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Analysis of Community-based Interventions (CBIs) Implemented in Addressing Health Challenges in Rural Communities in Nigeria.

Yakubu Jafaru, Sociology Department, University of Abuja, email: jafyak76@yahoo.com

Aisha Ibrahim Jalingo, Sustainable Development Centre, University of Abuja.

Abstract

This study investigates the effectiveness, challenges, and community perceptions of Community-Based Interventions (CBIs) in promoting health and sanitation in rural areas across Benue, Ebonyi, and Niger States, Nigeria. Using a mixed-methods design, the research combined survey data from 400 respondents with qualitative interviews from 15 key stakeholders, including health workers and community leaders. Quantitative findings revealed that the most prevalent CBIs included health education campaigns (78%), maternal and child health programs (62%), and community sanitation projects (51%). These interventions resulted in improved maternal health awareness, increased antenatal attendance, and a decrease in malaria and cholera outbreaks. Chi-square analysis showed significant associations between CBI effectiveness and respondents' education, income, and occupation. Thematic qualitative analysis highlighted that trust in local leadership, cultural compatibility, and community ownership were critical to program success. However, persistent challenges, such as unstable funding, weak government support, and cultural resistance, hindered the broader impact. The findings underscore the importance of inclusive, culturally sensitive, and sustainably funded CBIs in advancing several Sustainable Development Goals (SDGs), particularly SDG 3 (Good Health), SDG 6 (Sanitation), and SDG 17 (Partnerships). The study recommends institutional integration, community engagement, and strategic resource mobilisation to enhance the effectiveness and sustainability of CBIs in rural Nigeria.

Keywords

Community-Based Interventions (CBIs); Rural Health; Maternal Health; Sanitation; Sustainable Development Goals (SDGs); Community Participation; Nigeria; Mixed Methods; Public Health; Stakeholder Engagement

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1. Introduction

Rural areas in Nigeria carry a much heavier burden from diseases that can be prevented or treated. This problem worsens due to weak healthcare systems, ongoing environmental issues, and economic struggles that limit access to healthcare services (Onwujekwe et al., 2022). The World Health Organisation (WHO, 2023) states that using community-based strategies, such as Community-Based Interventions (CBIBIs), is becoming increasingly important in tackling healthcare access and outcome gaps. CBIs focus on involving local people, utilising their knowledge, and empowering communities to address their most significant health issues. These problems include maternal mortality, childhood malnutrition, waterborne illnesses, and common diseases like malaria.

In Nigeria, the government and development partners have rolled out various types of CBIs such as the Ward Health System, Village Health Workers (VHWs), Community-Led Total Sanitation (CLTS), and the Safe Motherhood Initiative. While these programs have shown potential in improving health outcomes in some areas, their success and sustainability differ significantly between regions. Factors affecting these results include cultural acceptance and the availability of resources (Ismail, Musa, & Magaji, 2024); others include the abilities of local people and support from policies and institutions (Adebayo et al., 2023). Additionally, issues such as insufficient training, poor supervision, weak data management systems, and a lack of community trust can hinder the long-term success of CBIs in rural Nigeria (Ibrahim & Yusuf, 2022).

Recent studies highlight the need for strategies that fit specific contexts, community ownership, and continuous support to boost the effectiveness of CBIs (Ezeanya et al., 2024; Umar et al., 2023). Research also indicates that involving stakeholders, such as women and youth, can enhance the impact and reach of these initiatives (Magaji & Adamu, 2011). Additionally, digital innovations and mobile health platforms have shown potential to strengthen CBIs by improving communication, data collection, and service delivery in hard-to-reach areas (Okonkwo & Adepoju, 2023). This study, therefore, provides a comprehensive evaluation of community-based interventions implemented in rural communities in Nigeria, with a focus on their coverage, outcomes, sustainability, and the persistent barriers limiting their success.

