Descriptive Study of Knowledge Regarding Bio-Medical Waste Management among Hospital Attendants

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Abstract

The aim of the study is to evaluate the knowledge of bio-medical waste management among hospital attendants at AIIMS Patna. The objective of the study is to assess the level of knowledge of hospital attendants regarding bio-medical waste management and to find an association of the level of knowledge of hospital attendants with selected demographic variables. The conceptual framework of the study was developed on the basis of Roy's Adaptation Model. Methodology non-experimental descriptive approach was used. The study was carried out at AIIMS Patna. The sample comprised of 60 hospital attendants of AIIMS Patna selected by convenient sampling. Pilot study was conducted on 6 samples and the tools were found to be reliable. Data collection was done from 10th March 2017 to 18th march 2017. Data was collected by administering a structured knowledge questionnaire. The result of this study showed that most of the hospital attendants had average knowledge (48.3%) about Bio-medical waste management. About 28.3% of the hospital attendants had good knowledge and 23.4% hospital attendants have poor knowledge regarding Bio-medical waste management. A relationship between the level of knowledge of hospital attendants and selected variables were noticed. The finding of this study supports the need of health education and training programme for the hospital attendants regarding Bio-medical waste management.

Keywords: Knowledge; Bio-Medical Waste Management; Hospital Attendants.

Introduction

Let the wastes of "the sick" not contaminate the lives of "the healthy"   *– K. Park*

Waste are unwanted or unusable materials. Waste is any substance which is discarded after primary use, or it is worthless, defective or of no use. There are various types of waste such as household waste, commercial waste, demolition waste, industrial waste, bio-medical waste, radioactive waste etc.

Bio-medical waste is defined as any waste which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in the production or testing of biologicals [2].

According to the Ministry of Environment and Forest (MoEF) gross generation of bio-medical waste in India is 405702 kg per day of which 291983 kg per day is disposed, which means that almost 28% of the waste is left untreated and not disposed, finding its way in dumps or water bodies and re-enters our system.

The indiscriminate dumping of bio-medical waste by hospitals and nursing homes was a source of pollution that caused dangers to the health and environment [3].

Statement of the Problem

A descriptive study to assess the level of knowledge regarding Bio-medical Waste management among hospital attendants in AIIMS Patna.

Objectives

- To assess the level of knowledge of hospital attendants regarding Bio-medical waste management.

- To find an association of the level of knowledge of hospital attendants with selected demographic variables.

Operational Definition

In the present study the researchers have defined the following terms:-

- *Knowledge:* Knowledge refers to information and understanding about the bio-medical waste management and its hazards.

- *Bio-medical waste:* It refers to the waste generated during diagnosis, treatment or immunization of human beings or animals.

- *Bio-medical waste management:* It refers to disposal of waste generated by hospital into different color coded bins depending on the properties of the waste.

- *Hospital attendants:* It refers to all the Grade III workers working in hospital of AIIMS Patna.

Assumptions

- Hospital attendants may have some knowledge regarding Bio-medical waste management.

- Hospital attendants knowledge regarding Bio-medical waste management can be measured by structured knowledge questionnaires.

Hypothesis

- H_0: There is no association between level of knowledge of hospital attendants and selected demographic variables.

- H_1: There is an association between level of knowledge of hospital attendants and selected demographic variables

Methodology

Research Approach

In the present study, the research approach is non-experimental descriptive approach.

Research Design

Keeping in view the objectives of the study the research design selected for the study was descriptive research design.

Variables

Research variable: In this study the research variable is knowledge about bio-medical waste management among hospital attendants.

Setting of the Study

The present study was conducted in hospital of AIIMS Patna.

Population

Population for the present study comprises of hospital attendants working in hospital of AIIMS Patna.

Sample

In the present study the sample is the sixty (60) hospital attendants working in AIIMS Patna.

Sampling Technique

In the present study a sample selection was done by non-probability convenient sampling technique.

Criteria for Selection of Sample

Inclusion Criteria

1. Hospital attendants working in hospital of AIIMS Patna.

2. Hospital attendants who are present on the day of study.

3. Hospital attendants who can speak and write Hindi.

Exclusion Criteria

1. Hospital attendants below the age of 20 years

2. Hospital attendants who are not interested to be a part of the study.

The Tool/Instrument

Used in current study is structured knowledge questionnaire.

Description of the Tool

The tool consists of structured knowledge questionnaire which contains two sections.

