Community Engagement in Malaria, HIV, and NCD Control Programs in Cameroon: A Scoping Review of Practices, Barriers, and Research Gaps

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ABSTRACT

Background: Community engagement (CE) is widely endorsed as essential for effective disease control. However, in Cameroon, a country facing a high burden of malaria, HIV/AIDS, and rising non-communicable diseases (NCDs), the evidence base for CE practices remains fragmented. This scoping review maps the existing literature on community engagement in disease control programs in Cameroon, identifying key concepts, types and levels of engagement, barriers and facilitators, and critical research gaps in the literature.

Methods: Following Arksey and O'Malley's framework (as refined by Levac et al. and the Joanna Briggs Institute) and PRISMA-ScR reporting guidelines, we searched six electronic databases (PubMed, Scopus, Web of Science, Global Health, African Journals Online, and Cairn.info) for peer-reviewed articles published in English or French between January 2000 and March 2026. Studies were included if they reported CE in malaria, HIV/AIDS, or NCD control programs in Cameroon. Data were extracted on study characteristics, CE definitions and frameworks, types and levels of engagement, barriers and facilitators, and the reported outcomes. The thematic analysis was guided by Arnstein's ladder of participation and Rifkin's continuum. Two reviewers screened records and charted data, with disagreements resolved by discussion. Study quality was appraised descriptively with the Mixed Methods Appraisal Tool (MMAT).

Results: Of 847 records identified, 613 titles and abstracts were screened after removal of 234 duplicates, 71 full-text articles were assessed, and 23 studies met the inclusion criteria. HIV/AIDS was the most common (n = 12, 52.2%), followed by malaria (n = 8, 34.8%) and NCDs (n = 3, 13.0%). Only 5 studies (21.7%) provided explicit definitions of CE, with widespread conflation of "engagement," "participation," and "involvement." Engagement was predominantly at the information and consultation levels (17 of 23 studies; 73.9%), with only two studies (8.7%) reporting collaborative or empowered participation. Community health workers were the most common engagement mechanism (featured in 82.6% of studies). Key barriers included conflict and insecurity (cited in 69.6% of studies), poverty and financial constraints (65.2%), stigma (47.8% of all studies; 58.3% of HIV studies), low health literacy (56.5%), top-down program design (52.2%), and gender inequity (47.8%). Facilitators included trusted CHWs (78.3% of studies), community leadership involvement (60.9%), and tangible benefits (73.9%). Only eight studies (34.8%) reported measurable health or service-uptake outcomes; where measured, engagement was associated with higher service uptake, but these non-randomised findings cannot be interpreted as causal effects. Critical gaps identified include limited NCD research (13.0%), absence of theoretical frameworks (87.0%), no standardized CE measurement tools, only two cohort/longitudinal studies, no randomised or quasi-experimental evaluations, and only a small number of studies with a comparison group.

Conclusions: CE research in Cameroon is characterized by conceptual ambiguity, disease-specific silos (prioritizing HIV/malaria over NCDs), and systematic under-evaluation of outcomes. Although CE is widely

endorsed in policy, the evidence base remains fragmented and predominantly descriptive. Reported positive associations between engagement and service uptake come from non-experimental designs and should not be read as evidence of effectiveness. The crisis in North West and South West emerges as a critical contextual factor shaping engagement possibilities, yet remains under-integrated into the CE research. There is an urgent need for theoretically grounded, comparative, and longitudinal research across all three disease programs, with particular attention to NCDs and conflict-affected settings.

Keywords: Community engagement; community participation; disease control; malaria; HIV/AIDS; non-communicable diseases; Cameroon; scoping review; conflict

INTRODUCTION

1.1 Background

Community engagement (CE) has been recognised as a fundamental component of effective public health intervention for over four decades, dating back to the Alma Ata Declaration of 1978, which emphasized community participation as essential to primary health care (PHC) [1]. In recent years, global health institutions have increasingly positioned CE as critical to achieving Universal Health Coverage and Sustainable Development Goals, particularly SDG 3.3 (ending epidemics of communicable diseases) and SDG 3.4 (reducing premature mortality from non-communicable diseases) [2, 3]. Contemporary definitions emphasize CE as an on-going, evolving process of multidirectional communication with and for people to solve the problems and address the concerns that matter to them, with the ultimate goal of equitable partnering to influence policies, programs, and practices for community betterment [32].

The conceptual foundations of CE are drawn from multiple theoretical traditions. Arnstein's "ladder of citizen participation" remains influential, distinguishing between non-participation (manipulation, therapy), tokenism (informing, consultation, placation), and citizen power (partnership, delegated power, citizen control) [4]. The *Principles of Community Engagement* further codified nine principles, clarity of purpose, community knowledge, trust-building, self-determination, partnership, diversity, asset mobilization, release of control, and long-term commitment, that have guided CE practice globally [27]. A tenth principle of trustworthiness has recently been added, specifically noting that trustworthiness is essential for effective partnerships and for advancing health equity [32].

1.2 The Cameroonian Context

Cameroon faces a triple burden of communicable and non-communicable diseases. Malaria remains endemic, with the country among the 29 nations accounting for 96% of global malaria infections [8, 9]. Over 90% of Cameroon's population is at risk of malaria, with about 41% suffering at least one episode annually, and malaria accounting for 30–35% of overall mortality and 67% of childhood mortality [38]. HIV prevalence is estimated to be 3.6%, with significant regional variations [10]. NCDs are rising rapidly, with hypertension affecting 25% of adults and diabetes affecting 6% of adults [11, 12]. Diabetes awareness in the general population has been found to be generally good in areas exposed to intensive health promotion, with educational level, age, and having a relative with a chronic condition being significant predictors of awareness [37].

The health system faces numerous challenges, including inadequate financing, poor coverage of essential health services, and weak health information systems [13, 14]. Cameroon's health system has undergone successive reforms since the early 1990s, moving from the reorientation of primary health care to the National Health Development Plan, with decentralization to health districts and the creation of management committees at health facility levels intended to promote community participation [28]. However, community participation in these structures has often been weak, with difficulties in renewing management committee offices due to low participation in general assemblies, leadership conflicts, low schooling of members, and resistance to change by some health workers [39].

Since 2018, an on-going armed conflict in the North West and South West regions has severely impacted healthcare access, with reports suggesting that 29% of health centres in these regions are no longer functioning

[15, 16]. This crisis has displaced over one million people and created additional barriers to disease control efforts [17]. Engaging communities in conflict-affected settings is particularly difficult, as priorities may be difficult to identify and many other factors, such as safety, power relations, and entrenched inequalities, must be considered [31]. Nevertheless, community engagement in identifying and setting priorities, decision-making, and implementing health system interventions can give the public an opportunity to share their views and a sense of ownership in the services they use, and should thus make healthcare provision more successful [31].

Despite policy commitments to community engagement, including the Ministry of Public Health's Community Health Strategy aiming for 60% coverage of remote populations by 2025 [15], implementation often remains tokenistic and inadequately documented. There is a gap in the synthesized evidence on how community engagement is practiced across different disease programs in Cameroon, what barriers exist, and what outcomes are achieved.

1.3 Rationale

While systematic reviews have broadly examined CE in sub-Saharan Africa [16, 17], no comprehensive scoping review has focused specifically on Cameroon, a country with unique characteristics, including its dual English-French health system, on-going conflict in two regions, and the coexistence of well-funded HIV/malaria programs alongside nascent NCD responses. This mapping is essential for identifying patterns, gaps, and priorities for research and practice in Cameroon. Systematic reviews of CE in health services research in low- and middle-income countries have found insufficient description of engagement processes, limiting deeper understanding and analysis of the issue [30]. Reviews of CE in conflict-affected settings have similarly found limited research literature despite its recognised importance [31]. A Cameroon-specific review is therefore needed.

1.4 Objectives

1. Map the existing literature on community engagement in malaria, HIV/AIDS, and NCD control programs in Cameroon
2. Identify how CE is conceptualized and defined across studies
3. Describe the types and levels of CE implemented
4. Identify barriers and facilitators to effective CE in the Cameroonian context
5. Examine reported outcomes and effectiveness of CE interventions
6. Identify critical gaps in the evidence base and priorities for future research

1.5 Research Questions

1. How is community engagement conceptualized and defined in Cameroon's disease control programs?
2. What types and levels of community engagement are implemented in malaria, HIV, and NCD programs?
3. What barriers and facilitators influence community engagement in Cameroon?
4. What outcomes and effectiveness measures have been reported for CE interventions?
5. What are the key gaps in the evidence base that are specific to Cameroon?

2. Methods

2.1 Study Design and Protocol

This scoping review followed the methodological framework of Arksey and O'Malley [41], as refined by Levac et al. [42] and the Joanna Briggs Institute (JBI) methodology for scoping reviews [43], and is reported in accordance with the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) [18]. Scoping reviews are useful for broad research questions or complex and heterogeneous literature not amenable to a more focused systematic review [41]. No protocol was registered for this review. The completed PRISMA-ScR checklist is provided as Supplementary File S1.