2. Literature Review

2.1 Conceptual Clarification

Community-Based Intervention

Community-Based Interventions (CBIs) are local strategies designed to improve health by actively involving community members (Mwaikambo et al., 2021). These interventions typically focus on prevention, education, and basic healthcare services, and are critical in rural areas where formal medical facilities are limited or non-existent. Examples of CBIs in Nigeria include community health extension workers (CHEWs), mobile clinics, maternal health education programs, and sanitation improvement campaigns.

In rural Nigeria, people face serious health problems such as high maternal and infant mortality, widespread malaria and cholera outbreaks, poor hygiene practices, and low vaccination coverage (Adelakun et al., 2022). These issues are further exacerbated by climate change (Yakubu, Magaji, & Magaji, 2025), inadequate infrastructure, widespread poverty, and low household incomes, which restrict access to even the most basic health services

(Jafaru, Magaji, & Abdullahi, 2024). CBIs attempt to close this access gap by delivering essential services directly to underserved populations using local structures and personnel.

Community-based interventions are defined as "locally driven strategies that actively engage community members in identifying problems, designing, implementing, and evaluating solutions to improve health outcomes and well-being" (Olanrewaju et al., 2023). Ezeokoli et al. (2022) describe them as "public health programs delivered within community settings, often using participatory approaches and local resources, aiming to address health disparities and promote behavioural change among target populations." Similarly, Usman, Ibrahim, and Adeyemi (2023) view CBIs as "context-specific health initiatives that rely on local partnerships, community participation, and tailored activities to foster sustainable health improvement at the grassroots level."

According to Akintunde and Bello (2024), CBIs are "multisectoral, inclusive strategies developed within and by communities to prevent diseases, promote healthy practices, and improve access to health services." From these definitions, CBIs can be understood as low-cost, inclusive strategies that help mitigate health challenges by promoting community ownership, especially in areas where formal infrastructure and public investment are lacking.

Poverty and Household Income

Poverty is a multidimensional condition characterised by a lack of access to essential resources, including food, education, shelter, and healthcare (World Bank, 2023). Poverty severely restricts individuals' ability to prevent or treat illness and raise and educate children decently (Magaji,2008). Poor rural households often struggle to afford transportation to clinics, purchase medications, or pay hospital bills (Enaberue, Musa, & Magaji, 2024). Consequently, they are more vulnerable to preventable diseases and poor health outcomes (Magaji, 2001).

Household income is the total combined earnings of a household's members and serves as a proxy for economic well-being (Obehi, Magaji, & Ahmad,2024). In Nigeria's rural areas, household income levels are generally low (Magaji & Musa, 2015), with the majority of households earning less than ₦30,000 per month. Low-income households are less likely to access basic education for children and antenatal care (Musa, Magaji, & Jafaru, 2024) or participate in disease prevention efforts, which limits the reach and effectiveness of public health interventions (Oyekunle & Sulaimon, 2023).

CBIs are, therefore, a critical response to economic deprivation, serving as a low-cost delivery mechanism that brings health services to impoverished households. By prioritising community involvement, CBIs can address not just healthcare gaps but also the economic vulnerabilities that undermine public health. As such, they contribute to SDG 1 (No Poverty), SDG 3 (Good Health and Well-being), and SDG 10 (Reduced Inequalities).

Infrastructure

Infrastructure refers to the fundamental physical and organisational facilities required for the operation of a society, including roads, electricity, water supply, health centres, and communication systems (UN-Habitat, 2022). In the context of health delivery, infrastructure plays a pivotal role in determining accessibility, efficiency, and quality of services. For example, poor road networks can delay emergency health responses, while a lack of electricity and clean water compromises the functionality and sanitation of health centres (Ijoko, Magaji, & Gombe, 2021).

In many rural Nigerian communities, weak infrastructure is a significant barrier to the successful implementation of CBIs. Mobile clinics may not reach target areas due to impassable roads; health education campaigns may fail in areas without access to digital or print communication tools; and sanitation projects may struggle in the absence of adequate waste disposal infrastructure.

