

Systematic Review

Strategies for effective community participation in public health emergency preparedness and response in Nigeria: a systematic review

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ABSTRACT

Management of public health emergencies is a challenge in resource constrained environments, like Nigeria. In such contexts, community engagement is a key tool for effective emergency responses. This review aimed to examine the state of community engagement strategies in Nigeria's public health emergency preparedness and response framework, while highlighting their strengths and weaknesses. The PRISMA guidelines were used for this review. Medline, Scopus, Embase, CINAHL, and APA PsycINFO databases, were searched for studies focused on community engagement in public health emergencies in Nigeria, between the period from 2014 to 2024. Thirteen studies were selected and assessed using UNICEF's key indicators for community engagement. There were strengths and gaps identified in Nigeria's community engagement in public health emergencies. Some studies recorded some community involvement, but there was limited capacity building, community ownership of response, inclusion of marginalized groups and two-way communication. While most studies recognized the need for adaptability and context-specific engagement, only a few included community inputs in prioritizing project priorities or in the design process. The review shows that although there have been some improvements in the level of community engagement in the public health emergency responses in Nigeria, there are still gaps in some of the activities, such as empowerment, communication, and ensuring the involvement of marginalized groups. Improving Nigeria's health system sustainability and strengthening the public health system's capacity to respond to outbreaks and become more resilient depends on addressing these gaps.

Keywords: Community engagement, Community participation, Public health emergencies, Emergency preparedness, Disease outbreaks, Nigeria

INTRODUCTION

Countries with weak health systems, limited preparedness and limited surveillance mechanisms are adversely impacted in the event of a public health emergency. Better health system preparedness is required to absorb the impact, respond to the consequences, and adapt in the

event of future public health emergencies.¹ Increased community involvement in public health emergency preparedness and response is increasingly becoming a key area of focus for building health and social systems resilience and reducing impacts to health and well-being in the event of a public health crisis.²

By incorporating community engagement, health interventions can better fit local contexts, have more targeted impacts on health systems, and contribute to greater accountability.² When health interventions involve community participation, they are often more sustainable and culturally relevant, effectively improving healthcare access and health equity.³

Public health emergencies in the African Region are a complex and multifaceted problem, requiring a full and coordinated approach. The Region is the most affected area in the world from public health emergency events, accounting for more than 100 events per year. Often, these emergencies severely impact vulnerable populations, strain fragile healthcare systems, disrupt essential health services, and threaten the economy.⁴ The projection is that Africa could bear the final burden of pandemics such as COVID-19 if its countries do not institute effective measures to combat them.⁵

Nigeria is among the vulnerable African countries due to the weak state of the healthcare system.⁶ It faces frequent natural and environmental disasters as well as violent conflicts, including insurgency and communal clashes.⁷

Given the cultural diversity of Nigeria, it is essential that health interventions are culturally sensitive for them to be effective. Engaging communities in public health responses allows for the incorporation of local knowledge and practices, which can enhance trust in health systems.⁸ Nigeria continues to be vulnerable to infectious diseases—such as Lassa fever and the recent COVID-19 outbreaks. Research into building trust in health systems must also include the involvement of communities to ensure that local knowledge and practices are incorporated.

Given the demonstrated impact of community participation, to what extent has the country integrated and involved the community in its response to public health

emergencies? And how effective are these efforts? This systematic review therefore aimed to identify and explore strategies to enhance community participation in Nigeria's response and preparedness to public health emergencies.

METHODS

The methodology was developed in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.⁹

The conceptual framework for this systematic review is grounded in the minimum quality standards and indicators for community engagement (shown in Table 1) by the United Nations Children's Fund (UNICEF).¹⁰ The framework considered the core engagement standards which are the basic guidelines that should guide the practice of the community engagement in the public health interventions.

The core community engagement standards should be prioritised at all levels of community engagement implementation and in all contexts. Each of the six core standards have quality criteria and actions that are expected. This framework was used to assess the extent to which community participation was reported in the included studies.

Search strategy

The search strategy was designed to identify all relevant studies on community participation in public health emergency preparedness and response within Nigeria. Electronic databases searched included Medline (PubMed), Scopus, Embase, APA PsycINFO, and CINAHL. In addition, reference and citation stringing of eligible studies was carried out to identify more relevant studies on Google Scholar.

Table 1: UNICEF Core community engagement standards.

Core standard	Quality criteria and action
1. Participation	1.1 Community goals for participation are identified and achieved. 1.2 Community members are aware of mechanisms for participation. 1.3 Community members are given an opportunity to identify barriers to participation. 1.4 Community members have positive experiences of participation. 1.5 NGOs, CSOs, and partners identify and use strategies to sustain or increase participation. 1.6 Community members identify the needs and priorities of various groups and sub-groups in the community
2. Empowerment and ownership	2.1 Issues identified are among the top priorities of communities for community action. 2.2 Communities demonstrate an ability to explore key issues, develop action plans, carry out action plans, and evaluate results. 2.3 Community members believe that community engagement contributed to increasing voice, decision-making, and authority. 2.4 Community members feel that they 'own' the project; that it is 'for them'. 2.5 Community members support and are invested in a plan for long-term sustainability. 2.6 There is an increase in perceived and demonstrated community capacity by the end of the project.

Continued.

