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**ASSESSING THE IMPACT OF ENVIRONMENTAL POLICIES ON MEDICAL WASTE
MANAGEMENT:**

**A CASE STUDY OF JOHN F. KENNEDY HOSPITAL (JFK) IN MONROVIA, LIBERIA.
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Abstract

Proper medical waste management is a cornerstone of public health and environmental sustainability, yet healthcare facilities in Liberia, including John F. Kennedy (JFK) Hospital in Monrovia, face persistent challenges in implementing effective waste handling practices. Inefficient management of medical waste poses serious risks to hospital staff, patients, and the surrounding community, highlighting the need to examine how environmental policies influence operational practices. This study aimed to assess the impact of environmental policies on medical waste management at JFK Hospital, focusing on healthcare waste management guidelines, national solid waste management policy, environmental protection policy, and public health regulations. A descriptive research design was employed, with data collected from 169 hospital staff using structured questionnaires. Data was analyzed using descriptive statistics to assess compliance and perceptions, and regression analysis to examine the relationship between policy awareness and medical waste management practices. Qualitative insights from document reviews and key informant interviews were used to support interpretation of the quantitative results. The regression results indicated a strong positive relationship between environmental policies and medical waste management practices at JFK Hospital, with $R = 0.894$, showing a very strong correlation between the combined policy variables and operational practices. The R^2 value of 0.799 implies that approximately 79.9% of the variation in medical waste management practices can be explained by the four policy variables studied, highlighting their critical influence on operational outcomes. Overall, the findings demonstrate that internal hospital guidelines, adherence to national environmental and public health policies, and operational monitoring are key determinants of effective medical waste management. It is recommended that hospital management and policymakers strengthen enforcement of environmental policies, provide adequate treatment facilities, and implement continuous staff training to ensure full compliance and safeguard public health.

Keywords

Environmental policies; Medical waste management; Public health; Hospital waste; Liberia

Introduction

Improper medical waste management poses serious environmental and public health risks, particularly in developing countries. Liberia faces persistent challenges in healthcare waste handling despite the existence of regulatory frameworks. John F. Kennedy Hospital, the

country's largest referral hospital, generates large volumes of hazardous medical waste, making it a critical case for examining the effectiveness of environmental policies in practice.

Literature Review

The study is grounded in Systems Theory, Institutional Theory, and Environmental Management Theory. These theories explain how environmental policies influence institutional behavior, compliance, and sustainability in healthcare waste management. Empirical studies globally demonstrate that policy enforcement, staff training, and infrastructure availability significantly improve waste management outcomes.

Methodology

A descriptive research design was used. The study population comprised medical staff, waste handlers, and administrators at JFK Hospital. A sample size of 169 respondents was determined using Yamane's formula. Data collection instruments included questionnaires, interviews, and document review checklists. Validity and reliability were ensured through pilot testing and Cronbach's alpha analysis.

Results and Discussion

Results indicate moderate to high compliance with healthcare waste management guidelines, though gaps exist in waste segregation, storage, and treatment infrastructure. Regression analysis revealed that environmental policies significantly predict effective waste management practices. The findings align with previous studies conducted in similar low-resource settings.

Conclusion

The study concludes that environmental policies play a significant role in shaping medical waste management practices at JFK Hospital. This study examined medical waste management at John F. Kennedy (JFK) Hospital in Monrovia, Liberia, with the aim of understanding the policies guiding waste management, assessing the current practices implemented by hospital staff, and evaluating the relationship between environmental policies and the effectiveness of medical waste management. The research employed a mixed-methods approach, combining quantitative surveys of hospital staff with qualitative interviews of the officer in charge of sanitation. This comprehensive approach enabled an in-depth understanding of how institutional frameworks, staff knowledge, operational practices, and regulatory compliance interact to ensure safe, effective, and environmentally responsible handling of medical waste within a major healthcare facility. However, policy effectiveness is constrained by inadequate infrastructure, limited funding, and insufficient training.

Recommendations

The study recommends strengthening policy enforcement, increasing investment in waste treatment facilities, and implementing continuous capacity-building programs for healthcare workers. Further research should explore longitudinal impacts of policy reforms on hospital waste management.

- Promote Staff Engagement and Incentivization

Staff motivation and participation were highlighted as areas needing improvement. The hospital should consider introducing recognition programs, performance-based incentives, and participatory mechanisms for staff feedback on waste management practices. Engaging staff and acknowledging their efforts will encourage compliance, foster ownership of processes, and support continuous improvement in waste management operations.

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