

## Original Research Article

## Assess the Knowledge regarding Bio Medical Waste Management among the Staff Nurse in Selected Hospitals at Kanpur, Uttar Pradesh with a View to Develop an Information Booklet.

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### Abstract

Hospital waste refers to all waste, biologic or non biologic that is discarded and not for further use in any circumstances. Biomedical waste (BMW) is created in hospitals, research and health care teaching institutes, clinics, laboratories, blood banks, animal homes and veterinary institutes. The objectives of the study are to assess the knowledge level among staff nurses, to find out the association between knowledge level with their socio demographic variables and to develop and distribute an information booklet regarding bio medical waste management. The descriptive design was used to conduct the study with 60 staff nurses selected as convenient sampling technique. The results are the majority of the staff nurses 30(50%) had adequate knowledge and 27(45%) had moderate knowledge, 03(05%) had inadequate knowledge. The association between socio demographic variables like age in years and non significant was gender and religion shows significant.

**Keywords** Knowledge, Biomedical Waste Management, Information Booklet

### Introduction

Health is evolved over the centuries as a concept from an individual concern to a worldwide social goal and encompasses the whole qualities of life. In olden days, population density was less. Industrialization was not at its peak. So, resources were exploited but on minimum basis and waste by humans were generally bio-degradable. But today's scenario is different, population is growing at alarming rates, industrialization & urbanization is increasing [1].

Health care activities like immunization, diagnostic tests, medical treatments and laboratory examinations protect and restore health and save lives [2]. At the same time, however, health services may generate large quantity of wastes and by-products that need to be handled safely and disposed of properly. Public concern about medical waste dates back to early 1980's when large quantities of syringes and needles were found on the beaches of the East Coast and in Florida, USA. The public hue and cry due to a scare regarding the spread of infectious diseases from this waste led to the first legislation on bio-medical waste management in the USA [3]. Later, other countries adopted similar legislation to manage their bio-medical waste effectively [1].

Hospital waste refers to all waste, biologic or non biologic that is discarded and not intended for further use. Medical waste is a subset of hospital waste; it refers to the material generated as a result of diagnosis, treatment or immunization of patients and associated biomedical research. Biomedical waste

(BMW) is generated in hospitals, research institutions, health care teaching institutes, clinics, laboratories, blood banks, animal houses and veterinary institutes [4].

Indian Government taking major indications to control and reduce various types of environmental pollution. It regulated the disposal of biomedical wastes and standards to be complied with. These rules apply to all persons who generate, collect, receive store, transport, and treat or handle biomedical wastes in any form [5].

World Health Organization states that 85% of hospital wastes are actually non-hazardous, whereas 10% are infectious and 5% are non-infectious but they are included in hazardous wastes. About 15% to 35% of Hospital waste is regulated as infectious waste. This range is dependent on the total amount of waste generated (Glenn and Garwal, 1999) [4]. These wastes now threatens the public since, the health care foundations are situated in heart of city and therefore medical waste, if not properly managed can cause dangerous infection and possess a potential threat to the surrounding environment persons handling it and to the public [6]. Health and environmental effects, uncertainty regarding regulations and negative perceptions by waste handles are some important concerns in health care waste management in a country (Freeman, 1998). Globally this issue has been seriously considered and appropriate waste management systems are being developed and installed [7]. A number of difficulties are being faced

at many places in implementation of this plan in practice. The waste disposal is governed by the Government agencies and regulations including private organizations [5]. At present, there is no available information that describes the actual practice of handling the health care waste products. The proposed hospital waste management plan is consistent with the biomedical waste.

Approximately 75-90% of the Bio-medical waste is non-Hazardous and as harmless as any other municipal waste. The remaining 10-25% is hazardous and can be injurious to humans or animals and deleterious to environment<sup>8</sup>. It is important to realize that if both these types are mixed together then the whole waste becomes harmful. Major hospitals contribute substantially to the quantum of Bio-medical waste generated.

### Objectives

- To assess the knowledge level among staff nurses regarding bio medical waste management.
- To find out the association between knowledge level regarding biomedical waste management among staff nurses with their socio demographic variables.
- To develop and distribute an information booklet regarding bio medical waste management.

### Assumptions

Nursing staff may have some knowledge regarding biomedical waste management.

The knowledge levels of nursing staff regarding biomedical waste management may vary according to socio-demographic variables.

Develop and distribute an information booklet may improve the knowledge level regarding Bio medical waste management.

### Research Methodology

**Research Approach:** Quantitative research approach.

**Research Design:** Descriptive design.

**Population:** Staff nurses who have registration with state nursing council.

**Sample:** Staff nurses those who are working in hospitals.

**Sample Size:** 60 Staff nurses.

**Sampling Technique:** Convenient sampling technique.

**Setting of the Study:** The study was conducted in Ursala horse men memorial hospital at Kanpur, UP.

**Method of Data Collection:** Knowledge questionnaire on bio medical waste management.

### Criteria for Sample Selection

#### Inclusive Criteria

- Staff nurses who have registration with state nursing council.
- Staff nurses who are willing to participate in the study
- Staff nurses who are available at the time of data collection.
- Staff nurses who can understand and speak Hindi and English.