Core standard	Quality criteria and action
3. Inclusion	<p>3.1 A full range of stakeholders, including women, children, people with disabilities, linguistic, religious, and ethnic minorities, and vulnerable populations are identified and facilitated to contribute during the informed design and participatory planning processes.</p> <p>3.2 Strategies have been developed and implemented to ensure as wide a range of inclusive representation as possible (e.g. gender, youth and children, minority groups, linguistic groups, vulnerable populations).</p> <p>3.3 Marginalized group members hold decision-making roles, leadership roles, and mobilization roles.</p> <p>3.4 Groups affected by the prioritized issue have been involved in leadership and mobilization activities</p>
4. Two-way communication	<p>4.1 Community leaders had direct access to government and NGO/ CSO leaders in prioritizing community engagement goals.</p> <p>4.2 Two-way communication mechanisms have been used to reach community members.</p> <p>4.3 There has been an increase in knowledge about the issue among community members.</p> <p>4.4 Communications between local communities, governments and, stakeholders have increased in quality and frequency.</p> <p>4.5 Communication between key stakeholders has been sustained throughout the entirety of the community engagement initiative.</p> <p>4.6 CE platforms have facilitated two-way communication and feedback for decision-making and action by local stakeholders (including young people)</p>
5. Adaptability and localisation	<p>5.1 Communities are able to influence and guide project priorities and actions.</p> <p>5.2 Community support is assessed before initiating projects or activities.</p> <p>5.3 Contextual analysis of the community informed both the proposal and budget for the project.</p> <p>5.4 Qualitative materials and participatory practices have been integrated into all aspects of implementation.</p> <p>5.5 Community concerns, beliefs, and structures have been prioritized as a key input throughout the project cycle.</p> <p>5.6 Contextual analyses involve ‘experience-near’ research and evaluation contributions (e.g. the use of qualitative data or case studies).</p> <p>5.7 Course corrections have been made when community members and leaders indicated issues with activities and strategies.</p> <p>5.8 CE platforms/processes have been adapted to address specifics of local contexts, programmatic areas, and special requirements of stakeholders (including the young people).</p>
6. Building on local capacity	<p>6.1 The resources and capacities of local populations have been identified and maximized in designing and implementing activities.</p> <p>6.2 Local capacities (including formal institutions, formal structures and informal social networks, informal social networks, and individual skills) have been integrated into project planning, management, and the evaluation using routine strategies and the practices.</p> <p>6.3 Existing community capacities have been used to collect and analyse data.</p> <p>6.4 CE initiatives prioritized community capacity-building towards the development of local solutions and empowerment.</p>

The search terms were developed using keywords from the title, medical subject headings (MeSH) terms on PubMed, and previously published literature. Keywords were combined with Boolean operators ‘AND’ and ‘OR’. Search syntaxes like wildcards (? or #) and truncation (*) were also used to broaden the search.

The search strategy was executed using the PICO framework. PICO is an acronym for Population, Issue of interest or phenomenon of Interest, Context of phenomenon, and Outcome.¹¹

Keyword combinations used were as follows:

Population included communities within the Nigeria-Nigeria*

Issue of interest included-Community participation, community, participation and engagement.

Context-Public health emergency preparedness and response-epidemic, outbreak, pandemic, Ebola, COVID, Lassa, cholera, diphtheria, meningitis, monkeypox, polio, measles, anthrax, yellow fever, influenza and H1N1.

The working search strategy was as follow, “Nigeria* AND (community OR participation OR engagement)

AND (epidemic OR outbreak OR pandemic OR Ebola OR COVID OR Lassa OR cholera OR diphtheria OR meningitis OR monkeypox OR polio OR measles OR anthrax OR yellow fever OR influenza OR H1N1).”

This search strategy was modified to suit different search databases.

The search was conducted in July 2024 and included studies published over the preceding 10 years from January 2014 to June 2024. The choice of 10 years is apt as it captures the Ebola virus outbreak in 2014 and other major outbreaks, including the COVID-19 pandemic. This period is thus deemed sufficient to generate evidence to make recommendations

Inclusion criteria

To be eligible for inclusion in this review, the PICO criteria were applied. Studies had to meet the following criteria.

Population

Studies must focus on communities within Nigeria.

Issue of interest

The study must address issues related to community participation.

Context

The focus of the study must be in the context of public health emergency.

Outcome

The study should address the outcome of community participation or engagement.

Study design

All study designs were considered for inclusion.

Language

Only studies published in English language were included.

Time frame

Studies published between January 2014 and June 2024 were considered for inclusion.

Exclusion criteria

The following were excluded-Articles that focused solely on individual-level preparedness or healthcare provider efforts without community involvement, and commentaries or editorials without empirical data

Study selection

The study selection process involved two stages:

Title and abstract screening

Two reviewers independently screened the titles and abstracts of all identified studies. Articles that clearly did not meet the inclusion criteria were excluded at this stage.

Full-text screening

The remaining studies were assessed in full text for eligibility. Disagreements between reviewers were resolved by consulting a third reviewer. The PRISMA flow diagram was used to illustrate the selection process and provide transparency about the number of studies excluded at each stage.

Data extraction

A data extraction table was developed to capture relevant information from each selected study. The key data fields included: Study characteristics (author, year of publication, state, title, aim, design, population, sample size, sex, and age/age group) and domains of the six core community engagement standards

Quality assessment

To ensure the validity and reliability of the review findings, the quality of the included studies was assessed using the Critical Appraisal Skills Programme (CASP) checklists for qualitative and cross-sectional studies (CASP, 2024). Studies were categorised as high, moderate, or low quality. The choice of the CASP framework was due to its advantages of simplicity, conciseness, and speed of application.

Result synthesis

A narrative synthesis approach was adopted due to the diversity in study designs, interventions, and outcomes. The core implementation standards were used to assess community engagement for the study. Each sub-domain was assessed as “Yes”, “No”, or “Unclear” if the standard was alluded to, absent, or not reported clearly enough to decide, respectively.

