

Assessment of the Attitude and Practice of Healthcare Workers Towards Management of Hospital Waste in General Hospital Katsina, Northwest Nigeria

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Abstract

Healthcare waste represents a major public health issue, especially in developing countries. Among healthcare waste categories, Waste materials in the form of sharp ends are one of the most hazardous. Exposure to needle stick injuries can lead to blood-borne pathogens, therefore healthcare waste management should be done effectively well. The study was conducted to assess the attitude of healthcare workers towards healthcare waste management. A descriptive study through the employment of structured questionnaires was employed to elicit information from one hundred and fifty (150) healthcare workers in the General Hospital Kastina. Descriptive statistics was employed to analyze and present the data generated. Results generated show that types of healthcare waste generated in the facility can be associated with risks and hazards if not properly treated. From the findings healthcare workers has poor attitude towards waste management. It was recommended that Government should make effort to provide sanitation departments and different waste units in all hospitals which will help to manage the waste disposal

Keywords: Hospital waste, Waste management, Attitude, Health workers, Katsina metropolis

INTRODUCTION

Hospital waste materials are by-product of healthcare that include sharps materials, non-sharps materials, blood, body parts, chemicals, pharmaceuticals, medical devices and radioactive materials (Dehghani, et al , 2019). Poor management of healthcare waste exposes healthcare workers, waste handlers and community to infections, toxic effects and injuries. Healthcare waste management include all the steps necessary for waste management from planning to disposal. It is the process that ensure proper handling and disposal of the healthcare waste in a safe way [World Health Organization (WHO), 2015]. Healthcare activities protect and restore health and saves lives. But the waste materials and its associated by-products generated can be hazardous materials that may be infectious (WHO, 2018). Healthcare waste threatens the public due to its contagious nature (WHO, 2018). Most healthcare facilities are located in the heart of the cities and therefore, healthcare waste items that are not correctly managed can cause dangerous infection and pose potential threat to the nearby environment, health workers and the public at large (WHO, 2014) .

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WHO (2015) reported about 21 million hepatitis B virus infections, in 2000 and nearly 260,000 HIV infections across the globe. From the total percentage of medical wastes generated by medical facilities, roughly 20% pose a danger to the environment (WHO, 2015). Many of these infections were avoidable if the syringes had been disposed of safely. The reuse of disposable syringes and needles for injections is particularly common in certain African, Asian and Central and Eastern European countries. Hospital waste which accounts for around 1-2% of urban wastes, is a critical public health issue as it can jeopardize human and environmental health (Dehghani, *et al.*, 2019). High-income countries generate on average up to 0.5 kg of hazardous waste per hospital bed per day while low-income countries generate on average 0.2 kg (Dehghani, *et al.*, 2019). However, hospital waste is often not separated into hazardous or non-hazardous wastes in low-income countries making the real quantity of hazardous waste much higher (WHO, 2015) Nigeria is among the countries with poor healthcare delivery services and competing with limited resources, it is not amazing that healthcare waste management receives less attention and precedence than it merits (Stephen & Elijah, 2011).

Developing countries have serious challenges as there is currently no institutional provision for healthcare waste management. Clinical wastes are disposed openly in the dumpsites along with municipal waste and the practice make the members of the community gain access to it which may lead to outbreak of infectious diseases (Alagoz, *et al.* 2011).

Most healthcare workers are not informed about what happens after waste leaves the bedside of the patients' room. Employees move the waste from the bedside to storage areas until it is processed by healthcare facility or transported to a processing facility. Hospital staff can help reduce waste by responsibly using required materials in the practice setting.

In a study conducted by Awodele, *et al.* (2016) in seven hospitals in Lagos, Nigeria, through cross sectional design, assessed that the medical wastes generated range from 0.116 to 0.561 kg/bed/day, while the total waste is about 215.56 kg/day. Thus, the average generation rate is approximately 0.181 kg/bed/day. The various categories of waste; general, pathological, chemical, infectious, sharp and pharmaceutical were found in all the hospital units, apart from the Pharmacy which does not generate pathological waste. The laundry, kitchen, administration and engineering units also generate general wastes alone. There are no policies or guidelines in all investigated hospitals for managing waste.

