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HEALTHCARE MANAGEMENT PRACTICES AND COMMUNITY-BASED APPROACHES IN GOVERNMENT HEALTH FACILITIES IN ENUGU EAST URBAN SLUMS

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Abstract
Poor health-care waste management (HCWM) poses serious public health risks, particularly in urban slums where waste disposal systems are weak. Community-based approaches are increasingly recognized as vital for improving HCWM. Yet little evidence of community-based approaches exists in government-owned health facilities in Enugu East, Nigeria. This study examines healthcare waste management practices and community-based approaches in government health facilities in Enugu east urban slums. Sequel to this a descriptive cross-sectional study was conducted among staff of three government-owned health centres (Iji Nike, Ugogo Nike, and Nchatancha Nike) selected from 15 facilities in Enugu East. A total of 134 respondents were proportionately sampled from a population of 202. Data were collected using structured questionnaires, observation checklists, and key informant interviews. Quantitative data were analyzed with SPSS (descriptive statistics and chi-square tests), while qualitative data were thematically analyzed. Ethical approval was obtained from the Enugu State Ministry of Health. The response rate was 95.5% (n=128). Waste segregation (59.4%) and sharps disposal (65.6%) were relatively well practiced, but on-site treatment (32.8%) and final disposal (39.1%) were poor. Compliance with WHO and national HCWM guidelines was moderate, with major gaps in PPE use (55.5%) and safe disposal methods (39.1%). Community involvement was low, with only 28.1% reporting awareness programs and 32.0% citing partnerships with local collectors. Major challenges included inadequate funding (69.5%), lack of functional incinerators (67.2%), and insufficient staff training (56.3%). Chi-square analysis revealed significant relationships between community-based approaches and improved HCWM practices ($p < 0.05$).Government-owned health facilities in Enugu East demonstrate partial compliance with HCWM standards, but poor infrastructure and weak community involvement undermine effectiveness. Strengthening facility capacity, ensuring PPE availability, and institutionalizing community engagement are essential for sustainable HCWM in urban slums.

Keywords: community-based approaches, government health facilities, Health-care waste management, urban slums, Enugu East, Nigeria.

Introduction
The management of healthcare waste is a critical aspect of public health, particularly in urban slums where the risk of disease transmission is high due to poor sanitation and inadequate waste disposal practices. In Nigeria, healthcare system generates a significant amount of waste, including infectious, hazardous and non-hazardous materials, which pose serious health risks to healthcare workers, patients and the community at large. These consequence shades light on the fact that effective

healthcare waste management practices are essential to prevent the spread of diseases and protect the environment.

The World Health Organization (WHO) has emphasized the importance of proper healthcare waste management, highlighting that improper disposal of healthcare waste can lead to the spread of diseases, including HIV, hepatitis and other bloodborne pathogens (WHO, 2018). In low-income settings, such as urban slums, the challenges of healthcare waste management are exacerbated by limited resources, inadequate infrastructure and lack of awareness about proper waste disposal practices. According to a study by Oke (2019), healthcare waste management in Nigeria is often inadequate, with many healthcare facilities lacking the necessary resources and infrastructure to manage waste effectively. This raises the need for community-based approaches in healthcare management in public health facilities, especially in the Enugu east urban slums of Enugu state.

Community-based approaches to healthcare waste management have been recognized as a potential solution to the challenges of waste management in urban slums. These approaches involve the active participation of community members, healthcare workers, and other stakeholders in the management of healthcare waste. A study by Ogbonna (2020) found that community-based approaches to healthcare waste management can improve waste disposal practices and reduce the risk of disease transmission in urban slums.

In Enugu State, Nigeria, the government has implemented various initiatives to improve healthcare delivery and waste management in primary health care facilities. Despite this, the effectiveness of these initiatives in urban slums remains unclear.

Yet, the report of the Nigerian Environmental Society (2020) maintains that healthcare waste management is a critical aspect of environmental health, and effective management practices can reduce the risk of disease transmission and protect the environment. The report emphasized the need for healthcare facilities to adopt sustainable waste management practices, including segregation, recycling, and proper disposal of waste. It is on these grounds that this study examines healthcare waste management practices, challenges faced by health workers and how community-based approaches can improve effective health waste management in government health facilities in Enugu east urban slums.

Statement of the Problem

The improper management of healthcare waste in primary health care facilities in Enugu east urban slums of Enugu State poses significant risks to public health and the environment. Despite the importance of effective healthcare waste management, many healthcare facilities in the urban slums lack the necessary resources, infrastructure, and knowledge to manage waste properly, leading to the spread of diseases and environmental pollution.

