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Assessment of Waste Management System and Sterilization Procedure of the Equipment in the Dental Section of Khwaja Yunus Ali Medical College and Hospital, Sirajganj

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Abstract

Background: Healthcare waste generated in healthcare facilities poses significant risks to public health, healthcare workers, patients, and the environment if not managed properly. Effective waste management and adherence to infection prevention measures are particularly important in dental settings due to frequent exposure to infectious materials and sharp instruments.

Objective: To assess the waste management system and infection control practices, including sterilization-related procedures, in the Dental Section of Khwaja Yunus Ali Medical College and Hospital, Sirajganj, Bangladesh.

Methods: A cross-sectional study was conducted among 125 healthcare personnel working in the Dental Section of Khwaja Yunus Ali Medical College and Hospital. Participants were selected using convenience sampling. Data were collected through a semi-structured questionnaire covering sociodemographic characteristics, waste management practices, occupational safety measures, and infection prevention activities. Data were analyzed using descriptive statistics and presented as frequencies and percentages.

Result: Among the respondents, 76.0% reported practicing waste segregation and 79.2% followed color-coded waste disposal methods. Most participants (92.8%) reported mutilating or shredding used syringes before disposal. Waste management records were maintained by 67.2% of respondents, while 68.0% reported using personal protective equipment during waste handling. Hand washing after waste handling was practiced by 96.0% of respondents. More than half (56.0%) reported a history of needle-stick injury, whereas only 41.6% received adequate treatment following exposure. Tetanus and hepatitis B vaccination coverage were 94.4% and 76.8%, respectively. Only 52.0% of respondents had received formal training on hospital waste management.

Conclusion: Although waste management practices were generally satisfactory, important deficiencies were identified in waste disposal, occupational safety, and staff training. Continuous training and strict compliance with standard guidelines are needed to improve healthcare waste management practices.

Keywords: Dental waste; Occupational safety; Disinfection; HCWM

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Introduction

Biomedical waste refers to all waste generated during the diagnosis, treatment, immunization, or research activities involving human beings and animals [1]. Healthcare facilities produce a wide range of waste materials, including both non-hazardous and hazardous waste [2]. Dental healthcare settings contribute significantly to biomedical waste generation using needles, dressings, extracted teeth, disposable materials, disinfectants, chemicals, and dental amalgam [3]. In addition, reusable dental instruments require proper cleaning, disinfection, and sterilization to prevent the transmission of infectious diseases [4]. According to the World Health Organization (WHO), healthcare waste is broadly classified as general waste and hazardous waste [5]. While general waste resembles household waste, hazardous waste includes infectious waste, pathological waste, sharps, pharmaceutical waste, chemical waste, heavy metals, pressurized containers, and radioactive materials [6,7]. Improper handling and disposal of these wastes pose significant risks to healthcare workers, patients, waste handlers, and the surrounding environment [8]. Medical waste management remains a major public health concern worldwide. Studies have shown that a substantial proportion of healthcare facilities in developing countries fail to implement appropriate waste management practices [9]. Inadequate segregation of waste at the source often results in hazardous waste being mixed with general waste, increasing the risk of infection, injury, and environmental contamination. Occupational exposure to improperly managed healthcare waste may lead to the transmission of serious infections such as hepatitis B, hepatitis C, and human immunodeficiency virus (HIV) [10]. In Bangladesh, rapid urbanization, increasing healthcare demands, and limited waste management infrastructure have intensified the challenges associated with biomedical waste disposal [11]. Previous studies have reported deficiencies in waste management policies, inadequate supervision, insufficient resources, and poor compliance with standard guidelines in many healthcare institutions. These shortcomings contribute to unsafe waste handling practices and increase the risk of healthcare-associated infections and environmental pollution [12].

Infection prevention and control (IPC) is a fundamental component of quality healthcare services. Effective waste segregation, safe disposal methods, and proper sterilization procedures are essential elements of IPC programs. Among healthcare disciplines, dentistry requires particular attention because dental procedures frequently involve direct contact with blood, saliva, and oral tissues. Consequently, contaminated instruments can serve as potential sources of cross-infection if sterilization procedures are not properly followed [13]. Sterilization of dental instruments is crucial for eliminating microorganisms and ensuring patient safety. International organizations such as the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC) have established guidelines for instrument processing, sterilization, and infection control in dental settings [14]. However, adherence to these guidelines may vary among healthcare facilities, especially in resource-limited environments. Assessing existing waste management systems and sterilization practices is essential to identify strengths, deficiencies, and areas requiring improvement [15]. Such assessments can contribute to the development of safer working environments, better infection control measures, and improved quality of patient care. The aim of this study was to assess the waste management system and sterilization procedures in the Dental Section of Khwaja Yunus Ali Medical College and Hospital, Sirajganj, and to identify areas for improvement in infection prevention and control practices.