2.2 Eligibility Criteria

A comprehensive literature search was conducted based on the following inclusion and exclusion criteria:

Inclusion Criteria

Population: Communities (geographic or interest-based) in Cameroon participating in disease control programs

Concept: Community engagement, participation, or involvement in malaria, HIV/AIDS, or NCD (hypertension, diabetes) control programs

Context: Cameroon, any setting (urban, rural, conflict-affected)

Types of evidence sources: Peer-reviewed primary research (quantitative, qualitative, mixed-methods), peer-reviewed program evaluations, and systematic reviews with Cameroon-specific data, published in English or French between January 2000 and March 2026. Study designs were not restricted, so that longitudinal, comparative and intervention evaluations, if present, could be captured

Exclusion Criteria

Commentaries, editorials, opinion pieces without primary data; studies focused solely on clinical outcomes without CE components; studies from other countries without Cameroon-specific data; grey literature and conference abstracts

2.3 Database Sources

Our search strategy was carried out across the following six electronic databases:

- PubMed/MEDLINE
- Scopus
- Web of Science Core Collection
- Global Health (CABI)
- African Journals Online (AJOL)
- Cairn.info (for French-language publications)

Database-specific platforms, search dates and the total number of records retrieved are reported in Appendix A (Table 5), together with the search strategy used in each database. All databases were searched between January and March 2026. The reference lists of all included studies and of relevant systematic reviews were hand-searched for additional studies.

2.4 Searches for Relevant Publications

The following search terms were used to identify relevant publications:

Population/Geography: "Cameroon" OR "Cameroun"

Concept: "community engagement" OR "community participation" OR "community involvement" OR "community mobilization" OR "community-based" OR "participatory" OR "community health worker" OR "relais communautaire" OR "agent de santé communautaire"

Context: "disease control" OR "disease prevention" OR "health program" OR "malaria" OR "paludisme" OR "HIV" OR "AIDS" OR "VIH" OR "SIDA" OR "non-communicable disease" OR "NCD" OR "hypertension" OR "diabetes" OR "diabète"

2.5 Screening

Records were exported to excel and duplicates were removed. Titles and abstracts were then screened against the eligibility criteria, followed by full-text assessment of potentially eligible articles. Three reviewers EGF, LK, and LM screened each record independently at both stages. Disagreements were resolved through discussion and consensus involving a separate three-member adjudication panel including KMK, DND, and FEE. A record was included only after consensus was reached. Formal inter-rater agreement was not calculated; all disagreements were resolved by consensus. Reasons for exclusion at the full-text stage were recorded and are reported in Figure 1 and Section 3. The selection process was documented using a PRISMA-ScR flow diagram.

2.6 Charting the Data

Data were extracted from eligible studies using a standardized piloted form developed in Microsoft Excel. The details that were extracted included the following:

- The study characteristics: Author(s), year, region(s) of Cameroon, setting (urban/rural/conflict-affected), study design, sample size, disease focus
- The Community Engagement (CE) conceptualization: Definition of CE provided (yes/no), definition text, theoretical framework used (if any found)
- CE implementation: Types of CE activities, level of engagement (coded using Arnstein's ladder), primary engagement mechanisms, stages of program involved
- Barriers and facilitators: Reported barriers to CE, reported facilitators/enablers, with attention to conflict-specific factors
- Outcomes: Reported health outcomes, process outcomes, sustainability measures, any evaluation of CE effectiveness

Data were extracted by one reviewer and verified against the source article by a second reviewer; discrepancies were resolved by discussion, with a third reviewer consulted where necessary. Study designs were coded as reported by the study authors and checked against the methods described. 'Longitudinal/cohort' studies followed the same participants or records over time (prospectively or retrospectively) with repeated measurement or follow-up; 'comparative' studies reported an explicit comparison group or comparator (for example, participants versus non-participants, or community-based versus facility-based delivery), whether or not allocation was randomised; and 'intervention' studies evaluated a deliberately implemented engagement activity against a stated outcome. Randomised trials and quasi-experimental designs (controlled before-and-after studies, interrupted time series) were coded separately. All extracted statistics and denominators were re-checked against the original articles during revision.

2.7 Analysis and Synthesis of Data

The analysis of data was done using descriptive statistics and thematic analysis. Engagement levels were categorized according to Arnstein's ladder [4]:

- Non-participation: Manipulation, therapy
- Tokenism: Informing, consultation, placation
- Citizen power: Partnership, delegated power, citizen control

The selected studies were also coded using Rifkin's continuum from passive participation to self-mobilization [5]. Because none of the primary studies was designed around these typologies, engagement levels were inferred from each study's description of engagement activities, and the coding is therefore interpretive. Similar approaches have been used in systematic reviews of CE in health services research, where engagement levels are rated across research phases such as developing ideas, developing methodology, data collection/analysis, report writing, and dissemination [30].

The thematic analysis of the barriers and facilitators followed Braun and Clarke's approach [40], involving familiarization, initial coding, theme development, and refinement of themes. The themes were organized using the socio-ecological model (individual, interpersonal, community, and structural levels).

Descriptive statistics are presented as counts and percentages of the 23 included studies unless another denominator is stated (for example, disease-specific subgroups). Many characteristics (region, barriers, facilitators, mechanisms) were not mutually exclusive, so percentages do not sum to 100%. Because the review did not pool effect estimates, outcome findings are summarised narratively as reported by the original authors and are interpreted as associations rather than causal effects.

2.8 Critical Appraisal of Included Studies

Although critical appraisal is optional in scoping reviews, the methodological quality of the included empirical studies was appraised using the 2018 version of the Mixed Methods Appraisal Tool (MMAT) [44] in order to describe the strength of the evidence base. Each study was rated against the five MMAT criteria applicable to its design. Consistent with MMAT guidance, appraisal was not used to exclude studies or to weight the synthesis. For descriptive purposes only, studies meeting all five criteria were categorised as higher quality, those meeting three or four as moderate, and those meeting two or fewer as lower quality. Appraisal was conducted by three reviewers independently, with disagreements resolved by consensus. Item-level ratings are provided in Supplementary Table S3.

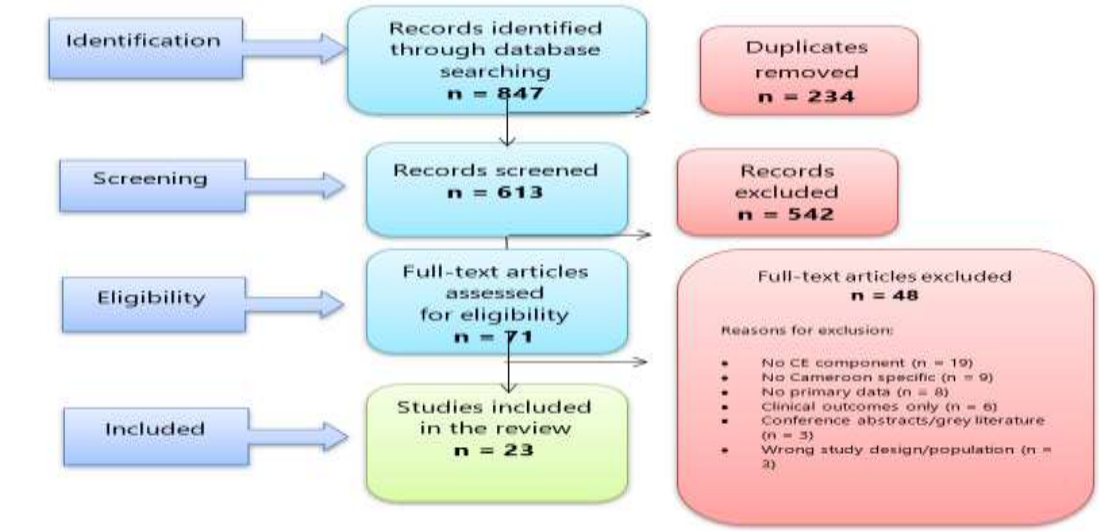
Ethics Statement

This scoping review synthesised data from previously published peer-reviewed literature and did not involve direct human subjects participation. As such, ethical approval was not required. All included studies that directly involve human subjects had obtained appropriate ethical approval from their respective institutional review boards.

3. Results

A total of 847 records were identified across the six databases. After removal of 234 duplicates, 613 titles and abstracts were screened, of which 542 were excluded as irrelevant. The full texts of 71 articles were assessed for eligibility; 48 were excluded and 23 studies were included in the final review (Figure 1). The 48 full-text exclusions were attributed to: no community engagement component (n = 19), no Cameroon-specific data (n = 9), no primary data (n = 8), clinical outcomes only (n = 6), conference abstracts or grey literature (n = 3), and wrong study design or population (n = 3), which sum to 48 (19 + 9 + 8 + 6 + 3 + 3 = 48). The list of excluded full-text articles with reasons is provided as Supplementary Table S2.

