

Awareness and Practices in Hospital Waste Management

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Abstract

Biomedical waste also known as infectious waste or medical waste or hospital waste. It is infectious waste and improper disposing of bio- medical waste is also the source of various health hazards. Very little or no awareness is there regards it and therefore it was observed that this hospital waste is not segregated as per the rules. an attempt therefore was made to study the awareness and practices in hospital waste management in 30 hospitals of Mumbai and the primary data collected is treated with suitable statistical techniques using SPSS.

KEYWORDS: Bio- medical waste, spss, Mumbai, awareness and practices

INTRODUCTION

According to bio medical waste rules 1998 of India, “ **bio-medical waste**” means any waste which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining there to or in the production or testing of bio medicals. Any unwanted residual material which cannot be discharged directly, or after suitable treatment can be discharged in the atmosphere or to a receiving water source, or used for landfill is waste. (*Wilson, 1981*). Sources of health care waste are Government /Private hospitals, Nursing homes Physician/dentist office or clinic Dispensaries

Primary health care centers, Medical research and training centers, Animal/slaughter houses, Labs/research organizations, Vaccinating centers, Bio tech institutions/production units

Improper management leads to variety of health problems. It acts as potential biological and chemical agents in spread of diseases. Biological Agents for diseases like Anthrax, Smallpox, Botulism, Plague, Tularemia, Hemorrhagic Fevers, Q Fever, Glanders, Cholera, E.Coli O157:H7. It acts as Chemical Agents for Nerve Agents, Vesicants or Blister Agents

Potential Hazards	Waste Materials
Psychological Stress	Human Anatomical waste
Infections and Diseases: HIV/AIDS, Hepatitis B & C, Hemorrhagic fever, Herpes, Measles, Shigellosis, Salmonellosis, Pneumonia, Septicemia, Bateriaemia, Cholera, Tuberculosis, Anthrax, Helminthic infections, Candidiasis and others	Soiled Waste, Microbial/ Biotech waste, Sharps
Infections: Rabies, Anthrax, and others	Animal waste
Injuries	Chemical, Cytotoxic, Radioactive, Incinerator wastes
Dermatitis, Conjunctivitis, Bronchitis	Cytotoxic, Radioactive drugs and materials, Chemical
Cancer, Genetic mutation	wastes Sharps, cytotoxic & Radioactive dmgs, Incinerator waste
Poisonings	Cytotoxic & other drugs, liquid & Chemical wastes