Ethical considerations

Ethical considerations in this systematic review included assessing all studies for their adherence to ethical standards in the quality assessment. In addition, as this review did not involve primary data collection, formal ethical approval was not required. However, efforts were made to ensure transparency and integrity in the review process by following PRISMA guidelines and maintaining robust documentation of decisions throughout the study selection and analysis phases.

RESULTS

Search outcome

The search terms were fed into five databases- Medline, Scopus, Embase, APA PsycINFO, and CINAHL. A total of 67,558 articles were identified with the first hit. Automation tools and filters marked 65,663 results as ineligible based on eligibility criteria, leaving 1,925 articles. De-duplication was carried out on 1,925 articles, leading to the removal of 1,227 duplicates. The resulting 698 articles were manually screened by two reviewers independently. A third reviewer resolved conflicts. Title and abstract screening were carried out and led to the exclusion of 671 articles that did not meet the eligibility criteria. Twenty-seven articles were sought for retrieval, and 1 full article was unavailable. Nine full articles were reviewed and included. Four additional articles were retrieved following the stringing of references and citations of the included articles. A total of 13 articles were included in the review.¹²⁻²⁴ The PRISMA flow diagram is shown in Figure 1.

Quality assessment

Quality assessment was conducted on the 13 included studies using the Critical Appraisal Skills Program (CASP) Checklists for qualitative and cross-sectional studies.¹¹ From the assessment, 6 studies were assessed as high quality, while 7 received a medium quality assessment.¹²⁻²⁴ The medium-quality studies were judged as such due to

unclear and insufficient statements on recruitment strategy, unclear statements about the researchers' role and potential for bias, and non-exhaustive ethical considerations. The results of the quality assessment are shown in Tables 2 and 3.

Study characteristics

This review covers 13 studies conducted between 2015 and 2023 across various States in Nigeria, addressing public health response to infectious disease outbreaks such as Ebola, Polio, Cholera, Lassa fever, and COVID-19. These studies generally aimed to understand outbreak response efficacy, identify gaps, and assess social and cultural impacts. Eight (61.5%) of the studies were qualitative in design, while 5 (38.5%) were quantitative cross-sectional studies.¹²⁻²⁴ They incorporate quantitative and qualitative interviews, discussions, and document reviews, focusing on stakeholders involved in surveillance, emergency response, and community engagement. The sample sizes in the studies range from small groups, such as 15 participants, to larger groups, with one study involving 933 respondents.²² did not specify an exact sample size. Gender was not consistently reported across all studies. The studies explore perspectives from various age groups, often without specifying exact ages. The studies focused on stakeholders such as health officials, community members, community leaders, frontline workers, individuals directly affected by outbreaks, and policymakers in government agencies (Table 4).

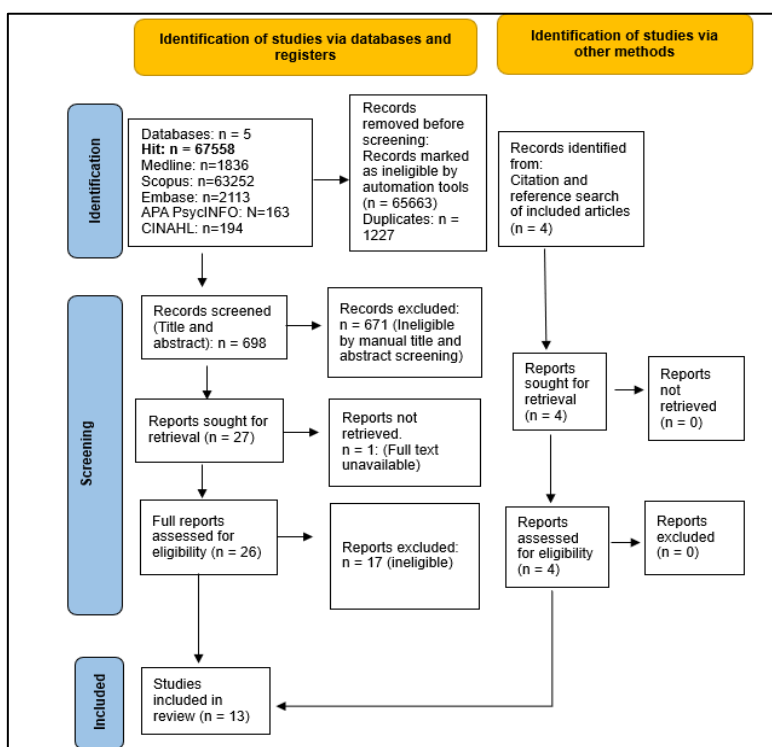


Figure 1: PRISMA flow diagram.

Table 2: CASP quality assessment for qualitative studies.

Authors	Aims of research	Methodology appropriate	Research design	Recruitment strategy	Data collection	Relationship of researcher and participants	Ethical issues	Data analysis	Statement of findings	Value of research	Overall quality
Abayomi et al 2021 ¹⁹	✓	✓	✓	—	✓	—	✓	✓	✓	✓	Medium
Alenoghena et al 2022 ¹²	✓	✓	✓	—	—	—	—	✓	✓	✓	Medium
Eze et al 2021 ¹⁸	✓	✓	✓	—	✓	—	N/A	✓	✓	✓	Medium
Ihekweazu et al 2022 ¹⁷	✓	✓	✓	—	✓	—	—	✓	✓	✓	Medium
Mukherjee et al 2023 ¹³	✓	✓	✓	✓	✓	—	✓	✓	✓	✓	Medium
Ngwa et al 2017 ¹⁴	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	High
Otu et al 2018 ¹⁵	✓	✓	✓	✓	✓	—	—	✓	✓	✓	Medium
Oyegoke et al 2020 ¹⁶	✓	✓	✓	✓	✓	—	—	✓	✓	✓	Medium

‘✓’: Yes, ‘—’: Can’t tell, N/A: Not Applicable.

