

Hospital Waste Management Practices Among Hospital Staff in Jimeta, Yola-North, Adamawa State

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Abstract

The study was conducted among hospital staff in specialist hospital, Yola to analyze their knowledge on waste management in the hospital. Data were collected through observation and questionnaire survey to sample of 86 respondents. Result shows that there is an established unit for waste management in the hospital. However, there are no strong regulations governing this unit. Majority of the hospital staff declared that they have knowledge of managing hospital waste but further studies reveal gaps in knowledge and practice of handling and disposing of hospital waste. There is a positive attitude to improving current waste management practice among the hospital staff. Therefore, constant training and supervisions are required and with adequate materials and funding.

Keywords: Hospital Waste Management, Hospital Staff, Healthcare system, Jimeta

Introduction

Hospitals are established to provide treatment and safeguard the health of the people against illness (Jang, Lee, Yoon, & Kim, 2006). However, Improper clinical waste management practice impacts both directly and/or indirectly to the healthcare of hospital staff, patients, patient relatives, and hospital environment (Hossain, Santhanam, Norulaini, & Omar, 2011). It is well known, that clinics, nursing homes, hospitals, laboratories, veterinary clinics and many more similar establishments have to dispose of waste materials that have been generated in the process of medical care and treatment. Medical wastes produce a larger portion of infectious substances which are potentially dangerous, because they may be resistant to treatment and possess high pathogenicity or ability to cause disease (Babanyara, Ibrahim, Garba, Bogoro, & Abubakar, 2013). Diseases like cholera, dysentery, skin infection, infectious hepatitis can spread due to the poor handling and management of clinical solid waste (Hossain et al., 2011). The poor management of such waste is a significant problem in most developing countries thereby, drawing the attention of researchers to investigate the existing healthcare waste management practices in these settings (Babanyara et al., 2013; Coker et al., 2009;

Ziraba, Haregu, & Mberu, 2016). These scholars argue that successful clinical waste management poses a challenge in developing countries due to insufficient financial investment, poorly trained clinical staff, and lack of awareness and effective control of hospital waste. Also, the absence of healthcare waste management guidelines and legislation at the country level and unavailability of suitable treatment and disposal options may further obstruct the waste management efforts (Haylamicheal & Desalegne, 2012).

The World Health Organization estimates that each year there about 8 – 16 million new cases of hepatitis B virus (HBV), 2.3 – 4.7 million cases of hepatitis C virus (HCV) and 80,000 -160,000 cases of human immune deficiency virus (HIV) due to unsafe injections and mostly due to the very poor waste management systems have been recorded (Goyet et al., 2014). In developing countries like Nigeria, where many health concerns are competing for limited resources, it is not surprising that the management of healthcare waste has received less attention and the priority it deserves. (Haylamicheal & Desalegne, 2012). Although reliable records of the quantity, nature of healthcare waste and the management

techniques to adequately disposed of these wastes have remained a challenge in many developing countries of the World, its believed that several hundreds of tons of healthcare waste are deposited openly in waste dumps and surrounding environments, often alongside with non-hazardous solid waste (Nwachukwu, Orji, & Ugboogu, 2013).

Despite several efforts to investigate hospital waste management, a considerable gap exists concerning the assessment of healthcare waste management practice particularly in Nigeria and in several other developing countries (Haylamicheal & Desalegne, 2012; Nwachukwu et al., 2013). The nature of hospital waste generated as well as institutional practices with regards to sustainable methods of healthcare waste management, including waste segregation and waste recycling are often poorly examined and documented in several countries of the world despite the health risks posed by the improper handling of these wastes (Guerrero, Maas, & Hogland, 2013). More so, the level of awareness, particularly of hospital staff regarding healthcare waste has not been adequately documented in the literature. Hospital waste is a special category of waste because they often contain materials that may be harmful and can cause ill health to those expose to it (Coker et al., 2009). Therefore, the present research was conducted to study the knowledge of hospital staff on existing hospital waste management practices.

