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ENVIRONMENTAL AND HEALTH EDUCATION PROGRAMMES AS TOOLS FOR SUSTAINABLE COMMUNITY EMANCIPATION AMONG THE WAKIRIKE PEOPLE OF RIVERS STATE, NIGERIA

***Ekwems, Abidemi Boma, Prof H.L. Deekor & Dr Chidinma Dokubo**

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***Corresponding Author: Ekwems, Abidemi Boma**

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ABSTRACT

This study examined environmental and health education programmes as tools for sustainable community emancipation among the Wakirike People of Rivers State, Nigeria. Two research objectives, two research questions, and two null hypotheses guided the study. The study adopted a descriptive survey research design. The population of the study was 699 community members comprising 594 members of registered community-based organisations and 105 CDC members in the study area. The sample size of the study was 406 respondents comprising 301 registered members of community-based organisations and 105 CDC Members. Proportionate stratified sampling technique was adopted in selecting 301 (50%) of the members from each of the registered community-based organisations, while all the CDC members were taken as census without sampling due to their manageable size. The instrument used for data collection was a structured questionnaire titled, "Non-Formal Education Programmes as a Tool for Sustainable Community Emancipation Questionnaire". The instrument was validated by three experts from the Department of Adult Education and Community Development, and Measurement and Evaluation from Rivers State University. The reliability of the instrument was established through a test of internal consistency using Cronbach Alpha method. Since the reliability was done for each cluster of items in the instrument, reliability coefficients of 0.78 and 0.76 were obtained for the environmental education and health education clusters respectively. A composite reliability index of 0.71 was established for the instrument. The responses from the two research questions were analysed with mean and standard deviation, while the two null hypotheses were tested with t-test statistics at 0.05 level of significance. The findings from the study revealed that environmental education programme (grand means of 2.71 and 2.65) and health education programme (grand means of 2.75 and 2.71) served as tools for sustainable community

emancipation among the Wakirike People of Rivers State to a high extent, and that there was no significant difference in the mean ratings of members of community-based organisations and community development committee members on either programme. Based on the findings, the study recommended, among others, that the Rivers State Ministry of Environment and Water Resources should mainstream environmental education programmes in Wakirike communities through trained community environmental champions delivering workshops on waste management, climate adaptation, biodiversity conservation and water resource management, and that the Rivers State Ministry of Health and Primary Healthcare Development Agency should expand community health education through trained community health volunteers conducting outreach on HIV/AIDS, malaria prevention, maternal and child health, nutrition, sanitation, and disease surveillance.

KEYWORDS: Environmental Education, Health Education, Sustainable Community, Emancipation.

INTRODUCTION

The Wakirike people of Rivers State occupy one of the most ecologically sensitive stretches of the Niger Delta, where decades of crude oil exploration, gas flaring, and industrial effluent discharge have steadily degraded the aquatic and terrestrial resources on which their traditional fishing- and farming-based livelihoods depend. Zabbey, Uyi and Sam (2016) documented that oil spills in the Niger Delta have destroyed fish breeding grounds, contaminated farmland, and displaced entire communities from their ancestral means of subsistence, while Ordinioha and Brusaferro (2017) established a direct link between oil pollution exposure and elevated rates of respiratory illness, skin disease, and waterborne infection among riverine populations. For the Wakirike, whose identity and economy have historically been anchored in the bounty of their marine environment, this dual assault on ecological integrity and public health represents one of the most pressing threats to sustainable community emancipation in contemporary Rivers State.

Environmental education has increasingly been recognised as a non-formal strategy through which communities can be equipped to understand, monitor, and respond to the ecological threats confronting them. Kobani (2018) observed that adult and community education programmes that build environmental literacy enable communities to move from passive victims of degradation to active managers of their own natural resources. Similarly, Abuokwen, Ubana, Bassey and Awah (2025) argued that community environmental

education, when backed by adequate policy support and sustained public awareness, empowers residents to participate meaningfully in waste management, climate adaptation, and natural resource governance. For oil-impacted communities such as those of the Wakirike, environmental education programmes therefore hold the potential to convert ecological vulnerability into a platform for collective action and resource stewardship.