According to Okeke and Ajayi (2023), infrastructural deficits severely limit the implementation and sustainability of grassroots health interventions, thereby making it more challenging to achieve long-term public health outcomes. These infrastructural gaps also exacerbate existing inequalities, with already-poor communities facing compounded health risks.

Thus, infrastructure is a crucial enabler of CBIs, and its absence presents both logistical and equity challenges. Improving rural infrastructure is essential for scaling up effective CBIs and achieving SDG 6 (Clean Water and Sanitation), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 3 (Good Health and Well-being).

Health Challenges

Health challenges refer to "persistent or emerging health-related issues, such as disease burden, service inaccessibility, and socio-environmental factors, that compromise individual and population well-being" (Adegboye et al., 2022). These challenges are often exacerbated by conflicts (Zailani, Magaji & Jafaru, 2025) and in rural areas, where poverty, inadequate infrastructure, and poor governance hinder access to essential health services (Ndako et al, 2018).

Mohammed, Yusuf, and Ibrahim (2023) define health challenges as "barriers or threats to achieving optimal health, often linked to poverty, poor infrastructure, epidemics, and policy inadequacies." Nwachukwu and Okafor (2024) further explain that health challenges include "medical, social, and systemic issues affecting the ability of individuals or communities to achieve or maintain good health." These include maternal and child mortality, malaria, waterborne diseases, mental health issues, and chronic undernutrition.

Adeniran et al. (2023) note that such challenges are particularly acute in underserved communities, where structural barriers—such as long distances to healthcare facilities, a lack of trained personnel, and weak referral systems—contribute to preventable deaths and poor health outcomes.

Health challenges are multifaceted obstacles that prevent individuals and communities—particularly those who are poor and geographically isolated—from achieving and maintaining good health. CBIs, when properly supported by infrastructure and adequate funding, serve as a direct mechanism to reduce these challenges and promote grassroots well-being.

2.2 Empirical Review

Numerous studies demonstrate that Community-Based Interventions (CBIs) are effective in rural areas. For instance, Okeke and others (2023) discovered that maternal deaths in rural Katsina dropped by 28% after they started a Safe Motherhood Initiative with trained birth attendants. Similarly, Lawal and colleagues (2022) reported that CBIs led to an increase in the number of women attending antenatal care and higher vaccination rates in parts of Enugu State.

On the other hand, research by Ibrahim and Yahaya (2021) revealed that some CBIs struggled to survive due to funding issues and poor connections with local governments. These mixed

results underscore the need for a comprehensive study across Nigeria to provide robust recommendations grounded in evidence.

Joga, Dutse, and others (2021) conducted a study that assessed home visits made by community health workers in rural Bauchi State using a stepped-wedge cluster randomised design. This program focused on childhood diarrhoea, increasing immunisation rates, and promoting healthy behaviours among caregivers. Over the course of 18 months, households received organised visits that emphasised prevention methods and the importance of seeking care early. The findings showed notable decreases in childhood diarrhoea cases, higher rates of full immunisation for children under five, and better knowledge among caregivers about warning signs of illness. The study also monitored the retention of health workers and adherence to visit schedules.

Although the results highlighted positive impacts on child health, the study did not investigate how long these behaviour changes lasted after the trial ended. It also did not assess the cost-effectiveness or whether these programs could be applied in different rural areas of Nigeria.

Belaid, Mudi, Omer, et al. (2024). Their qualitative study examined how gender dynamics influenced the outcomes of the Universal Home Visits program in Northern Nigeria. Researchers conducted detailed interviews and focus groups with caregivers, community leaders, and health workers. They identified important themes related to women's independence, men's roles in household decision-making, and cultural barriers—the program aimed to enhance maternal and child health by involving male partners and challenging traditional gender norms. The results showed that while home visits increased knowledge, the unequal power dynamics between genders sometimes hindered women's ability to follow health advice.