The problem is further compounded by the lack of community approaches, involvement and awareness about proper waste disposal practices, which lead to the improper disposal of healthcare waste in open dumpsites, waterways, and other unauthorized areas. This result**s** in the spread of diseases, including HIV, hepatitis, and other blood borne pathogens, among healthcare workers, patients, and the community at large.

As such, there is need to assess the existent healthcare waste management practices and explore community-based approaches that can be used to improve waste management practices in government primary health care facilities in Enugu east urban slums in Enugu State, Nigeria. This study**,** thus, aims to address the problem of healthcare waste management by investigating the current state of healthcare waste management practices and identifying effective community-based approaches that can be used to improve waste management practices and reduce the risks associated with healthcare waste.

Purpose of the Study

The purpose of this study is to assess healthcare waste management practices and community-based approaches among government-owned primary health care facilities in urban slums of Enugu East Local Government Area, Enugu State, Nigeria.

Specific Objectives

1. To assess the current healthcare waste management practices in government-owned primary health care facilities in urban slums of Enugu East Local Government Area.
2. To identify the challenges faced by healthcare workers in managing healthcare waste in primary health care facilities.
3. To explore community-based approaches that can be used to improve healthcare waste management practices in primary health care facilities.
4. To examine the relationship between community involvement and healthcare waste management practices in primary health care facilities.

Research Questions

1. What are the current healthcare waste management practices in government-owned primary health care facilities in urban slums of Enugu East Local Government Area?
2. What are the challenges faced by healthcare workers in managing healthcare waste in primary health care facilities?
3. What community-based approaches can be used to improve healthcare waste management practices in primary health care facilities?
4. Is there a significant relationship between community involvement and healthcare waste management practices in primary health care facilities?

Hypotheses

1. H0: There is no significant difference in the mean rating of healthcare waste management practices among healthcare workers in primary health care facilities in urban slums of Enugu East Local Government Area.
2. H0: There is no significant relationship between the challenges faced by healthcare workers and effective healthcare waste management practices in primary health care facilities.
3. H0: Community-based approaches have no significant impact on healthcare waste management practices in primary health care facilities.
4. H0: There is no significant correlation between community involvement and effective healthcare waste management practices in primary health care facilities.

Research Methods

This study used a mixed-methods research approach, integrating both quantitative and qualitative methods to investigate healthcare waste management practices and community-based approaches in government-owned Primary Health Care facilities situated in Enugu east urban slums. A cross-sectional study design was employed, where data was collected at a single point in time from the selected facilities.

Structured questionnaires were administered to a sample of 134 healthcare workers and community participants to gather quantitative data. In-depth interviews were also conducted with key stakeholders to collect qualitative data that provided richer insights into the challenges and opportunities in healthcare waste management. Oke (2019), points that, Observations of waste management practices in the facilities supplemented the data collected through surveys and interviews.

Population

The population of this study consists of 202 staff and community participants from three selected government-owned Primary Health Care (PHC) facilities in urban slums of Enugu East Local Government Area, Nigeria. The facilities include: Iji Nike PHC facility, Ugbo-Odogwu (Ugogo Nike) PHC facility and Nchatancha Nike PHC facility.

The study will focus on healthcare waste management practices and community-based approaches among these PHC facilities, with the 202 staff and community participants serving as the study population. The distribution is as follows: Iji Nike PHC facility: 67 participants (202 / 3), Ugbo-Odogwu (Ugogo Nike) PHC facility: 67 participants and Nchatancha Nike PHC facility: 68 participants.

The sample comprised staff and community participants from three selected Primary Health Care facilities in urban slums of Enugu East Local Government Area. Data analysis involved the use of descriptive and inferential statistics for quantitative data, while thematic analysis was applied to qualitative data. This mixed-methods

approach enabled a comprehensive understanding of healthcare waste management practices and community-based approaches in the study setting.

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Results

Research Question 1: What are the current healthcare waste management practices in government-owned Primary Health Care facilities?

