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Assessment of Management of Sharp Wastes in Health Care Institutions in Yenagoa Metropolis of Bayelsa State

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Abstract

This study assessed and compared the standard level of sharp wastes management in Health institutions in Yenagoa Metropolis of Bayelsa State. Its purpose was to assessed and compared the extent (standard) level of sharp wastes management in Government and Private Health institutions. Eighty respondents were purposively and randomly sampled and used in the study. A structured questionnaire of five sections in handling, storage, transportation, treatment and disposal of sharp wastes management with a four point likert scale of measurement of strongly disagree i., disagree ii., agree iii. and strongly agree iv. was used to elicit information. The research question was analyzed with mean while the hypothesis was analyzed with inferential statistics of t-test of independent samples. The result showed that there was low standard level of sharp wastes management in Government Health institutions and a very low level of standard management of sharp wastes in Private Health care institutions. The result also revealed that there is no significance difference in standard level of sharp wastes management in Government and Private Health care institutions. It was then concluded that all factors responsible for the above result should be addressed to improve standard and minimize risk of spreading blood borne infections that may arise from sharp wastes injury and other hazards to the environment.

Keywords: Sharps, management, waste, health care, institution.

Introduction

The alarming rate at which increasing volume of wastes continue to occupy the environment together with inadequate and insanitary management of these wastes especially in developing countries has been a source of concern over the years. It has not only defaced the beauty of the environment and produce odour nuisance but encourage the proliferation of disease vectors with outbreak of diseases, accident and pollution of the environment. Thus, there is need to effectively and efficiently manage these wastes to bring them back into the cycle of life to maintain ecological balance[1,2].

Waste management is a planned system of effectively and efficiently controlling, the production, storage, collection, transportation, processing and disposal of wastes in a sanitary, aesthetically acceptable and economic manner in order to reduce or eliminate its objectionable properties. However, the degree of hazards pose by wastes depends on the type and nature of the waste. Some wastes poses low hazard, some moderate while other poses high hazard. A typical example of a class of wastes that impose high degree of hazards on health and the environment is health care wastes[3-5].

Health care wastes are wastes generated in Health care providing institutions as a result of their unavoidable consequence of activities and operations taking place in the premises. They include laboratory, pathological, pharmaceutical, disinfectants, soil linen, blood, body fluid, gloves, empty drug bottles, plastics, metals etc. Health care wastes are classified into non-infectious, infectious, highly infectious, chemical, radioactive and sharp wastes[4].
Sharps wastes are Sharp edged wastes generated in health care institutions. They include needles, scalpels, infusion sets, knives, broken glass, syringes, surgical blades, ampoules, glass instruments, pipettes, nails etc. In the course of Health care activities, operations and processes, sharps waste may be contaminated with blood, body fluid, chemicals, radioactive materials or infectious agents. In consequence, these wastes serve as a reservoir of potentially harmful micro-organisms and chemicals which can inflict or affect hospital patients, workers, visitors, workers in support services, workers in hospital wastes disposal services and the public. Depending on the quantity, concentration, physical and chemical properties, they cause or contribute to increase serious irreversible or incapacitating illness and pose hazard to human health and the environment at large if improperly managed[4,6].

Developed and developing nations of the world have experienced development in many areas with various consequential impacts on the people and the environment. One of such area is in the establishment of health care institutions to tackle the increasing health needs and problems of man. These facilities have cumulatively given rise to large volume of health care wastes that have impacted on the health of man and the environment.

Epidemiological studies indicates that a person who experience

one needle stick injury from a needle used on an infected source patient has a risks of 30%, 1.8%, 0.3% respectively of becoming infected with HBV, HCV and HIV[7]

The generation and management of health care wastes are governed by laws and regulations which differ from one country to another according to their activities. In the early 1990s, the World Health Organization (WHO) requested all member nations to develop safe and sound hazardous waste policies with special focus on health care wastes. Consequently, developed nations moved swiftly while developing nations do not pay serious attention, yet Government and private Health care institutions are on the increase to meet the high demand in Health with increasing rate of generation of health care wastes without corresponding standards in their management. In most cases these Health care institutions are established with greater challenge on how to effectively and properly manage the different types of Health care wastes at their disposal. As a matter of fact, couple with weak provisions of the law and laxity in enforcement of available ones, managers of these Health care institutions take advantage in management and dispose these untreated wastes in open public dumpsites, drains, tidal beaches and other public places not minding their hazardous effects on Health and the environment at large[4]. According to Sridhar et al[4], the increase in blood borne infections such as HBV, HCV and HIV in the 1980s were due to political and epidemiological reasons that were linked to discarded syringes thus there was a public outcry on the visual unsightliness of Health care waste in open dumpsites, drains, tidal water beaches and other public places[7,8].

Today waste recycling is a big business and an occupation in the cities. It is not uncommon to see scavengers in these places where wastes are dump to resource recyclable materials without wearing appropriate protective gadgets thereby exposing themselves openly to a variety of Health hazards. A concerned society refuses to look at such issues especially when there is a solution. In order to reduce the menace of these hazards, it is imperative that a very high standard level of management culture should be ensured in every Health care institution especially at the treatment and disposal level of management.

It is in view of this that this study seeks to comparatively assess the standard level of Sharp wastes management in Government and Private Health care providing institutions in Yenagoa Metropolis of Bayelsa State.

Material and methods

The study was conducted in four (4) Government Health institutions and seven (7) privately owned health institutions due to size, all in Yenagoa Metropolis of Bayelsa State.

A comparative research design approach to data collection was used in the study. A sample size of eighty (80) respondents was used while simple random sampling technique was used for administration of instrument.