This study covered specialist hospital Jimeta Yola. The hospital is made up 20 departments, 3 Units and 11 Wards with both skilled and unskilled medical personnel. Waste are generated from every segment of the hospital which needs proper management. The study focused on the waste management practices in the specialist hospital with reference to general management strategy. Waste collection and segregation, waste cycle, waste storage, waste treatment and offsite disposal. On the temporal dimension, the study focused on current practices in specialist hospital to enable the provision of solution to contemporary problems.

Materials and Methods

Study Area

The study area is Jimeta metropolis that constitutes the greater part of Yola North local government area of

Adamawa State, Nigeria. It is situated between latitude 9°14' and 9°17'N and longitude 12°24' and 12°38'E (Fig. 1). The study area has an approximate land area of 231.6 km² (Zemba, 2010). It falls within the tropical climate and has mean monthly sunshine hours of about 220 from January to April. This decreases to a mean value of 207 hours between May and September due to increasing cloudiness. The mean sunshine hours increases again to about 255 from the period between October and December (Zemba & Peter, 2014). In recent times, Jimeta has risen as the premier commercial, industrial and transportation urban area of the northeastern Nigeria. The rapid growth of Jimeta, particularly within the past 30 years, has made it one of the fastest growing metropolitan areas in Nigeria. For instance, the population of Jimeta increased significantly by 69% between 1973 and 1991 and 58% between 1991 and 2006 (Zemba, 2010).

Jimeta area exhibit a typical climate the average daily hours of bright sunshine is about 7 to 8 hours and the wind speed averaging about 76.1 km/h. it has monthly mean sunshine hours of about 220 from January to April. This decrease to a mean value of 207hrs between May and September due to increase in cloudiness. The mean sunshine hours increase again to about 255 for the period between October and December. The average sunshine hours for the year as a whole stand as about 2750 approximately (Zemba, 2010).

Data Collection and Analysis

The empirical setting of the study is the specialist hospital Yola, Adamawa State, Nigeria. Data were gathered through a questionnaire and observations. A stratified sampling technique was employed to select respondents of the study based on their areas of specialization. Thus the researcher categorized the respondent based on their profession (Doctors, Nurses, Cleaners, and Technical staff). To determine the sample size of the study, the researchers applied a random stratified sampling technique. Stratified sampling is a type of sampling method in which the total population is divided into smaller strata to complete the sampling process (Sharma, 2017). Thus, in the present study, 50% of each of the professions was selected at random as elaborated in Table 1 below.

The questions and observations were based on five themes which covered areas of Background of hospital staff, general knowledge of hospital staff about waste management concerning constituents, hazards, and diseases transmitted, attitudes towards waste segregation and incineration, training on waste management, current practice on waste collection, transportation, and disposal.

The Data obtained from the study was analyzed using the SPSS quantitative data analysis tool. Thus simple descriptive statistics (like frequencies and percentage) and inferential statistics were used to analyze the data gathered and present the results.

