8-83.9
Transmission of diseases through Biomedical waste	45(90%)	80.1-96.2

Table 2: Practices of nurses regarding biomedical waste

	N=50	c.1 (95%)
Disposal in specified color coded containers	35 (70%)	57.3-80.9
Disposal of sharps in puncture proof containers	36(72%)	56.8-81.1
Reporting of injuries due to improperly disposed sharps	15(30%)	18.8-43.2

IV. Discussion

Various cross sectional studies have been done on the same as mentioned in our study^(6,7,10). Knowledge about biomedical waste management is consistent with other studies on the subject^(7,8,9). The practice of non-reporting of injuries due to sharps is low among nurses of this hospital. Consistent figures have also been shown by other studies^(7,10,11,12). Low reporting in our study is possibly due to unawareness about formal system of injury reporting due to sharps in a health care setting.

Conclusion and recommendations.

Regular training and awareness generation activities among the nursing staff needs to be held to increase the knowledge , attitude and practices up to 100% level. Nursing protocol should be made for handling infectious as well as non-infectious wastes. Adequate supplies and equipments should be available in all the departments to take care of waste properly. A mechanism of injury reporting in the hospital needs to be established.

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