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LEVEL OF AWARENESS ABOUT BIOMEDICAL WASTE MANAGEMENT IN MAYO HOSPITAL LAHORE

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Abstract:
Objective: *Perception and Awareness of Support staff towards Biomedical Waste Management*
Methods: *73 individuals at Mayo Hospital, Lahore, consisting of 50 dental assistants, eleven technician laboratories and 12 housekeepers, conducted a cross-sectional study [interview-based]. The study took place from March 2018 to February 2019 for a period of three months. The UCMD Legal Committee has approved ethical clearance. Data have been obtained with the aid of a simplified version of the questionnaire [15 close-ended questions], which has been translated to Urdu to be included in this analysis [1]. Participants were asked to complete the survey and to show all unanswered queries. Both participants received the percentage of right and incorrect answers to each question. Data were evaluated with the Chi Square check and the Z score using SPSS version 24.0.*
Results: *According to the survey findings, the average awareness of dental staff was 66 percent, the bad knowledge of technicians was 44.46% and the poor awareness of biomedical waste treatment was 42.7 percent. Of all 25.8 percent of participants, 62.7 percent showed average awareness and perception and 14.8 percent were well aware of the biomedical waste management situation. Such statistics indicate that staff have little to no understanding of biological waste management in terms of their interpretation and comprehension.*
Conclusion: *In the Hospital, Lahore, there is little awareness of biomedical waste management. In order to protect the environment and human health, it is vital that waste is secreted and disposed of in a safe way.*
Keywords: *Biomedical Waste Management, Dental Assistants, Mayo Hospital, Lahore.*

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INTRODUCTION:

Infectious waste consists of a lot of harmful micro-organisms which can enter into human body via inhalation, ingestion and direct skin contact. Biomedical waste is produced during the diagnosis and treatment and process of research and immunization which includes penetration inside body.[1] The Biomedical waste in Hospital setting can be divided into Hazardous and Nonhazardous waste, out of which 85% is Nonhazardous also known as General waste and rest of 15% is hazardous which can be further subdivided into chemical and infectious waste.[2] Biomedical waste includes different types of waste including sharp Waste, Infectious Waste, Pathological Waste, Pharmaceutical Waste, Chemical Waste and Radioactive Waste. According to biomedical waste management rules 1998, waste management is scheduled into 6 stages, Stage 1 includes categorization into 10 categorizes, Stage 2 involves color coding of waste container, Stage three involves labelling waste containers and stage four involves label for transport of waste containers. Fifth and sixth step involves disposal of treated biomedical waste.[3] Biomedical Waste is categorized in 10 different categories, 1 2 3 & 6 includes anatomical waste microbiological waste soiled waste and animal waste and is coded Yellow and kept in plastic bags and treated with incineration. Category 3 6 & 7 includes microbiological waste solid waste and soiled waste is coded red and kept in disinfectant container or plastic bag and treated with autoclaving, microwaving or chemical treatment. Category 4 & 7 consists of sharp wastes and solid wastes and is coded blue, white or transparent should be kept in puncture proof container treated with autoclaving, microwaving or destruction and shedding. Category 5 9 & 10 includes cytotoxic drugs incineration ash and chemical waste is coded black should be kept in plastic bag and should be disposed in secure landfills.[4] Contaminated syringes caused 21 million people suffered from hepatitis B virus [HBV] infections, 2 million suffered from hepatitis C virus [HCV] infections. Population of 260 000 suffered from HIV infections. Studies in Pakistan show that large hospital generates 2.0 kg of waste, per bed per day. Of this, 0.5 kg can be categorized as biomedical risk waste. Daily Medical Waste Generation [from both public & private sector hospitals]: Approximately 0.8 million tons by year 2025 Pakistan's Population of 160 million will rise to an estimated 250 million.[5] And with this raise the number of Hospitals both private and government sector will also increase biomedical waste and if the biomedical medical management remains up to the current standards we will surely have an alarming situation. Biomedical waste can be cause of transmitting different diseases through contaminated needles with human blood, needles and sharps can not only cause cut but also transmit harmful viruses. The World Health Organization [WHO] has stated that improper disposal of medical waste can cause the following diseases hepatitis, respiratory infection, meningitis, HIV, skin infections. Health care professional's makes necessary measures to prevent any cross infection to the patients in a clinical setting.[6]

As main source of infectious waste is hospital and laboratories, health care working there should have proper knowledge about its disposal to prevent spread of infectious disease and prevent contact of waste with community. Handling and transport of this waste is important task which needs special handling and care.[7] The supporting staff assistants and technicians are most at risk, as they handle the biomedical waste. So, the knowledge and perception of support staff is very important. For this purpose we conducted a study at UDH & ULTH of all the support staff which includes Dental Assistants, Lab technicians & Housekeeping staff, to find out Perception & Awareness of Support staff [UDH&ULTH] towards Biomedical Waste Management.

METHODOLOGY:

A Cross sectional study [interview based] was conducted among 73 individuals at University Dental Hospital & University of Lahore Teaching Hospital, comprising of 50 Dental Assistants, 11 Lab Technicians and 12 Housekeepers. Study was conducted for duration of 3 months from November 2019 to January 2020. Ethical approval by the Ethical Committee of UCMD was taken. Data was collected with the help of a modified version of questionnaire [15 close ended questions] which was translated into urdu to be used in this study.[8] Piloting for urdu version was done and questionnaire was found appropriate for use. Participants were requested to complete questionnaire and indicate any questions that they found to be unclear. The percentage of correct and incorrect answers for each question from all the participants was obtained. Data was analyzed using SPSS version 23.0, using Chi Square test and Z score.

