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An Assessment Level of Efficiency in The Sanitational Prctices/Activities by The People Living in Duport Road Community, Paynesville City-Liberia

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ABSTRACT

Sanitation plays a crucial role in public health, yet its efficiency/efficacy varies widely across different communities, particularly in urban settings like the Dupont Road Community in Paynesville City, Liberia. This study aims to assess the Efficiency of Sanitation Practices or activities by the people living in Dupont Road Community to identify their strengths, weaknesses, and opportunities for improvement. The key to man's health lies largely in his

environment. In fact, much of man's ill-health can be traced to adverse environmental factors such as water, soil and air pollution, poor housing conditions, presence of animal reservoir and insect vectors of diseases which pose threats to man's health. Drawing upon relevant literature, including the importance of sanitation in public health [1], community-based approaches to sanitation improvement [2], challenges in urban sanitation management [3], assessment tools for sanitation efficiency [4], and policy implications for sanitation improvement [5], the research employs a mixed-methods approach. Data collection methods include surveys, direct observations, and participatory assessments involving community members. Through this comprehensive assessment, the study seeks to provide valuable insights for policymakers, community leaders, and residents to inform targeted interventions and initiatives that can enhance sanitation standards and foster a healthier environment for all residents of the Duport Road Community.

KEYWORDS: Sanitation practices, Environmental Efficiency, Public Health, Diseases

INTRODUCTION

Environmental Sanitation is defined as the principles and practice of effecting healthful and hygienic conditions in the environment to promote public health and welfare improve quality of life and ensures a sustainable environment, [6].

Sanitation is a cornerstone of public health, playing a crucial role in preventing the spread of diseases and promoting overall well-being within communities.

However, despite its significance, sanitation practices often vary widely across different regions and communities, leading to disparities in health outcomes. The Duport Road Community, nestled within the vibrant fabric of Paynesville City, serves as a focal point for understanding the intricate interplay between socio-economic factors, cultural norms, and environmental conditions shaping sanitation practices. Against the backdrop of Liberia's rich history and diverse ethnic tapestry, this community embodies the resilience and aspirations of its residents amidst ongoing challenges. In the bustling Dupont Road community, settled

within the vibrant City of Paynesville, Liberia, assessing the efficiency of sanitation practices is paramount for safeguarding the health and dignity of its residents.

This study embarks on a comprehensive exploration aimed at assessing the level of efficiency in sanitation practices and activities among the inhabitants of the Duport Road Community. By delving into the intricacies of daily routines, waste management systems, and hygiene behaviors, this research endeavors to unearth valuable insights into the prevailing sanitation landscape.

By shedding light on the current state of sanitation affairs, this research endeavors to inform policymakers, community leaders, and residents alike, paving the way for targeted interventions and initiatives that can enhance sanitation standards and foster a healthier environment for all.

LITERATURE REVIEW

The Importance of Sanitation in Public Health: Numerous studies underscore the pivotal role of sanitation in public health outcomes. Access to clean water, proper waste disposal, and hygienic practices are essential components of sanitation that directly impact disease transmission and overall community well-being (Bartram & Cairncross, 2010).

Community-Based Approaches to Sanitation Improvement: Community involvement is fundamental to the success of sanitation interventions. Engaging residents in decision-making processes, promoting behavioral change through education, and fostering local ownership of sanitation initiatives have been shown to yield sustainable improvements in sanitation practices (Jenkins et al., 2014).

Challenges in Urban Sanitation: Urban areas present unique challenges for sanitation management, including population density, inadequate infrastructure, and informal settlements. Addressing these challenges requires holistic approaches that consider socio-economic factors, cultural norms, and environmental sustainability (UN-Habitat, 2010).

Assessment Tools for Sanitation Efficiency: Various methodologies exist for assessing the efficiency of sanitation practices at the community level. These may include surveys, direct observations, and participatory assessments that involve community members in data collection and analysis (WHO/UNICEF, 2021).

Policy Implications for Sanitation Improvement: Effective sanitation policies are essential for promoting public health and sustainable development. Policy frameworks should prioritize equitable access to sanitation services, regulatory mechanisms for sanitation standards, and investments in infrastructure and human resources (UNICEF, 2019).

Inadequate sanitation is widely recognized as a significant environmental health challenge globally, contributing to a considerable number of deaths and illnesses. The improper disposal of solid waste is closely linked to the proliferation of vector-borne diseases such as malaria and dengue fever. As noted by McMichael (2000), numerous studies have linked the prevalence of parasitic infections, cholera, malaria, and diarrhea in African urban areas to substandard sanitary conditions resulting from the indiscriminate disposal of waste materials.[7], [8], [9].