Similarly, Edith, *et al.* (2022) conducted study on "assessment of disposal practices among health workers in selected hospitals in Abuja", showed that the health workers practiced some safe treatment and disposal techniques such as autoclaving, chemical disinfection, microwaving, and incineration. Also, the study revealed the poor disposal practices such as open dumping, open burning, and burial. The study further revealed poor handling during transportation for disposal and poor temporal storage conditions.

Hence this study was conducted to assess healthcare workers attitude towards healthcare waste management in General Hospital Katsina.

Methodology

The study was conducted in General Hospital Katsina, located within Katsina metropolis, Katsina state in northwest Nigeria. The hospital is located along Muhammad Dikko Road, Katsina metropolis. The hospital was established in the year 1930 and was commissioned by governor Luggard in the year 1932. The hospital comprises of different departments, units

and subunits including outpatients and laboratory departments, antenatal unit and gynecological wards, labor room and postnatal ward, family planning unit, pediatrics and male wards, accident and emergency, ear, nose and throat departments.

Descriptive survey design was used in conducting the study; using Morgan Krejcie and Morgan Table. 150 healthcare workers were sampled in the conduct of the research including doctors, midwives, nurses, medical laboratory staff and pharmacy staff. Structured questionnaires were used to collect data. The data obtained was analyzed using descriptive statistics.

RESULTS AND DISCUSSION

The majority of the respondents (56%) are females and (44%) are males. (29%) are nurses, 16% of the respondents are midwives, 17% of the respondents are doctors, 15% of the respondents are Pharmacy Staff, 12 % of the respondents are Lab Technicians, 11% of the respondents are Dentists, while 34% of the respondents are healthcare attendants. Majority of the respondents (42%) had diploma certificate, 37% of the respondents are degree holders and 21% of the respondents had additional.

Table 1: Socio-demographic data of the respondents

Variables	Frequency	Percentage
<i>Gender</i>		
male	42	44%
female	53	56%
<i>Profession</i>		
nurses	28	29%
midwives	15	16%
medical doctors	16	17%
pharmacy staff	14	15%
lab. technicians	12	12%
dentist	10	11%
<i>Tribe</i>		
Hausa	56	59%
Igbo	13	14%
Yoruba	14	15%
others	12	12%
<i>Marital status</i>		
single	49	52%
married	33	35%
divorce	7	7%
widow	6	6%
<i>Educational level</i>		
diploma	40	42%
degree	35	37%
others	20	21%

Table 2 shows that (49%) of the respondents mentioned hospital waste as the exception of types of waste.

Table 2: Types of Healthcare Waste Generated in the Hospital

Variables	Frequency	Percentage
<i>All are types of healthcare waste except</i>		
Infectious waste	14	15%
Pharmaceutical waste	15	16%
Pathological waste	19	20%
Hospital waste	47	49%
<i>Do you think hospitals laboratories and autopsy centers are a major source of healthcare waste?</i>		
Yes	68	72%
No	18	19%
I don't know	9	9%
<i>Wastes in general are classified into hazardous and non hazardous.</i>		
True		
False	82	86%
	13	14%
<i>Infectious, pharmaceutical, genotoxic, pathological, and radioactive waste are all types of waste generated in healthcare facilities.</i>		
True		
False	82	86%
	13	14%
<i>Do you think wastes poses serious threats to health workers?</i>		
Agreed		
Disagreed	71	75%
Strongly disagree	18	19%
	6	6%

Table 3 shows that (45%) of the respondents mentioned landfilling and dumps as the most effective method of waste disposal.

Table 3: Methods Employed for the Management of Hospital Waste

Variables	Frequency	Percentage
<i>Which method do you think is more effective in waste disposal?</i>		
Incineration		
Pyrolysis and gasification	37	39%
Landfilling and dumps	7	7%
Open burning	42	45%
	9	9%
<i>What effect do you think opening burning method of waste disposal can cause?</i>		
Air pollution		
Water pollution	76	80%
Soil pollution	6	7%
I don't know	8	8%
	5	5%
<i>Do you think hospital waste can be disposed through landfilling and dump?</i>		
Agreed		
Disagreed	48	51%
Strongly disagreed	36	38%
	11	11%
<i>Safety box is best used to dispose off sharps</i>		
True	81	85%
False	14	15%

Table 4 shows that majority of the respondents (76%) indicated that there are risk/hazards associated with improper waste disposal.