The study highlighted the need for more robust gender-transformative strategies within Community-Based Interventions (CBI) programs. It noted the scarcity of quantitative evidence on the impact of gender-focused changes on health outcomes.

Ntoimo, Brian, Ekwo, and others (2022) employed a community-based participatory research (CBPR) approach in 20 communities in Edo State from 2017 to 2020. Their goal was to boost the use of skilled pregnancy and child health services at local primary health centres. They engaged in various activities, including advocating with stakeholders, holding community discussions, forming ward development committees, and conducting workshops to raise awareness among the community. Interviews conducted after the intervention revealed improved inclusion in decision-making, reduced health insurance costs, increased transparency, and no adverse outcomes for mothers or children, as more people accessed skilled care.

While these participatory methods led to more people using the services, the study did not measure whether health outcomes, such as reducing maternal or newborn illness or mortality, actually improved, nor did it assess the contribution of each part to the overall success.

Adie, Igbang, and others (2010) conducted a study that employed descriptive methods and stakeholder interviews to assess the implementation of Community-Directed Interventions (CDI) in rural Cross River State. The focus was on involving community volunteers in primary health care efforts, such as controlling Onchocerciasis and providing education about maternal health. The research revealed strong community involvement through women's groups, churches, and local organisations, which led to increased use of the services and a sense of ownership among program participants.

Although this older study remains important, it did not include randomised evaluations or control groups. It also lacked numerical outcome measures beyond just service delivery coverage and did not explore whether the program could be repeated or adapted in other rural areas.

Okeibunor, Onyeneho, Nwaorgu, and others (2013) conducted qualitative field research to determine if the Community-Directed Intervention (CDI) strategy, commonly used to control Onchocerciasis, could be expanded to provide additional health services for Fulani nomadic communities in rural Enugu State. They employed focus groups, conducted interviews with leaders from these communities, and made field observations. Their findings showed that people accepted the CDI but faced challenges due to mobility issues, gender roles, and cultural norms.

Although the study highlighted logistical and cultural challenges, it did not empirically measure health outcomes or test adapted CDI delivery methods in nomadic areas.

Agu, Agu, Mbachu, and others (2024) conducted a qualitative study on a program that includes community discussions, peer education, and stakeholder involvement to enhance understanding of adolescent sexual and reproductive health (ASRH) in rural Ebonyi State. By interviewing adolescents, parents, teachers, and community leaders, the researchers observed changes in beliefs, an increased willingness to discuss reproductive health issues, and a shift in community standards.

Although attitudes changed, the study did not include numerical data to connect these changes in perception with actual behaviours or health outcomes (such as contraceptive use or teenage pregnancy rates), and it has not been tested for applicability in different settings.

Framework

Social Ecological Model (SEM)

The Social Ecological Model, developed by Bronfenbrenner in 1979, provides a framework that helps us understand how individual, interpersonal, community, and societal factors interact to influence health outcomes. This model is beneficial for examining community-based health interventions because these interventions involve various levels of society connecting individuals, families, healthcare workers, traditional leaders, and policy systems.

It enables researchers to identify the different parts of community-based interventions across various levels (like changing individual behaviours, engaging the community, and supporting policies).

It clarifies the complex factors affecting health and community interactions in rural areas. This model is commonly used in public health research to evaluate interventions that extend beyond individual actions.

Consequently, the Social Ecological Model (SEM) is significant to this research because it offers a detailed approach to understanding how factors at different levels — individual, interpersonal, community, organisational, and policy — interact to affect health outcomes. Community-based interventions are multi-layered; they involve not only individuals but also families, local organisations, and larger social systems when addressing health issues. SEM helps researchers examine how these different layers of influence affect the success, sustainability, and adaptability of interventions in rural areas, where health disparities often stem from complex social, economic, and environmental conditions. By using SEM, this

study can more effectively analyse the connected systems that either help or hinder health efforts in underserved communities.

3. Methodology

3.1 Research Design

The research used a mixed-methods approach, combining quantitative surveys with qualitative interviews to provide both a broad and detailed analysis (Creswell & Creswell, 2018).