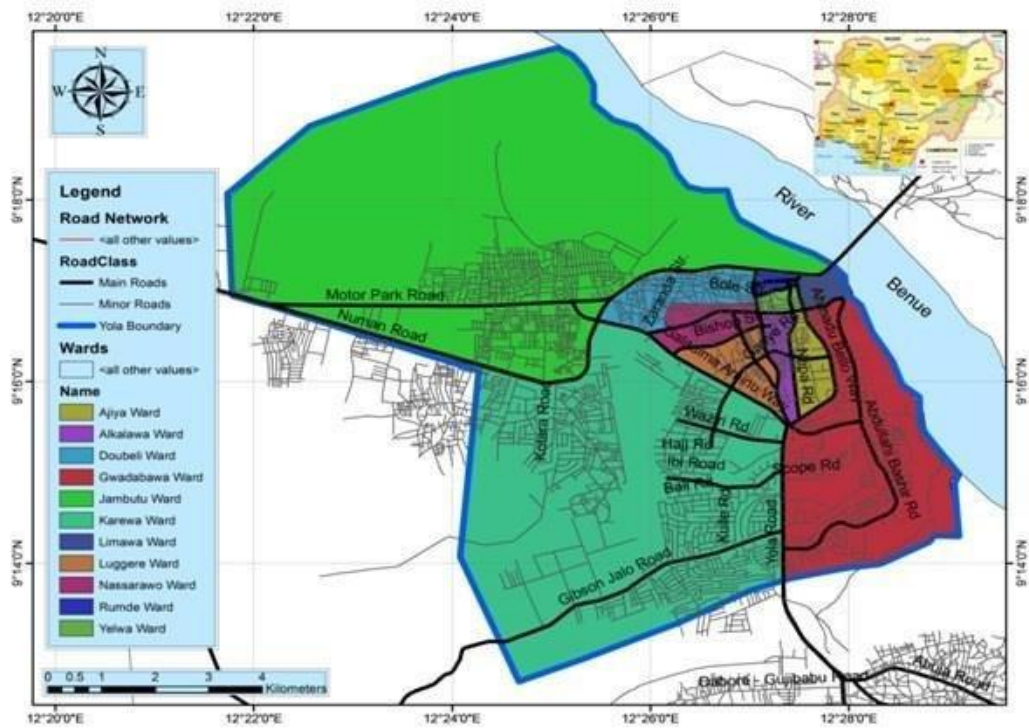


Figure 1: Study Area

Results and Discussion

This study was conducted in Specialist Hospital Jimeta-Yola Adamawa State where 86 questionnaires were distributed 82 retrieved as presented on the Table 1. From the Pie chart in figure 2, there are more nurses

than any other category of hospital staff in the case study. The nurses constitute 59% of the total hospital staff while only 6% of the hospital staff are technical staff.

Table 1: Categories of hospital staff in specialist hospital, Yola

Category	Total number of staffs	50% of total number of staff
Nurses	99	49
Doctors	30	15
Cleaners	29	15
Technical Staff	14	7
Total	168	86

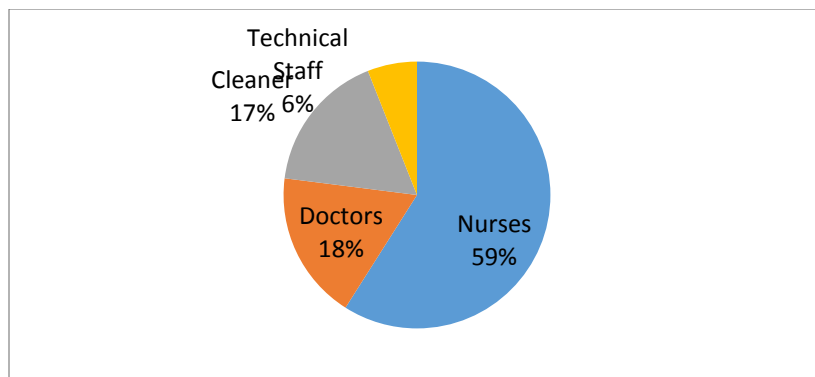


Figure 2: Representation of hospital staff by professional category

The table 2 shows the different types of waste such as radioactive waste, chemical waste, pathological waste, pharmaceutical waste, and sharps. Findings show that

sharp objects are the highest category of waste generated in specialist hospital Yola while kitchen waste is the least hospital waste generated.