METHODOLOGY

The research design used in this study was a descriptive cross-sectional study design that aimed at collecting information from respondents on their ideas and opinions relating to the perceived environmental sanitation efficiency in the control of malaria and other diseases. The population for this study comprised all residents of Duport Road Rommunity in Paynesville City; sources from census in 2014 estimated the population of Duport Road Community at 400,000 male and female residents.

SAMPLE SIZE AND SAMPLING TECHNIQUES

The estimated population of Duport Road Community, Paynesville City according to census in 2014 is 400,000. The researcher therefore used the accepted scientific formula below to come up with the sample size. Formula: $(n=Z^2X2\ P\ (1-P)/(SE)^2)$, where n= unknown sample size, Z^2=1.96, P=probability of selection, 1-P= q or probability of not selecting, SE^2=standard

error and 0.5 was used as margin of error. However, the sample size for this study was 400 respondents (male and female) between ages of 18-55years which the researcher used for the study that cut across all streets in Duport Road Community.

For this study, a sampling technique employing multiple stages was utilized. Stratified sampling technique was adopted to select the number of houses in each street selected for this study. A purposive sampling technique was used to select 400 respondents, (180 male and 220 females) who are volunteers. A proportionate sampling technique was used to select 50% married respondents in Duport Road Community and used for the study.

RESEARCH INSTRUMENT

The study sample consisted of 400 respondents aged between 18 and 55 years, randomly chosen from the Duport Road Community. A self-designed questionnaire titled the Environmental Sanitation Questionnaire (ESQ) was utilized for data collection. The questionnaire comprised three distinct sections labeled as Sections A, B, and C. Section A contained information relevant to the demographic data of the respondents while section B sought information on the research questions while section C focus on the variables under study.

DESCRIPTION OF THE STUDY AREA

Liberia is **Liberia,** officially **Republic of Liberia,** Republic, Western Africa. Area: 37,466 sq mi (97,036 sq km). Population: (2023 est.) 5,209,000.

Capital: Monrovia. Liberia is home to a diverse array of ethnic groups, including the Americo-Liberians, who are descendants of black freedmen that migrated from the United States during the 19th century, as well as sixteen indigenous peoples belonging to the Mande, Kwa, and Mel linguistic groups. The official language of Liberia is English, although various indigenous languages are also spoken. The religious landscape of the country encompasses traditional beliefs, Christianity, and Islam. The currency used is the Liberian dollar. Geographically, Liberia features coastal lowlands that stretch approximately 350 miles along the Atlantic Ocean, with hills and low mountains found further inland. Established in 1821,

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Liberia holds the distinction of being Africa's oldest republic, initially formed as a colony by the American Colonization Society on land acquired for freed U.S. slaves. Jehudi Ashmun, a Methodist minister, assumed leadership of the settlement in 1822, playing a significant role in its establishment. The territory was officially named Liberia in 1824, with its principal settlement designated as Monrovia. Independence was declared by Joseph Jenkins Roberts in 1847, who subsequently worked to expand Liberia's boundaries. The country faced border disputes with France and Britain until 1892, when its borders were officially delineated.

Liberia has 15 counties. Monserradoe is one of the counties, which host Paynesville City that has several neighborhoods, *called* "*communities*" by residents, which are notable for their unique names. One of these communities is *Duport Road Community, where the study was conducted* [10] [11]

PROCEDURE FOR DATA COLLECTION

The researcher signed a letter of introduction from the Head of Department, of Environmental Health at the International Academic Management Association (IAMA) University for Identification Purpose to the Head of Duport Road Community and made advance familiarization tour and enlightenment visit to all the community selected for the study and sought the consent of household heads for their absolute support. The instrument was distributed in the morning before setting to work and marketplaces and the evening especially weekends and during relaxation hours by the researcher and assistant researchers and collection was made on the spot to ensure a high rate of returns.

PROCEDURE FOR DATA ANALYSIS

The data collected from the instruments were analyzed using various statistical methods. Frequency counts and percentages were employed to analyze the demographic data, with pie and bar charts utilized for visualization. A correlation matrix was utilized to examine the relationships between variables corresponding to the research questions. Furthermore, multiple regression analysis was conducted to analyze the hypotheses, with a significance level set at 0.05.

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RESULTS

The result reviled that the Efficacy of Sanitation Practices or activities by the people living in Dupont Road Community have direct influence on the spread of malaria and other diseases among the people of Duport Road Community, Paynesville City, Liberia.