Table 3: CASP quality assessment for cross-sectional studies.

Authors	Clearly focused issue	Methodology appropriate	Recruitment strategy	Measures to reduce bias	Data collection	Sample size	Result presentation	Data analysis	Statement of findings	Local application of findings	Value of research	Overall quality
Akinyemi et al 2021 ²⁰	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	High
Amoo et al 2021 ²²	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	High
Bassey et al 2021 ²¹	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	High
Nwafor et al 2020 ²³	✓	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	High
Umeh et al 2018 ²⁴	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	High

‘✓’: Yes, ‘—’: Can’t tell, N/A: Not Applicable.

Table 4: Study characteristics.

Authors	Year	State	Study title	Study aim	Study design	Sample population	Sample size	Male	Female	Age
Abayomi et al¹⁹	2021	Lagos	From Ebola to COVID-19: Emergency preparedness and response plans and actions in Lagos	To describe how the lessons learned from the Ebola outbreak in 2014 informed the emergency preparedness of the state ahead of COVID-19 outbreak and guided response	Case study	Reviewed relevant documents	Unclear			All
Akinyemi et al²⁰	2021	Nasarawa, Borno, Kano, Sokoto, Anambra, Bayelsa, Lagos, Ondo, Oyo, Abuja	Assessing community engagement in Nigeria polio eradication initiative: application of the consolidated framework for implementation research	To assess factors that enhanced or impeded the implementation of community engagement strategies using the Nigerian polio programme as a point of reference.	Cross-sectional	Programme managers, policy-makers, researchers, frontline field implementers and govt parastatals	364	-	-	
Alenoghena et al¹²	2022	Edo	The role of the ward health system in COVID-19 pandemic response in Nigeria: a case study of Edo State	To examine established pattern in disease prevention and the role of WHS system in COVID-19 pandemic response in Edo State, Nigeria	Qualitative case study	Multi-stakeholder	Unspecified			
Amoo et al²²	2021	Ogun, Lagos	Analysis of residents' preparedness protocols during ebola pandemic in urban environment	To provide empirical analysis of the change in hygiene behavioural practices among community in Ogun and Lagos State with respect to Ebola outbreak in Nigeria	Cross-sectional	Household representative	933	416	517	
Bassey et al²¹	2021	Oyo	AFP case detection along international border communities in Oyo state: challenges, opportunities and threats	To uncover each respondent's views on constraints on AFP surveillance and opportunities for improving AFP detection in these areas.	Cross sectional	Two groups of respondents; community informants (7) and community members (428)	435	-	-	All
Eze et al¹⁸	2021	National	Community informatics for sustainable management of pandemics in developing countries: A case study of COVID-19 in Nigeria	To recommend a community-informatics strategy for the sustainable management of the pandemic in Nigeria, based on the prevalent health cultural beliefs	Case study	Unclear	Unclear	-	-	All
Ihekweazu et al¹⁷	2022	National	Implementing an emergency risk communication campaign in response to COVID-19 pandemic in Nigeria: lessons learned	To describe how a unique communication campaign was developed to support the response to the COVID-19 pandemic.	Case study	Multi-stakeholder	Unspecified			

Authors	Year	State	Study title	Study aim	Study design	Sample population	Sample size	Male	Female	Age
Mukherjee et al¹³	2023	Kano, Gfombe, Ekiti, Bayelsa	National and subnational governance and decision-making processes during the COVID-19 pandemic in Nigeria: an empirical analysis	To assess the elements of governance that were incorporated during decision-making.	Qualitative	FG/State officials, CSO representatives, academics and other relevant stakeholders	20 KIIs, 1 FGD	-	-	
Ngwa et al¹⁴	2017	Bornu	Cholera in internally displaced persons camps in Borno State-Nigeria, 2017: A qualitative study of the multi-sectorial emergency response to stop the spread of the 3 outbreaks	To understand individuals' or groups' perspectives about cholera interventions intended to stop the 2017 cholera outbreak in Borno State	Qualitative	Participants involved with surveillance, water-sanitation-hygiene and case management	39 interviews	-	-	All
Nwafor et al²³	2020	Abuja	Nigeria's public health response to the	To describe Nigeria's public health response to the	Cross-sectional	All relevant stakeholders involved in response activities	Unclear	-		All
Otu et al¹⁵	2018	Lagos	An account of the Ebola virus disease outbreak in Nigeria: implications and lessons learnt	To describe the events that occurred during the Nigeria Ebola crisis in 2014 with a view to identifying successes and gaps in the containment response.	Qualitative	Ebola Virus Disease outbreak response stakeholders	15 KIIs	10	5	35-65 years
Oyegoke et al¹⁶	2020	Bauchi	Community resistance to state Lassa fever rapid response team in Kayauri Community in Toro LGA Bauchi State-Nigeria, January-April 2019	To identify the social and cultural factors responsible for the resistance	Qualitative	Affected community members, community heads, contacts to the confirmed case and other relevant persons	Unclear	-	-	
Umeh et al²⁴	2018	Kaduna	Acute flaccid paralysis (AFP) surveillance intensification for polio certification in Kaduna state, Nigeria: lessons learnt, 2015–2016	To evaluate all the different initiatives implemented in Kaduna state, Nigeria, in 2016 to improve AFP reporting by the LGAs and to sustain gains made towards meeting standard polio certification surveillance.	Cross-sectional	Under 15 children in 23 LGAs in Kaduna state	23 LGAs	-	-	<15 years