Figure 1: PRISMA Flow Diagram



3.1 Characteristics of the Included Studies

The 23 studies included in this scoping review revealed a distinct geographic and thematic imprint reflective of the broader health system realities of community engagement in Cameroon. The evidence base was heavily concentrated or skewed towards the regions of the South West (52.2% of studies) and North West (43.5% of studies), with additional representation from the Centre region (34.8% studies), Littoral (26.1% studies), and West (17.4% of studies). In contrast, the northern regions (Extreme North 13.0% of studies, Adamawa 8.7% of studies, and North 4.3% of studies) remained markedly under-represented, together appearing in 26.1% of studies. Regional categories are not mutually exclusive because some studies covered more than one region, so percentages sum to more than 100%.

This regional imbalance may reflect both the presence of international and local research institutions and NGOs in the English-speaking regions and Centre and the heightened visibility of the on-going crisis in the North West and South West regions which has drawn attention to health service disruptions in conflict-affected areas, with potential publication language biases favouring English language outputs. Indeed, five studies (21.7%) were conducted in conflict-affected regions (North West, South West or Extreme North); of these, two explicitly characterised their setting as conflict-affected and three noted conflict impacts without treating conflict as an analytical category (see below).

Publication trends showed a steady increase over time, with only 13.0% (n = 3) of studies appearing between 2000 and 2009, rising to 47.8% (n = 11) in the 2010-2019 decade, which coincides with the scale-up of global health initiatives such as the President's Emergency Plan for AIDS Relief (PEPFAR) and the Global Fund, and 39.1% (n = 9) of studies published between 2020 and 2025. This growth parallels the expansion of donor-funded HIV and malaria programs and, more recently, growing concern over the rising burden of non-communicable diseases (NCDs).

In terms of diseases, HIV/AIDS was found to dominate the literature with 52.2% of studies, followed by malaria with 34.8% of studies. Only 13.0% of studies addressed NCDs, primarily hypertension and diabetes, highlighting a significant mismatch between research focus and Cameroon's evolving epidemiological profile. Critically, no study addressed multiple diseases simultaneously. This disease-specific siloing means that opportunities for cross-learning for example, adapting HIV peer education models to NCD self-management remain unexplored in the studies identified.

Looking at study designs, most studies employed qualitative designs (n = 11; 47.8%) or quantitative cross-sectional surveys (n = 7; 30.4%), with fewer mixed-methods studies (n = 3; 13.0%) and cohort/longitudinal designs (n = 2; 8.7%). The two cohort/longitudinal studies were retrospective, record-based analyses of HIV care cohorts followed over time: one compared ART linkage and viral load suppression at 12, 24 and 36 months between community-based organisation (CBO) and hospital cohorts at the Yaoundé Central Hospital [35], and the other examined retention in HIV care over 28 months (January 2016 to April 2018) in the Muyuka Health District, alongside a cross-sectional community survey of participation [36]. A small number of studies included an explicit comparison group, for example community-based versus facility-based HIV service delivery [35], participants versus non-participants in peer education, or communities with versus without CHW engagement (Section 3.7); all of these were non-randomised, observational comparisons. No randomised controlled trials or quasi-experimental evaluations (such as controlled before-and-after or interrupted time-series designs) were identified. A few studies described programme-level interventions, such as community dialogue approaches, but evaluated them using descriptive or uncontrolled designs. This limits the evidence base to associational claims: causality cannot be inferred, and the comparative effectiveness of different engagement approaches remains unknown.

The setting was diverse. Studies were distributed across rural (n = 9; 39.1%), urban (n = 8; 34.8%), mixed rural-urban (n = 4; 17.4%) and explicitly conflict-affected (n = 2; 8.7%) contexts. Three further studies noted conflict impacts without making conflict a primary analytical category. Given that an estimated 29% of health facilities in the North West and South West are no longer functioning due to the crisis, this under-specification of conflict settings represents a significant missed opportunity.

Table 1: Summary of Included Study Characteristics

Characteristic	Category	Number (N=23)	Percentage
Disease	HIV/AIDS	12	52.2%
	Malaria	8	34.8%
	NCDs	3	13.0%
Design	Qualitative	11	47.8%
	Quantitative cross-sectional	7	30.4%
	Mixed-methods	3	13.0%
	Cohort/Longitudinal	2	8.7%
Region	South West	12	52.2%
	North West	10	43.5%
	Centre	8	34.8%
	Littoral	6	26.1%
	Other regions (West, Extreme North, Adamawa, North)	10	43.5%
Setting	Rural	9	39.1%
	Urban	8	34.8%
	Mixed rural-urban	4	17.4%
	Conflict-affected (explicitly classified)	2	8.7%

Note: Percentages use N = 23 included studies as the denominator. Region categories are not mutually exclusive because some studies covered more than one region.

3.2 Conceptualization of Community Engagement

Conceptual clarity around community engagement (CE) remains limited in the Cameroonian literature. Only 21.7% of studies offered explicit definitions. Two of the studies drew on the World Health Organization's framing, one referenced Arnstein's ladder of participation, one used Rifkin's continuum, and one applied empowerment theory. The remaining 78.3% of studies used the terms "community engagement," "participation," and "involvement" interchangeably, without theoretical anchoring, conceptual grounding or distinction. This pattern was consistent across disease areas and was equally evident in the four French-language publications; similar ambiguity prevailed, where "participation communautaire," "engagement communautaire," and "implication communautaire" were employed as synonyms without clear distinction. Similar conceptual ambiguity has been noted in HIV community participation literature, where community participation has inherited various meanings from different stakeholders who often use it for conflicting ends, ranging from using community resources to meet health care costs to empowerment in decision-making [33].

The thematic analysis of the studies that did define CE revealed three broad conceptual orientations:

The first is an instrumental view or conceptualisation (three studies). Within this view, CE was framed primarily as a means to improve program or project uptake and compliance; for example, involving communities to increase acceptance of the intervention. Here, communities are instruments for achieving externally defined goals.

The second is a relational view or conceptualisation (one study). Based on this view, CE was understood as building trust and partnership between communities and programs or projects. This view emphasises process over outputs.

The last is a rare empowerment perspective (one study). This conceptualisation is premised on capacity building, highlighting the transfer of decision-making power to communities on all health related programs or projects. This explicitly addresses issues of power dynamics and community agency. This conceptual ambiguity has practical consequences: it may enable programs to claim community engagement while operating largely at tokenistic levels, limiting accountability and deeper community agency.

Based on the three conceptualisations, only this last conceptualization found in a single study on HIV peer education aligned meaningfully with questions of power, decision-making authority, and structural inequity. Across all the three disease areas, conceptual ambiguity was found to be consistently high: 75% of HIV studies, 87.5% of malaria studies, and two-thirds of NCD studies lacked explicit definitions. By treating CE as a self-evident "good" rather than a rigorous methodology, the literature may enable programs to claim the legitimacy of engagement while operating largely through top-down, instrumentalist approaches.

3.3 Types and Levels of Community Engagement

The community engagement (CE) pattern that was found reported most frequently reflected a largely top-down orientation. The types of CE activities reported across Cameroonian studies reveal a clear pattern: engagement is overwhelmingly oriented toward implementation and information dissemination, not decision-making. Health education and sensitization campaigns appeared in 87.0% of studies (n = 20), followed by community health worker home visits (82.6%; n = 19) and mass distribution or testing campaigns (65.2%; n = 15). Community dialogue meetings (39.1%; n = 9), peer support groups (34.8%; n = 8, mostly for HIV), and community-based screening (30.4%; n = 7) represented more interactive but still largely implementation-focused activities. Notably, activities that imply shared decision-making or community leadership were exceedingly rare. Only 8.7% of studies reported community involvement in program planning, and only 4.3% of studies described community-led monitoring or evaluation. In HIV programs specifically, community participation has included care provision, research involvement, activism, role modelling, peer education, associations of people living with HIV, community-based organisations, municipal councils, and community health appraisal yet these components have rarely been systematically evaluated in Cameroon [33].

When these activities were mapped using Arnstein's ladder of citizen participation, most initiatives fell into the lower rungs (Table 2). Seventeen studies (73.9%) operated at the levels of informing (n = 9) or consultation (n = 8), primarily informing or consulting communities about externally designed programs; including the two placation studies, 19 studies (82.6%) fell within Arnstein's tokenism tier. Two studies (8.7%) fell into the non-participation category, where communities were manipulated or informed after the fact with no meaningful input. Two studies (8.7%) reached placation, allowing limited community input into implementation decisions without shared governance, and two (8.7%) reached partnership-level engagement, in which communities shared decision-making authority or led initiatives; both of the latter were HIV programs that incorporated peer educator models and community-led support groups. No study described delegated power or full citizen control. Similar patterns have been documented in malaria prevention in Cameroon, where current measures have been described as more of a top-down approach, with affected communities mainly at the receiving end, and a ladder of community participation proposed to move communities from recipients to owners of malaria prevention programmes [38].

