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"Knowledge, Attitude and Practice of Biomedical Waste Segregation among Housekeeping Staff"

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ABSTRACT

Background: "Biomedical waste" means 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 biological.[1] In comparison, hazardous wastes are those that carry infectious pathogens, such as used syringes, needles, and broken ampules. India generates around three million tons of medical wastes every year and the amount is expected to grow at eight per cent annually. **Objective:** To assess the knowledge, attitude and practice regarding the biomedical waste segregation among housekeeping staff in a selected hospital setting **Materials and Methods:** Quantitative research approach with Non experimental, descriptive study design' was used, total 40 housekeeping staff were selected through the purposive sampling technique from selected hospital of Dehradun, Uttarakhand. Knowledge was assessed by using self-developed knowledge questionnaire, attitude was assessed by using self-developed attitude scale and practice was measured by using self-developed practice checklist and demographic details were obtained using baseline data. . **Results:**Result showed that majority (80%) of the housekeeping staff have good knowledge, positive attitude good practice regarding biomedical waste segregation There was association found in age (0.0013) and type of family (0.004) in knowledge level of housekeeping staff, experience (0.0003) in attitude scale of housekeeping staff and in age (0.0334) and previous knowledge (0.0435) in practice of housekeeping staff.**Conclusion:** The study concludes that majority of the participants have good knowledge regarding biomedical waste segregation and all of them have good practice and positive attitude regarding biomedical waste segregation.

Key words: Knowledge, Attitude, Practice, Biomedical Waste, Housekeeping Staff.

INTRODUCTION

"Bio-medical Waste (Management and Handling) Rules"1998 of India, "Biomedical waste" means 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 biological.[1] The Government of India (notification, 1998) specifies that Hospital Waste Management is a part of hospital hygiene and maintenance activities. This involves management of range of activities, which are mainly engineering functions, such as collection, transportation, operation or treatment of processing systems, and disposal of wastes.[1]

World Health Organization states that 85% of hospital wastes are actually nonhazardous, 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.1 Safe disposal of biomedical waste is now a legal requirement in India. In this regard government of India first enacted an Environment (Protection) Act in 1986, then notified the Biomedical waste (Management and Handling) rules 1998. Now since 28 March 2016, Bio- medical waste Management rules, 2016 has come into force.[1]

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Colour coding in biomedical waste management includes:

Yellow: Human anatomical waste, animal anatomical waste, solid waste, expired or discarded medicines, chemical waste, liquid waste, microbiological, biotechnological and other clinical laboratory waste, linen contaminated with blood or body fluids.[2]

Red: Waste generated from tubing, bottles, intravenous tubes and sets, catheters, urine bags, syringes and vacutainers with their needle and gloves.[2]

Blue: Broken or discarded and contaminated glass including medicine vials and ampules, metallic body implants.[2]

Sharp container/white: Needles, syringes with fix needles, scalpels, cutter or burner, blades, discarded and contaminated metal sharps.[2]

Housekeeping staff refers to the cleaning and up keeping of the hospital premised which renders the environmental surfaces safe to Handel by removing organic matter, salts and visible soils. The purpose of the general housekeeping staff is to reduce the number of microorganisms that may come in contact with patients, visitors, staff and the community. They are responsible for sustaining a sterile environment in all areas of the hospital.[3]

Need for the study

India generates 1, 00,000 metric tonnes waste/day. Odisha waste generation rate is 42 million tonnes annually. In Bhubaneswar (City where setting is located) itself 200 metric tonnes of waste/day is generated. Status of knowledge and practice of housekeeping staff can draw the attention of the administrators in this regard. With this view, this study was carried out to assess the knowledge and practice on the method of waste disposal among housekeeping staff working in AIIMS hospital, Bhubaneswar. The study revealed weak positive correlation between knowledge and practice regarding method of BMW disposal.[4]

In 2011, WHO stated that high developed countries produce an average up to 0.5 KG of hazardous waste per hospital bed per day while the figure for developing countries was only 0.2 KG per hospital bed per day. Biomedical waste was often not properly segregated in to hazardous or non-hazardous wastes that made the actual amount of hazardous waste possibly much higher. 85% of generated waste from hospitals and other health care facilities were in fact non-hazardous while remaining 15% is considered to be hazardous materials that may be radioactive, toxic or infectious (WHO, 2011).[5]

Worldwide, every year an estimated 16 billion injections are administered, but not all of the needles and syringes are properly disposed. Studies documented from different parts of the country, still convey that there are gaps in the Knowledge, lacunae in the attitudinal component and inconsistency in the practice aspects which are matters of concern among doctors, post graduates, staff nurses, laboratory technicians and housekeeping staffs in hospitals.[4]

It is crucial on the part of the employees to know the hazards of the biomedical waste in the work environment and make its disposition effective and in a scientific manner. It is critical that the different professionals engaged in the healthcare sector have adequate Knowledge, Attitudes and Practices (KAP) with respect to biomedical waste management.[5] Adequate knowledge amongst the house keeping staff about the biomedical waste management rules and regulations, and their understanding of segregation, will help in the competent disposal of the waste in their respective organization.[6]

MATERIALS AND METHODS

In the present study Quantitative research approach with Non experimental, descriptive study design' was used, total 40 housekeeping staff were selected through the purposive sampling technique from selected hospital of Dehradun, Uttarakhand. Knowledge was assessed by using self developed knowledge

questionnaire , attitude was assessed by using self developed attitude scale and practice was measured by using self developed practice checklist and demographic details were obtained using baseline data.

