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A descriptive study to assess the knowledge regarding bio medical waste management among sweepers in Saveetha Medical College and Hospital

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Abstract

Biomedical waste are generate during treatment, surgical intervention, immunization, dressing of wounds, pathological investigation and Radiological investigations. The training for handling of hospital waste is generally restricted within the waste handlers (sweeper) this is the main obstruction to establish a good integrated hospital waste management plan. It becomes the primary responsibility of health administrators and infection control team to manage hospital waste in most safe and Eco - friendly manner. The exposure to infectious and hazardous hospital waste can cause serious health problems to those who handle it, particularly to waste collectors or rag pickers and the environment. World Health Organization (WHO) predicted that India is on the verge of having an HIV epidemic. Tuberculosis (TB) and HIV combined together is taking a great toll on the human health and life. The present study to assess the knowledge regarding biomedical waste management among sweepers in Saveetha Medical College and Hospital. A quantitative descriptive research design was conducted among 30 sweepers. Convenient sampling technique was used to select samples. Semi-structured questionnaire was used to collect demographic data and knowledge among sweepers. The study results show among 78 sweepers 38(48.71%) have moderately adequate knowledge, only 5(6.41%) have inadequate knowledge and 35(44.87%) have adequate knowledge. This indicates the necessities for educational program on the use of PPE among sweepers to prevent infections.

Keywords: Biomedical waste, environment, sweepers, management, infection, hospital

Introduction

The biomedical waste is the waste that is generated during the diagnosis, treatment, or immunization of human beings or animals or in research activities pertaining there or in the production or testing of biological components. The different location or points of generation of waste in a health care establishment are operation theaters, wards, labor rooms, dressings rooms, injection rooms, Intensive care units, Dialysis room, Laboratory, Corridor, Compound of hospital or nursing home. Any waste contaminated by blood or body fluids can be termed as infected waste. Municipal wastes on the other hand do not require any special treatment. It should be handed over to municipal board disposal unit ^[1, 2].

Segregation system is up to the mark than this has been observed that 85 to 95% of the total waste becomes non infected only 10 to 15% are infected waste which need special disposal system. Incineration or deep burial per day in- house patient generate 1.5Kg of waste only 10 to 15% of which is infected waste. Radiology department generate radioactive waste. Handling of radioactive waste requires special attention and skill at sources of different types of biomedical wastes and their appropriate storage and or dis infections sterilization. Would ensure that infectious wastes as this would infect the entire waste.

Only a small fraction of waste generated by health care institutions is actually infectious or hazardous. It is estimated that 80-85 per cent is non - infectious, 10 per cent is infectious and 5 per cent is hazardous ^[3].

Biomedical waste is a term applied to waste generated during the diagnosis, treatment or immunization of human beings or animals or in the production or testing of biological. Biomedical waste has been categorized as general waste, pathological waste, radioactive waste, chemical waste, infectious waste, sharps and pharmaceutical waste ^[4].

In country like India, where there is big and complex health care system, mixed economy, private and Government hospitals working together, while providing services generate waste. It is estimated that the quantity of waste generated from hospitals in our country ranges between 0.5 and 2.0 kg/bed/day and annually about 0.33 million tones of waste are generated in India [5].

WHO fact sheet reported that from total of waste generated by health care activities 20% are hazardous. The waste produced by the hospitals if disposed off improperly can pose an even greater threat than the original diseases. Such practices may contribute to the spread of diseases, as well as pollution of the air, soil and water. A large body of ill informed population suffers from harmful effect of such medical waste, which is discharged in an already compromised environment [6].

The purpose of the study is [1] to assess the knowledge biomedical waste management among sweepers [2]. To find the association between the knowledge and baseline variables [3]. To identify the problems faced regarding biomedical waste management by the sweepers in Saveetha medical College and hospital.

Methods and Material

A descriptive study was conducted to assess the knowledge regarding biomedical waste management among sweepers in Saveetha Medical College and Hospital. 78 Samples were selected by using a convenient sampling technique. The inclusion criteria for the selecting samples are sweepers of all categories working in the Saveetha medical college and hospital, those who are all available at the time of data collection and able to read and write in Tamil. The exclusion criteria for the samples are sweepers can't understand Tamil to speak and write and sweepers who is not willing to participate in the study. The data collection period was done with prior permission from the Medical officer in SIMATS. The purpose of the study was explained to the samples and return informed consent was obtained from them. The demographic data and knowledge among sweepers were collected using a semi structured interview questionnaire, The data were analyzed using descriptive and inferential statistics. The sample characteristics were described using frequency and percentage. Chi square was used to associate the knowledge level of sweepers with the selected demographic variables.

Result and Discussion

Section A: Demographic Variable

The present study revealed that frequency and percentage distribution of demographic variables out of 60 samples were come under the (53.84%) of the sweepers are in the age group of ≤ 40 years. The mean age group is found to be 40.80(± 11.47) with a range of 19-65 years. The majority (69.23%) of the surveyed sweepers are females. 52.56% of the sweepers have ≤ 10 years of experience in their present job. The mean years of experience of professionals is found to be 9.62 (+6.85) with arrange of 3-31 years. The years is found to be 15.80 (± 11.16) with a range of 1-36 years.

Section B: Level of knowledge regarding sweepers at saveetha medical college and hospital

The present shows that out of the 78 sweepers 38(48.71%) have moderately adequate knowledge, only 5(6.41%) have

inadequate knowledge and 35(44.87%) have adequate knowledge.

Section C: The Association between the Knowledge and Demographic Variable

The present study shows that the young sweepers have better knowledge regarding biomedical waste management. The data shows a significant association between knowledge levels and age.

Section D: To determine the current system of practice biomedical waste Management in all the SMCH using one time observation

The present shows that the posters are more often ($>50\%$) absent in vital clinical areas such as the labour room, OPD, IPD, Laboratory and dressing room. In fact they are totally absent 3(100%) in the dressing room. The 12 SMCH's observed 8(66.66%) did not use biohazard symbol for labelling waste and 4(33.33%) used it for labelling waste. The different colour coded containers for different types of waste are maintained only in loutpatient department (08.33%) of a SMCH. The data infers that out of the 12 SMCH's observed 12(100%) did not treat anatomical waste (placenta) by incineration. They however are using the deep burial pits within the compound of the SMCH. 7(58.33%) did not perform chemical disinfection before final disposal of liquid waste into drains and only 5(41.66%) performed it. 12(100%) performed disposal of waste sharps after treatment with hypochlorite solution into the disposal pits within the compound of the SMCH. 12(100%) do not have facilities for the internal transportation of waste without spillage

Conclusion

Sweepers have inadequate knowledge in handling Bio medical waste with proper PPE usage and techniques. This indicates the necessities for educational program on the use of PPE among sweepers to prevent infections.

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Conflicts of interest

The authors declare no conflicts of interest.

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