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Hospital Waste Management in Quetta City Mohterma Shaheed Benazir Bhutto Government Hospital

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Abstract:

Bio-medical and non-biomedical waste are included in hospital waste and hospital waste needs proper management. This study were examine the management of hospital waste in government hospital (M.S.B.B) of Quetta city, Pakistan. Incinerator is the best technology for the final disposal of solid hospital waste. Incinerator condenses the volume of solid waste for final disposal. Only 25kg waste incinerated per day in Benazir hospital but all types of wastes were incinerate. Due to poor handling of hospital waste by the hospital staff and supervision

correspondingly. This leads to environmental and health concerns within hospitals as well as to outside people. This study expected that to designate the qualitative results of observations of government hospitals in the city of Quetta Pakistan and 9 departments were selected from Benazir hospital. Due to covid-19 the amount of hospital waste increased almost 6 times to the peak 247 tons per day. This study highlights the lack of hospital waste management in government hospital. All hospital staff needs training programs about waste management in Pakistan.

Keywords: Training programs, Hospital waste, Waste management, Waste incineration.

INTRODUCTION

Hospital waste is a kind of hazardous wastes which is generated by hospitals, clinics, nursing house and laboratories etc., hospital waste must be properly treated and disposed to avoid possible contamination and health infection. (Oweis R *et al.,* 2005). Hospital waste produce during the treatment of patients, animal house, research technology and other types of general wastes. Two types of waste were generated in hospital infectious waste and non-infectious waste. (Rutala W *et al*., 1992). Infectious waste also called risk waste, sharps waste, chemicals, geno-toxic waste, pharmaceutical, pathological, radioactive waste and body fluids. Non-infectious waste includes non-risk waste, general waste, garbage etc. (Amin R et al., 2013). Infectious waste contain different pathogens i.e. Bactria, fungi, virus, and parasites. Generation of infectious agents from tissues culture, laboratory work, dressing during surgeries and autopsies. Bacterial and viral diseases spread by the treatment of infected patients, animals or materials in interaction with blood and infected body fluids. Infectious waste is very dangerous for human health and environment. (Thareja P et al. 2015). Hospital wastes are classified into different categories and these waste were treated or disposed in different techniques i.e. incineration, deep burial, autoclaving, chemical treatment and landfill. Incineration or burial method were used for the treatment of anatomical waste, animal waste,

cytotoxic waste and solid wastes. Sharp wastes, incineration ash, liquid waste, sloid wastes such as tubing, catheters, intravenous sets, gowns etc. were treated by autoclaving, chemicals and landfill. (Sharma A et al., 1998).

Hospital should prepared their own transcribed policies and methods for the proper waste management. Hospital should provide specific requirements to the medical staff and training programs about the management of hospital waste. (Hayashi, Y *et al.,* 2000). Hospital wastes are hazardous waste and when these waste were mixed with general waste then 100% waste becomes hazardous waste. It needed that the hospital waste were collected, stored and disposed- off in an appropriate means and scientific methods. Hospital should segregated the hazardous waste from non-hazardous waste at the source of generation and kept cleaned different color of bins through chemicals. (Ghimire, H et al., 2018).

Benazir hospital is near by the gulistan town Quetta cant. The hospital waste were not segregated rather they were mixed with general waste and disposed-off openly. Benazir hospital used incineration to reduce the quantity of waste. Hazardous and non-hazardous waste were burnt together and incineration ash was thrown in open area. Plastic waste were burnt but sharp waste were present in this ash which is very risky for human health. Hospital was not following the rules and regulation of World Health Organization (WHO). Hospital was not using separate bins for different waste in hospital rather they were using common bins for all types of wastes.

The main objectives of this study was to evaluate the management of hospital waste techniques working by the teaching hospital in Quetta and to know the procedure of hospital waste about landfill and safe disposal off hospital waste. Hospital must be follow the rules of WHO and safe the environment from pollution.

MATERIALS AND METHODS

A cross-sectional study was conducted in government hospital (Benazir) of Quetta city. This study is based on the management of waste, segregation of waste, collection of waste, composition of waste and methods for handling of hospital waste. The techniques used for

acute investigation were observation, using observation specification and interview with medical superintendent, doctors, nurses and word boy about transportation of hospital waste, disposal and solid waste management. Questionnaire method were used to analysis the quality and quantity of hospital waste. Different departments of hospital generates different quantity of different waste. Benazir hospital reduce the quantity of waste by incineration.