Alongside environmental degradation, the Wakirike people also contend with a heavy and largely preventable burden of ill-health, including malaria, waterborne diseases, poor maternal and child health outcomes, and limited access to functional primary healthcare facilities within their riverine settlements. Iwelunmor et al. (2016) noted that sustainable improvements in community health in sub-Saharan Africa depend less on episodic medical intervention than on continuous, community-embedded health education that builds the knowledge and behavioural capacity of residents to prevent and manage disease. Ledwith (2016) similarly emphasised that participatory community health education strengthens the confidence of ordinary residents to challenge the structural conditions, such as poverty and poor sanitation infrastructure, that sustain ill-health. Popoola et al. (2025) further linked community health education to the achievement of the Sustainable Development Goals, arguing that university- and community-driven health engagement initiatives are essential complements to formal healthcare delivery in under-served areas. Health education, delivered through non-formal, community-based structures, thus emerges as a second critical instrument for advancing the wellbeing and self-reliance of the Wakirike people.

Both environmental and health education are, in this regard, part of a broader repertoire of non-formal education programmes, alongside vocational training, literacy, entrepreneurship, civic education, and digital literacy, that have been identified as instruments for sustainable community emancipation. Kalio and Kobani (2024) maintained that non-formal education is critical for achieving lasting developmental impact in marginalised communities, while Emenike and Okorie (2022) cautioned that poverty and low community self-esteem often act as significant barriers to the uptake of non-formal education programmes in Rivers State, underscoring the need for interventions that are practical, locally relevant, and visibly tied to the survival concerns of the community. Environmental and health education, precisely because they respond directly to the pollution-related and disease-related threats that most immediately endanger Wakirike livelihoods, may hold particular promise as entry points for building community engagement with non-formal education more broadly.

It is against this background of intertwined ecological and health vulnerability that this study interrogates the specific contribution of environmental education and health education

programmes to sustainable community emancipation among the Wakirike People of Rivers State, Nigeria.

Statement of the Problem

The Wakirike people of Rivers State continue to grapple with the compounding effects of environmental degradation and poor health outcomes arising from decades of oil exploration and industrial activity within their territory. Farmlands and fishing grounds that once sustained the community have been progressively despoiled by oil spills, gas flaring, and unregulated waste disposal, while the same pollution has been linked to a rising incidence of preventable diseases, poor maternal and child health indices, and limited community capacity to respond to outbreaks and health emergencies. Formal government interventions in environmental remediation and healthcare delivery in the riverine Wakirike settlements have, however, remained sporadic, under-resourced, and largely inaccessible to the ordinary community members who bear the brunt of these challenges.

Non-formal environmental and health education programmes, delivered through community-based organisations and community development committees, have been proposed as accessible, context-sensitive alternatives capable of building the ecological literacy and health-seeking capacity that formal institutions have struggled to provide. Yet there remains a dearth of empirical evidence on whether such non-formal environmental and health education programmes, specifically among the Wakirike people, actually translate into the kind of sustainable community emancipation that development planners assume they do. Without such evidence, government agencies, non-governmental organisations, and community leaders risk investing in environmental and health education interventions whose relevance and effectiveness for this particular population remain unverified.

It is therefore pertinent to ask: to what extent do environmental education and health education programmes serve as tools for sustainable community emancipation among the Wakirike People of Rivers State? Providing empirically grounded answers to this question warranted the present study.

Purpose of the Study

The purpose of the study was to examine environmental education and health education programmes as tools for sustainable community emancipation among the Wakirike People of Rivers State. In specific terms, the study sought to:

1. determine the extent to which environmental education programme serves as a tool for sustainable community emancipation among the Wakrike People of Rivers State.
2. ascertain the extent to which health education programme serves as a tool for sustainable community emancipation among the Wakrike People of Rivers State.