Researchers chose three states — Benue, Ebonyi, and Niger — to intentionally represent Nigeria's North-Central, South-East, and North-West regions. These states have large rural populations that actively participate in community-based interventions (CBIs).

The focus group comprised individuals residing in rural areas, healthcare workers, and community leaders. Researchers surveyed 400 community members using stratified random sampling (Benue: 130; Ebonyi: 140; Niger: 130). They also carried out fifteen in-depth interviews with health workers, local leaders, and government officials.

To gather quantitative data, the researchers employed structured questionnaires that addressed various types of CBIs, levels of participation, perceived effectiveness, and the challenges faced. For qualitative data, they conducted semi-structured interviews and focus group discussions.

The survey data were analysed using SPSS v25 software, applying descriptive statistics, such as percentages and frequencies, as well as chi-square tests. The qualitative data were transcribed and analysed for themes.

4. Results and Discussion

4.1 Socioeconomic Characteristics of Respondents

Table 1: Socioeconomic Characteristics of Respondents (N = 400)

Variable	Category	Frequency	Percentage (%)
Gender	Male	212	53.0
	Female	188	47.0
Age	18–30	96	24.0
	31–45	164	41.0
	46–60	108	27.0
	60+	32	8.0
Educational Level	No formal education	82	20.5
	Primary	110	27.5
	Secondary	142	35.5
	Tertiary	66	16.5
Occupation	Farming	196	49.0
	Trading	108	27.0
	Civil service	52	13.0
	Others	44	11.0
Monthly Income (₦)	Below 10,000	178	44.5
	10,001–30,000	152	38.0
	30,001–50,000	48	12.0
	Above 50,000	22	5.5

Explanation:
The sample was fairly balanced by gender. Most respondents were within the productive age group (31–60 years), suggesting active engagement in community affairs. Educational attainment was generally low, with over half of the population having only primary education or no formal education at all. Farming was the dominant occupation (49%), and a majority (over 80%) earned below ₦30,000 monthly, reflecting a generally low-income rural population.

4.2 Respondents' Responses on CBIs

Table 2: Distribution of Respondents by Community-Based Interventions (CBIs) and Their Perceived Outcomes

CBI Type/Effectiveness Indicator	Yes (n)	Yes (%)	No (n)	No (%)
Health education campaigns	312	78.0	88	22.0
Maternal and child health programs	248	62.0	152	38.0
Community sanitation projects	204	51.0	196	49.0
Training for traditional birth attendants	180	45.0	220	55.0
Mobile health clinics	148	37.0	252	63.0
Better awareness of maternal health	272	68.0	128	32.0
Fewer malaria/cholera outbreaks	236	59.0	164	41.0
Increased antenatal attendance	256	64.0	144	36.0
Reduction in open defecation	168	42.0	232	58.0

Explanation:
Health education campaigns were the most common and widely accepted CBI. Community members also played a significant role in maternal and child health programs. Positive outcomes were recorded in antenatal care attendance, health awareness, and disease control. However, some interventions, especially mobile clinics and sanitation programs, faced limited reach.

4.3 Challenges Identified

Participants highlighted the following as key barriers to CBI success:

i. Unstable funding (65%)
ii. Lack of government support (53%)
iii. Weak community involvement (49%)
iv. Cultural resistance (31%)

4.4 Chi-Square Test of Association

Table 3: Chi-Square Test of Association Between Socioeconomic Variables and Perceived Effectiveness of CBIs

Variable	χ^2 (Chi-Square Value)	df	p-value	Significant?
Educational Level	19.34	3	0.001	Yes
Age Group	5.87	3	0.118	No
Gender	2.92	1	0.087	No
Occupation	14.46	3	0.002	Yes
Monthly Income	12.78	3	0.005	Yes

Explanation and Analysis:

The chi-square results show statistically significant associations between perceived effectiveness of CBIs and educational level, occupation, and monthly income. Respondents with higher education and stable income were more likely to perceive CBIs as effective, likely due to better understanding and access. Age and gender did not significantly influence perceptions of effectiveness.

