

A DESCRIPTIVE STUDY TO ASSESS KNOWLEDGE REGARDING BIO-MEDICAL WASTE MANAGEMENT AMONG THE CLASS IV WORKERS WORKING IN SELECTED HOSPITAL PUNJAB

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ABSTRACT:

A descriptive study was carried out to assess knowledge regarding bio-medical waste management among the class IV workers working in selected hospital in Punjab. Data collection was done from 1st to 15th December, 2010. Purposive sampling was done to obtain a sample of 60 class IV workers in the Medical ward, Surgical/ Operation theatre, Orthopaedic ward, cardiology ward in morning and evening shifts of Guru Nanak Dev Hospital in Amritsar. Analysis of data was done in accordance with objectives. It was done by using descriptive and inferential statistics (i.e. calculating %, mean score, SD, etc). 't' test was used to find out the relationship of knowledge regarding bio-medical waste management among class IV workers with selected variables such as age, gender, qualification, experience, work area or ward and in-service education. The findings of the study have shown that majority of class IV workers (43.3%) had good knowledge and (26.7%) had excellent knowledge and (20.0%) had average knowledge and rest of class IV workers (10.0%) had below average knowledge regarding bio-medical waste management. The findings have shown that class IV workers had good knowledge regarding bio-medical waste management and guidelines were distributed by the researcher to them regarding bio-medical waste management for improving their knowledge.

Key Words: Bio medical waste management, class IV workers.

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INTRODUCTION

Hospital is a place of the Almighty, a place to serve the patient. During the process of providing health care and eliminating potential risks to people's health, health care services produce wastes, which have adverse effect health and environment.¹

According to Bio-Medical Waste Management and Handling Rules, 1998 of India, "Bio-medical waste" means any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or in research activities and production or testing of biologicals.³

Bio-medical waste is any solid or liquid waste, including non-liquid tissues, discarded sharps, common parts, blood, blood products and body fluids from humans and other primates, laboratory veterinary wastes which may present a threat of infection to humans.⁵

Bio-medical waste can lead to potential health hazards to health care workers and the public. People at risk from hospital waste are doctors, nurses, auxiliary staff, laboratory technicians, waste handlers and sanitation personnel. The effects of waste on human being and environment include HIV infection, Hepatitis infection, puncture, abrasion, cut in the skin, injuries like burns, intoxication, carcinogenic effects and nosocomial infections.⁶

OBJECTIVES

1. To assess knowledge regarding bio-medical waste management among the class IV workers.
2. To find out the relationship of knowledge among the class IV workers regarding bio-medical waste management with selected demographic variables such as age, gender, qualification, work experience, work area/ ward, exposure to in-service education programme.
3. To prepare guidelines regarding bio-medical waste management for the class IV workers.

ASSUMPTION

Class IV workers will be having poor knowledge regarding bio-medical waste management.

MATERIALS AND METHODS

Research setting: The study was conducted at Guru Nanak Dev Hospital in Amritsar.

Target population: Class IV workers que was used to select the sample

Sample and sampling technique: The sample of study is 60. Purposive sampling technique was used to select the sample.

Data collection procedure

Permission: A formal written permission was obtained from Medical Superintendent of Guru Nanak Dev Hospital in Amritsar after discussing the purpose and objectives of the study with them. Also the subjects were explained the purpose of study and confidentiality was assured to them. Written consent was taken from all the subjects for their participation in the study.

Reliability of the research tool

Reliability of the structured multiple choice questionnaire was computed by applying split half method using Karl Pearson's coefficient of correlation and Spearman's Brown Prophecy formula. The reliability of the tool was found to be 0.86. Hence, the tool was highly reliable

RESULTS

Table-1: Frequency and Percentage distribution of sample characteristics

N = 60

Sample characteristics	F(n)	%
Age(in years)		
<25	4	6.7
25-30	5	8.3
31-35	9	15
36-40	17	28.3
>40	25	41.7
Gender		
Male	48	80
Female	12	20
Qualification		
Illiterate	13	21.7
Primary	11	18.3
Middle	14	23.3
Matric	16	26.7

Above matric	6	10
Experience(in years)		
0-5	12	20
5-10	5	8.3
10-15	9	15
15-20	26	43.3
>20	8	13.3
Work area/ward		
Medical ward	12	20
Surgical ward/OT	35	58.3
Orthopaedic ward	12	20
Cardiology ward	1	1.7
In-service Education		
Yes	0	0
No	60	100

Table-2: Frequency and percentage distribution of class IV workers according to level of knowledge regarding bio-medical waste management

N = 60

Level of knowledge	Knowledge score	n	%
Excellent	≥28 (≥76%)	16	26.7
Good	22-27(61-75%)	26	43.3
Average	17-21(46-60%)	12	20.0
Below average	≤16 (≤45%)	6	10.0

Maximum score =36

e managemenqualification, exper in-service education.