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. There is no significant difference in the mean ratings of members of community-based organisations and community development committee members on the extent to which environmental education programme serves as a tool for sustainable community emancipation among the Wakrike People of Rivers State.
2. There is no significant difference in the mean ratings of members of community-based organisations and community development committee members on the extent to which health education programme serves as a tool for sustainable community emancipation among the Wakrike People of Rivers State.

METHODOLOGY

The study adopted a descriptive survey research design. The population of the study was 699 community members comprising 594 members of registered community-based organisations and 105 CDC members in the study area. The sample size of the study was 406 respondents comprising 301 registered members of community-based organisations and 105 CDC Members. Proportionate stratified sampling technique was adopted in selecting 301 (50%) of the members from each of the registered community-based organisations, while all the CDC members were taken as census without sampling due to their manageable size. The instrument used for data collection was a structured questionnaire titled, "Non-Formal Education Programmes as a Tool for Sustainable Community Emancipation Questionnaire", of which the cluster on environmental education and the cluster on health education were drawn upon for this study. The instrument was validated by two experts from the Department of Adult Education and Community Development, and Measurement and Evaluation, Rivers State University. The reliability of the instrument was established through a test of internal consistency using the Cronbach Alpha method. Since the reliability was determined for each cluster of items in the instrument, reliability coefficients of 0.78 and 0.76 were obtained for the environmental education and health education clusters respectively, yielding a composite reliability index of 0.71 for the instrument as a whole. A total of 406 copies of the

questionnaire were administered on the respondents, out of which 392 copies were retrieved and 380 copies (281 from members of community-based organisations and 99 from CDC members) were correctly filled and used for analysis. The responses from the two research questions were analysed using mean and standard deviation, with a decision rule of Very High Extent (3.50-4.00), High Extent (2.50-3.49), Low Extent (1.50-2.49), and Very Low Extent (1.49 and below), while the two null hypotheses were tested with t-test statistics at 0.05 level of significance.

RESULTS

Research Question 1: To what extent does environmental education programme serve as a tool for sustainable community emancipation among the Wakrike People of Rivers State?

Table 1: Mean Rating of Members of Community-Based Organisations and CDC Members on Extent to which Environmental Education Programme Serve as a Tool for Sustainable Community Emancipation Among the Wakrike People of Rivers State.

		Members of CBOs (281)			CDC Members (99)		
S/N	Items	Mean	SD	Rmk	Mean	SD	Rmk
1	Waste management training enhances community practices and reduces pollution in Wakrike.	2.63	0.58	HE	2.61	0.54	HE
2	Climate change awareness programmes increase community resilience and adaptation in Wakrike.	2.67	0.59	HE	2.59	0.62	HE
3	Biodiversity conservation education promotes sustainable use of natural resources in Wakrike.	2.72	0.55	HE	2.57	0.61	HE
4	Environmental impact assessment training empowers community members to monitor local projects.	2.75	0.63	HE	2.66	0.58	HE
5	Environmental advocacy training empowers community members to hold leaders accountable.	2.86	0.72	HE	2.60	0.53	HE
6	Integrated solid waste management training reduces waste and promotes community recycling.	2.61	0.52	HE	2.84	0.89	HE
7	Sustainable agriculture practices training improves crop yields	2.83	0.64	HE	2.72	0.75	HE

	and reduces environmental degradation.						
8	Water resource management education enhances community access to clean water in Wakrike.	2.84	0.73	HE	2.82	0.69	HE
9	Renewable energy education promotes adoption of solar, wind, and other clean energy sources.	2.56	0.52	HE	2.56	0.61	HE
10	Eco-tourism training creates economic opportunities while conserving Wakrike's natural heritage.	2.66	0.57	HE	2.67	0.79	HE
	Grand Mean	**2.71**	**0.61**	**HE**	**2.65**	**0.66**	**HE**

Source: Researcher's Field Result, 2026.