Health hazards of the waste

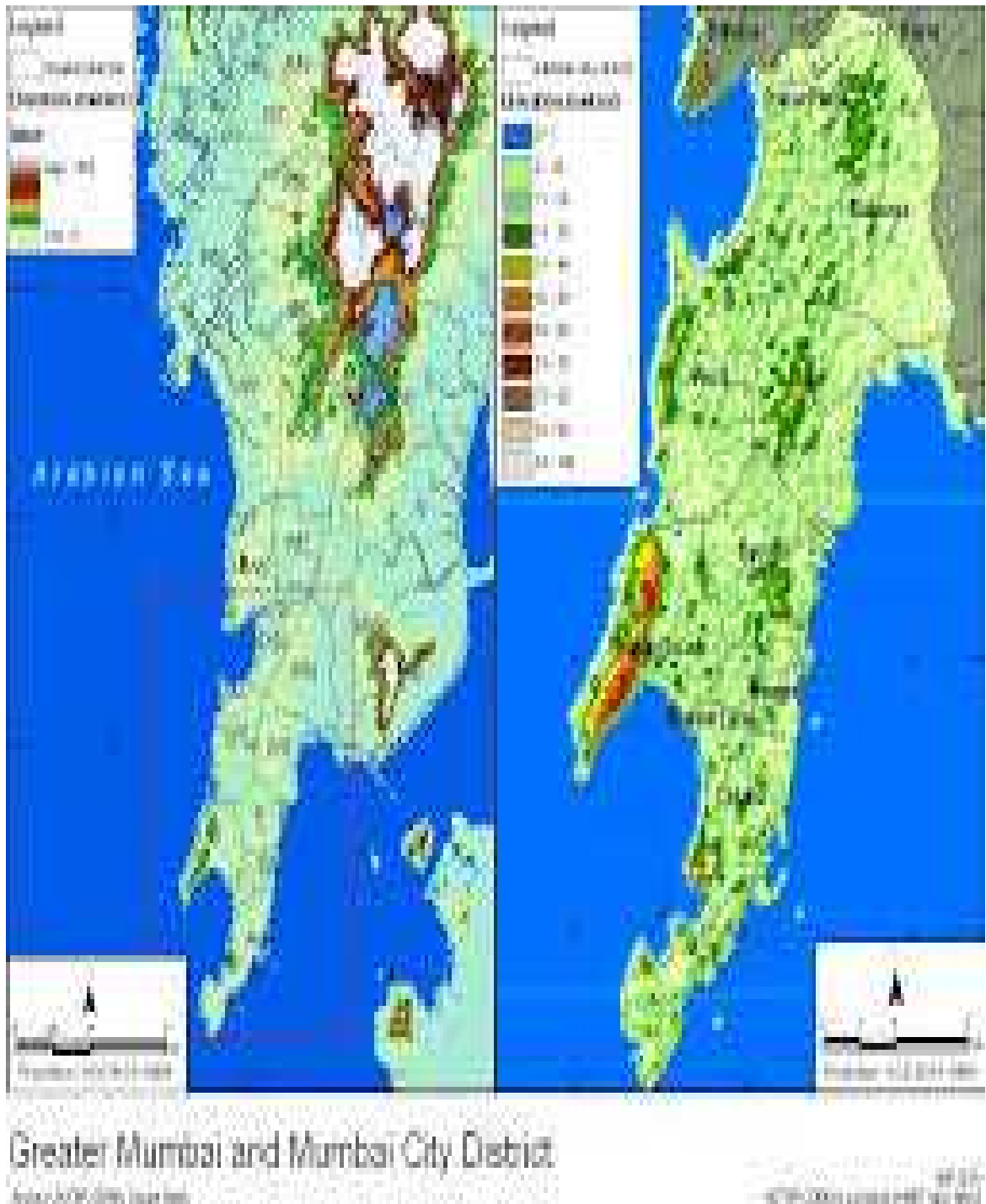
Source: Kishore, J.; Ingle, G.K., 2004

OBJECTIVES OF THE STUDY

- **To evaluate Bio-medical waste management in MUMBAI**

- To study the awareness and practices of handling bio-medical waste.
- To study the issues and problems involved in handling the bio-medical waste.