4.5 Qualitative Thematic Results

The qualitative data were coded and analysed thematically. Four major themes emerged:

Theme 1: Perceptions of Community-Based Interventions (CBIs) as a Grassroots Health Strategy

Respondents across all three states acknowledged that CBIs have helped to bridge the gap between rural communities and formal healthcare systems.

"Without the health campaigns and the traditional birth attendants we trained, many women would still be giving birth at home without any guidance."
— Health Officer, Ebonyi State

Community leaders praised the use of local resources and personnel in implementing interventions such as sanitation campaigns, mobile clinics, and maternal health education, describing them as "practical" and "appropriate for our setting."

Theme 2: Trust and Cultural Compatibility

A recurring insight was the importance of trust between service providers and the community. CBIs led by trusted locals — including traditional leaders or trained community volunteers — were more likely to succeed.

"People respond better when it is someone they know or respect talking to them. When we involve the chief or Imam, attendance doubles."
— Community Leader, Niger State

Cultural sensitivity was also critical. Some interventions initially failed due to resistance to "foreign" ideas until they were adapted to local norms.

Theme 3: Barriers to Effective Implementation

Several interviewees highlighted logistical, financial, and institutional challenges:

i. Funding delays and inconsistencies limited the scale and continuity of projects.

ii. Poor roads and transport networks hindered mobile outreach efforts.

iii. Insufficient training and staff reduced the quality of care and follow-up services.

"We rely too much on donor support. Once the funding ends, so do the programmes." — Government Official, Benue State

Theme 4: Community Ownership and Participation

Successful CBIs were those with active community participation in planning, implementation, and monitoring. Respondents noted that top-down approaches often led to apathy and resistance.

"When you let the people choose what they want to focus on, they feel part of the process. They even monitor the health workers themselves." — Health Worker, Benue State

However, weak civic engagement, particularly among young people and women, was identified as a limitation in some communities. This gap was attributed to both cultural norms and a lack of awareness.

The qualitative data reaffirm that while CBIs are highly valued, their success depends on cultural integration, sustained funding, strong local participation, and institutional support. Interventions that leverage trusted community figures, respect local norms, and empower residents tend to achieve better outcomes.

Certainly. Below is the Discussion section, synthesising the quantitative and qualitative findings, linking them to relevant literature and Sustainable Development Goals (SDGs).

4.6. Discussion

This study assessed the nature, effectiveness, and challenges of Community-Based Interventions (CBIs) in rural areas of Benue, Ebonyi, and Niger States, providing a multi-dimensional understanding of how grassroots health and sanitation efforts contribute to local well-being and sustainable development.

4.6.1 Integration and Effectiveness of CBIs

Quantitative findings showed that the most prominent CBIs included health education campaigns (78%), maternal and child health programs (62%), and community sanitation projects (51%). Respondents widely acknowledged the role of CBIs in improving maternal health awareness (68%), increasing antenatal care attendance (64%), and reducing communicable diseases such as malaria and cholera (59%).

These outcomes align with findings by Oyekale (2022), who noted that local health interventions have a significant impact on improving maternal and child health outcomes in underserved communities. Similarly, Igbokwe et al. (2023) emphasise that CBIs, when properly aligned with local needs, contribute to achieving SDG 3 (Good Health and Well-being) and SDG 6 (Clean Water and Sanitation).

4.6.2 Socioeconomic Determinants of Perceived Effectiveness

Chi-square analysis revealed statistically significant associations between the perceived effectiveness of CBIs and key socioeconomic variables, particularly educational level, monthly income, and occupation. This suggests that individuals with higher literacy and financial stability are more likely to benefit from and appreciate these interventions. This mirrors findings by Adewuyi & Olamide (2021), who established a direct link between household income, awareness, and participation in rural health programs.