Findings from the review

Core community engagement standards

Participation

Eleven (84.6%) of the studies clearly identify and address community goals for participation.^{12-14,16-21,23,24} However, 2 (15.4%) studies did not clearly identify participation goals.^{15,22} Regarding awareness of mechanisms for participation as an indicator of participation, 8 (61.5%) studies reported that participants were aware, 3 (23.1%) did not allude to it, and 2 (15.4%) were unclear.^{12,14-24} Opportunities for communities to identify barriers were highlighted by 2 (15.4%) studies.^{17,23} Ten (76.9%) studies did not clearly report this indicator, and 1 (7.7%) did not report it at all.^{12-16-22,24} Five (38.5%) studies reported positive experiences from communities as a result of participation, while the remaining 8 (61.5%) were unclear about this indicator.¹²⁻²⁴ Strategies to sustain or increase participation were alluded to by 10 (76.9%) studies, leaving 3 (23.1%) that were unclear in their report.¹²⁻²⁴ The various needs and priorities of various groups being identified are an important indicator for participation. However, only 6 (46.2%) studies report that the needs of these groups were identified (Table 5).¹²⁻²³

Empowerment and ownership

The core standard of empowerment and ownership has six indicators (Table 5). There is variability in the reporting of these indicators by the various included studies. Community top priorities were reportedly identified by 8 (61.5%) studies, while 5 (38.5%) studies were either unclear in their report or did not allude to it at all.¹²⁻²⁴ Twelve (92.3%) studies did not clearly report the indicator of capacity building for exploration, planning, and implementation of the studies.¹²⁻²⁴ Only 1 (7.7%) study identified this indicator in its report.²⁰ Community engagement is expected to contribute to increasing voice, decision-making, and authority. It was deduced from 8 (61.5%) studies that this indicator was achieved, while 5 (38.5%) studies did not delineate this indicator.¹²⁻²⁴ None of the included studies reported or alluded to community ownership of the projects, which is an important indicator of the empowerment and ownership standard. However, efforts to mobilise support and investment toward sustainability were made and reported by 7 (53.8%) studies. Other studies did not allude to this indicator. At the end of project, an empowerment and ownership standard is to demonstrate increased capacity. This was reported in 8 (61.5%) studies, while 5 (38.5%) studies were either unclear in their report/did not allude to it at all.^{12-14,16,20}

Inclusion

The inclusion indicator of the participation core standard requires the involvement of a full range of stakeholders (Table 6). Eight (61.5%) studies reported the involvement of a range of stakeholders, 4 (30.8%) were unclear about

this, and 1 (7.7%) did not allude to stakeholder involvement.¹²⁻²⁴ Several strategies need to be engaged with to include the wide range of groups, including vulnerable groups. Only 5 (38.5%) studies reported this wide range of inclusion. The others were either unclear or did not report it at all. Concerning the specific involvement of marginalized groups, only 3 (23.1%) studies reported this indicator, leaving 10 (76.9%) that did not report it.¹²⁻²⁴ Groups affected by emergencies were involved and reported by only 2 (15.4%) studies.^{15,24}

Two-way communication

Community leaders' direct access to government and NGO/CSO leaders is important for effective community engagement in public health emergency response (Table 7). This indicator was reported by only 2 (15.4%) studies.^{15,20} Other studies either did not report this or were unclear about it. Four (30.8%) studies reported mechanisms for two-way communication.¹²⁻²⁰ The majority, 11 (84.6%) of the studies reported or alluded to an increase in knowledge of the public health emergency, which is an important indicator of the two-way communication standard. Two (15.4%) studies, however, did not report this.^{12,16} Seven (53.8%) studies identified an increase in the quality and frequency of communication between communities, governments, and other stakeholders during the response to the public health emergency. While 5 (38.5%) were unclear about this indicator, 1 (7.7%) did not mention it.^{12,16,18,23-24} An indicator of 2-way communication is sustained communication between stakeholders throughout the emergency response period. Seven (53.8%) studies in this review identified this indicator, 4 (30.8%) were unclear about it, and 2 (15.4%) did not mention it. Platforms enabling two-way communication and feedback were used in only 3 (23.1%) studies.^{13,17,20}

Adaptability and localisation

Communities are expected to influence and guide project priorities according to the standard (Table 8). This indicator showed that included studies did not include community influence as a guiding factor. Similarly, community support should be assessed before initiating projects. Most (92.3%) of the studies either did not assess or did not clearly document community support assessment before implementation. Only one (7.7%) study documented a community support assessment.¹⁷

A contextual analysis of the community should inform both the project proposal and budget. The majority (92.3%) of studies recognised the importance of contextual analysis. Only 1 (7.7%) study did not clearly document contextual analysis guiding project proposal and budget.¹⁶

Concerning integration of qualitative materials and participatory practices throughout implementation, 10 (76.9%) of studies showed a high level of inclusion of qualitative materials and participatory practices.¹²⁻²⁴ Three

(23.1%) studies, however, did not clearly document this.^{16,21,22}

Prioritisation of community concerns and beliefs as a standard under adaptability and localisation was reported in 8 (61.5%) studies.¹²⁻²⁴ An emphasis on community concerns as a key project cycle component was reported by these studies. Contextual analysis, qualitatively involving some form of exploration of experiences, was reported by 8 (61.5%) studies.¹²⁻¹⁹