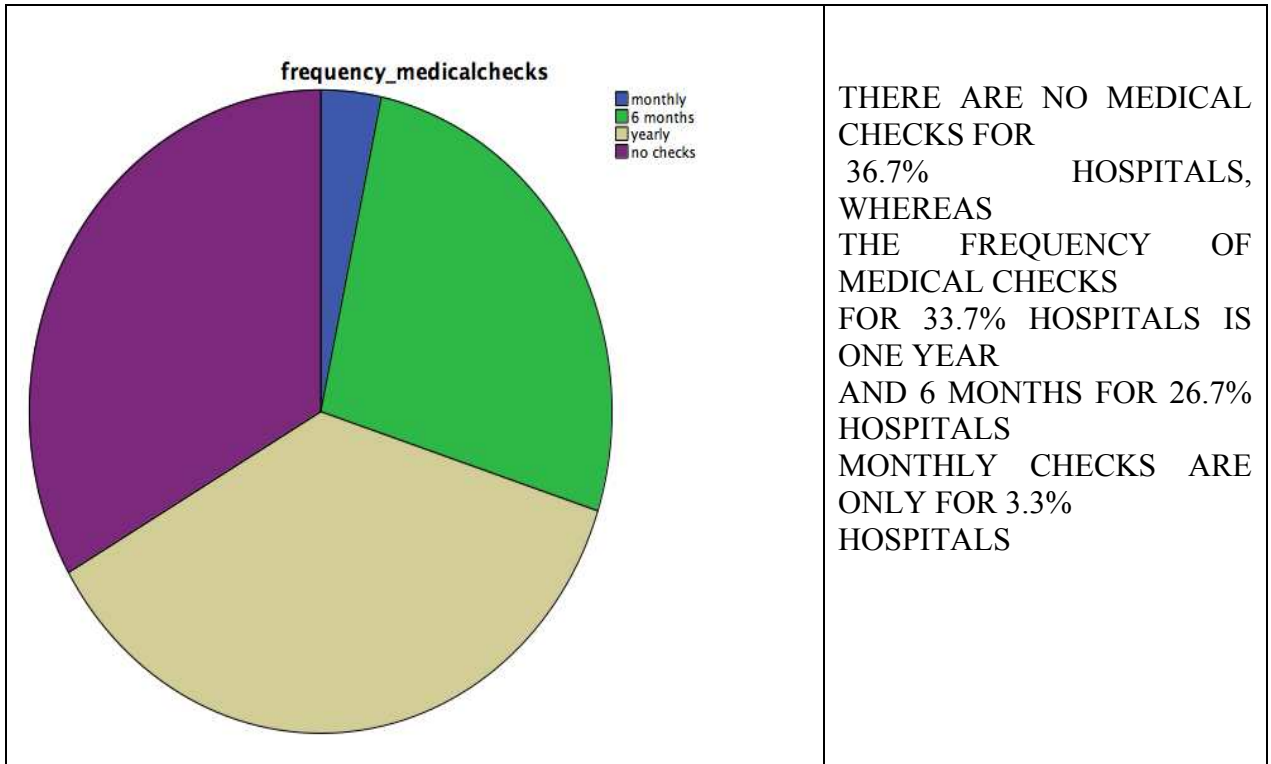
STUDY AREA- HOSPITALS IN MUMBAI



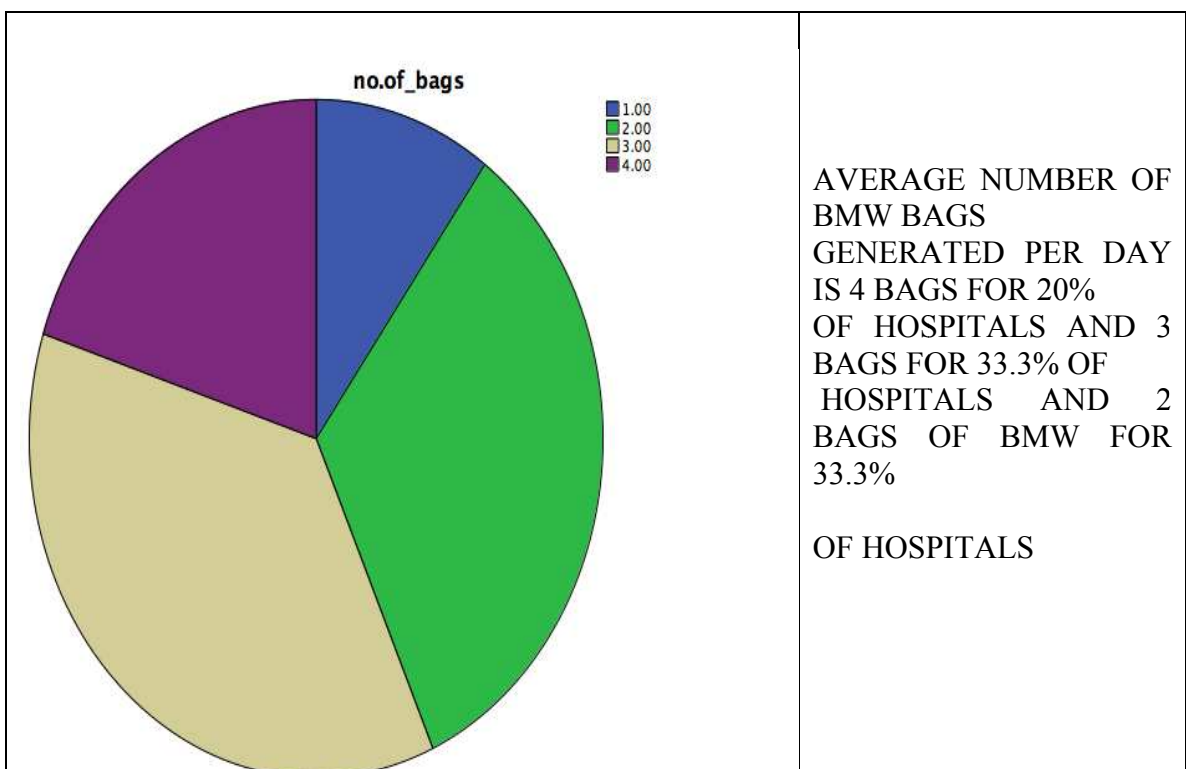
RESEARCH METHODOLOGY

- Study Design: Cross Sectional & Observational Study
- Both Primary And Secondary Data Is Used
- 30 Hospitals Were Surveyed With The Help Of Questionnaire Survey
- Results Are Treated With Suitable Statistical Techniques Using Sps