This distribution suggests a gap between the rhetoric of community engagement that pervades Cameroonian health policy documents. The National Community Health Strategy (2020-2025) speaks of partnership and empowerment, yet the evidence base suggests that routine practice remains firmly within the tokenistic range. Communities are treated as implementers of externally designed programs, not as partners in setting priorities, designing interventions, or allocating resources. This mirrors long-standing challenges in Cameroon's district health system, where community management committees have struggled with low participation, leadership conflicts, and weak support from other health system actors [39].

Disease-specific patterns also differed. HIV programs showed relatively more advanced engagement, with 2 of 12 studies (16.7%) achieving partnership, plausibly related to the long-established infrastructure of peer educator models, support groups, and community-based organizations that have accompanied HIV funding since the

2000s. Malaria programs predominantly featured functional participation (informing or consultation) in 6 of 8 studies (75%), with communities enlisted to implement pre-designed interventions but excluded from planning or evaluation. The NCD studies were the most limited (3 studies), all confined to information or consultation levels and with no examples of partnership or shared decision-making.

By programme stage, communities were most often involved in implementation (91.3% of studies) and information sharing (78.3%). In contrast, only 8.7% of studies reported involving communities in planning, and only 4.3% in evaluation.

This pattern suggests that CE is primarily valued for its utility in implementation rather than its power in agenda-setting. Communities are valued for their labour and local knowledge in delivering pre-defined interventions, but not for their voice in determining what those interventions should be or how success should be measured.

Table 2: Levels of Community Engagement by Disease Program in Cameroon

Arnstein's Level	HIV (n=12)	Malaria (n=8)	NCD (n=3)	Total (N=23)
Non-participation	1 (8.3%)	1 (12.5%)	0 (0%)	2 (8.7%)
Informing	4 (33.3%)	3 (37.5%)	2 (66.7%)	9 (39.1%)
Consultation	4 (33.3%)	3 (37.5%)	1 (33.3%)	8 (34.8%)
Placation	1 (8.3%)	1 (12.5%)	0 (0%)	2 (8.7%)
Partnership	2 (16.7%)	0 (0%)	0 (0%)	2 (8.7%)
Delegated power	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Citizen control	0 (0%)	0 (0%)	0 (0%)	0 (0%)

Note: Percentages are column percentages of the studies in each disease group (n in column headers). Informing + consultation = 17/23 (73.9%); including placation, the tokenism tier = 19/23 (82.6%).

3.4 Mechanisms of Engagement in Cameroon

Across all studies found on Cameroon, Community health workers (CHWs) emerged as the dominant mechanism, featuring in 82.6% of studies. They served as the primary interface for education, commodity distribution (malaria nets and HIV condoms), screening (HIV & NCD), and referral to facilities. However, a "CHW paradox" exists: while they are essential for reaching remote populations, they operate in structurally disempowered positions, often working as volunteers without formal remuneration or input into the governance of the programs they sustain. Traditional and religious leaders were engaged in 60.9% of studies, mainly for mobilization and endorsement rather than shared governance, while peer educators and support groups appeared in 34.8% of studies and played more prominent roles in HIV programs, a legacy of the disease's long history of community-based responses. Community-based organizations (30.4% of studies) and health facility committees (17.4% of studies) were less commonly described.

In HIV programs specifically, community-based organisations have been associated with improved access to antiretroviral treatment and retention in care. A study at the Yaoundé Central Hospital found that CBOs performed 25.6% of all HIV screening tests in 2020 and linked 73.2% of newly diagnosed patients to ART, compared with only 32.5% linkage at the approved treatment centre, with viral load suppression comparable between CBO and hospital cohorts at 12, 24, and 36 months, with no statistically significant differences [35]. This was a retrospective, single-site comparison without random allocation, so higher linkage in CBOs may partly reflect differences in the patients served. The viral-suppression figures are those reported in the source article's abstract (see Section 3.7). Similarly, community participation in HIV care in the Muyuka Health District has been assessed using Rifkin's scoring method, revealing low overall community participation (mean resource

allocation score = 2.43, leadership = 1.0, organization = 1.3), though needs assessment was rated good (4.0) [36]. These findings are consistent with a complementary role for CBOs and community structures alongside facility-based care, while also highlighting persistent weaknesses in community mobilisation and leadership.

3.5 Barriers to Community Engagement in Cameroon

Based on the thematic analysis of 23 studies, barriers to community engagement (CE) were found operating across multiple levels. For purposes of clarity, the barriers were grouped into three interlocking thematic clusters capturing the lived reality of CE in Cameroon's context. Table 3 also presents the same barriers by socio-ecological level (individual, interpersonal, community, structural). Percentages refer to the 23 included studies unless a disease-specific denominator is stated.

1. Conflict-Poverty-Access Triad

Conflict and insecurity constituted the most pervasive obstacle, cited in 69.6% of studies, particularly in the North West and South West regions. Studies reported destruction of health facilities (17.4%), fear of violence when seeking care (21.7%), kidnapping of health workers (8.7%), "ghost towns" and civil disobedience holidays disrupting services (13.0%), displacement disrupting treatment continuity (17.4%), and trauma and mental health impacts impairing health-seeking behaviour (8.7%). This aligns with findings from a scoping review of community engagement in health systems interventions and research in conflict-affected countries, which found that engaging communities can be particularly difficult in such settings, where priorities may be difficult to identify and many other factors, such as safety, power relations, and entrenched inequalities, must be considered [31]. In conflict-affected settings, community engagement is further complicated by the need to mediate between governments, armed groups and other organisations to increase the ability of healthcare providers to remain in post [31].

Poverty and economic constraints (65.2% of studies) compounded inaccessibility and competing livelihood demands. For most Cameroonians, the direct and indirect costs of engagement such as transport to health facilities, time away from income-generating activities, user fees for services even when nominal are prohibitive. Poverty and conflict were described as interacting in mutually reinforcing ways: displacement destroys livelihoods, which deepens poverty, which reduces the capacity to engage with health services, which worsens health outcomes, which deepens poverty further. In malaria prevention specifically, more than 54.3% of Cameroonians live below the poverty line and government finances only about 28% of healthcare, with very high out-of-pocket payment, creating inequality and inequity in access [38].

Geographic inaccessibility (52.2% of studies) compounds these challenges, particularly in rural areas and conflict zones where roads are impassable, bridges destroyed, or travel simply too dangerous. The combination of conflict, poverty, and inaccessibility creates what one study called "medical deserts" areas where no amount of CHW enthusiasm can overcome the structural barriers to reaching communities.

2. Stigma, Mistrust, and the Collapse of Social Cohesion

At the individual level, stigma and social exclusion (47.8% of all studies; n = 11) were most frequently reported in HIV research (58.3% of HIV studies; 7 of 12), where fear of disclosure, family rejection, and community ostracism remain powerful deterrents to engagement. Confidentiality breaches by health workers (26.1% of studies) were a recurring concern, reflecting inadequate training and weak accountability systems. In HIV care specifically, stigma has been identified as a major barrier to retention, with patients lost to follow-up citing fear of being stigmatized, financial constraints, and poor social support from partners and family members [36].

At the community level, mistrust of health workers and institutions (39.1% of studies) was not limited to HIV. In conflict-affected regions, health facilities are sometimes perceived as aligned with security forces, making engagement a political act. In stable regions, mistrust reflected historical neglect, perceived disrespect from clinicians, or experiences of corruption and demand for informal payments. In displacement settings, social

tensions can also be increased by the roles of social, local, and international media, especially if issues are framed in ways that target minority communities at the expense of others [29].

Culturally, beliefs conflicting with biomedical approaches were cited in 11 studies (47.8%), particularly for malaria, where traditional healers and spiritual explanations for illness remain prevalent. Notably, however, the included studies did not suggest that cultural beliefs are inherently barriers to engagement; rather, they appeared to become barriers when programs fail to engage with them respectfully, creating a binary choice between "modern" and "traditional" that most communities navigate flexibly.

3. Structural Disempowerment and Donor-Driven Priorities

A Top-down, donor-driven program design was identified in 52.2% of studies as a fundamental barrier. Programs were described as designed centrally (in Yaoundé or by international partners) with predetermined targets and rigid reporting requirements that left little room for communities to set priorities or adapt interventions to local realities. In addition, the issue of inadequate funding for community components found in 47.8% of studies was linked to CHWs, the backbone of engagement, being described as unpaid, insufficiently trained, and unsupported. Furthermore, weak health systems as found in 43.5% of studies, reportedly causes chronic shortages of medicines, equipment, and staff which undermine whatever goodwill engagement efforts generate. When a community member is motivated by a CHW to seek care, only to find the health centre locked or the pharmacy empty, the engagement contract is broken, sometimes irreparably. These structural barriers are consistent with historical analyses of Cameroon's health system, which have documented how economic crisis, structural adjustment, and reduced public resources for health have constrained the implementation of community participation reforms [28].