Below is the inter-co relational matrix of the relationship between perceived environmental sanitation components in the control of malaria among Duport Road Community residence. The table revealed that frequency of cleaning the surrounding bushes and grasses of the respondents (r=-0.6120, N=400,P<0.05), frequency of cleaning the drainage system (r=-0.7605, N400, P<0.05), availability of the drainage system around the house (r=-0.8999, N400, P<0.05), frequency of cleaning the toilet facilities (r=-0.0370, N400, P<0.05), presence of small farmland in areas of residence (r=-0.0692, N400, P<0.05).

This implies that frequency of cleaning the surrounding bushes and grasses, frequency of cleaning the drainage system, availability of the drainage system around the house, frequency of cleaning the toilet facilities, presence of small farmland in areas of residence had positive relationship in the control of malaria and other diseases among the people of Duport Road Community, Paynesville City- Liberia.

Also as indicated in table below, it was found that the linear contribution of perceived environmental sanitation component was tested significance on Distribution of insecticides treated nets, Wearing protective clothing, Residual house spraying, Door to door sensitization, frequency of cleaning the drainage system, in the control of malaria among Duport Road community. Indicating that about 61.7% of the variance was accounted for by the independent variables.

This below table indicates the frequency of cleaning the toilet facilities, presence of small farmland in areas of residence as environmental sanitation practice by the people of Duport Road Community, Paynesville City.

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FREQUENCY OF CLEANING THE SURROUNDINGS OF BUSHES AND GRASSES	Frequency	Percent	Cum. Percent	Wilson 95% LCL	Wilson 95% UCL
Every 2-3 months	90	23%	23%	19%	27%
Every six months	8	2%	25%	1%	4%
Monthly	138	35%	59%	30%	39%
Weekly	106	27%	86%	22%	31%
Whenever I like/except visitors	58	15%	100%	11%	18%
TOTAL	400	100.00%	100.00%		

This table Indicates that **138** respondents, accounting for 35% are cleaning the surrounding bushes and grasses on the monthly bases, **106** respondents, representing 27% clean on the weekly bases, **90** respondents representing 23% do clean every 2-3 months, **58** respondents, representing 15% can only do so whenever they like or expect guest/strangers, and **8** respondents, representing just 2% do so every six months.

Correlation matrix showing perceived environmental sanitation components in the control of malaria and other diseases among the people of Duport Road Community.

	Malaria	Frequency of Cleaning the Surrounding Bushes and Grasses of the Respondents	Frequency of Cleaning the Drainage System of the Respondents	Availability of the drainage system around the house of the respondents	Frequency of cleaning the toilet facilities	Presence of small farmland in areas of residence

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Malaria	1					
Frequency of Cleaning the Surrounding Bushes and Grasses of the Respondents	-0.6120	1				
Frequency of Cleaning the Drainage System	-0.7605	0.1993	1			
Availability of the drainage system around the house	-0.8999	0.2396	0.7750	1		
Frequency of cleaning the toilet facilities	0.0370	0.0689	0.0086	-0.0107	1	
Presence of small farmland in areas of	-0.0692	-0.0338	0.0086	-0.0299	-0.0181	1

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residence						

Correlation is significant at 0.05 (2-tailed); N=400

Summary of joint contribution of perceived environmental sanitation 'components' in the control of malaria and other disease among the people of Duport Road Community, Paynesville City.

Model	Sum of Square	Df	Mean square	F	Sig. P. value	Remark
Regression	685.836	4	186.459	98.409	.000	Sig
Residual	387.460	395	1.806			
Total	1073.296	399				

DISCUSSION/CONCLUSION OF RESULTS

The findings were discussed in line with the research question and hypotheses, which implies that frequency of cleaning the surrounding bushes and grasses, frequency of cleaning the drainage system, availability of the drainage system around the house, frequency of cleaning the toilet facilities, presence of small farmland in areas of residence the people of Duport Road Community were positively correlated in the control of malaria and other diseases. This is in line with the study done on sanitation in Nigeria cities which pointed a common practice in many cities in the country [12]. Also, according to study done in Accra, Ghana, it was observe that about 60-70 per cent of solid waste generated in the markets and other public places often find their way into an open drains and create a breeding ground for mosquitoes and insects [13][14]. Therefore, based on the research findings or result of the study, it can be concluded that there are environmental efficacy that influence the control of malaria and other disease among the people of Duport Road Community, evidence by the all variables in the study that showed significantly positive.

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