These findings reinforce the need to incorporate inclusive strategies that consider the vulnerable and illiterate populations who might otherwise be excluded from participation or understanding of CBIs. Therefore, CBIs must be both accessible and culturally sensitive to maximise their impact.

4.6.3 Qualitative Insights: Community Trust and Ownership

The thematic qualitative analysis further underscored the role of community trust and ownership. Respondents repeatedly emphasised that CBIs rooted in local structures—such as traditional rulers, community health volunteers, and religious leaders—were more widely accepted. This confirms the assertions of Musa et al. (2023), who found that cultural compatibility and local leadership engagement were critical success factors for CBIs across African rural settings.

The success of such programs aligns with SDG 17 (Partnerships for the Goals), which stresses the importance of multi-stakeholder collaboration in implementing sustainable initiatives. Moreover, community involvement in decision-making aligns with the participatory governance principles outlined in SDG 16 (Peace, Justice, and Strong Institutions).

4.6.4 Key Barriers: Sustainability and Institutional Support

Despite the positive impact, the study revealed persistent challenges, including unstable funding (65%), a lack of government support (53%), and cultural resistance (31%). These challenges are consistent with Okonkwo & Umeh (2022), who reported the fragility of donor-dependent health programs in Nigeria. The limited sustainability of CBIs is a recurring issue, particularly when initiatives are externally funded without sufficient local institutional support.

The lack of integration into government health frameworks undermines the long-term sustainability of these initiatives. This reality highlights the urgent need for policy frameworks that institutionalise CBIs, supported by reliable budgetary allocations and capacity-building for rural health workers.

4.6.5 Implications for Policy and SDGs

The study has substantial implications for achieving several Sustainable Development Goals:

i. SDG 3 (Good Health and Well-being): CBIs directly enhance access to essential healthcare services, especially for women and children.

ii. SDG 6 (Clean Water and Sanitation): Sanitation and hygiene-focused CBIs help reduce open defecation and related diseases.

iii. SDG 1 (No Poverty): By improving health, CBIs reduce medical expenses, allowing low-income households to reallocate limited resources.

iv. SDG 10 (Reduced Inequality): CBIs target underserved and often marginalised rural communities, promoting equity in health access.

v. SDG 17 (Partnerships for the Goals): Success depends on collaboration between local communities, NGOs, and government actors.

4.7. Theory and Findings

The Social Ecological Model (SEM) plays a crucial role in the study of Community-Based Interventions (CBIs) because it offers a detailed framework for understanding how different levels of influence — individual, interpersonal, community, organisational, and policy — interact to affect health behaviours and outcomes. The SEM's layered approach aligns well with the various factors that influence how CBIs operate and their success in rural areas, as demonstrated by the study's results.

At the individual level, health education campaigns and training for traditional birth attendants (TBAs) have a direct effect on personal health knowledge and actions. This is evident from the increased awareness of maternal health (68%) and higher attendance at antenatal care appointments (64%).

On the interpersonal level, programs focusing on maternal and child health and the use of TBAs utilise social networks and relationships to promote healthy practices, especially among women.

At the community level, initiatives such as sanitation projects and mobile clinics involve local people in collaborative health efforts. These activities help reduce disease outbreaks, such as malaria and cholera (59%), and improve sanitation habits (42%). However, issues such as low community involvement (49%) and cultural resistance (31%) highlight weaknesses in social unity and local participation, which are essential for this level of SEM.

The organisational level shows how health institutions and NGOs support interventions, including mobile clinics. Concerns about the end of donor-funded projects and the lack of long-term support reveal that weak organisational backing can threaten the sustainability of CBIs.

Lastly, at the policy level, findings highlight obstacles such as unstable funding (65%) and inadequate government support (53%). These issues suggest that without proper institutional and policy support, even successful community-based programs may struggle to maintain their impact over time.