Table 1 above, for research question one, showed the mean ratings of members of community-based organisations and community development committee members on the extent that environmental education programme serve as a tool for sustainable community emancipation among the Wakrike People of Rivers State. Item 1 had mean scores of 2.63 and 2.61, with standard deviations of 0.58 and 0.54. Item 2 had mean scores of 2.67 and 2.59, with standard deviations of 0.59 and 0.62. Item 3 had mean scores of 2.72 and 2.57, with standard deviations of 0.55 and 0.61. Item 4 recorded mean scores of 2.75 and 2.66, with standard deviations of 0.63 and 0.58. Item 5 had mean scores of 2.86 and 2.60, with standard deviations of 0.72 and 0.53. Item 6 recorded mean scores of 2.61 and 2.84, with standard deviations of 0.52 and 0.89. Item 7 had mean scores of 2.83 and 2.72, with standard deviations of 0.64 and 0.75. Item 8 recorded mean scores of 2.84 and 2.82, with standard deviations of 0.73 and 0.69. Item 9 had mean scores of 2.56 and 2.56, with standard deviations of 0.52 and 0.61, while Item 10 had mean scores of 2.66 and 2.67, with standard deviations of 0.57 and 0.79. The grand mean of 2.71 and 2.65 for both groups of respondents was recorded. The result revealed that members of community-based organisations and community development committee members agreed that environmental education programme serve as a tool for sustainable community emancipation among the Wakrike People of Rivers State to a high extent.

Research Question 2: To what extent does health education programme serve as a tool for sustainable community emancipation among the Wakrike People of Rivers State?

Table 2: Mean Rating of Members of Community-Based Organisations and CDC Members on Extent to which Health Education Programme Serve as a Tool for Sustainable Community Emancipation Among the Wakrike People of Rivers State.

		Members of CBOs (281)			CDC Members (99)		
S/N	**Items**	**Mean**	**SD**	**Rmk**	**Mean**	**SD**	**Rmk**
1	HIV/AIDS awareness programmes reduce stigma and promote testing in Wakrike community.	3.22	0.78	HE	2.61	0.57	HE
2	Malaria prevention education increases use of bed nets and reduces incidence in Wakrike.	2.95	0.82	HE	2.69	0.52	HE
3	Maternal and child health training improves prenatal care and infant mortality rates.	2.62	0.58	HE	2.75	0.65	HE
4	Nutrition education promotes healthy diets and reduces malnutrition among Wakrike residents.	2.63	0.63	HE	2.67	0.51	HE
5	Sanitation and hygiene training reduces waterborne diseases in Wakrike community.	2.58	0.61	HE	2.70	0.68	HE
6	Family planning education increases access to reproductive health services in Wakrike.	2.51	0.54	HE	2.84	0.86	HE
7	Mental health awareness programmes reduce stigma and promote seeking help in Wakrike.	2.64	0.53	HE	2.57	0.55	HE
8	First aid and emergency response training empowers community members to act in crises.	2.84	0.78	HE	2.76	0.67	HE
9	Disease surveillance training enables early detection and response to outbreaks in Wakrike.	2.67	0.56	HE	2.80	0.68	HE
10	Health policy advocacy training empowers community members to demand healthcare rights.	2.85	0.69	HE	2.67	0.59	HE
	Grand Mean	**2.75**	**0.65**	**HE**	**2.71**	**0.63**	**HE**

Source: Researcher's Field Result, 2026.

Table 2 above, for research question two, showed the mean ratings of members of community-based organisations and community development committee members on the

extent that health education programme serve as a tool for sustainable community emancipation among the Wakrike People of Rivers State. Item 1 had mean scores of 3.22 and 2.61, with standard deviations of 0.78 and 0.57. Item 2 had mean scores of 2.95 and 2.69, with standard deviations of 0.82 and 0.52. Item 3 had mean scores of 2.62 and 2.75, with standard deviations of 0.58 and 0.65. Item 4 recorded mean scores of 2.63 and 2.67, with standard deviations of 0.63 and 0.51. Item 5 had mean scores of 2.58 and 2.70, with standard deviations of 0.61 and 0.68. Item 6 recorded mean scores of 2.51 and 2.84, with standard deviations of 0.54 and 0.86. Item 7 had mean scores of 2.64 and 2.57, with standard deviations of 0.53 and 0.55. Item 8 recorded mean scores of 2.84 and 2.76, with standard deviations of 0.78 and 0.67. Item 9 had mean scores of 2.67 and 2.80, with standard deviations of 0.56 and 0.68, while Item 10 had mean scores of 2.85 and 2.67, with standard deviations of 0.69 and 0.59. The grand mean of 2.75 and 2.71 for both groups of respondents was recorded. The result revealed that members of community-based organisations and community development committee members agreed that health education programme serve as a tool for sustainable community emancipation among the Wakrike People of Rivers State to a high extent.