Table 1: Current Healthcare Waste Management Practices

Practice	Frequency	Percentage
Segregation of waste	90	67.2%
Proper disposal of sharp objects	80	59.7%
Use of personal protective equipment	100	74.6%
Regular waste collection	70	52.2%
Other (specify)	20	14.9%

The results show that while some healthcare waste management practices are being implemented, there is still room for improvement. For instance, 67.2% of participants reported that waste segregation is practiced in their healthcare facilities, indicating that about one-third of the facilities may not be segregating waste properly. The use of personal protective equipment (PPE) was reported by 74.6% of participants, which is a positive finding. However, only 59.7% of participants reported proper disposal of sharp objects and 52.2% reported regular waste collection. These findings suggest that healthcare facilities need to strengthen their waste management practices, particularly in areas such as sharp objects disposal and regular waste collection.

Research Question 2: What are the challenges faced by healthcare workers in managing healthcare waste?

Table 2: Challenges Faced by Healthcare Workers

Challenge	Frequency	Percentage
Lack of training	60	44.8%
Insufficient resources	80	59.7%
Inadequate infrastructure	50	37.3%
Limited budget	70	52.2%
Other (specify)	30	22.4%

The results highlight the challenges faced by healthcare workers in managing healthcare waste. The most significant challenges reported were insufficient resources (59.7%) and limited budget (52.2%). Lack of training was also a notable

challenge, reported by 44.8% of participants. These findings suggest that healthcare facilities face significant resource constraints that hinder their ability to manage healthcare waste effectively. Addressing these challenges will be crucial to improving waste management practices.

Research Question 3: What community-based approaches can be used to improve healthcare waste management practices?

Table 3: Community-Based Approaches

Approach	Frequency	Percentage
Community education	100	74.6%
Involvement in waste segregation	80	59.7%
Participation in waste collection	60	44.8%
Feedback mechanisms	50	37.3%
Other (specify)	20	14.9%

The results suggest that community-based approaches can be effective in improving healthcare waste management practices. Community education was identified as a potential approach by 74.6% of participants, indicating that educating communities about proper waste management practices can play a crucial role in improving waste management. Involvement in waste segregation and participation in waste collection were also suggested by 59.7% and 44.8% of participants, respectively. These findings highlight the importance of engaging communities in waste management efforts.

Research Question 4: Is there a significant relationship between community involvement and healthcare waste management practices?

Table 4: Relationship between Community Involvement and Healthcare Waste Management.

Variable	Correlation Coefficient	p-value
Community involvement vs. waste segregation	0.35	0.01
Community involvement vs. proper disposal	0.42	0.001
Community involvement vs. waste collection	0.28	0.05

The results show a significant positive correlation between community involvement and healthcare waste management practices. The correlation coefficients indicate a moderate relationship between community involvement and waste segregation ($r = 0.35$), proper disposal ($r = 0.42$), and waste collection ($r = 0.28$). These findings suggest that community involvement can play a crucial role in improving healthcare waste management practices. By engaging communities in waste management efforts, healthcare facilities can improve their waste management practices and reduce the risks associated with poor waste management.

Hypothesis 1: H0: Difference in Mean Rating of Healthcare Waste Management Practices

Table 5: Hypothesis Testing

Null Hypothesis (H0)	p-value	Decision
No significant difference in mean rating of healthcare waste management practices	0.02	Reject H0

The p-value of 0.02 is less than the significance level of 0.05, indicating a statistically significant difference in the mean rating of healthcare waste management practices among healthcare workers in primary health care facilities. This suggests that the perception of healthcare waste management practices varies significantly among healthcare workers.

Hypothesis 2: Relationship between Challenges Faced and Effective Waste Management Practices

Table 6: Hypothesis Testing

Null Hypothesis (H0)	p-value	Decision
No significant relationship between challenges faced and effective waste management practices	0.001	Reject H0

The p-value of 0.001 is less than the significance level of 0.05, indicating a statistically significant relationship between the challenges faced by healthcare workers and effective healthcare waste management practices. This suggests that the challenges faced by healthcare workers have a significant impact on the effectiveness of waste management practices.

Hypothesis 3: Impact of Community-Based Approaches on Healthcare Waste Management Practices

Table 7: Hypothesis Testing.

Null Hypothesis (H0)	p-value	Decision
Community-based approaches have no significant impact on healthcare waste management practices	0.005	Reject H0

The p-value of 0.005 is less than the significance level of 0.05, indicating a statistically significant impact of community-based approaches on healthcare waste management practices. This suggests that involving the community in waste management efforts can significantly improve waste management practices in primary health care facilities.

Hypothesis 4: Correlation between Community Involvement and Effective Healthcare Waste Management Practices

Table 8: Hypothesis Testing.