Short-term funding cycles (26.1% of studies) and donor priorities misaligned with community needs (21.7%) completed the picture. HIV has historically attracted substantial donor funding for community engagement, whereas NCD programs have received far less despite their rising burden. Communities in conflict zones need flexible, long-term, security-sensitive programming; donors demand predictable indicators, quarterly reports, and rapid results. The structural conditions of global health funding may therefore contribute to the tokenistic engagement described in Section 3.3.

Finally, language barriers between English and French speaking Cameroon (17.4% of studies) represent a context-specific structural barrier. The country's bilingual health system was described as often operating predominantly in French, alienating English-speaking populations and compounding the trust deficit in conflict-affected regions.

Table 3: Barriers to Community Engagement in Cameroon by Level

Barrier Level	Specific Barrier	Studies (%)	Primary Disease
Individual	Low health literacy	56.5%	All
	Fear of stigma	43.5%	HIV (58.3%)
	Competing priorities	39.1%	All
Interpersonal	Stigma/discrimination	47.8%	HIV
	Mistrust of institutions	39.1%	All
	Confidentiality breaches	26.1%	HIV
Community	Conflict/insecurity	69.6%	Malaria, All
	Poverty	65.2%	All
	Geographic inaccessibility	52.2%	Malaria
	Cultural beliefs	47.8%	All

Structural	Top-down program design	52.2%	All
	Inadequate funding	47.8%	All
	Weak health systems	43.5%	All
	Donor-driven priorities	21.7%	All

Note: Percentages refer to the 23 included studies unless a disease-specific denominator is given in brackets; a study could report more than one barrier.

3.6 Facilitators of Community Engagement in Cameroon

Even though barriers were identified, the 23 studies also identified distinct facilitators pointing to practical pathways forward. Rather than listing these mechanistically, we highlight the enabling conditions that appear most consequential.

1. Trusted community health workers (CHWs)

The single most frequently cited facilitator was trusted CHWs serving as critical bridges between the communities and programs as mentioned in 78.3% of studies, leveraging personal connections and cultural proximity. When CHWs come from the same community, speak the same language, understand local customs, and maintain confidentiality, they may overcome mistrust, stigma, and cultural barriers that would stymie professional clinicians. Several studies emphasised that CHWs' effectiveness was attributed not to their formal training but to their relational proximity, being known, being present and demonstrating care over time. This is consistent with global principles of community engagement, which emphasise that community collaboration requires long-term commitment, trust-building, and the mobilization of community assets [27, 32].

2. Community Leadership Endorsement

Community leadership endorsement, including by traditional leaders, religious leaders, women's group heads, and youth leaders, appeared in 60.9% of studies and was among the most frequently cited facilitators. Leaders provide endorsement, mobilization, and legitimacy. In conflict zones, leaders can negotiate access with armed groups or facilitate dialogue between communities and health actors. However, several studies noted the risk of "elite capture," where leaders divert benefits to themselves or their kin, a reminder that community leadership is not automatically democratic or equitable. Reviews of community engagement in conflict-affected countries have similarly found that engaging community and religious leaders in both designing and delivering culturally acceptable healthcare is a major lesson, while also cautioning that marginalised groups may not be able to share their views with or through community elites and must be included in an equitable health system [31].

3. Tangible and Immediate Benefits

Perceived benefits and immediate benefit of participation were cited in 73.9% of studies. Communities were reported to be more likely to engage when they see tangible returns: free or subsidized services (cited in 65.2% of studies), immediate improvements in health (e.g., malaria treatment), or material incentives (though these raise sustainability concerns). This finding challenges purely altruistic framings of CE and suggests that engagement is, in part, an economic calculation. The "social exchange" perspective provides insight into motivations for participation, using the framework of benefits and costs to explain who participates and why; community members and organizations will participate if they perceive that the benefits of participation outweigh the effort required [27].

4. Free or Subsidised Services

Free or subsidised services were mentioned in 65.2% of studies (a subset of the tangible benefits above) and emerged as an important structural facilitator. Studies suggested that removing user fees, even modest ones, was associated with higher uptake of testing, treatment, and prevention. In the Cameroonian context, where out-of-

pocket payments remain the dominant financing mechanism, several studies reported higher service utilisation where fees were waived.

5. Conflict-Specific Facilitators

In conflict-affected settings, community dialogue approaches (5 studies; 21.7%) and integration with humanitarian actors (3 studies; 13.0%) were identified as facilitators of engagement. Studies reported that community dialogues, structured facilitated meetings where communities articulate grievances and co-design solutions, may help rebuild trust after violence. Integration with humanitarian actors (WHO, ICRC, MSF) was argued to provide security, legitimacy, and resources that the Ministry of Public Health alone cannot offer in active conflict zones. These findings suggest that while structural constraints are formidable, targeted, context-sensitive strategies can meaningfully enhance engagement even in challenging environments. Reviews of communication for social cohesion in forced displacement have similarly found that community dialogues and media interventions can help rebuild trust and foster horizontal social cohesion among displaced populations, though attention must be paid to the dynamics and social fractures among displaced communities themselves, not only between hosts and displaced people [29].

3.7 Outcomes and Effectiveness of Community Engagement

Despite widespread implementation of community engagement (CE) activities, only eight studies (34.8%) reported measurable health-related outcomes: service-uptake outcomes in six studies (26.1%) and clinical or biological outcomes in two (8.7%). Of these eight studies, six (75%) reported positive associations and two (25%) reported mixed findings or barriers limiting effectiveness. Because all eight were non-experimental, these results should be interpreted with caution.

Community engagement through CHWs and peer models (6 studies; 26.1%) was associated with increased HIV testing, insecticide-treated net (ITN) use, treatment adherence, and NCD screening attendance (service-uptake outcomes). Knowledge and attitude outcomes (5 studies; 21.7%) included improved awareness of malaria, HIV, and NCDs, as well as reduced stigma measured in two HIV studies. Process outcomes (4 studies; 17.4%), including participation rates, community satisfaction, and trust in CHWs, were also reported. Clinical or biological outcomes (reduced malaria prevalence in children and better viral suppression) appeared in two studies (8.7%), and sustainability outcomes in one study (4.3%), which documented program continuation after external funding ended. Knowledge, attitude and process outcomes were not counted as health outcomes above, and some studies reported more than one outcome type.

In HIV care specifically, community-based organisations have been associated with improved linkage to ART and comparable viral load suppression compared with facility-based care. At the Yaoundé Central Hospital, CBOs linked 73.2% of newly diagnosed HIV-positive patients to ART compared with 32.5% at the approved treatment centre, and viral load suppression rates were 95.12% vs 90.54% at 12 months, 95.96% vs 95.34% at 24 months, and 96.91% vs 94.15% at 36 months, with no statistically significant differences between CBO and hospital cohorts [35]. As noted in Section 3.4, this was a retrospective, single-site, non-randomised comparison. In the Muyuka Health District, however, retention in HIV care was only 29.1%, with 70.9% lost to follow-up over a two-year and four-month period, and retention was higher among the 11 patients on a Zidovudine-containing regimen than among the 374 on a Tenofovir-containing regimen (8 of 11 [72.7%] versus 104 of 374 [27.8%]; OR 6.92, 95% CI 1.80-26.60, P = 0.005) [36]. The source article's abstract and text describe this odds ratio as a higher likelihood of loss to follow-up on Zidovudine, whereas the counts in its Table 3 (consistent with the overall retention of 112 of 385 records, 29.1%) correspond to higher retention; we report the direction implied by the table counts, and the very small Zidovudine group means this subgroup finding should be treated with caution. These findings are consistent with the possibility that community-based follow-up works well where CBOs are well established, but, being observational, they cannot establish effectiveness; retention remains a major challenge in settings with weak community participation.

Other service-uptake associations reported in the included studies, such as higher HIV testing, ITN use and NCD screening attendance in engaged communities, came from non-experimental designs with heterogeneous

measures. They are summarised with their source citations in Supplementary Table S4 and are not pooled here; they should be read as associations, not causal effects.

However, the overall evidence base remains thin. Most studies focused on process indicators (participation rates, satisfaction, trust) rather than health outcomes or sustainability. In relation to conflict, studies in conflict-affected regions described CHW-led approaches and community dialogue as ways of sustaining service access and rebuilding trust despite facility closures, but outcome data were sparse and largely self-reported. Two studies (8.7%) reported that conflict appeared to attenuate program effectiveness. Systematic reviews of CE in health services research have similarly found that the insufficient description of community engagement processes limits deeper understanding and analysis of effectiveness, and that future well-designed prospective studies with attention to the description of mechanisms of engagement, facilitating the whole process and reporting community-level outcomes are recommended [30].