RESULTS

Table No. 1 The data presented in the above table represents frequency and percentage of socio-demographic characteristics about the housekeeping staff in hospital setting. It shows that 70% of the participants are aged between 25-45 yrs. and only 30% are aged between 46-60 yrs. Majority (85%) are females. All the participants are married, 60% of participants are educated. Half (50%) of the participants have experience less than 5 yrs. And rest half (50%) have experience more than 5 yrs. Majority (80%) have previous knowledge of Bio-Medical Waste Management from hospital training. 55% of participants are from urban areas and 45% are from rural areas.

Table 1: Socio-demographic characteristics of study participants (N=40)

Sample Characteristics	Frequency F (%)
Gender	
Male	8 (20%)
Female	32 (80%)
Qualification	
Illiterate	16(40%)
Literate	24(60%)
Type Of Family	
Nuclear Family	22(55%)
Joint Family	18(45%)
Experience(In Years)	
Less Than 5 Yrs.	20 (50%)
More Than 5 Yrs	20(50%)
Previous Knowledge about Biomedical Waste Segregation	
Yes	32(80%)
No	8 (20%)

Locality	
Urban	22(55%)
Rural	18(45%)

Table no. 2: Mean standard deviation of Knowledge, Practice, Attitude score of housekeeping staff regarding biomedical waste segregation

N=40

Variable	Obtained range of score	Mean ± S.D.	Median	Mode	Range
Knowledge Score	10 – 20	14.9 ± 2.33	15	15	0-24
Practice Score	18- 20	18.6 ± 0.65	19	18	0-20
Attitude Score	42 – 63	54.7 ± 5.31	56	59	16-64

Table No. 2 shows that the obtained knowledge score of the study participants ranges from 10 -20 in which Mean with Standard deviation (S.D.) is 14.9 ± 2.33, median and mode are both 15 respectively. In practice checklist obtained Practice score of the housekeeping staff ranges from 18-20 in which Mean with Standard deviation (S.D.) is 18.6 ± 0.65, median is 19and mode is 18. In attitude obtained Attitude score of the study participants ranges from 42- 63 in which Mean with Standard deviation (S.D.) is 54.7 ± 5.31, median is 56 and mode is 59.

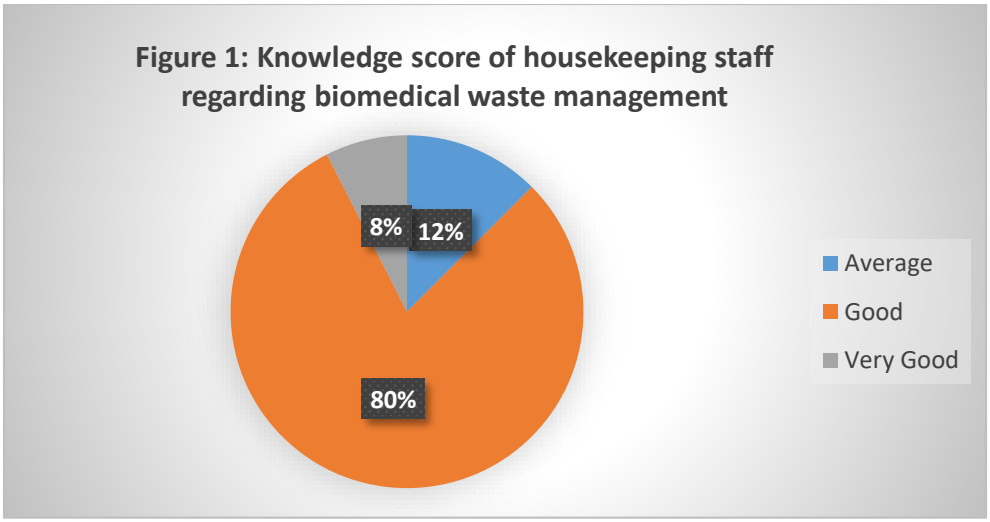

Figure 1 illustrate that percentage wise distribution of knowledge score of housekeeping staff regarding waste segregation which shows that the majority (80%) of the housekeeping staff have good knowledge regarding biomedical waste segregation

Chi square, yates correction and fischer exact test was used to find out the association between knowledge with their socio-demographic variables which shows that only age (p=0.0013) and type of family (p=0.004) was significantly associated with knowledge of housekeeping staff regarding the biomedical waste seggregation . Chi square, yates correction and fischer exact test was used to find out the association between attitude of housekeeping staff with their socio-demographic variables which shows that only experience (p=0.0003) was significantly associated with attitude of housekeeping staff regarding the biomedical waste seggregation .

Chi square, Yates correction and fischer exact test was used to find out the association between attitude of housekeeping staff regarding the seggregation of biomedical waste management with their socio-demographic variables which shows that only age (0.0334) and previous knowledge (p=0.0435) was significantly associated with practice of housekeeping staff regarding the biomedical waste seggregation .

DISCUSSION

The finding shows that there is good knowledge, positive attitude and good practice regarding the biomedical waste seggregation among the housekeeping staff. Study was supported by by ManoRanjini J. that the Group D health workers has adequate knowledge of bio medical waste disposal.[7]Significant association was find between age (p=0.0013) and type of family (p=0.004) was with knowledge, experience (p=0.0003) with attitude and age (0.0334) and previous knowledge (p=0.0435) with practice of housekeeping staff regarding the biomedical waste segregation.

There are several limitation in the study. First the small sample size which affects generalization of the study. Second sampling technique (Purposive sampling) where there is more chances of bias. Third is self

developed tool were used where there is question of validity and reliability. The strength of the study is researcher selected the statistical test based on the distribution of the data.

CONCLUSION :

The study was conducted to assess the knowledge, attitude and practice regarding the biomedical waste segregation among the housekeeping staff. Hence the study conclude that there is a good knowledge, positive attitude and good practice regarding the biomedical waste segregation among the housekeeping staff but there is a need for continuing education regarding the waste management and segregation for further prevention of the infection.

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