Methodology

This study was taken at Khwaja Yunus Ali Medical College and Hospital in Sirajganj district, which is in the northern part of Bangladesh. Research was conducted over a one-year period, starting from June 2024 to May 2025. The research population consisted of 125 purposively selected respondents. The research employed the descriptive cross-sectional method. A survey technique was applied for collecting data from hospital employees, which included doctors, nurses, medical technicians, ward boys, cleaners, and ayas. Data collection was achieved through face-to-face formal interviews following the structured method. There were several variables in the study. The socio-demographic variable involved age, sex, religion, occupation, length of service, and waste segregation practices within the hospital. Hospital waste management systems were based on waste segregation, methods of storage, disposal following color code guidelines, shredding or mutilating used plastic syringes, waste collection from departments, means of transportation of the waste, mixing the waste with the rest of garbage, and availability of designated storage areas. Records on hospital waste management systems referred to the presence of injury reports in connection with hospital waste management system implementation. The disposition of hospital waste system was determined based on how blood-stained material (cotton and gauze), papers, and kitchen wastes, sharp and hazardous liquid waste were disposed of. Sterilization practices involved wearing PPEs during waste handling and hand washing. The presence of injuries, needlestick injuries, and adequacy of treatment for injuries were evaluated. In addition, the vaccination status of the respondents was noted especially regarding immunizations against tetanus and hepatitis. Finally, the presence of training in the hospital waste management process was assessed. Prior to statistical

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analysis, collected data underwent scrutiny to eliminate inconsistencies, omissions, and errors before proceeding with coding and classification of the data. The Statistical Package for Social Science (SPSS) software version 22.0, running on windows operating system, was utilized to analyze data collected. Findings from this study were presented using tables, figures, and descriptive analyses. Socio-demographic information of the subjects was given along with analysis of the relationship between dependent and independent variables.

Results

Atotal of 125 healthcarepersonnel participated in this study. The sociodemographic characteristics of the respondents are presented in Table 1. Most of the respondents were aged 25–29 years (39.2%), followed by 30–34 years (28.8%), while 20.0% were aged 35 years or above and 12.0% were aged 21–24 years. Female respondents constituted 64.0% (n=80) of the study population, whereas males accounted for 36.0% (n=45). Most participants were Muslim (91.2%), followed by Hindu (8.0%) and Christian (0.8%). Regarding occupation, more than half of the respondents were doctors (53.6%), while nurses, medical technicians, and other support staff constituted 30.4%, 12.8%, and 3.2%, respectively. In terms of work experience, 68.0% of the respondents had worked for less than five years, whereas 32.0% had five years or more of service experience.

Table 1: Sociodemographic Characteristics of the Respondents (n=125).

Variable	Category	Frequency (%)
Age (years)	21–24	15 (12.0)
	25–29	49 (39.2)
	30–34	36 (28.8)
	≥35	25 (20.0)
Sex	Male	45 (36.0)
	Female	80 (64.0)
Religion	Muslim	114 (91.2)
	Hindu	10 (8.0)
	Christian	1 (0.8)
Occupation	Doctor	67 (53.6)
	Nurse	38 (30.4)
	Medical Technician	16 (12.8)
	Others	4 (3.2)
Duration of Service	<5 years	85 (68.0)
	≥5 years	40 (32.0)

Table 2 presents the waste segregation, collection, and transportation practices among the respondents. A total of 76.0% (n=95) reported practicing hospital waste segregation, while 24.0% were unaware of the practice. Most respondents (75.2%) reported storing waste in plastic dustbins with lids, whereas 23.2% used plastic dustbins without lids and only 1.6% used color-coded containers. Regarding waste disposal according to color-coding guidelines, 79.2% reported following the color-coded system, while 19.2% did not and 1.6% were unaware of the procedure. Proper mutilation or shredding of used syringes before disposal was reported by 92.8% of respondents. The majority (94.4%) indicated that hospital waste was collected once daily, while 5.6% reported collection twice daily. For waste transportation, 83.2% used wheeled carts or trolleys, whereas 16.8% used covered bins.

Table 2: Waste Segregation, Collection and Transportation Practices (n=125).