3.8 Quality and Gaps

Methodological quality was appraised with the Mixed Methods Appraisal Tool (MMAT; Section 2.8). Of the 23 studies, 8 (34.8%) were rated higher quality because they met all criteria, 11 (47.8%) moderate because they met most criteria but had at least one significant limitation, and 4 (17.4%) lower quality, with notable limitations that call for caution in interpreting their findings. Ratings were descriptive and were not used to weight or exclude studies. Common limitations included unclear sampling strategies (39.1%; n = 9), lack of any theoretical framework (87.0%; n = 20), no direct evaluation of CE effectiveness (65.2%; n = 15), and no consideration of power dynamics between communities and health systems (78.3%; n = 18).

Beyond the quality assessment, the review identified several critical gaps that shape the future research agenda for Cameroon.

Conceptual gaps are the most fundamental. The vast majority of studies (78.3% with no explicit definition, all of whom used 'engagement', 'participation' and 'involvement' interchangeably, and 87.0% with no theoretical grounding) treat CE as a self-evident good requiring no conceptual elaboration. This may have allowed tokenistic practices to persist under the rhetoric of participation. Without theoretical clarity, measurement is difficult; without measurement, accountability is difficult. The multiple definitions available in the literature on social cohesion, a closely related concept, also do not come to a consensus on what the concept means, and oversimplifying such concepts risks rendering programmes meaningless, without clear objectives or a coherent theory of change [29].

Geographic gaps are equally stark. The South West, North West and Centre regions accounted for 30 of the 46 region-level mentions (65.2%; categories overlap because some studies covered several regions), leaving the northern regions (Adamawa, North, Extreme North) severely under-represented. Comparative work between French and English speaking regions is almost entirely absent (91.3% of studies do not address this dimension), despite the bilingual health system being a defining feature of the Cameroon state.

Disease gaps reveal a clear hierarchy of neglect. NCDs received only 13.0% of studies despite their rising burden; no study addressed multiple diseases, meaning opportunities for cross-learning remain unexplored; and the transfer of HIV community engagement models to NCDs, a potentially high-yield strategy has not been investigated in the studies identified. Diabetes awareness research in Cameroon has shown that educational level, age, and having a relative with a chronic condition are significant predictors of awareness [37], but there is little evidence on how such awareness translates into sustained community engagement for NCD prevention and management.

Methodological gaps are the most consequential for the evidence base. Only two studies (8.7%) used cohort or longitudinal designs (the remaining 21, or 91.3%, were cross-sectional, qualitative or otherwise single-time-point), no randomised or quasi-experimental intervention evaluations were found, only a small number of studies included a comparison group, and no standardized CE measurement tools were identified. These are not minor limitations; they are fundamental barriers to building a causal evidence base. Reviews of CE in lymphatic

filariasis elimination have similarly found insufficient description of engagement processes and recommend future well-designed prospective studies with attention to mechanisms of engagement and community-level outcomes [30].

Conflict-related gaps are particularly concerning given the centrality of the crisis in the North West and South West to Cameroonian health. While 69.6% of studies (16 of 23) cited conflict as a barrier, only two (8.7% of all studies) explicitly characterised their setting as conflict-affected, and most of the remainder mentioned conflict without integrating it analytically into their research design or interpretation. No study tracked how CE evolves as conflict progresses or resolves, and the long-term health impacts of conflict-disrupted engagement remain unknown. Reviews of community engagement in conflict-affected countries have found that despite its importance, there is limited research literature on community engagement in such settings, with most published since 2015 [31].

Outcome and equity gaps complete the picture. Nearly two-thirds of studies (65.2%) reported no health outcomes whatsoever; cost-effectiveness data are entirely absent (100%). Gender analysis is limited (65.2% of studies lack it); disability inclusion is entirely absent; intersectional analysis, examining how gender, displacement, language, and socioeconomic status combine to shape engagement, has not been attempted.

These gaps are not merely academic shortcomings, they also point to the need for more theoretically informed, comparative, and outcome-focused research that better reflects Cameroon's complex linguistic, geographic, and security landscape. They represent missed opportunities to generate the evidence that Cameroonian policymakers, donors, and program implementers need to design effective, equitable, and context-appropriate community engagement strategies.

Table 4: Key gaps identified in Cameroon

Gap Category	Specific Gap	Studies Affected
Conceptual	No explicit CE definition	78.3%
	Conflation of terms	82.6%
	No theoretical grounding	82.6%
Geographic	Under-representation of North/Adamawa/Extreme North	65.2% of region mentions (30/46) from 3 regions
	Limited English-French comparative work	91.3%
Disease	NCD under-representation	13.0%
	No multi-disease studies	100%
Methodological	No randomised or quasi-experimental intervention studies	100%
	Few longitudinal/cohort studies (n = 2)	91.3% not longitudinal
	Few studies with a comparison group	Small number; all non-randomised
	No standardized CE measurement	100%
Conflict	Conflict mentioned but not integrated	Most of the 16 conflict-citing studies; only 2 classified their setting as conflict-affected
	No longitudinal conflict-CE research	100%
Outcome	No health outcome reporting	65.2%
	No cost-effectiveness data	100%
Equity	Limited gender analysis	65.2%
	No disability inclusion	100%
	No intersectional analysis	100%

DISCUSSION

4.1 Summary of Main Findings

This scoping review provides, to our knowledge, the first mapping of community engagement research on malaria, HIV, and NCD control programs in Cameroon. The findings reveal several critical patterns that are specific to the Cameroon context.

Throughout this discussion, findings on outcomes are interpreted as associations. The included studies were largely descriptive, qualitative or cross-sectional; none was randomised or quasi-experimental, and comparisons between engagement and non-engagement groups were not adjusted for confounding or selection. Statements about how engagement 'works' therefore describe hypotheses generated by the evidence rather than demonstrated causal mechanisms.

First, conceptual ambiguity pervades the literature, with 78.3% of studies failing to define CE or distinguish it from related concepts. This mirrors findings from broader African reviews [16, 17] but has particular salience in Cameroon's bilingual context, where French and English terminologies ("engagement communautaire," "participation communautaire," "implication communautaire") are used interchangeably without conceptual precision [20]. This terminological muddle is not merely semantic; it has practical consequences. When a program claims to practice "engagement" but in fact only informs communities about pre-determined decisions, the term loses analytical meaning and accountability becomes impossible. This conceptual muddle may allow programs to claim "engagement" while maintaining tokenistic approaches [5]. Similar ambiguity has been documented in HIV community participation literature, where the concept has inherited various meanings from different stakeholders who often use it for conflicting ends [33].

Second, engagement was predominantly tokenistic in the studies reviewed. The observed pattern is unlikely to be accidental; it plausibly reflects the structural reality that most Cameroonian CE programs are designed externally by donors, international NGOs, or the Ministry of Public Health and communities are brought in only at the implementation stage. In 73.9% of studies (17 of 23), CE was described at the information or consultation level, with communities involved in implementation but excluded from planning and decision-making. This "functional participation" uses communities as instruments for program delivery rather than empowering them as partners. The finding that only 8.7% of studies reached the partnership level aligns with Arnstein's observation that genuine citizen power remains rare in practice [4]. In malaria prevention specifically, current measures have been described as more of a top-down approach, with affected communities mainly at the receiving end, and a ladder of community participation has been proposed to move communities from recipients to owners of prevention programmes [38].

Third, CHWs are the backbone of CE in Cameroon but operate in structurally disempowered positions. This may have implications for CHW policy: interventions that undermine the relational basis of CHW trust (e.g., excessive formalisation, replacement by external workers, or imposition of bureaucratic monitoring) could risk weakening the relational basis on which engagement appears to depend. CHWs are relied upon for essential functions, yet are rarely compensated, trained adequately, or included in program governance. This reflects what has been termed the "CHW paradox" documented across Africa.

Fourth, the crisis in the North West and South West appears to shape the possibilities of engagement. Conflict emerged as the most frequently cited barrier (69.6% of studies), with impacts including destroyed health facilities, fear of violence, displacement and disrupted services [19]. This finding aligns with research from other conflict-affected settings, where health systems become contested terrain. Critically, while conflict is frequently mentioned, it remains under-integrated into CE research designs and theories. Reviews of community engagement in conflict-affected countries have found that community engagement in identifying and setting priorities, decision-making, and implementing health system interventions can give the public an opportunity to share their views and a sense of ownership in the services they use, but that engaging communities can be particularly difficult in such settings, where priorities may be difficult to identify and many other factors, such as safety, power relations, and entrenched inequalities, must be considered [31].