RESULTS:

According to results of study 65% of Dental Assistants were having average awareness, 44.46% of Technicians had Poor awareness and 42.7% of Housekeeping staff were having Poor Awareness about the biomedical waste management. Among all 25.8% participants showed poor level of awareness &

perception, 62.7% showed average level of awareness & perception and 14.8% showed Excellent level of awareness & perception in biomedical waste management. This data indicates that the perception and awareness of the concerned staff have little or no knowledge about biomedical waste management.

Table 1 Awareness about Biomedical waste management

Variables	percentage
Dental assistance	65%
Technicians	46.6%
House keeping	42.7%

Table 2 Level of Awareness

variable	percentage
poor	25.8%
Average	62.7%
Excellent	14.8%

DISCUSSION:

"Knowledge, Attitude and Practice of Biomedical Waste Management in Nursing Staff of a Private and a Government Tertiary Care Teaching Hospital: A Comparative Study" conducted by Nishitha, Alice and Nish et. All showed that out of 160 participants from private hospital 82%had training in BMW management, 78% knew where to report in case of needle stick injury, 68% perceived that they have adequate knowledge regarding BMW management, 96% were willing to attend programs regarding BMW management. 75% had good knowledge. 86% practice good management of BMW. Study concluded that overall percentage of biomedical waste awareness was percent, which is accordance of our study result which showed that Among all 25.8% participants showed poor level of awareness & perception, 61.6% showed average level of awareness & perception and 14.8% showed Excellent level of awareness & perception in biomedical waste management. This data indicates that the perception and awareness of the concerned staff have little or no knowledge about biomedical waste management [9].

Assessing knowledge, attitude, and practice of healthcare personnel regarding biomedical waste management: a systematic review of available tools conducted by Assessing knowledge, attitude, and practice of healthcare personnel regarding biomedical waste management: a systematic review of available tools Show all authors Mannocci, Ornella, Domineco et. al conducted in 2020 showed that data from previous studies indicate that there are already 15 available questioners in Asia which can be used to conduct bio medical waste awareness checking. However still there is a need for development of new tool or questionnaire which can be used as standard questionnaire [10].

"Biomedical Waste Management in Kandahar City" conducted by Khadem Saeedi and Abdul Wahid Monib et al in year 2020 showed that 65.3% newly hired biomedical waste staff did not received training or instruction. Furthermore, the result indicates that 44% generated biomedical wastes were regulated by municipality and color coding was not followed accordingly. Biomedical waste in kandhar was not appropriate based on designed international standards and the criteria suggested by world health organization. Study showed that newly hired people had less knowledge about biomedical waste management and people who were not trained in biomedical waste training did not understood its importance and had lesser knowledge about it. This is similar to reults of our staudyy which states as 64% of Dental Assistants were having average awareness, 45.45% of Technicians had Poor awareness and 41.6% of Housekeeping staff were having Poor Awareness about the biomedical waste management.[9]

"Knowledge, attitude, and practices of Bio-medical Waste Management rules, 2016; Bio-medical Waste Management [amendment] rules, 2018; and Solid Waste Rules, 2016, among health-care workers in a tertiary care setup" conducted by anuupama, kumar and malini et al. states that 68% of the participants had prper knowledge about disposal of waste and its segregation, 82% of the health care workers knew of the different color-coded bins used for segregation. However, 49% had proper knowledge about hazards of waste. Laboratory waste handling was found to be the least understood area of the newer guidelines. Study showed that health care workers should d be trained about bio medical waste, its segregation and colour differentiation and proper disposal for infection control and preventing spread of disease.[10]

CONCLUSION:

There is minimal level of awareness about biomedical waste management in University Dental hospital, University of Lahore Teaching Hospital. It is imperative that waste should be segregated and disposed of in a safe manner to protect the environment as well as the human health.

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REFERENCES:

1. Patil PM, Bohara RA. Nanoparticles impact in biomedical waste management. Waste Management & Research. 2020:0734242X20936761.
2. Chand S, Shastry C, Hiremath S, Joel JJ, Krishnabhat C, Mateti UV. Water, sanitation, hygiene and biomedical waste disposal in the healthcare system: A review. Biomedicine. 2020;40[1]:14-9.
3. <Dr._Palanisamy_Pasupathi-Biomedical_waste_management_for_health_care_industry-_A_review.pdf>.
4. Woromogo SH, Djeukang GG, Yagata Moussa FE, Saba Antaon JS, Kort KN, Tebeu PM. Assessing Knowledge, Attitudes, and Practices of Healthcare Workers regarding Biomedical Waste Management at Biyem-Assi District Hospital, Yaounde: A Cross-Sectional Analytical Study. Advances in Public Health. 2020;2020.
5. Sogi G, Sudan J. Biomedical waste–Health beyond healthcare. Contemporary Clinical Dentistry. 2019;10[2]:183-4.
6. Khan M. Biomedical Waste Management in Hospitals. International Journal of Biomedical Engineering. 2019;4[1]:1-6.
7. Sharma A, Sharma V, Sharma S, Singh P. Awareness of biomedical waste management among health care personnel in Jaipur, India. Oral Health Dent Manag. 2013;12[1]:32-40.
8. Saeedi KH, Monib AW. Biomedical Waste Management in Kandahar City. American International Journal of Biology and Life Sciences. 2019;1[2]:40-8.
9. Parida A, Capoor MR, Bhowmik KT. Knowledge, attitude, and practices of Bio-medical Waste Management rules, 2016; Bio-medical Waste Management [amendment] rules, 2018; and Solid Waste Rules, 2016, among health-care workers in a tertiary care setup. Journal of laboratory physicians. 2019;11[4]:292.