The study was based on primary data collected from three groups of medical personnel (Laboratory scientist, Nurses and Pharmacists) through an informal consent from the respective unit heads. The questionnaire was design to generate data to assess the extent of sharp waste management (standard) by using four point scale assessment to measure the extent to which sharp waste were managed in five areas (handling, storage, transportation, treatment and disposal).

Data obtained were analyzed using mean. On the level (extent/standard) to which sharp wastes were managed, a criterion mean of 2.50 in Golden's et al[9] was used to interpret the result. In this regard, a mean evaluation of 3.1 and above signifies a very high extent (very high standard), 2.50 to 3.00 signify a high extent (high standard), and 2.00 to 2.49 signify a low extent (low standard) and 1.00 to 1.99 signify a very low extent (very low standard). The mean analysis on the extent of sharp wastes management in Government and Private Health Institutions is shown in table-1.

For the hypothesis, the extent of sharp wastes management in Government and Private Health Institutions were comparatively tested and analyzed using T-test of Independent samples at 5% level of significance. In this regard the following hypothesis was tested:

H_o: There is no significant difference in the extent (standard) of sharp wastes management in Government and Private Health care institutions for the period under study.

H_1: There is significant difference in the level (standard) of sharp wastes management in Government and Private Health care institutions for the period under study. The T-test analysis on the level of sharp wastes management in Government and Private Health Institutions is shown in table-2.

On handling of sharp wastes, we conclude that there was a very high level of sharp waste management (very high standard mode of practice) in Government and a high level (high standard mode of practice) in Private Health institutions respectively.

Similarly, on storage of sharp wastes management, we conclude that there was a high level (high standard mode of practice) of sharp waste management in Government and a very low level (very low standard mode of practice) in Private Health institutions respectively.

On internal/external transportation, we also conclude that there was a low level (low standard mode of practice) of sharp wastes management in Government and a very low level (very low standard mode of practice) in Private Health institutions respectively.

On treatment of sharp wastes management, we conclude that there was a low level (low standard mode of practice) of sharp wastes management in Government and Private Health institutions respectively.

Table-1
Showing Mean on the extent of sharp wastes management

Item No.	Category	Govt. H/C. Institutions. (Weighted mean.)	Private H/C. Institutions. (Weighted mean)	Total.
1	Handling of sharp wastes	3.175	2.862	6.037
2	Storage of sharp wastes	2.56	1.041	3.601
3	Internal/External transportation of sharp wastes	2.293	1.869	4.162
4	Treatment of sharp wastes	2.244	2.0	4.244
5	Disposal of sharp wastes	2.05	1.861	3.911
Grand Total		12.322	9.633	21.955
Grand Mean		2.464	1.927	4.391

Result and Discussion

In the same vein, on disposal, we conclude that there was a low level of management (low standard) methods of disposing sharp wastes) in Government and a very low level of management (very low standard methods of disposing sharp wastes) in Private Health care institutions respectively.

The result emanating from these with an a Grand mean value of 2.464 and 1.927 implies that there was a low level standard of sharp wastes management in Government Health institutions and a very low level standard of sharp wastes management in Private Health institutions.

According to the World Health Organization[10], epidemiological studies indicates that a person who experiences one needle stick injury from a needle used on an infected source patient has a risk of 30%, 1.8% and 0.3% respectively of becoming infected with HBV, HCV and HIV. Leading credence to the above with a low and very low level standard of sharp wastes management in Government and Private Health institutions implies that both Government and Private Health care institutions in Yenagoa Metropolis may not be absolutely exonerated from the 30%, 1.8% and 0.3% risk rate in the spread of blood borne infections such as HBV, HVC and HIV.

The above result is also in consonant with Sridhar et al[4]. Sridhar et al[4] aver that the generation of Health care wastes is governed by laws and regulations which are different from one country to another. Thus non-adherence to stipulated laws and regulations regarding high standards leads to poor management.

On comparative testing of the hypothesis on the extent of standard management, we conclude that there is no significant difference in the level (standard) of sharp wastes management in government and Private Health institutions for the period under study in Yenagoa Metropolis as the calculated value was less than the table value at 5% level of significance.

Consequently, if the World Health Organization[10] epidemiological studies report which indicates a risk of 30%, 1.8% and 0.3% of becoming infected of blood infections such as HBV, HCV and HIV by a person who experiences one needle stick injury from a needle used on infected source patient is something to give recognition to, then, Government owned Health care institutions were less likely to spread blood borne infections such as HBV, HCV and HIV than Private Health institutions with sharp waste injury from an infected source.

Table-2
T-test for sharp wastes management

Source of variability.	Mean	Variance	t-cal.	t-tab.
Government H/C institutions.	2.50	0.15	1.78	2.31
Private H/C institutions.	1.93	0.35		
All.	0.57	0.25		

The above assertion is in conformity with Sridhar et al[4]. Sridhar et al[4] also disclosed that the increase in blood borne infections such as HBV, HCV and HIV were due to political and epidemiological reasons that were linked to discarded syringes upon increase exposure to diseases transmission. This has complemented public outcry as a result of visual unsightliness of Health care wastes in open dumpsites, drains, tidal water beaches and other public places. However, it is important to note that occurrence of the above mentioned diseases is consequent upon contaminated sharps injury.

Conclusion

The standard of sharp wastes management in Government and Private Health care institutions in Yenagoa Metropolis as the result of this study has shown remain a source of concern and will continue to rob the society if nothing is being done. It is therefore imperative that all the factors responsible for the above result should be holistically addressed to improve standard and minimize cases and spread of blood borne infections that may arise from sharp wastes injury and other hazards to the environment.

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