Concerning the standard indicator of course correction, two studies (15.4%), reported course correction when the community indicated issues with activities or strategies.^{14,15} Other studies were either unclear or not applicable. Furthermore, as an indicator, community engagement processes should adapt based on local context, programmatic area, and stakeholder feedback. Nine

(69.2%) studies reported adherence to this indicator in some form.^{12,14,15,17-20,22,23}

Building on local capacity

Effective engagement entails leveraging local resources (Table 9). Eleven (84.6%) studies reported identification and maximisation, to some extent, of available local resources and capacities in emergency response activities.¹³⁻²⁴ Two, however, (15.4%) did not mention it.^{12,19} In all (92.3%) but 1 (7.7%) of the included studies,¹² local capacities were integrated in the planning, implementation, and management of emergency response. Similarly, existing community resources and capacities were used in data collection as reported in 11 (84.6%) studies.^{13,14,16-24} In 9 (69.2%) studies, community capacity-building towards the development of local solutions and empowerment was reported or implied.^{13,14,16-21-24}

Table 5: Participation and Empowerment and ownership core standards.

Participations							
Authors	Year	Community goals for participation are identified and achieved	Community members are aware of mechanisms for participation	Community members are given an opportunity to identify barriers to participation	Community members have positive experiences of participation	NGOs, CSOs, and partners identify and use strategies to sustain or increase participation	Community members identify the needs and priorities of various groups and sub-groups in the community
Abayomi et al ¹⁹	2021	Yes	Yes	Unclear	Unclear	Yes	Yes
Akinyemi et al ²⁰	2021	Yes	Yes	Unclear	Unclear	Yes	Unclear
Alenoghena et al ¹²	2022	Yes	Unclear	Unclear	Unclear	Yes	Yes
Amoo et al ²²	2015	Unclear	No	Unclear	Yes	Yes	Unclear
Bassey et al ²¹	2021	Yes	Yes	Unclear	Yes	Unclear	No
Eze et al ¹⁸	2021	Yes	Yes	No	Yes	Unclear	Yes
Ihekweazu et al ¹⁷	2022	Yes	Unclear	Yes	Unclear	Yes	Yes
Mukherjee et al ¹³	2023	Yes	Yes	Unclear	Unclear	Yes	Yes
Ngwa et al ¹⁴	2017	Yes	No	Unclear	Yes	Yes	No
Nwafor et al ²³	2020	Yes	Yes	Yes	Yes	Yes	Yes
Otu et al ¹⁵	2018	Unclear	Yes	Unclear	Unclear	Yes	Unclear
Oyegoke et al ¹⁶	2017	Yes	No	Unclear	Unclear	Unclear	No
Umeh et al ²⁴	2016	Yes	Yes	Unclear	Unclear	Yes	No
Empowerment and ownership							
Author	Year	Community top priorities identified for action	Communities develop capacity to explore issues, plan, implement and evaluate actions	Believe that engagement contributed to increasing voice, decision making, and authority	Community feel they own project	Support and investment in plan for sustainability	Increased perceived and demonstrated capacity at the end of the project
Abayomi et al ¹⁹	2021	Yes	No	Yes	No	Yes	Yes
Akinyemi et al ²⁰	2021	Unclear	Yes	Yes	No	Unclear	Unclear
Alenoghena et al ¹²	2022	Yes	Unclear	Unclear	No	No	Unclear
Amoo et al ²²	2015	Unclear	No	No	No	Unclear	Yes
Bassey et al ²¹	2021	No	No	Yes	No	Unclear	Yes
Eze et al ¹⁸	2021	Yes	No	Yes	No	Yes	Yes
Ihekweazu et al ¹⁷	2022	Yes	Unclear	Yes	Unclear	Yes	Yes
Mukherjee et al ¹³	2023	Yes	Unclear	Unclear	No	Yes	Unclear
Ngwa et al ¹⁴	2017	Yes	No	Yes	No	Yes	No
Nwafor et al ²³	2020	Yes	Unclear	Unclear	No	Yes	Yes
Otu et al ¹⁵	2018	Yes	No	Yes	No	Yes	Yes
Oyegoke et al ¹⁶	2017	No	No	Unclear	No	Unclear	No
Umeh et al ²⁴	2016	No	No	Yes	No	No	Yes

Table 6: Inclusion core standard.

Authors	Year	Full range of stakeholders involved (women, children, PLD, religious groups etc.	Strategies to ensure wide range of inclusion e. g youth, minority groups, vulnerable etc.	Marginalized group members hold critical roles	Groups affected by prioritized issue are involved in leadership and mobilization
Abayomi et al ¹⁹	2021	Yes	Yes	No	No
Akinyemi et al ²⁰	2021	Yes	Yes	No	No
Alenoghena et al ¹²	2022	Yes	Yes	No	No
Amoo et al ²²	2015	Unclear	Unclear	No	No
Bassey et al ²¹	2021	Unclear	Unclear	No	Unclear
Eze et al ¹⁸	2021	Unclear	Unclear	No	No
Ihekweazu et al ¹⁷	2022	Yes	Yes	Yes	No
Mukherjee et al ¹³	2023	Yes	Unclear	Yes	No
Ngwa et al ¹⁴	2017	Yes	No	No	Unclear
Nwafor et al ²³	2020	Unclear	Unclear	No	No
Otu et al ¹⁵	2018	Yes	No	No	Yes
Oyegoke et al ¹⁶	2017	No	No	No	No
Umeh et al ²⁴	2016	Yes	Yes	Yes	Yes

Table 7: Two-way Communication core standard.