RESULTS AND DISCUSSION

Government Benazir hospital were surveyed and their waste management techniques were evaluated. Different departments of Benazir hospital generates various amount of wastes on daily basis. Benazir hospital generate 52kg waste per day and 364kg waste per week as shown in figure 1.

Large and covered bins were used in the hospital. Lack of dustbins in emergency room and sharp waste or general waste spread on the floor as shown in figure 2.

Hospital waste should be collected and segregated carefully but in this hospital different types of wastes like blood bags, gloves, syringes, needles and drip set were thrown behind the hospital as shown in figure 3.

Hospital rooms, wards, washrooms, and coli door should be cleaned with chemicals and provide more water for patients in washroom. Patients should be given neat and clean environment while these washrooms were left uncleaned as shown in figure 4.

Hospital wastes were stored inside the hospital for long time which is very risky for doctors, nurses, patients and attendants, as shown in figure 5.

Sweepers must collect hospital waste and transfer it on a temporary storage area. Waste were not segregated and were thrown behind the hospital as shown in figure 6. Spreading of waste in open area produces different diseases.

According to World Health Organization (WHO) hospital waste must be segregated in different color of bins. General waste should not be mixed with hazardous waste while here all hazardous and non-hazardous waste were mixed together as shown in figure 7.

Anatomical waste were treated with different techniques i.e. Burial method. Some body parts were stored and sent to the laboratory for analysis of different disease as shown in figure 8.

Doctors and nurses must be attentive during operation and they should remember the instruments they are using. They should keep the instruments away from floor as shown in figure 9.

Incineration reduce the quantity of hospital waste but it is compulsory that the incineration ash should be buried away from the public area. Incineration method is used only for plastic waste while other sharps waste were treated by other method. In this hospital hazardous and non-hazardous waste were incineration together as shown in figure 10.

Hospital nurses used unclean water to wash the OT instruments as shown in figure 11 and indirectly this infected water mixed with the river. River water is used for the irrigation and crops take heavy metals from water which affect the food and create human health problems.

Incineration and landfill is the best option for the hospital waste management while hospitals burnt waste in open area as shown in figure 12. Smoke is release during burning process which creates pollution and damage to the ozone layer.

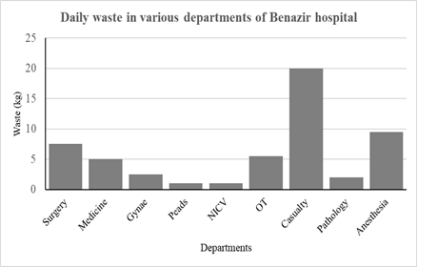

Figure 1. Hospital Waste of MSBBGH

Figure 2. Hospital Waste of MSBBGH

Figure 3. Hospital Waste of MSBBGH

Figure 4. Hospital Waste of MSBBGH

Figure 5. Hospital Waste of MSBBGH

Figure 6. Hospital Waste of MSBBGH

Figure 7 Hospital Waste National Hospital (Private)

Figure 8 Hospital Waste of MSBBGH

Figure 9 Hospital Waste of MSBBGH

Figure 10 Hospital Waste of MSBBGH

Figure 11. Hospital Waste of MSBBGH

Figure 12. Hospital Waste of MSBBGH

CONCLUSIONS

Benazir hospital is the government hospital due to high patient movement waste produce in the hospital also in larger extent. Hospital waste bad effects to patients, doctors, nurses, sweepers and the people near by the hospital. This poor waste management increase the disease problem in the Quetta city. Hospital waste management is not completed in a proper way where segregation of hazardous and non-hazardous waste was not done. Common and uncovered bins were used for the collection of waste. The medical staff is responsible for ensuring proper hospital waste management and waste disposal. Environment of the hospital were cleaned if the hospital waste management is done properly. Hospitals are generally appreciative to maintain a clean environment and dispose hospital waste in order to avoid pollution and infection within the hospital and near the hospital. Government should provide funds and training programs for the hospital staff. Supervisor, hospital staffs, hospital development committee and government is responsible for the hospital waste management.

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