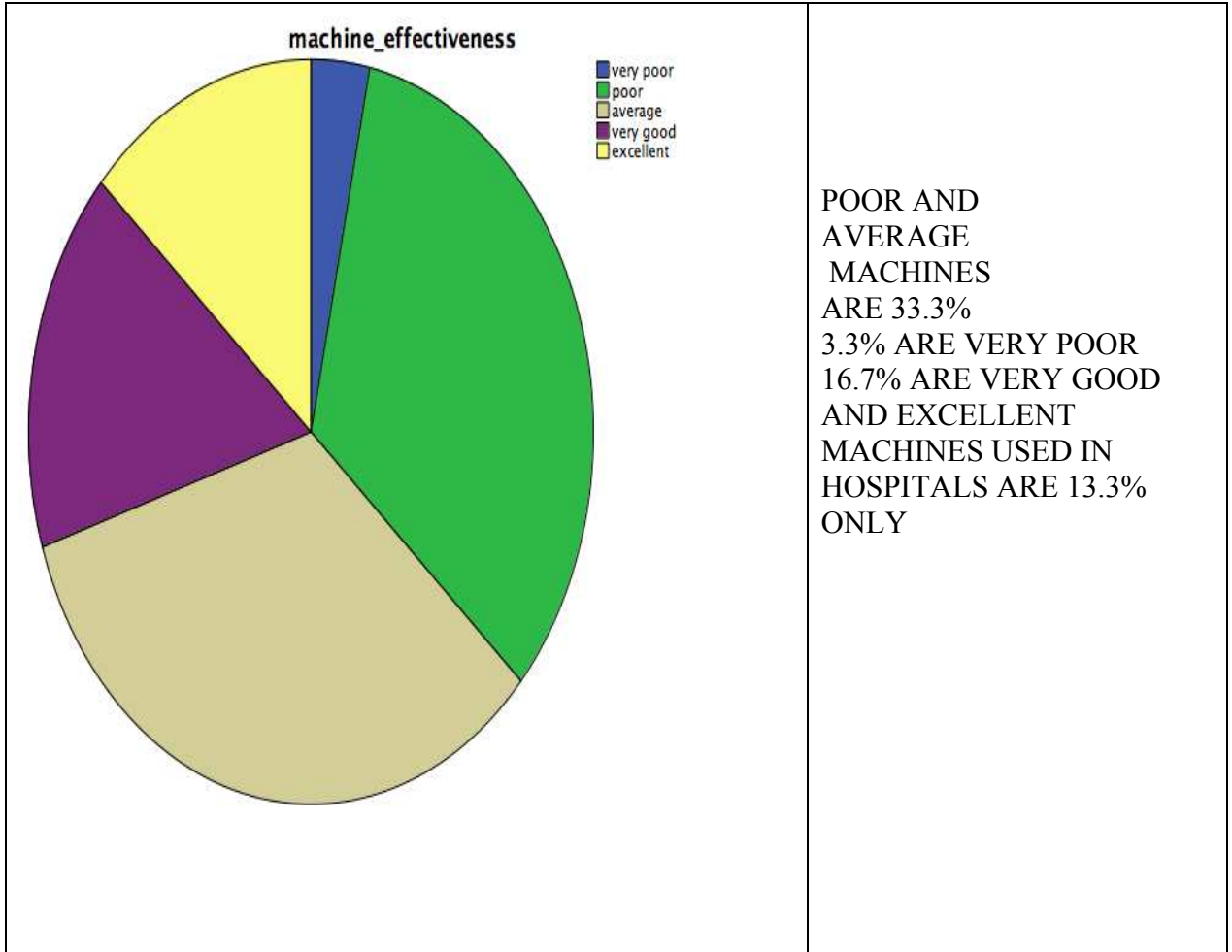
RESULTS OF SURVEY- MEDICAL CHECKS