Authors	Year	Community leaders had direct access to government and NGO/CSO leaders in prioritizing community engagement goals.	Two-way communication mechanisms were used to reach community members.	There was an increase in knowledge about the issue among community members	Communications between local communities, governments and stakeholders increased in quality and frequency.	Communication between key stakeholders was sustained throughout the entirety of the community engagement initiative	Community engagement platforms have facilitated two-way communication and feedback for decision-making and action by local stakeholders (including young people).
Abayomi et al ¹⁹	2021	Unclear	Unclear	Yes	Yes	Yes	Unclear
Akinyemi et al ²⁰	2021	Yes	Yes	Yes	Yes	Yes	Yes
Alenoghena et al ¹²	2022	No	Yes	Unclear	Unclear	Unclear	No
Amoo et al ²²	2015	Unclear	No	Yes	Unclear	Unclear	Unclear
Bassey et al ²¹	2021	Unclear	Unclear	Yes	No	Unclear	Unclear
Eze et al ¹⁸	2021	No	Unclear	Yes	Unclear	Unclear	Unclear
Ihekweazu et al ¹⁷	2022	No	Yea	Yes	Yes	Yes	Yes
Mukherjee et al ¹³	2023	Unclear	Yes	Yes	Yes	Yes	Yes
Ngwa et al ¹⁴	2017	No	No	Yes	Yes	No	No
Nwafor et al ²³	2020	Unclear	No	Yes	Yes	Yes	Unclear
Otu et al ¹⁵	2018	Yes	Unclear	Yes	Yes	Yes	Unclear
Oyegoke et al ¹⁶	2017	No	Unclear	No	Unclear	No	No
Umeh et al ²⁴	2016	No	No	Yes	Unclear	Yes	No

Table 8: Adaptability and localization.

Authors	Year	Communities were to influence and guide project priorities and actions.	Community support was assessed before initiating projects or activities	Contextual analysis of the community informed both the proposal and budget for the project	Qualitative materials and participatory practices were integrated into all aspects of implementation	Community concerns, beliefs, and structures have been prioritized as a key input throughout the project cycle	Contextual analyses involved 'experience-near' research and evaluation of contributions (e.g. the use of qualitative data or case studies)	Course corrections were made when community members and leaders indicated issues with activities and strategies	Community engagement platforms/ processes were adapted to address specifics of local contexts, programmatic areas and special requirements of stakeholders (including young people)
Abayomi et al ¹⁹	2021	No	Unclear	Yes	Yes	Unclear	Yes	Unclear	Yes
Akinyemi et al ²⁰	2021	No	No	Yes	Yes	Yes	No	Unclear	Yes
Alenoghena et al ¹²	2022	No	Unclear	Yes	Yes	Yes	Yes	Unclear	Yes
Amoo et al ²²	2015	No	Unclear	Yes	Unclear	Yes	No	Unclear	Yes
Bassey et al ²¹	2021	No	No	Yes	Unclear	Unclear	No	Unclear	Unclear
Eze et al ¹⁸	2021	No	Unclear	Yes	Yes	Yes	Yes	Unclear	Yes
Ihekweazu et al ¹⁷	2022	No	Yes	Yes	Yes	Yes	Yes	Unclear	Yes
Mukherjee et al ¹³	2023	No	No	Yes	Yes	Yes	Yes	Unclear	Unclear
Ngwa et al ¹⁴	2017	No	No	Yes	Yes	No	Yes	Yes	Yes
Nwafor et al ²³	2020	No	No	Yes	Yes	No	No	Unclear	Yes
Otu et al ¹⁵	2018	No	Unclear	Yes	Yes	Yes	Yes	Yes	Yes
Oyegoke et al ¹⁶	2017	No	No	Unclear	Unclear	Unclear	Yes	Unclear	No
Umeh et al ²⁴	2016	No	No	Yes	Yes	Yes	No	No	No

Table 9: Building on local capacities core component.

Authors	Year	The resources and capacities of local populations were identified and maximized in designing and implementing activities	Local capacities (including formal institutions, formal structures and informal social networks, informal social networks, and individual skills) were integrated into project planning, management and evaluation using routine strategies and practices	Existing community capacities were used to collect and analyse data	Community engagement initiatives prioritized community capacity-building towards development of local solutions and empowerment
Abayomi et al ¹⁹	2021	No	Yes	Yes	Yes
Akinyemi et al ²⁰	2021	Yes	Yes	Yes	Yes
Alenoghena et al ¹²	2022	No	No	No	No
Amoo et al ²²	2015	Yes	Yes	Yes	Unclear
Bassey et al ²¹	2021	Yes	Yes	Yes	Yes
Eze et al ¹⁸	2021	Yes	Yes	Yes	Yes
Ihekweazu et al ¹⁷	2022	Yes	Yes	Yes	Yes
Mukherjee et al ¹³	2023	Yes	Yes	Yes	Yes
Ngwa et al ¹⁴	2017	Yes	Yes	Yes	No
Nwafor et al ²³	2020	Yes	Yes	Yes	Unclear
Otu et al ¹⁵	2018	Yes	Yes	Unclear	Yes
Oyegoke et al ¹⁶	2017	Yes	Yes	Yes	Yes
Umeh et al ²⁴	2016	Yes	Yes	Yes	Yes