Fifth, disease-specific hierarchies exist and the gradient suggests that engagement was deepest in HIV programs, intermediate in malaria programs and shallowest in NCD programs, a pattern that may mirror global funding priorities and the historical timing of disease-specific movements. These differences may also reflect how long-established HIV program structures created more space for deeper participation, while newer NCD efforts have yet to move beyond basic sensitization. NCDs were also severely under-represented (13.0% of studies), which may reflect global funding priorities and what has been termed "hierarchies of suffering." NCD neglect is particularly concerning, given the epidemiological transitions underway in Cameroon [11, 12]. Diabetes awareness research has shown that awareness alone is insufficient without corresponding community engagement structures for prevention and management [37].

Sixth, the evidence base on effectiveness is limited. Only 34.8% of studies reported health-related outcomes, all from non-experimental designs, so the positive associations observed cannot be interpreted as evidence that CE causes improved outcomes. This echoes the calls for a more rigorous evaluation of community participation interventions globally [5, 16]. Systematic reviews of CE in health services research have similarly found limited community engagement in research and recommend future well-designed prospective studies with attention to the description of mechanisms of engagement, facilitating the whole process and reporting community-level outcomes [30].

4.2 Comparison with Regional and Global Literature

Our findings align with and extend those of broader African reviews. The LSHTM systematic review of community-led strategies in LMICs found that community-led approaches can improve health behaviours for HIV, malaria, and NTDs, but the evidence for mortality and morbidity impact remains inconclusive [16, 17]. Similarly, Schmidt et al.'s Cochrane protocol on CE in infectious disease trials in LMICs highlights the need for better evidence of barriers and facilitators [21]. Reviews of CE in lymphatic filariasis elimination in Southeast Asia and the Pacific have found that the majority of studies were at a 'moderate level' of engagement, mainly through collaboration in developing methodology, data collection, and dissemination of findings, with common barriers being lack of involvement of participating bodies and technology-related issues [30]. Reviews of CE in conflict-affected countries have found that despite the recognised importance of community engagement in all aspects of health system functioning; only 19 documents discussed at least one aspect of community engagement, predominantly participatory methods, in diverse conflict-affected countries [31].

However, our review adds Cameroon-specific insights.

1. **Conflict as a central determinant:** While conflict is recognized as a barrier in African health research, its prominence in Cameroon (69.6% of studies) and the specific mechanisms (destruction, fear, and displacement) provide a granular understanding of humanitarian settings. Reviews of community engagement in conflict-affected countries have similarly found that major lessons include the importance of engaging community and religious leaders, mobilising community members, mediating between governments and armed groups, and giving community members spaces for feedback on healthcare provision [31].

2. **Bilingual context:** Cameroon's dual French-English health system creates unique communication and trust challenges not captured in single-language studies [19]. Historical analyses of Cameroon's health system have documented how the bilingual context and centralized administrative structures have complicated the implementation of community participation reforms [28].

3. **NCD marginalization:** NCDs accounted for only 13.0% of included studies despite the rising NCD burden [11]. Diabetes awareness research in Cameroon has shown that awareness is generally good in areas exposed to intensive health promotion, but there is little evidence on how such awareness translates into sustained community engagement [37].

4. **Community dialogue approaches:** Recent studies in Cameroon have piloted community dialogue interventions, showing promise in conflict settings [19], contributing to the evidence on participatory

approaches in humanitarian crises. Reviews of communication for social cohesion in forced displacement have similarly found that community dialogues and media interventions can help rebuild trust and foster horizontal social cohesion among displaced populations [29].

5. **Community-based HIV service delivery:** A Cameroon-specific retrospective study found that CBOs were associated with higher linkage to ART and viral load suppression comparable to facility-based care [35], though retention remains a challenge in settings with weak community participation [36].

4.3 Theoretical Implications

These findings have important implications for the development of theory in community engagement, particularly in conflict-affected bilingual African settings.

Empowerment Theory [6, 7] provides a useful lens for understanding the gap between rhetoric and reality in Cameroon's healthcare system. The predominance of psychological empowerment (individual knowledge) over organizational and community empowerment reflects a shallow engagement that fails to transfer power. The finding that conflict was described as exacerbating disempowerment through the destruction of community structures and erosion of trust is consistent with, and may help extend, empowerment theory in humanitarian contexts. Reviews of community empowerment in disaster management have similarly found that resilience, community development, and local knowledge are key factors in building community resilience, and that government help in the form of social, economic, and environmental support is essential to boost disaster management adaptation [34].

Social Capital Theory [22, 23] may help to explain differential engagement outcomes. Trust in CHWs (78.3% of studies) is consistent with strong bonding capital leveraged for implementation. However, conflict may erode bridging and linking capital [24], which could help explain why engagement falters in crisis zones. The finding that community dialogue approaches may rebuild trust [19] suggests pathways for the reconstruction of social capital. Reviews of communication for social cohesion in forced displacement have similarly found that communication serves as both a prerequisite and a tool for creating social cohesion and forming solid communities, and that community dialogues can create communicative spaces that encourage community engagement in pertinent social issues [29].

Conflict Theory [25, 26] illuminates the structural determinants of engagement failure in Cameroon. Top-down, donor-driven program design (52.2% of studies), inadequate funding (47.8%), and weak health systems (43.5%) may be understood as products of historical and on-going power asymmetries. The crisis in the North West and South West amplifies these dynamics, transforming health engagement from a development issue to a survival calculus. Historical analyses of Cameroon's health system have documented how economic crisis, structural adjustment, and reduced public resources for health have constrained the implementation of community participation reforms since the 1990s [28].

An integrated theoretical framework combining these perspectives is particularly relevant in Cameroon.

- Empowerment theory diagnoses agency levels and how conflict disrupts them
- Social capital theory explains relational mechanisms and how conflict erodes trust
- Conflict theory reveals structural conditions and how crisis exacerbates inequities

4.4 Implications for Policy and Practice in Cameroon

The recommendations below are informed by a largely descriptive and associational evidence base and by the contextual literature cited; they are offered as considerations for policy and practice rather than as interventions proven to be effective.

For Cameroonian policymakers:

1. **Develop clear CE definitions and standards:** The Ministry of Public Health should adopt standardized definitions distinguishing involvement, participation, and engagement with clear indicators for each level

[27]. The *Principles of Community Engagement* provide a useful framework, including the recently added tenth principle of trustworthiness, which is essential for effective partnerships and for advancing health equity [32].

2. **Integrate conflict-sensitive CE into health strategies:** The Community Health Strategy [15] should explicitly address crisis contexts with flexible implementation modalities for conflict-affected regions. Reviews of community engagement in conflict-affected countries recommend that community engagement in identifying and setting priorities, decision-making, and implementing health system interventions can give the public an opportunity to share their views and a sense of ownership in the services they use [31].
3. **Formalize and remunerate CHWs:** Building on existing cadres, CHWs should receive formal recognition, compensation, and inclusion in health governance structures.
4. **Prioritize NCD community engagement:** Allocate dedicated funding for NCD community structures, learning from HIV and malaria experiences. Diabetes awareness research has shown that educational level is the most significant predictor of desirable knowledge and perceptions of diabetes risk factors, complications and prevention, raising optimism that health education could be a powerful tool in the fight against diabetes and other chronic conditions in Cameroon [37].
5. **Strengthen bilingual health communication:** Develop standardized health messaging in both official languages and major local languages (Pidgin, Fulfulde, etc.) [19].
6. **Support community-based HIV service delivery:** Building on evidence that CBOs were associated with higher linkage to ART and viral load suppression comparable to facility-based care [35], the Ministry of Public Health should strengthen collaborations between health care structures and community initiatives to foster continuum of care for people living with HIV [36].

For program implementers in Cameroon:

1. **Contextualize engagement approaches:** Adapt strategies for conflict-affected regions using community dialogue, mobile outreach, and integration with humanitarian actors [19]. Reviews of community engagement in conflict-affected countries recommend giving community members spaces for feedback on healthcare provision, to provide communities with evidence that programmes and initiatives are working [31].
2. **Move from consultation to co-creation:** Involve communities in planning from the outset, particularly in the post-conflict reconstruction of health services.
3. **Address stigma systematically:** Implement community-led anti-stigma dialogues for HIV, adapting successful models from other African countries.
4. **Leverage existing community structures:** Work through chiefs, religious leaders, women's groups, and youth associations already trusted in communities [19]. In malaria prevention, engaging Village Development Committees and social groups such as njangis, community health clubs, women and youth meetings has been recommended as a feasible strategy to complement current interventions in Cameroon [38].
5. **Establish feedback mechanisms:** Create systematic channels for community input into program adaptation and evaluation.
6. **Strengthen community participation in HIV care:** Collaborations between the Ministry of Health and Community-Based Organizations should be encouraged to ensure continuum of care for HIV/AIDS patients [36].