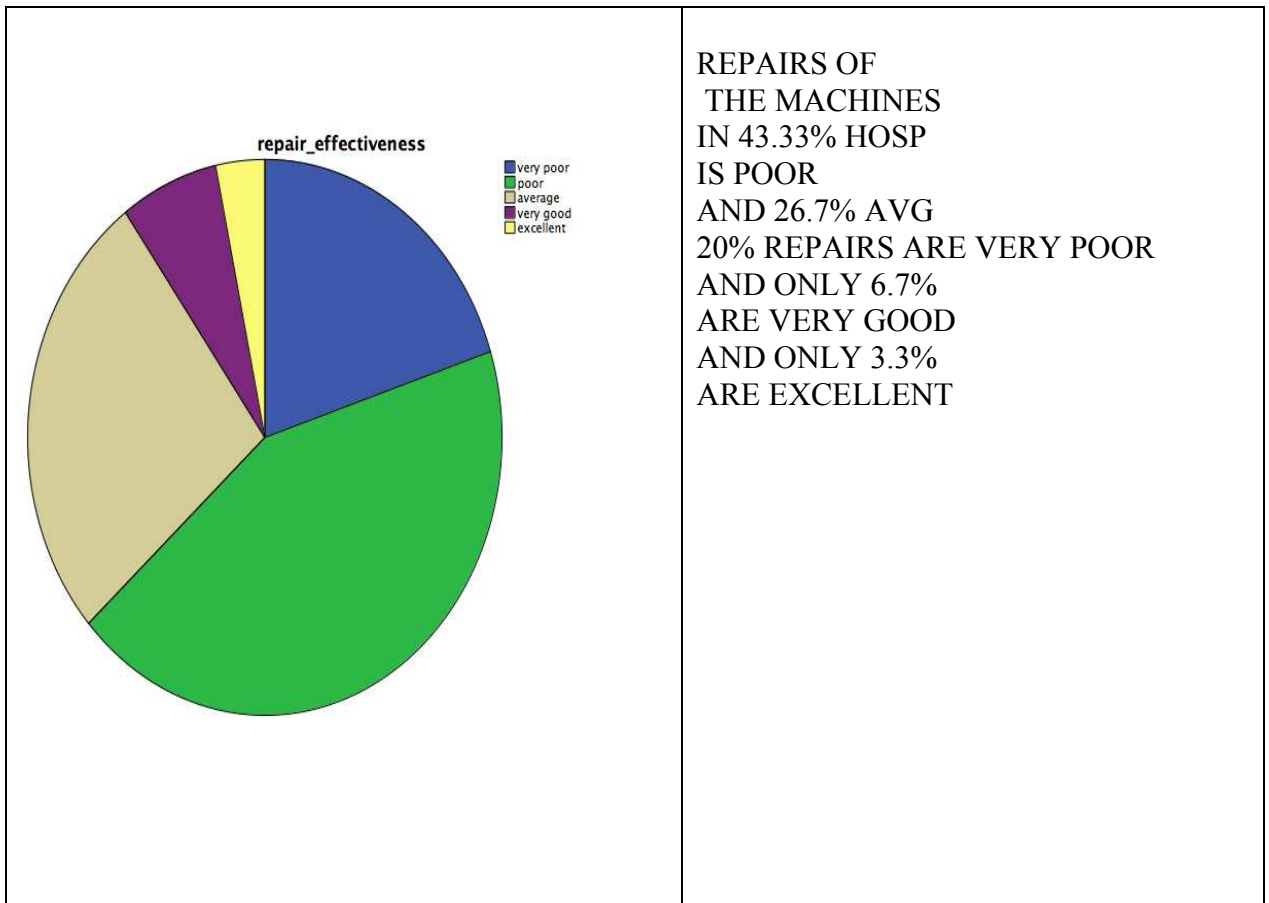
NUMBER OF BIO-MEDICALWASTE BAGS GENERATED PER DAY(BMW)