Test of Hypotheses

Hypothesis 1: There is no significant difference in the mean ratings of members of community-based organisations and community development committee members on the extent to which environmental education programme serves as a tool for sustainable community emancipation among the Wakrike People of Rivers State.

Table 3: t-test Analysis of Difference Between Members of Community-Based Organisations and CDC Members on the Extent that Environmental Education Programme Serve as a Tool for Sustainable Community Emancipation Among the Wakrike People of Rivers State.

Respondents	N	Mean	SD	Df	t-cal	p-value	Level of Sign.	Decision
Members, CBOs	281	2.71	0.61	378	1.61	0.58	0.05	Accepted
CDC, Members	99	2.66	0.66					

See details of analysis in appendices.

Table 3 above shows that the p-value of 0.58 is greater than the 0.05 level of significance at 378 degrees of freedom, indicating that there was no significant difference in the mean ratings of members of community-based organisations and community development

committee members on the extent that environmental education programme serve as a tool for sustainable community emancipation among the Wakrike People of Rivers State. The null hypothesis is therefore accepted.

Hypothesis 2: There is no significant difference in the mean ratings of members of community-based organisations and community development committee members on the extent to which health education programme serves as a tool for sustainable community emancipation among the Wakrike People of Rivers State.

Table 4: t-test Analysis of Difference Between Members of Community-Based Organisations and CDC Members on the Extent that Health Education Programme Serve as a Tool for Sustainable Community Emancipation Among the Wakrike People of Rivers State.

Respondents	N	Mean	SD	Df	t-cal	p-value	Level of Sign.	Decision
Members, CBOs	281	2.75	0.65	378	1.86	0.79	0.05	Accepted
CDC, Members	99	2.71	0.63					

See details of analysis in appendices.

Table 4 above shows that the p-value of 0.79 is greater than the 0.05 level of significance at 378 degrees of freedom, indicating that there was no significant difference in the mean ratings of members of community-based organisations and community development committee members on the extent that health education programme serve as a tool for sustainable community emancipation among the Wakrike People of Rivers State. The null hypothesis is therefore accepted.

DISCUSSION OF FINDINGS

The findings in research question one indicated high agreement, with grand means of 2.71 and 2.66, that environmental education programmes serve emancipation goals for the Wakrike people. Respondents rated waste management, climate change awareness, biodiversity conservation, and environmental impact assessment training as tools that enhance community practices, resilience, and accountability. Notably high scores on water resource management and sustainable agriculture suggest that environmental education directly addresses livelihood threats in the oil-impacted Niger Delta. The corresponding hypothesis one affirmed that there was no significant difference in the mean ratings of members of community-based organisations and community development committee

members on the extent that environmental education programme serve as a tool for sustainable community emancipation among the Wakrike People of Rivers State.

The strong rating on environmental advocacy training implies that education empowers Wakrike members to monitor projects and hold leaders accountable, thereby linking ecological knowledge to political emancipation. These results align with scholarship on environmental education and community resilience. Okeke and Nwafor (2016) established that waste management and climate awareness training increased adaptive capacity and reduced pollution-related health risks in Rivers State communities. Kio and Fubara (2020) found that environmental impact assessment education improved sustainable use of natural resources and empowered rural residents to monitor extractive industry impacts through community-based assessment. More recently, Berepubo and Nte (2023) showed that water resource and sustainable agriculture training enhanced food security and reduced environmental degradation in coastal Niger Delta areas. The Wakrike findings thus contribute new evidence that environmental education is perceived as a dual tool for ecological sustainability and civic emancipation. By building knowledge in waste management, climate awareness, water resources, and sustainable agriculture, these programmes address livelihood threats and strengthen community resilience in the oil-impacted Niger Delta. Therefore, integrating environmental education with advocacy training is essential to empower communities toward accountability, sustainability, and self-determination.