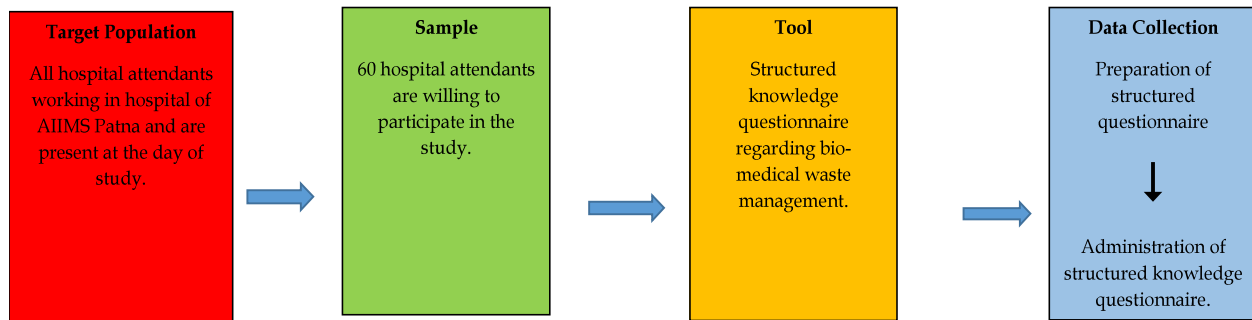| Target Population	Sample	Tool	Data Collection
All hospital attendants working in hospital of AIIMS Patna and are present at the day of study.	60 hospital attendants are willing to participate in the study.	Structured knowledge questionnaire regarding bio-medical waste management.	Preparation of structured questionnaire ↓ Administration of structured knowledge questionnaire.

Fig. 2: Schematic representation of research design

Section A: The demographic data of hospital attendants which include age, gender, academic qualification, professional experience of working, department/ wards in which they are working, any special training/course attended, employment status, any special training received from the hospital after joining.

Section B: A structured knowledge questionnaire for hospital attendants regarding bio-medical waste management was prepared.

Reliabilty of the Tool

Reliability of the tool was calculated by using Cronback's alpha method and was conducted on 6 samples. The reliability was calculated by spilt half method (Cronback's alpha) and the value is 0.715.

Data Collection Process

The data was collected from 10/03/2017 to 18/03/2017 in hospital of AIIMS Patna.

Data Analysis

Organisation of the Study Findind

The analysis of data is presented under the following headings:

Section I: Description of Demographic variables of samples

Section II: Description of knowledge of hospital attendants regarding Bio-medical waste management.

Section III: Association between demographic variables and level of knowledge of hospital attendants.

Section A: Describing frequency and percentage of socio-demographic variables of hospital attendants.

The table depicts that the frequency and percentage distribution of age, gender, educational status, work experience, department in which they are working, any special course or training attended, job status and previous knowledge about Bio-medical waste management.

Table 1: Depicts the frequency and percentage of demographic variables

Sr. No.	Title	Category	Frequency (f)	Percentage (%)
1	Age	20-35	54	90%
		36-50	6	10%
2	Gender	Female	17	28.3%
		Male	43	71.6%
3	Educational status	<12th	16	26.6%
		>12th	44	73.3%
4	Work experience	<4 years	51	85%
		>4 years	9	15%
5	Department in which they are working	OPD	21	35%
		IPD	25	41.6%
		OT, HDU, Post-operative ward	14	23.3%
6	Any special course/ training attended	No	56	93.3%
		Yes	4	6.6%
7	Job status	Permanent	24	40%
		Temporary	36	60%
8	Previous knowledge regarding Bio-medical waste management	T.V, newspaper, magazine	20	33.3%
		Staff nurse and co-workers	40	66.6%

This clustered column diagram illustrates that 73.3% of the study subjects are having educational qualification of >12th.

This bar diagram illustrates that 85% of the study subjects are having < 4 years of work experience.

This pie diagram illustrates that 42% of the study samples work in IPD, 35% of the study samples work in OPD and 23% of the study samples work in OT, HDU and Post-operative ward.

The pie diagram illustrates that 60% of the study subjects are temporary employees.

This area diagram illustrates that 66.66% of the study subjects had previous knowledge about Bio-medical waste management from staff nurses and co-workers.