Variable	Category	Frequency (%)
Waste segregation practiced	Yes	95 (76.0)
	Don't know	30 (24.0)
Waste storage container	Plastic dustbin with lid	94 (75.2)
	Plastic dustbin without lid	29 (23.2)
	Color-coded container	2 (1.6)
Waste disposal according to color code	Yes	99 (79.2)
	No	24 (19.2)
	Don't know	2 (1.6)
Syringes mutilated/ shredded before disposal	Yes	116 (92.8)
	No	9 (7.2)
Frequency of waste collection	Once daily	118 (94.4)
	Twice daily	7 (5.6)
Waste transportation	Trolley/Wheeled cart	104 (83.2)
	Covered bin	21 (16.8)

The waste disposal practices of the respondents are summarized in Table 3. A notable finding was that 80.0% (n=100) of respondents reported that different categories of waste were mixed with general garbage, while only 20.0% reported proper segregation. For disposal of blood-contaminated cotton, gauze, and related materials, 79.2% used red plastic bags and 20.8% used yellow plastic bags. Regarding paper and kitchen waste disposal, 48.8% used yellow plastic bags, 45.6% used red plastic bags, and 5.6% used blue plastic bags. Disposal of sharp waste was most performed using red bins (53.6%), followed by yellow bins (40.0%), while 6.4% used other disposal methods. Concerning hazardous liquid waste, nearly half of the respondents (48.8%) reported disposal with general garbage, 19.2% disposed of it through drains, 1.6% used chemical treatment before discharge, and 30.4% were unaware of the appropriate disposal method.

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Table 3: Waste Disposal Practices in the Hospital (n=125).

Variable	Category	Frequency (%)
All waste mixed into general garbage	Yes	100 (80.0)
	No	25 (20.0)
Disposal of blood-contaminated cotton/gauze	Red plastic bag	99 (79.2)
	Yellow plastic bag	26 (20.8)
Disposal of papers and kitchen waste	Yellow plastic bag	61 (48.8)
	Red plastic bag	57 (45.6)
	Blue plastic bag	7 (5.6)
Disposal of sharp waste	Red bin	67 (53.6)
	Yellow bin	50 (40.0)
	Others	8 (6.4)
++++++++++++++++Disposal of hazardous liquid waste	General garbage	61 (48.8)
	Drain	24 (19.2)
	Chemical treatment & drain	2 (1.6)
	Don't know	38 (30.4)

Table 4 describes occupational safety, record-keeping, and infection prevention practices among the respondents. Waste management records were maintained by 67.2% of respondents, while 32.8% reported no record maintenance. Injury records related to healthcare waste management were available according to 64.0% of respondents, whereas 32.8% reported their absence and 3.2% were uncertain. The use of personal protective equipment (PPE) during waste handling was reported by 68.0% of respondents. Hand washing after handling hospital waste was practiced by 96.0%, indicating a high level of compliance with basic infection prevention measures. More than half of the respondents (56.0%) reported a history of needle-stick injury, while 44.0% had never experienced such injuries. Among all respondents, only 41.6% reported receiving adequate treatment following a needle-stick injury, whereas 58.4% did not receive appropriate post-exposure management. Regarding immunization status and training, 94.4% of respondents had received tetanus vaccination and 76.8% had been vaccinated against hepatitis B. In addition, 52.0% reported receiving training on hospital waste management, while 48.0% had never received such training. These findings indicate good vaccination coverage among healthcare personnel; however, training on hospital waste management and post-exposure care remains inadequate for a considerable proportion of respondents.

Discussion

Most respondents reported practicing waste segregation (76.0%) and disposal according to color-coded guidelines

Table 4: Occupational Safety, Record Keeping and Infection Control Practices (n=125).

Variable	Category	Frequency (%)
Waste management records maintained	Yes	84 (67.2)
	No	41 (32.8)
Injury records available	Yes	80 (64.0)
	No	41 (32.8)
	Don't know	4 (3.2)
Use of PPE during waste handling	Yes	85 (68.0)
	No	40 (32.0)
Hand washing after waste handling	Yes	120 (96.0)
	No	4 (3.2)
	Don't know	1 (0.8)
History of needle-stick injury	Yes	70 (56.0)
	No	55 (44.0)
Adequate treatment after needle-stick injury	Received	52 (41.6)
	Not received	73 (58.4)
Vaccinated against tetanus	Yes	118 (94.4)
	No	7 (5.6)
Vaccinated against hepatitis B	Yes	96 (76.8)
	No	29 (23.2)
Training on hospital waste management	Received	65 (52.0)
	Not received	60 (48.0)