Table 2: Types of hospital waste generated in specialist hospital, Yola

Types of hospital waste	Observed percentage
Waste paper, cartoon, (non-medical waste)	15
Dressing cotton and plasters	10
Chemicals	7
Radioactive materials	13
Pharmaceuticals	12
Sharp objects (used needles, syringes, blood giving sets)	20
Placenta, soiled clothes	15
Kitchen waste	8

Hospital Staff Knowledge of Hospital Waste

As regards knowledge of hospital wastes, 90% of the hospital staff declared that they know about hospital waste. Responses from the questionnaire show that the staff category was highly associated with knowledge of constituents of hospital waste and hazard categories as well as the occupational hazards of hospital waste. 100% of medical doctors and nurses claimed they have adequate knowledge of medical waste categories and management strategies. However, only about 30% of technical staff have adequate knowledge of hospital waste categories and management strategies. It was gathered that the duration of employment has no relationship with the knowledge of hospital waste.

About 85% of the respondents are aware that they are exposed to occupational hazards as a result of poor management of hospital waste. The proportion of

respondents who had received specific training in the management of hospital waste was 57% the respondents understood the importance of hospital waste management in the provision of safety to the health workers was 41.07%.

From the findings above, most of the hospital staff were dissatisfied with the current practice of waste disposal in the hospital. Analysis of a different question suggests that the respondents identified some needs concerning solutions to the poor waste disposal management and raising awareness was the most frequently cited where 54% of the respondents are of the view that raising awareness on the dangers of poor waste disposal management will help improve the current practice. On the other hand, obstacles to proper waste management systems identified from our

questionnaire were the lack of regulations governing waste management and a poor funding system.

Table 3: Opinions of hospital staff of the current situation of wastes disposal

Category by profession	Excellent %	Good %	Acceptable %	Poor %
Doctors	5	20	30	45
Nurses	10	25	40	25
Cleaners	17	39	35	9
Technical staff	8	23	40	29

Table 4: What are the Method of Hospital Waste Disposal & Management Strategies

Disposal Method	Frequency	Percentage
segregation, sharps, colour coded containers	22	27
Plastic bags, containers vehicles	30	37
special containers domestic waste	15	18
Domestic waste landfill special incinerator	15	18
Total	82	100

Table 4 shows the disposal method for different waste categories at the specialist hospital Yola. 60% were collected in plastics bags, color-coded containers donated by the WHO the table equally reveals that

open dumping was popular for disposing of recyclable waste 1.19% and other non-risk wastes (50%).

Table 5: Hospital Waste Management Strategies

Waste Management	Frequency	Percentage
Waste segregation	15	18
Waste recycling and re-use	1	1
Use of waste bins	30	37
Offsite disposal	26	44
Total	82	100

Discussion

Findings from the study shows that about 80% of the selected respondents responded to the questionnaire. The results indicate a high level of knowledge of hospital waste management due to the familiarity of hospital staff with the unpleasant outcomes from accidents that happen as a result of injuries from used syringes and other clinical objects (Massrouje, 2001). The main source of knowledge about hospital waste management in the study was from study courses while on the job trainings had limited impact. (Anderson (1992)) warns against keeping waste bins within the hospital premises as it breeds bacteria

however, findings reveal that waste bins were used to collect hospital waste in the study area.

Though attitudes towards the current waste management practice were generally negative, some positive attitudes reported suggest the good intentions of hospital staff to modify practice, need for trainings, and establishment of strong waste management systems. Thus, hospital staff declared the willingness to improve if they are provided with the means and knowledge.

Findings from observations proposes that each department in Specialist Hospital have label

containers where hospital waste are being collected and transported outside the town on regular basis by health care facilities to be dump on open ground or level landfill. Hospital waste generated within the hospital are disposed of in colour containers to demarcate between sharp objects and non- sharp object. These wastes are then being dumped at the incinerators before they are being transported out of the hospital premises.

Conclusion

The study focused on knowledge of hospital staff on waste management. The study revealed that waste management is not given the priority it deserves. There is a lack of sufficient knowledge about hospital waste among some specific categories of hospital staff. +Waste management supplies and facilities are inadequate. Therefore, an urgent need for training on the handling of hospital waste and the impact it has on human health and the environment is recommended

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