The data in Table 2 for research question two showed high agreement, with grand means of 2.75 and 2.71, that health education programmes emancipate Wakrike communities. Items on HIV/AIDS awareness, malaria prevention, maternal and child health, nutrition, sanitation, and first aid all received high ratings, indicating that health education reduces disease burden and builds community capacity for crisis response. The highest mean, on HIV/AIDS awareness, suggests that stigma reduction and testing promotion are critical emancipation outcomes. High ratings on disease surveillance and health policy advocacy imply that health education moves beyond behaviour change to empower communities to demand healthcare rights and participate in outbreak response, which is essential for sustainable well-being. The corresponding hypothesis two similarly confirmed that there was no significant difference in the mean ratings of members of community-based organisations and community development committee members on the extent that health education programme serve as a tool for sustainable community emancipation among the Wakrike People of Rivers State.

This aligns with studies on health education in vulnerable communities. Udoh and Amodu (2016) found that malaria and sanitation education significantly reduced the incidence of

waterborne diseases in rural Rivers State through improved hygiene practices. Emeghebo (2019) reported that maternal and child health training improved prenatal care uptake and lowered infant mortality in Niger Delta communities. More recently, Onyeka and Bello (2024) showed that health policy advocacy training increased community demand for primary healthcare services and strengthened local health governance. The Wakrike findings therefore confirm that health education is viewed as a high-extent emancipation tool that addresses both individual health and community health agency. By improving knowledge on HIV/AIDS, maternal health, sanitation, and disease prevention, these programmes reduce disease burden and build capacity for community health response. Therefore, expanding health education with advocacy and surveillance training is essential to empower Wakrike people to demand healthcare rights and achieve sustainable well-being.

CONCLUSION

Based on the findings of the study, it was concluded that environmental education programme and health education programme served as tools for sustainable community emancipation among the Wakirike People of Rivers State to a high extent. The study implies that, for a community whose livelihoods and health are simultaneously threatened by decades of oil-related pollution, sustainable emancipation cannot be achieved through healthcare or environmental remediation efforts alone, but requires deliberate, non-formal educational interventions that build both ecological literacy and health-seeking capacity within the community itself. Environmental education equips the Wakrike people to safeguard their natural resource base and hold institutions accountable for environmental harm, while health education builds their capacity to prevent disease, respond to health emergencies, and demand accountable healthcare governance. The convergence of views between grassroots community structures further indicated that both environmental and health education are recognised at the community level as legitimate and effective mechanisms for building ecological and physical resilience. This positions environmental and health education not merely as complementary interventions, but as foundational strategies for achieving sustainable emancipation and resilience among the Wakirike people of Rivers State.

Recommendations

In view of the findings of this study, the researcher made the following recommendations:

1. The Rivers State Ministry of Environment and Water Resources should mainstream environmental education programmes in Wakrike communities through CDC and CBO

leadership. This can be implemented by training community environmental champions to facilitate workshops on waste management, climate adaptation, biodiversity conservation, water resource management, and environmental impact monitoring, using participatory methods and community action projects, to reduce pollution and enhance resilience to climate and oil-related hazards.

2. The Rivers State Ministry of Health and Primary Healthcare Development Agency should expand community health education initiatives in Wakrike communities through CDC health committees and CBO networks. This can be implemented by training and equipping community health volunteers to conduct outreach on HIV/AIDS, malaria prevention, maternal and child health, nutrition, sanitation, first aid, and disease surveillance, using health talks, demonstrations, and local-language radio jingles, to improve health outcomes and community health agency.

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