(79.2%). In addition, most respondents indicated that used syringes were mutilated or shredded before disposal (92.8%), suggesting a relatively good level of compliance with recommended biomedical waste management practices. Proper segregation and safe disposal of sharps are essential for preventing accidental injuries and reducing the risk of disease transmission among healthcare workers and waste handlers [16]. Appropriate waste storage and collection practices were also observed in the study. Most respondents reported using plastic dustbins with lids (75.2%), while hospital waste was generally collected once daily (94.4%). Furthermore, waste transportation was mainly carried out using wheeled carts or trolleys (83.2%). These findings indicate the presence of an organized waste handling system within the institution. Proper storage, collection, and transportation of healthcare waste are important components of infection prevention and environmental safety [17]. Despite these positive findings, several gaps in waste management practices were identified. A notable proportion of respondents (80.0%) reported that different categories of waste were mixed with general garbage. This finding is concerning because improper

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segregation increases the risk of environmental contamination and exposure to infectious materials. Similarly, only a small proportion of respondents reported the use of color-coded containers for waste storage, suggesting that although staff may be aware of color-coding principles, practical implementation may not always be adequate [18,19]. The study also revealed variations in waste disposal practices. Most respondents disposed of blood-contaminated materials in red plastic bags; however, practices regarding paper, kitchen waste, sharp waste, and hazardous liquid waste were inconsistent [19]. Nearly half of the respondents reported disposing of hazardous liquid waste with general garbage, while a substantial proportion were unaware of the appropriate disposal method. These findings suggest deficiencies in knowledge and implementation of standard biomedical waste disposal procedures [20]. Occupational safety and infection prevention measures showed mixed results. The majority of respondents reported using personal protective equipment during waste handling (68.0%) and practicing hand washing after waste handling (96.0%). The high rate of hand hygiene reflects a positive awareness of infection prevention measures. However, the PPE utilization rate indicates that a considerable proportion of healthcare personnel remain unprotected during waste handling activities, increasing their risk of occupational exposure [21].

Needle-stick injury remains an important concern in the study setting. More than half of the respondents (56.0%) reported experiencing a needle-stick injury during their professional activities. Moreover, only 41.6% reported receiving adequate treatment following such incidents. These findings indicate weaknesses in occupational health and post-exposure management systems and emphasize the need for stronger reporting mechanisms, immediate medical evaluation, and appropriate post-exposure prophylaxis protocols [22]. Record-keeping practices were moderately satisfactory. Approximately two-thirds of respondents reported maintaining waste management records (67.2%) and injury-related records (64.0%). Although these findings indicate some level of institutional monitoring, the absence of complete documentation may limit effective supervision, evaluation, and quality improvement efforts. The study further demonstrated encouraging vaccination coverage among healthcare personnel. Most respondents had received tetanus vaccination (94.4%), while more than three-quarters had been vaccinated against hepatitis B (76.8%). Vaccination plays a critical role in protecting healthcare workers from occupationally acquired infections and contributes to a safer healthcare environment [23]. Training is a key factor influencing effective healthcare waste management. In the present study, only 52.0% of respondents reported receiving formal training on hospital waste management. The relatively low training coverage may explain some of the inconsistencies observed in waste segregation, disposal practices, and occupational safety measures. Regular training programs, refresher courses, and continuous supervision are therefore necessary to improve compliance with standard waste management guidelines.

Conclusion

Generally, the hospital demonstrated acceptable behaviour concerning the segregation, collection, and transport of its waste. Nevertheless, one should raise concerns about the security of temporary storage places and containers, which are poorly protected from being accessed by anyone unauthorized. For the proper conduct of hospital waste management practices, it is crucial to provide hospitals with enough of all needed equipment and supplies in all departments. Moreover, hospitals should post safety posters and instructions, policy statements, and other guidelines that would promote the implementation of HWM guidelines. Finally, it is important to develop an appropriate plan and allocate funds for the establishment of waste management facilities. With these measures, it is possible to promote the creation of effective HWM systems in hospitals by providing them with the right number of employees, materials, and equipment.

Limitations of the Study

This study had several limitations. First, it was conducted in a single hospital, which may limit the generalizability of the findings to other healthcare settings in Bangladesh. Second, participants were selected using convenience sampling, introducing the possibility of selection bias. Third, no formal statistical method was used to calculate the sample size, which may have affected the representativeness of the study population. Finally, the relatively short study period may have limited the scope and depth of data collection.

Recommendations

Based on the analysis of 125 randomly selected samples, the current study revealed some aspects related to hospital waste management practices and the behaviour of workers. It also allowed considering different categories of healthcare workers, including doctors, nurses, and other supporting staff members. Still, there are certain issues and problems that should be taken into account. The cross-sectional design limits the possibilities to establish any causal relationship. Convenience sampling may produce selection bias that influences the generalization process. The data is collected through self-reports; thus, it may produce response and recall biases among respondents. The research is limited to a single hospital of a particular region. The determination of the required sample size is performed only once, and no consideration of variability is provided.