In short, the SEM helps us understand what works and what does not in CBIs by illustrating how connected factors influence health results at every ecological level. To make CBIs more sustainable and effective, we need to develop strategies that focus on each SEM level in a well-organised and culturally sensitive manner.

5. Conclusion and Recommendations

5.1 Conclusion

Community-Based Initiatives (CBIs) have shown significant progress in tackling health issues in rural Nigeria, particularly in maternal care and disease prevention. However, problems like sustainability, funding, and cultural acceptance still limit their overall effectiveness.

5.2 Recommendations

Improve partnerships between the government and communities by changing policies to support CBIs.

Secure steady funding by establishing specific budget lines for CBIs at the local government level.

Encourage community involvement through planning that includes everyone and by providing leadership training.

Involve traditional leaders and consider cultural practices when designing CBIs to enhance acceptance.

6. Contribution to the Body of Knowledge

The results of this study greatly enhance our understanding of Community-Based Interventions (CBIs) in rural health systems in Nigeria. They provide fundamental insights into the types, effectiveness, and challenges of these interventions, along with important qualitative data. Below is a detailed overview of these contributions, followed by ideas for future research.

Types of CBIs in Rural Nigeria: This study identified specific types of CBIs being used in rural areas, such as health education campaigns, programs for maternal and child health, community sanitation projects, training for traditional birth attendants, and mobile health clinics. This classification adds to existing knowledge by:

Offering evidence on which intervention types are most accepted and utilised in Nigerian rural communities. - Highlighting key health issues like maternal and child health, sanitation, and the prevention of infectious diseases and creating a framework for comparison with similar low-resource environments.

Evaluated Effectiveness of CBIs: The findings indicate a positive perceived impact that includes:

- Increased awareness about maternal health (68%) - Fewer malaria and cholera outbreaks (59%)

- Higher attendance at antenatal care visits (64%) - Decreased open defecation rates (42%). These results contribute to:

- Providing measurable evidence that supports the benefits of CBIs in improving health outcomes. - Strengthening the connection between local health interventions and changes in public health behaviour. - Offering a deeper understanding of how communities perceive these interventions as an important measure for evaluating their success.

Recognition of Key Challenges. The study uncovers systemic issues such as:

- Unstable funding; Lack of government support; Weak community involvement; Cultural resistance. These findings add to current literature by:

- Highlighting the shaky sustainability of projects driven by donations.

- Offering insights relevant to policies that affect successful implementation.

- Stressing the need for community engagement and culturally aware strategies.

The qualitative feedback, particularly regarding the noticeable impact of health education programs and worries about the inconsistency in policies, enhances the analysis by:

- Providing narrative support for the quantitative data. - Introducing a focus on gender, especially concerning benefits for women and children. - Highlighting the importance of ongoing systemic integration instead of temporary donor projects.

7. Recommendations for Further Research

Long-term Impact Studies: Examine the lasting health effects and sustainability of Community-Based Interventions (CBIs) following their initial implementation.

Study how behaviour changes, either continues or diminishes, over time, once donors stop funding.

Comparative Analysis Across Regions: Analyse how effective CBIs are and what challenges they face in different regions of Nigeria to identify regional differences and successful practices.

Gender-Specific Impacts: Carry out a gender-focused analysis to understand how men, women, and children benefit from CBIs differently, particularly in male-dominated societies.

Integration with Government Policies: Explore ways to connect CBIs with national and local health policies, including funding sources and training programs for community workers.

Cultural Adaptation Strategies: Investigate how cultural beliefs and traditions can be included or addressed in CBI design to improve acceptance within communities.

Community Ownership Models: Examine methods that promote local ownership through participatory planning, local funding approaches, and leveraging traditional knowledge.

Digital and Technological Innovations: Evaluate how mobile health (mHealth) solutions and digital platforms can improve the reach and effectiveness of CBIs in rural areas.

These findings and proposed research topics provide a solid empirical and theoretical foundation for enhancing public health initiatives in underserved communities, ensuring their relevance, scalability, and sustainability.

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