DISCUSSION

In this section the investigator discusses the results of the present study according to objectives of research and review of literature.

The present study's results revealed that majority of class IV workers i.e. 43.3% had good knowledge, 26.7% of class IV workers had excellent knowledge 20.0% of class IV workers had average knowledge and rest of them i.e. 10.0% had below average knowledge regarding bio-medical waste management. So the assumption of present study that class IV workers have poor knowledge regarding bio-medical management was found false.

Analysis and findings of the present study related to age showed that the highest mean knowledge score (25.50) was obtained by class IV workers in the age group < 25 years and minimum mean knowledge score i.e. 22.00 was within the age group of 31-35 years of class IV workers and this was found non-significant. Hence, there was no relationship between knowledge score of age of class IV workers.

Findings of present study in relation to gender showed that males had higher mean knowledge score i.e. 24.54 than females i.e. 21.42. The difference between mean knowledge score of males and females was found to be statistically non-significant.

Findings of the present study in relation to qualification showed that the highest mean knowledge score of 25.36 was amongst workers who were educated at primary, and the least mean knowledge score of 22.33 was amongst workers who were educated up to above matriculation level. Difference in the mean knowledge score of workers with different qualifications was statistically tested and found non-significant. Hence, it was concluded that qualification had no

impact on knowledge of class IV workers. There was no relationship between knowledge score and qualification of class IV workers.

⁶The present study stated that the highest mean knowledge score was i.e. 25.75 of those workers who had work experience > 20 years and minimum mean knowledge score i.e. 22.00 was of those who had work experience 5-10 years. Difference between mean knowledge score was statistically non significant. Hence, it was concluded that experience had no impact on knowledge of class IV workers.

Class IV workers working in medical and surgical wards had statistically significant ($p < 0.05$) difference in the mean knowledge score. But the differences in the mean knowledge score of the class IV workers in other areas were not statistically significant. The present study stated that class IV workers who were working in cardiology had maximum mean knowledge score i.e. 26.00 and minimum mean knowledge score i.e. 20.33 was of those class IV workers who were working in medical ward. Orthopaedic and surgical/ operation theatre showed impact on the knowledge of class IV workers whereas in the other areas there was no impact on the knowledge of class IV workers. Knowledge scores of workers who were educated up to above matriculation were statistically tested and found to be non significant. Hence, it was concluded that work area\ ward had no impact on knowledge of class IV workers. There was no relationship found between knowledge score regarding bio-medical waste management of class IV workers and the work area\ ward of these workers.

In the present study no class IV workers had attended any in-service education programme, so it did not have any impact on their knowledge score.

Maximum (41.7%) of class IV workers were in age group of > 40 years. The majority (80%) of class IV workers were males and the remaining 20% were females. The maximum (26.7%) of class IV workers were educated up to matriculation qualification. The majority of class IV workers (43.3%) were having experience between 15-20 years. The maximum number of class IV workers (58.3%) was working in surgical ward and operation theatre. None of them received any in-service education regarding bio-medical waste management. The majority of class IV workers (43.3%) had good knowledge, followed by 26.7% workers who had excellent knowledge, 20.0% workers had average knowledge and the rest of the workers (10.0%) had below average knowledge regarding bio-medical waste management. Hence, it was inferred that age, gender, qualification, experience, work area/ ward and in-service education had no impact on knowledge of class IV workers regarding bio-medical waste management.

CONCLUSION

The findings have shown that 43.3% of the class IV workers had good knowledge of bio-medical waste management, so there is need to improve the knowledge of class IV workers. Hence, the researcher had prepared the guidelines on bio-medical waste management and distributed these guidelines among class IV workers.

IMPLICATIONS

The findings of the study have several implications in nursing education, nursing practice, nursing administration and nursing research.

Nursing Education Seminars, workshops, conferences should be organised in nursing institutions to improve the knowledge of nursing students.

Nursing Practice Nurses should make concerted efforts to ensure that class IV workers are aware of effects of hospital waste and are well equipped with the knowledge and skill to dispose off hospital waste according to hospital's policy.

All nursing personnel should be vigilant enough to ensure that hospital waste is disposed off in proper manner.

a) Nursing Administration

- Nursing administrators can start structured teaching programme on hospital waste management on regular basis in hospitals for all nursing personnel and other waste handlers and sanitary workers.
- Appropriate hospital waste management policy should be made and it should be available in all areas of patient care to create awareness regarding hospital waste management. Regular and periodic evaluation of hospital waste management system should be conducted to ensure compliance with guidelines.

c) Nursing Research

ARTICLES

- Research should be directed for exploring and updating knowledge regarding bio-medical waste management among all health care workers.
 - Nursing research should be conducted to prepare various materials for mass awareness programme.
 - Research should be directed towards developing administrative strategies to ensure compliance with bio-medical waste management guidelines.
- d) General public:** Biomedical waste management can be included in secondary level education under health science subjects. General public should be aware of potential effects of bio-medical waste management.

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