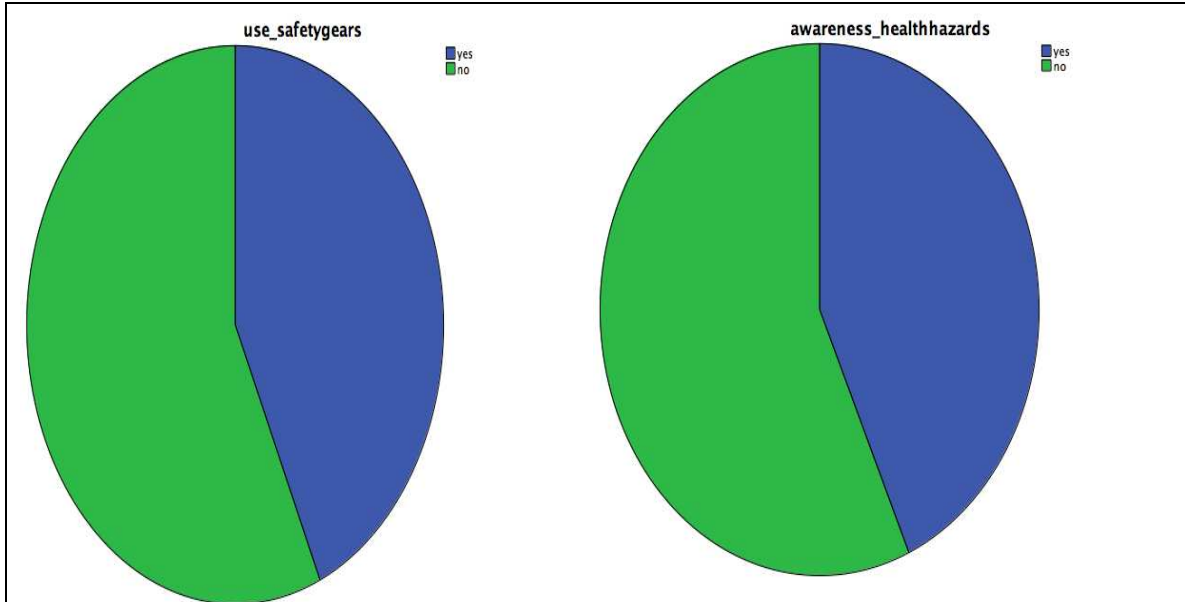
EFFECTIVENESS OF THE MACHINES USED IN HOSPITALS FOR BMW



EFFECTIVENESS OF THE REPAIRS CARRIED OUT FOR THE MACHINES FOR BMW

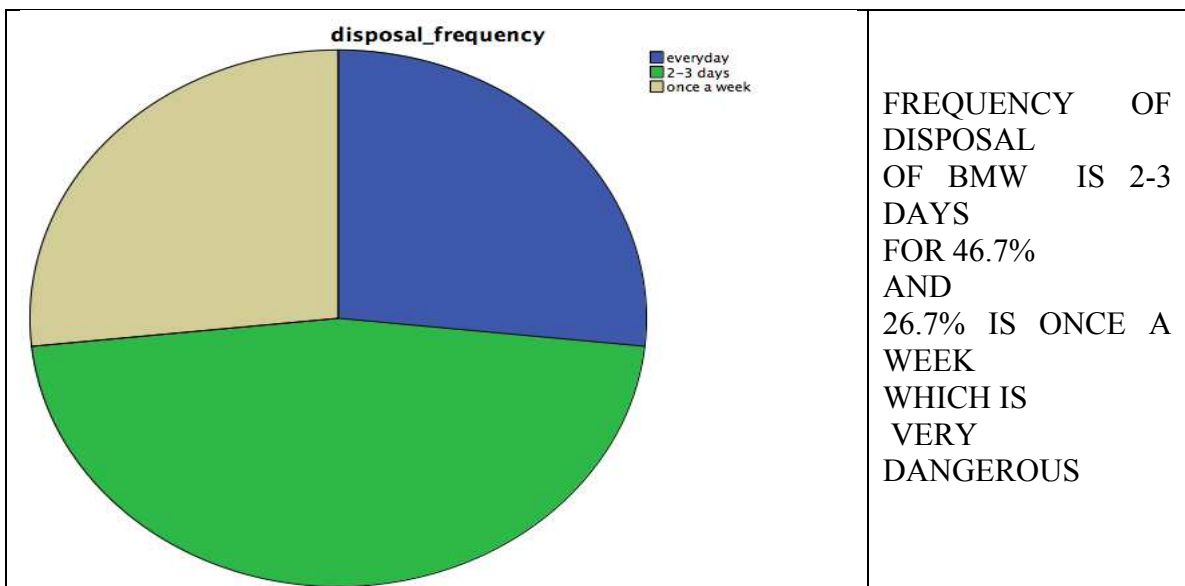


USE OF SAFETY GEARS AND AWARENESS OF HAZARDS



56.7% Do Not Use Gloves, Masks As They Are Not Aware Of Potential Hazards

FREQUENCY OF WASTE DISPOSAL



The data was treated using co-relation analysis

CO-RELATION ANALYSIS

- Effectiveness Of Machines And Complaints Are Negatively Co- Related
- Increase In Effectiveness Will Decrease The Complaints
- Frequency Of Medical Check Ups Is Positively Co Related With The Use Of Safety Gears And Use Of Disinfectants.
- Increase In The Medical Checks Is Therefore The Need Of The Hour