Null Hypothesis (H0)	p-value	Decision
No significant correlation between community involvement and effective healthcare waste management practices	0.01	Reject H0

The p-value of 0.01 is less than the significance level of 0.05, indicating a statistically significant correlation between community involvement and effective healthcare waste management practices. This suggests that community involvement is positively correlated with effective waste management practices, highlighting the importance of community participation in waste management efforts.

Discussion of the finding

The finding of the study underscore**s** the critical role that community involvement plays in enhancing healthcare waste management practices within government-owned Primary Health Care facilities. By examining the relationship between community participation and waste management, the research highlights the potential benefits of engaging communities in efforts to improve waste segregation, proper disposal, and waste collection.

One of the most significant takeaways from the study is the strong positive correlation between community involvement and effective healthcare waste management practices. This suggests that when communities are actively engaged in waste management initiatives, healthcare facilities are more likely to adopt and maintain proper waste handling procedures. This finding is particularly noteworthy, as it implies that community-driven approaches can serve as a catalyst for improving waste management practices in healthcare settings.

The study also sheds light on the challenges faced by healthcare facilities in managing waste effectively. The findings indicate that insufficient resources and limited budgets are significant barriers to proper waste management, highlighting the need for innovative solutions and strategic resource allocation. Furthermore, the research identifies community education and involvement in waste segregation as promising strategies for enhancing waste management practices. By empowering communities with the knowledge and skills necessary to participate in waste management, healthcare facilities can tap into a valuable resource that can help drive positive change.

The study provides compelling evidence of the importance of community involvement in healthcare waste management. By fostering partnerships between

healthcare facilities and local communities, we can create more effective waste management systems that not only improve public health outcomes but also contribute to a more sustainable and environmentally conscious healthcare sector, (Ogbonna, 2020).

Implication of the study to Public Health Education

The study's findings have several implications for public health education:

1. Community-based interventions: The study highlights the importance of community involvement in healthcare waste management. Public health education programs can focus on developing community-based interventions that promote proper waste management practices.
2. Health education: The findings of the study emphasize the need for health education programs that target healthcare workers, community members and other stakeholders. These programs can focus on promoting proper waste management practices, use of personal protective equipment and infection control.
3. Capacity building: The findings of the study suggest that healthcare facilities face significant resource constraints. Public health education programs can focus on building the capacity of healthcare workers to manage healthcare waste effectively.
4. Promoting behavioural change: The study's findings highlight the importance of promoting behavioural change among healthcare workers and community members. Public health education programs can use various strategies to promote behavioural change, such as social marketing, community mobilization and education.
5. Interdisciplinary collaboration: The study's findings emphasize the need for interdisciplinary collaboration between healthcare professionals, environmental health professionals, and community members. Public health education programs can promote interdisciplinary collaboration and teamwork in healthcare waste management.

Policy development and implementation: The findings can inform policy development and implementation related to healthcare waste management. Public health education programs can advocate for policies that promote safe and effective healthcare waste management practices.

By incorporating these implications into public health education programs, we can promote safe and effective healthcare waste management practices, reduce the risks associated with poor waste management and improve public health outcomes.

Conclusion

The study examined the existent healthcare management practices, and explored community-based approaches towards the management of healthcare wastes in government health facilities in Enugu east urban slums. This venture was due to the

glaring poor healthcare waste management in Enugu east urban, which poses the risk of epidemic in the Enugu east local government area of Enugu state. The findings of the study demonstrate the significance of community involvement in improving healthcare waste management practices. By engaging communities in waste management efforts, healthcare facilities can enhance their waste management practices, reduce the risks associated with poor waste management and contribute to better public health outcomes. The results of this study highlight the potential for community-driven approaches in driving positive changes in healthcare waste management. Hence, future efforts should focus on building partnerships of healthcare facilities and local communities to promote sustainable and effective waste management practices.

Recommendations

The study recommends that,

Healthcare Facilities should;

1. Engage communities in waste management efforts through education and involvement in waste segregation.
2. Provide training and resources to healthcare workers on proper waste management practices.
3. Allocate sufficient resources and budget for effective waste management.

Policymakers should

1. Develop policies and guidelines that support community-driven waste management initiatives.
2. Provide funding and resources for community-based waste management programs.
3. Encourage interdisciplinary collaboration between healthcare professionals, environmental health professionals, and community members.

Future Research should

1. Conduct further studies on the effectiveness of community-based waste management initiatives.
2. Explore the role of community involvement in other aspects of healthcare, such as infection control and patient safety.
3. Develop and evaluate interventions aimed at improving healthcare waste management practices in different settings.

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