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References

1. Alam MZ, Islam MS, Islam MR. Medical waste management: a case study on Rajshahi city corporation in Bangladesh. Journal of Environmental Science and Natural Resources 6 (2013): 173-178.
2. Attrah M, Elmanadely A, Akter D, et al. A review on medical waste management: treatment, recycling, and disposal options. Environments 9 (2022): 146.
3. Akter N, Tränkler J. An analysis of possible scenarios of medical waste management in Bangladesh. Management of Environmental Quality: An International Journal 14 (2003): 242-55.
4. Thakur V, Ramesh A. Healthcare waste management research: A structured analysis and review (2005–2014). Waste Management & Research 33 (2015): 855-870.
5. Kousar H, Puttaiah ET. Enumeration of health care waste management at public and private hospital sector of Mysore, Karnataka, India. International Journal of Applied Science and Engineering Research 2 (2013): 416-419.
6. Alves SB, e Souza AC, Tipple AF, et al. The reality of waste management in primary health care units in Brazil. Waste Management & Research 32 (2014): 40-47.
7. Patil GV, Pokhrel K. Biomedical solid waste management in an Indian hospital: a case study. Waste management 25 (2005): 592-599.
8. Ghasemi MK, Yusuff RB. Advantages and Disadvantages of Healthcare Waste Treatment and Disposal Alternatives: Malaysian Scenario. Polish Journal of Environmental Studies 25 (2016).
9. Singh VP, Biswas G, Sharma JJ. Biomedical waste management-an emerging concern in Indian hospitals. Indian Journal of Forensic Medicine &Toxicology 1 (2007): 39-44.
10. Aziz HA, Omar FM, Halim HA, et al. Health-care waste management. InSolid Waste Engineering and Management: Cham: Springer International Publishing 3 25 (2022): 163-229
11. Shammi M, Rahman MM, Ali ML, et al. Application of short and rapid strategic environmental assessment (SEA) for biomedical waste management in Bangladesh. Case Studies in Chemical and Environmental Engineering 5 (2022): 100177.
12. Akter N, Chowdhury AM, Kazi NM. Hospital waste disposal in Bangladesh with special reference to Dhaka City and its environmental evaluation. International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR, B). (1999).
13. Akter N, Hussain Z, Trankler J, et al. Hospital waste management and it's probable health effect: a lesson learned from Bangladesh. Indian journal of environmental health 44 (2002): 124-37.
14. Sarker MA, Harun-Or-Rashid M, Hirosawa T, et al. Evaluation of knowledge, practices, and possible barriers among healthcare providers regarding medical waste management in Dhaka, Bangladesh. Medical science monitor: international medical journal of experimental and clinical research 20 (2014): 25-90.
15. Ara L, Billah W, Bashar F, et al. Effectiveness of a multi-modal capacity-building initiative for upgrading biomedical waste management practices at healthcare facilities in Bangladesh: a 21st century challenge for developing countries. Journal of Hospital Infection 121 (2022): 49-56.
16. Manyele SV, Tanzania V. Effects of improper hospital-waste management on occupational health and safety. African newsletter on occupational health and safety 14 (2004): 30-33.
17. Padmanabhan KK, Barik D. Health hazards of medical waste and its disposal. InEnergy from toxic organic waste for heat and power generation Woodhead Publishing (2019): 99-118.
18. Chudasama RK, Rangoonwala M, Sheth A, et al. Biomedical Waste Management: A study of knowledge, attitude and practice among health care personnel at tertiary care hospital in Rajkot. Journal of Research in Medical and Dental Science 1 (2013): 17-22.
19. World Health Organization. Safe management of bio-medical sharps waste in India. WHO Regional Office for South-East Asia; (2005).
20. Loveday HP, Wilson JA, Pratt RJ, et al. epic3: national evidence-based guidelines for preventing healthcare-associated infections in NHS hospitals in England. Journal of Hospital Infection 86 (2014): S1-70.
21. WHO, Western Pacific Region. Practical guidelines for infection control in health care facilities (2004).
22. Deress T, Hassen F, Adane K, et al. Assessment of knowledge, attitude, and practice about biomedical waste management and associated factors among the healthcare professionals at Debre Markos town healthcare facilities, Northwest Ethiopia. Journal of environmental and public health 2018 (2018): 7672981.
23. Jovanovic V, Manojlović J, Jovanovic D, et al. Management of pharmaceutical waste in hospitals in Serbia–challenges and the potential for improvement.

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