Table 4: Risks and Hazards Associated with the Disposal of Hospital Waste

Variables	Frequency	Percentage
<i>Do you think there are risk/hazards associated with healthcare waste disposal?</i>		
Agreed		
Disagreed	72	76%
Strongly disagreed	18	19%
	5	5%
<i>Do you think needle stick is a sharp and inflicted injury?</i>		
Agreed	74	78%
Disagreed	13	14%
Strongly disagreed	8	8%
<i>Do you think radioactive burns and chemical burns are risk/hazard associated with healthcare waste disposal?</i>		
Agreed	60	63%
Disagreed	22	23%
Strongly disagreed	13	14%
<i>Do you think dumping of healthcare waste in an uncontrolled manner is a risk/hazard associated with healthcare waste disposal?</i>		
Agreed		
Disagreed	76	80%
Strongly disagreed	13	14%
	6	6%

Table 5 shows that most of the respondents (53%) mentioned developing a formal waste management plan as effective way of improving healthcare waste management practice.

Table 5: Suggestions of the Respondents regarding Ways of Improving Hospital Waste Management

Variables	Frequency	Percentage
<i>What do you think is an effective way of improving healthcare waste management practice?</i>		
Developing a formal waste management plan.	50	53%
conducting waste audits	8	9%
Color code containers for appropriate separation of waste.	17	18%
Providing small medical container in patient room.	19	20%
<i>Do you think using reusable product in place of single-use product is a way of improving healthcare waste management practice?</i>		
yes	42	44%
no	45	48%
I don't know.	8	8%
<i>Does training of health personnel on healthcare waste management contributes in reducing improper waste disposal?</i>		
agreed	74	78%
disagreed	16	17%
strongly disagreed	5	5%

The study revealed that health workers have knowledge and understanding on the various types of healthcare waste generated. This is in accordance with a stud conducted by Adhikari (2018) who reported different methods of healthcare waste management. The author further reiterated that public hospitals generated more waste than private hospitals owing to more number of beds, wards and department compared to private hospitals.

Similarly, majority of the respondents in this study reported landfilling and dump site as the most effective method of waste disposal in the hospital. This finding is contrary to the study carried out by Oyekale & Oyekale (2017) on hospital waste management practice and safety indicators in Nigeria which showed that sharp and non-sharp hospital waste materials were

burnt in protected pits in 45.40% and 45.36% of all the sampled facilities in their study and incinerators were reported to be functional in only 2.06% of the total healthcare facilities. Alagoz *et al.* (2011) noted that subjecting hospital waste to burning instead of incineration will release some pollutants into the atmosphere.

Moreso, majority of the respondents in this study agreed that developing a formal waste management plan and colour coding containers for appropriate separation of waste are the best way of improving healthcare waste management practice. This finding agrees with the finding of Abah and Ohimain (2011) who reported in a survey of a tertiary health facility in Nigeria, revealed that hospitals did not have waste management manuals. Possession of guidelines on hospital waste management was found to enhance safe indices of healthcare waste disposal. It is expected to assist designated staff to understand the procedures for treating different waste products (Abah and Ohimain, 2011).

CONCLUSION

Owing to the findings in this study, it can be concluded that there are different types of hospital waste generated in the General Hospital Katsina, and there are different methods employed in the management of hospital waste generated therein.

Based on the findings of this study, it is recommended that a study should be conducted to assess the effect of hospital waste on the general public. Again, government should make efforts to provide sanitation departments and different waste units in all hospitals which will help to manage the waste disposal. Training of health personnel by hospital management on appropriate methods of waste disposal will go a long way in improving their awareness and bring about positive impact thereby preventing indiscriminate hospital waste disposal.

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