CORRELATION_ MACHINE EFFECTIVENESS & COMPLAINTS

CO-RELATIONS	machine effectiveness	complaints

machine_effectiveness	Pearson Correlation	1	-.093
	Sig. (2-tailed)		.626
	N	30	30
complaints	Pearson Correlation	-.093	1
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	N	30	30

CO-RELATIONS		machine_effectiveness	complaints
Kendall's tau_b machine_effectiveness	Correlation Coefficient	1.000	-.077
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FINDINGS/OBSERVATIONS-Collection

- 1. BMW is not segregated at the source properly
- 2. Hospitals tend to avoid giving wastes to the operator. As they are charged per bed/kilo
- 3. No common point of collection of waste.
- 4. Hospitals do not generally send the non-incinerable / autoclavable waste to the facility. This waste is directly sold for recycle without any treatment..
- 5. The category wise weight of BMW collected at every collection point is not recorded properly.
- 7. The operator does not collect their BMW on daily basis.

FINDINGS/OBSERVATIONS- Transportation

- 1. Inadequacy of the transport vehicles.
- 2. No proper compartments for different category of wastes.
- 3. No records of the waste collected from individual operators as per category and weight basis.
- 4. The transporters do not visit and collect the BMW from all hospitals, particularly the small ones.

FINDINGS/OBSERVATIONS- Treatment

1. There is no proper arrangement for ash disposal. These facilities cannot be considered as common facility.

2. The Records of incinerator operation, waste received and treated, temperature, hours of operations are not maintained.
3. Lack of technical support to address operational problems
4. Because of improper segregation, the incinerators tend to emit lot of fumes
5. Handling and storage of waste before treatment is inadequate.

CHALLENGES

- Establishing robust waste management policies within the Health Care Facility/organization
- Organization wide awareness about the health hazards
- Sufficient financial and Trained human resources needed
- Monitoring and control of waste disposal
- Accountability for appropriate handling and disposal of waste.

ADDRESSING THE ISSUES - RECOMMENDATIONS

- Need to build-up of a comprehensive system, address responsibilities, resource allocation, handling and disposal
- Monitoring the bio-medical waste management in the hospital..
- Quality assessment of bio-medical waste management should be done from time to time.
- Segregated collection and transportation
- Clear directives in the form of a posters and notice to be displayed in all concerned areas in English and local languages.
- Safety of handlers is a big concern that is still not addressed adequately.
- Raising Awareness about risks related to health-care waste; training staff & Waste handlers on safe practices.
- Selection of safer & environmentally friendly management options
- Issue of all protective clothing such as, gloves, aprons, masks etc. to all Waste handlers.
- Regular medical check-up (half-yearly) of staff associated with BMW Management.
- Maintenance of Record registers for this purpose.
- Containers should be robust and leak proof
- Tracking of Bio Medical Waste up to point of Disposal.
- Proper treatment and final disposal

DARK REALITY- Mumbai Mirror | Feb 8, 2015

The city's only biomedical waste treatment plant at Govandi, run by SMS Envocare, is functioning without an authorisation letter from the Maharashtra Pollution Control Board (MPCB) since January 2014, an RTI query has revealed. The MPCB authorisation letter lays down terms and conditions for operating a biomedical waste plant, and mentions the quantity of waste to be disposed at the facility. The RTI application was filed by Govandi resident Irfan Divate asking for details of permissions given by MPCB to run the plant. "The facility is one of the biggest contributors to air pollution in the area. It has an incinerator in which the waste is treated at high temperature. The chimney attached to this incinerator releases dark fumes throughout the day, visible from the Ghatkopar-Mankhurd Link Road. It is shocking to know that the plant doesn't have MPCB authorisation," said Divate. Biomedical waste is generated by clinical establishments in the city, including hospitals, blood banks and nursing homes. Mumbai generates 12 tons of biomedical waste every day. According to doctors, TB, Chronic Obstructive Pulmonary Disease (COPD) and Interstitial Lung Disease (ILD) are the three most prevalent ailments in the neighbourhood.

CONCLUSION

The study confirms the need to increase awareness regarding treatment of bio- medical waste and also there a dire need to increase the frequency of medical checks to ensure the bio-medical rules are practised as per the Maharashtra Rules for Disposing Bio- Medical Waste

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