DISCUSSION

Study characteristics

This review set out to explore strategies for effective community engagement in public health emergency preparedness and response in Nigeria. Thirteen studies met the inclusion criteria. This may be a limitation in the number of databases searched or the search strategy. However, it may also underscore the need for more extensive research on the effectiveness of strategies for public health response in emergencies or more standardised reporting of such responses. The existence of gaps in the consistent reporting of experiences in public health emergencies has been reported in previous studies. Furthermore, there is a risk that certain aspects of outbreak response may be overrepresented or underrepresented based on the available studies' foci. More so, Nigeria's vast regional, cultural, and socioeconomic differences mean that public health responses can vary significantly across States. This should be considered to ensure successful engagement.²⁵ Consequently, a small number of studies may not fully capture these variations, reducing the representativeness of this systematic review. The predominance of qualitative studies in this review suggests a strong focus on understanding perceptions, motivations, and barriers faced by stakeholders. While this focus is important for tailored and effective public health strategies, the limited number of quantitative studies could restrict the generalizability of findings. Diverse stakeholders' perspectives were accounted for by this review, similar to a synthesis.²⁶ These groups offer insights into the operational challenges and successes of outbreak responses, highlighting practical and community-specific considerations that may inform future policy adjustments and capacity-building efforts. The lack of consistent demographic information, such as gender and specific age groups, limits the ability to explore differential impacts across population segments. This indicates the need for more thorough demographic data collection in future studies to ensure inclusive, targeted public health responses. The wide variation in sample sizes from very small in some studies to large in others produces an inconsistency that may limit the generalisability of findings.

Core community engagement standards

Participation is a primary focus of studies in this review. However, only a little over half of the studies reported community awareness of participation opportunities, and an even smaller subset allowed communities to identify barriers. A study argues that an uninformed community cannot tackle public health challenges.²⁷ This indicates an inconsistency in empowering communities to actively shape emergency responses and identify obstacles to participation. Positive community experiences were noted in less than half of the studies, suggesting limited documentation on the perceived benefits of participation. This highlights a need for more transparent reporting on

community perspectives, especially since positive reinforcement can enhance community trust and encourage sustained involvement.

The empowerment and ownership standard reveals some structural deficiencies in public health responses. While several studies emphasized identifying community priorities, capacity building, a critical component for local empowerment was scarcely reported, with only one study clearly addressing it. The lack of capacity-building initiatives diminishes the long-term effectiveness of interventions and leaves communities less prepared for future outbreaks. While previous studies documented active community support, efforts to mobilize support and secure sustainability in this review were documented in half of the studies, suggesting some recognition of the importance of continuity.^{27,28} No study reported community ownership of projects, highlighting a significant gap in fostering local accountability and decision-making power.

Inclusion varied across studies involving a diverse range of stakeholders, but limited engagement with marginalized and vulnerable groups. This is similar to the findings of a previous study that reported the exclusion of vulnerable groups in community engagements for public health emergency response.²⁹ These findings suggest a need for more intentional efforts to include underrepresented groups to ensure comprehensive preparedness that addresses the needs of all community members, particularly those who are most vulnerable. Vulnerable groups should be prioritized in engagement considerations.³⁰

Two-way communication was largely inadequate. Community leaders' direct access to decision-makers was scarcely reported; a few studies documented mechanisms for two-way communication. While the majority of studies highlighted an increase in public health knowledge and more frequent communication during emergencies, sustained interaction was only evident in about half of the studies. Consistent communication, however, was reported during the Ebola crisis in Sierra Leone.²⁸ This lack of continuous, bi-directional communication reduces the community's ability to provide feedback or influence the response, impacting the adaptation of interventions to local needs and potentially leading to community disengagement. This is a bad sign for future occurrences of public health emergencies.

The adaptability and localisation component showed that no community input to guide project priorities was reported in any of the studies. All lacked community support assessments before implementation. On the contrary, the Community Led Ebola Action in Sierra Leone was largely and effectively borne by the community.²⁸ Though most studies acknowledged the importance of contextual analysis, this rarely translated to tailored project approaches. Only two studies documented course correction based on community feedback, revealing

inflexibility in adapting strategies. While contextual relevance was largely respected, the actual inclusion of community input as a guiding factor was very low, reducing the perceived relevance and effectiveness of interventions.

Building on local capacity showed that the majority of the studies identified and leveraged local resources. Local capacities were integrated into planning and management processes in most studies, and community resource use in data collection was widely reported. Capacity-building efforts to foster local solutions were noted in a fair number of studies, suggesting some success in fostering community resilience.²⁸ However, inconsistent documentation on the scope and impact of these efforts indicates room for improvement in standardizing local capacity-building practices.

The findings underscore a pressing need to enhance community participation, empower local stakeholders, and adapt response strategies to local contexts. Gaps in inclusion and empowerment may reduce community trust and cooperation, which are vital for effective public health emergency responses.

The underreporting of participation mechanisms and two-way communication suggests that communities may not have adequate platforms to voice concerns or provide input, limiting the effectiveness of public health interventions.

Limitations

This review is limited by the small number of included studies. This limited pool may not fully capture the diverse response strategies or public health challenges across different States in Nigeria. The review may also be limited by the inconsistent reporting of demographic factors, such as gender and age, which hinders an in-depth understanding of subgroup-specific engagement needs. In addition, the limited representation of quantitative studies constrains the statistical generalizability of findings. Also, the studies varied widely in sample size and methodology, creating challenges in drawing uniform conclusions across different emergency contexts.

CONCLUSION

The review reveals that while strides have been made in community engagement in Nigeria's public health emergency responses, substantial gaps remain, particularly in empowerment, two-way communication, and inclusion of marginalized groups. Addressing these gaps is essential to fostering community ownership, improving public health outbreak response efficacy, and building sustainable public health resilience across the health system.

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