Fig. 3: Distribution of sample based on age

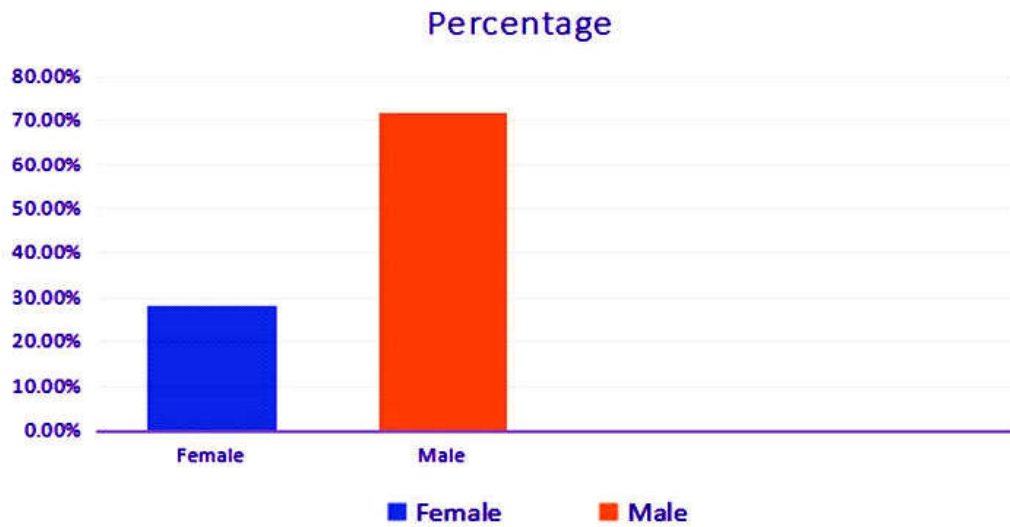The pie diagram illustrates that 90% of the study subjects were in the age group of 20-35 years.

Fig. 4: Distribution of sample based on gender

The column diagram illustrates that 71.6% of study subjects are males.

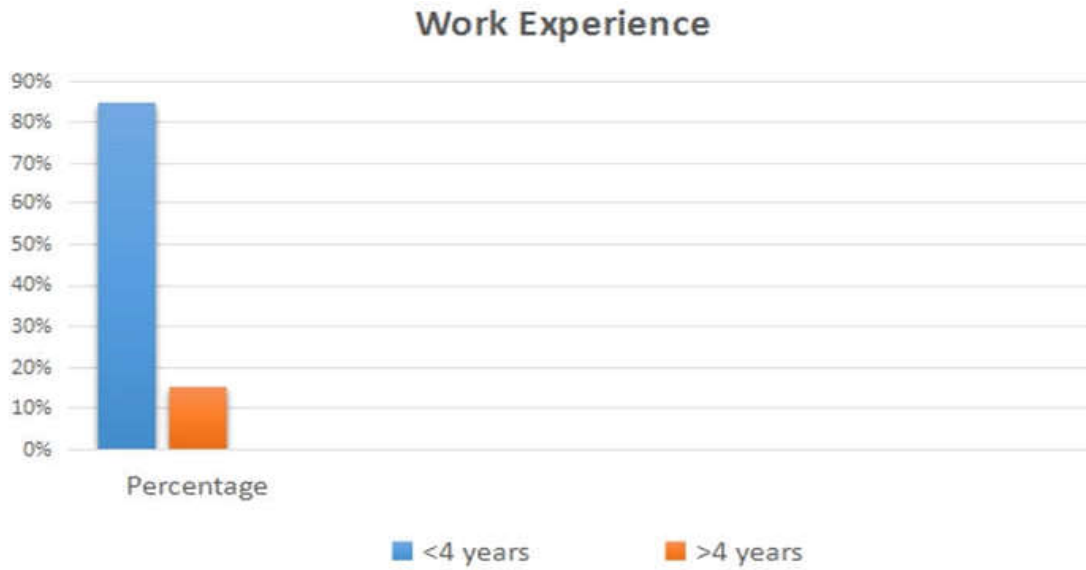**Fig. 5:** Distribution of sample based on educational qualification

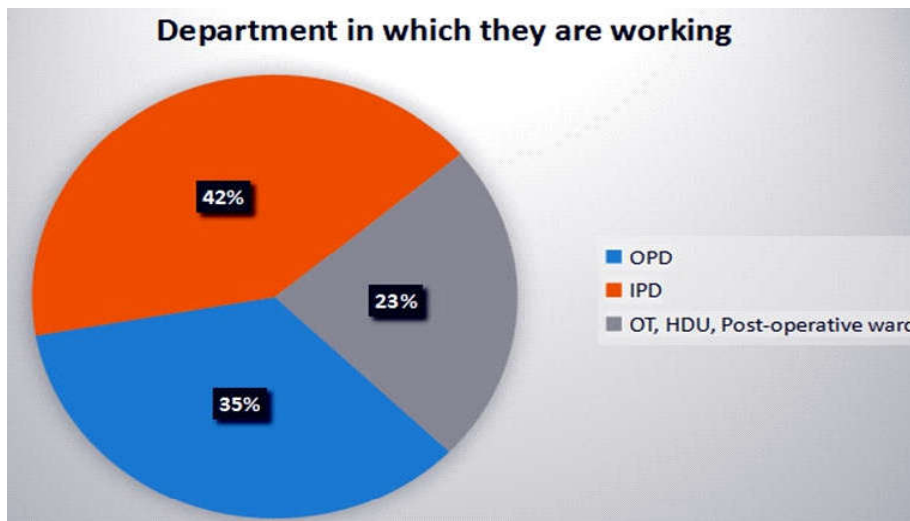**Fig. 6:** Distribution of sample based on work experience

Fig. 7: Distribution of samples based on department in which they are working

Fig. 8: Distribution of sample based on previous training/course attended

This column diagram illustrates that 93.33% of the study subjects are having no previous training/ course regarding Bio-medical waste management.