#### Exclusive Criteria

- Staff nurses who are not having registration with state nursing council.
- ANM staff nurses not included.

### Description of Data Collection Instrument

The tool for collection of data was self-administering questionnaire. The schedule was organized in to 2 sections.

**Section A:** Consists of Socio demographic Data.

**Section B:** Consists of Questions on Knowledge regarding bio medical waste management.

#### Plan for the Data Analysis

The data was analyzed by using relevant and appropriate descriptive and inferential statistics.

**Descriptive Statistics:** This includes frequency and percentage distribution, mean, and standard deviation was used to assess the knowledge levels regarding bio medical waste management.

**Inferential Statistics:** Chi-square was used to find out the association between knowledge levels with their selected socio demographic variables.

### Results

#### Analysis and Interpretation

The analysis and interpretation of results were shown in below sections

**Section I:** To assess the knowledge level among staff nurses regarding bio medical waste management.

**Section II:** To find out the association between knowledge levels regarding biomedical waste management among staff nurses with their socio demographic variables.

**Section III:** To develop and distribute an information booklet regarding bio medical waste management.

#### Section I: This Section Deals With Socio-Demographic Variables of Sample

This section reveals that regarding age, majority of the clients 27(45%) were in the age group of 21-30 years, 15(25%) were in the age group of above 31-40 years, 15(25%) were in the age group of 41-50 years, and 03(05%) were in the age group of 51-60 years. Related to Gender 46(76.67%) were females, 14

(23.33%) were males. Regarding to the religion, majority of the clients 43(71.67%) were Hindus, 09(15%) were Christians, 08(13.33%) were Muslim, 00(0%) were belongs to other religion.

Regarding educational status, majority of the clients 29(48.34%) were graduate, 20(33.33%) were educated up to higher secondary education, 09(15%) were post graduate, 02(3.33%) were secondary education. Regarding family income per month, majority of the clients 34(56.67%) were earning Rs. 15000-25000/-, 09(15%) were earning 45001 or above, 09(15%) were earning 35001-45000/-, 08(13.33%) were earning 25001-35000/-. Regarding area of work, majority of the staff nurses 34(56.67%) working in general wards, 16(26.66%) were working in emergency & others, 05(8.33%) were working in critical care unit, 05(8.33%) were working in operation theatre.

Regarding year of experience, majority of the staff nurses 30(50%) had 0-5 years experience, 14(23.33%) had 5.1-10 years of experience, 07(11.67%) had 15.1-20 years of experience, 06(10%) had 10.1-15 years of experience, 03(5%) had 20.1 or above years of experience. Related to source of information majority of the staff nurses 53(88.34%) had received information from health care persons, 04(6.66%) from mass media, 03(05%) from workshops.

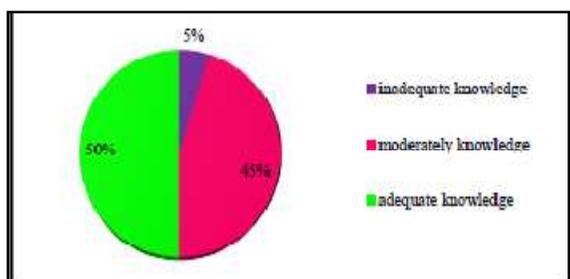
**Section - II**

**Table 1:** Knowledge Level Regarding Bio Medical Waste Management.

N=60

Sl. no	Knowledge levels	Frequency	Percentage
1.	Inadequate knowledge	03	5
2.	Moderate knowledge	27	45
3.	Adequate knowledge	30	50
	<b>Total</b>	<b>60</b>	<b>100</b>

The above table shows that the majority of the staff nurses 30(50%) had adequate knowledge and 27(45%) had moderate knowledge, 03(05%) had inadequate knowledge.



**Figure 1:** Percentage Distribution of Sample According to Knowledge Levels of the Staff Nurses.

**Section III**

The table finding revealed that there is significant association between socio demographic variables like age in years and non significant was gender and religion.

The findings revealed that there is no significant association between socio demographic variables like educational status, and significant was family income per month and area of work

The findings shows that there was significant year of experience and no significant association for Source of formation regarding bio medical waste management

**Recommendations**

The study may be conducted with a small sample to generalize the findings.

Similar kinds of study can be undertaken in different setting.

A similar study can be replicated, but, the interval between the studies should be more than those 7 to 15 days.

A Non experimental study can be undertaken.

A descriptive study to assess the staff nurse’s knowledge level and practice regarding Biomedical Waste Management can be undertaken.

Regular In-service Education Programmes can be conducted for registered staff nurses to refresh their knowledge regarding Biomedical Waste Management.

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