Job Status

Fig. 9: Distribution of sample based on their job status

Section B: Assessing the level of knowledge of hospital attendants regarding Bio-medical waste management.

The table depicts that most of the study subjects have average knowledge 29 (48.3%) regarding Bio-medical waste management. 17 (28.3%) have good knowledge regarding Bio-medical waste management and 14 (23.4%) have poor knowledge regarding Bio-medical waste management.

Section C: Association of the level of knowledge of hospital attendants with selected demographic variables.

The chi square was calculated to find out the association between level of knowledge among hospital attendants and selected demographic variables.
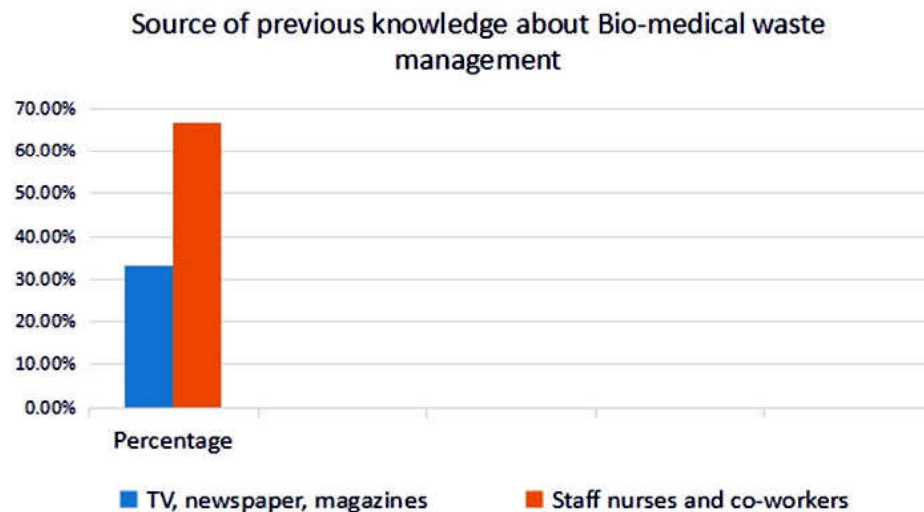

Fig. 10: Distribution of the sample based on source of previous knowledge about Bio-medical waste management

Table 2: Shows overall level of knowledge of hospital attendants regarding Bio-medical waste management

Sr. No.	Knowledge level	Range of score	Hospital attendants	
			Frequency(f)	Percentage (%)
1	Good Knowledge	21-30	17	28.3%
2	Average Knowledge	15-20	29	48.3%
3	Poor Knowledge	<15	14	23.4%
	Total		60	100.0

Table 3: Depicts association the level of knowledge of hospital attendants with selected demographic variables

Socio-demographic variable	Category	Knowledge score		DF	X^2
		<median	≥ median		
Age	20-35	25	29	1	1.91**
	36-50	1	5		
Gender	Female	7	10	1	0.04*
	Male	19	24		
Educational status	<12th	7	9	1	0.7**
	>12th	19	25		

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Work experience	<4 years	25	26	1	0.04*
	>4 years	4	5		
Department in which they are working	OPD	10	11	2	10.62**
	IPD	12	13		
	OT, HDU, Post-operative ward	5	9		
Any special course/ training attended	No	25	31	1	0.02*
	Yes	2	2		
Job status	Permanent	13	11	1	0.52**
	Temporary	16	20		
Previous knowledge regarding Bio-medical waste management	T.V, newspaper, magazine	7	13	1	0.54**
	Staff nurse and co-workers	18	22		

Data presented in Table 5 shows that there is no significant association between level of knowledge and variables such as gender, work experience and special training/course and having significant association between age, educational status, department in which they are working, job status and previous knowledge about BMW management.

Discussion

Description of level of knowledge regarding Bio-medical waste management among hospital attendants

The present study findings revealed that 48.3% hospital attendants have average knowledge regarding Bio-medical waste management, 28.3% of hospital attendants have good knowledge regarding Bio-medical waste management and 23.4% have poor knowledge regarding Bio-medical waste management.

An Association of the Level of Knowledge of Hospital Attendants with Selected Demographic Variables

The present study findings revealed that there is significant association between level of knowledge among HA workers and selected demographic variables such as age, educational status, department in which they are working, job status and previous knowledge about BMW management whereas there is no significant association between level of knowledge and selected demographic variables such as gender, work experience and special training/course.

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