For donors and partners working in Cameroon:

1. **Funding conflict-sensitive CE research:** Support longitudinal studies examining how engagement works (or fails) in crisis contexts [19]. Reviews of community engagement in conflict-affected countries have found limited research literature on community engagement in such settings, and recommend future research to identify ways of engaging healthcare service-users in conflict-affected settings [31].
2. **Invest in community systems, not just outputs:** Allocate flexible, long-term funding to community structures, not short-term project cycles.
3. **Support bilingual and multilingual approaches:** Fund translation and culturally appropriate adaptation of health materials.

4. **Balance disease investments:** Increase NCD funding proportionate to the burden, learning from HIV community engagement models.
5. **Conflict analysis is required:** An explicit analysis of conflict dynamics is mandatory in program design for affected regions [19].

4.5 Limitations

This review has several limitations.

1. **Language bias:** Despite including French-language databases, English-language publications predominate, potentially under-representing Francophone Cameroonian research.
2. **Publication bias:** Studies reporting positive findings may be over-represented; grey literature (NGO reports, government evaluations) was excluded.
3. **Quality heterogeneity:** Variable study quality limits confidence in the synthesized findings.
4. **Geographic gaps:** Northern regions (Adamawa, North, and Extreme North) are under-represented, limiting generalizability.
5. **Temporal trends:** Studies spanned 25 years, and engagement practices may have evolved over this period.
6. **Conflict dynamics:** The on-going crisis means that the findings may not generalize to stable regions or post-conflict settings.
7. **Search scope:** Six databases were searched and grey literature and conference abstracts were excluded. Google Scholar, national repositories and implementing-partner evaluations were not searched, so relevant evidence may have been missed. No protocol was registered, which may increase the risk of post hoc methodological decisions.
8. **Interpretive coding:** None of the included studies was designed around Arnstein's ladder or Rifkin's continuum. Engagement levels were inferred from descriptions of activities, and misclassification is possible.
9. **Appraisal:** The MMAT is intended for primary empirical studies, its ratings were used descriptively and did not inform weighting, and item-level judgements involve subjectivity.
10. **Small denominators:** With 23 studies, one study equals about 4.3 percentage points, categories overlap, and subgroup percentages (for example, NCDs, n = 3) should be interpreted cautiously.
11. **Associations versus causation:** Outcome findings come from non-randomised, mostly uncontrolled designs and are subject to confounding, selection bias and self-report bias. Some come from single sites (for example, CBO versus hospital comparisons) and may not generalise. This review did not assess effectiveness, and no causal inference is drawn.

4.6 Priorities for Future Research in Cameroon

Based on the identified gaps, the priority research directions include the following:

1. **NCD-focused community engagement research:** Investigate context-appropriate CE models for hypertension, diabetes, and other NCDs in both stable and conflict-affected settings. Diabetes awareness research in Cameroon has shown that awareness alone is insufficient without corresponding community engagement structures for prevention and management [37].
2. **Longitudinal studies in conflict zones:** Track communities over time to assess how engagement evolves during and after crisis, and how it affects long-term health outcomes. Reviews of community engagement in conflict-affected countries have found limited research literature on community engagement in such settings and recommend future research to identify ways of engaging healthcare service-users in conflict-affected settings [31].
3. **Comparative designs:** Compare engagement models across: (1) French vs. English speaking regions; (2) Conflict-affected vs. stable regions; (3) Different disease programs (HIV/malaria/NCDs); (4) Urban vs. rural settings.
4. **Intervention research:** Design and rigorously evaluate CE interventions using participatory action research and, where feasible, controlled designs (e.g., cluster-randomised, stepped-wedge or quasi-experimental). Reviews of CE in lymphatic filariasis elimination recommend future well-designed prospective studies with

attention to the description of mechanisms of engagement, facilitating the whole process and reporting community-level outcomes [30].

5. **Intersectional analysis:** Examine how gender, displacement, language, and socioeconomic status intersect to shape engagement experiences.
6. **Cost-effectiveness studies:** Generate evidence on returns on investment for different engagement approaches in the Cameroon context.
7. **CHW system strengthening research:** Investigate sustainable financing, motivation, and governance models for CHWs.
8. **Community dialogue evaluations:** Assess the effectiveness and scalability of community dialogue approaches in rebuilding trust in conflict-affected regions. Reviews of communication for social cohesion in forced displacement have found that community dialogues and media interventions can help rebuild trust and foster horizontal social cohesion among displaced populations, though attention must be paid to the dynamics and social fractures among displaced communities themselves [29].
9. **Bilingual health communication research:** Study how language affects health messaging reception and community trust.
10. **Post-conflict health system reconstruction:** Research how community engagement can be integrated into rebuilding health services after crisis.
11. **Community-based HIV service delivery research:** Investigate the effectiveness and scalability of CBO-led HIV testing, linkage to ART, and retention in care in different Cameroonian contexts [35, 36].
12. **Malaria prevention through community participation:** Evaluate the effectiveness of community-based strategies such as house screening, training of mothers and caregivers, mobilisation of social groups and Village Development Committees, and environmental management in reducing malaria prevalence in Cameroon [38].

CONCLUSION

This scoping review has demonstrated that community engagement research in disease control programs in Cameroon is characterized by conceptual ambiguity, disease-specific silos, and systematic under-evaluation of outcomes. While CE is widely endorsed in policy and extensively used in practice, particularly through CHWs, the evidence base remains fragmented and predominantly descriptive; reported associations with outcomes come from non-experimental designs and are not evidence of causal effects.

The conceptual confusion surrounding CE (78.3% of the studies lacked explicit definitions) may allow tokenistic practices to persist under the rhetoric of participation. Without clear distinctions between involvement, participation, and engagement, programs cannot be held accountable for meaningful community partnership.

The marginalization of NCDs from CE research (13.0% of studies) is particularly concerning given Cameroon's epidemiological transition. As NCDs account for increasing morbidity and mortality, community systems for prevention and management remain almost non-existent in the evidence base. Diabetes awareness research has shown that educational level is the most significant predictor of desirable knowledge and perceptions of diabetes risk factors, complications and prevention, raising optimism that health education could be a powerful tool in the fight against diabetes and other chronic conditions in Cameroon [37].

An emerging striking finding is the centrality of conflict as a determinant of engagement possibilities. The crisis affecting the North West and South West regions, emerges as the most frequently cited barrier (69.6% of the studies), yet it remains under-integrated into CE research design and theory. This represents a critical gap, as humanitarian crises are likely to increase in frequency and duration globally. Reviews of community engagement in conflict-affected countries have found that engaging communities in identifying and setting priorities, decision-making, and implementing health system interventions can give the public an opportunity to share their views and a sense of ownership in the services they use, but that engaging communities can be particularly difficult in such settings [31].

Realizing the potential of community engagement in Cameroon requires fundamental shifts: from conceptual ambiguity to theoretical clarity; from disease-specific silos to integrated, comparative research from short-term,

cross-sectional studies to longitudinal, intervention-focused designs and from conflict as a footnote to conflict as a central analytical category.

The building blocks for genuine partnership exist within Cameroon's communities, trusted CHWs, engaged traditional leaders, and resilient community networks even in crisis zones. The evidence base must catch up to this reality, generating a rigorous, context-specific knowledge needed to guide policy and practice. Only then can community engagement fulfil its promise as a driver of health equity and sustainable development in Cameroon.

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Author contributions: EGF conceptualized the review, developed the search strategy, screened articles, extracted and analysed data, and drafted the manuscript. LK, LM, KMK, DND, FEE screened articles, extracted and analysed data and in drafting the manuscript. MYN, Conceptualised the review, and supervised the manuscript.

Reflexivity Statement

The authors are based in Cameroon at the University of Buea, ensuring that the research questions, analysis, and interpretation are grounded in local contextual, bilingual health system and community structures. The authors have years of experience as researchers with expertise in medical sociology, public health, and community health systems. The authors acknowledge their status as university-based researchers, which may influence interpretations of community engagement practices; they sought to mitigate this by adhering closely to the extracted data and established theoretical frameworks (Arnstein's ladder, Rifkin's continuum). No external funding was received, and there are no conflicts of interest to declare.

Appendix A. Database-Specific Search Strategies

Table 5 reports, for each database, the platform, the period of the search and the search string; the total number of records identified across all databases was 847. The strings express the search terms reported in Section 2.4 in each platform's syntax. African Journals Online and Cairn.info support only simple Boolean queries, so the concept groups were combined in shorter queries. Supplementary files accompanying this manuscript: S1, PRISMA-ScR checklist; S2, excluded full-text articles with reasons; S3, item-level MMAT ratings; S4, charted data for the 23 included studies, including the reported outcome estimates and their source citations.

Database (platform)	Date searched	Search string
PubMed/MEDLINE (NLM)	January-March 2026	(Cameroon[tiab] OR Cameroun[tiab]) AND ("community engagement"[tiab] OR "community participation"[tiab] OR "community involvement"[tiab] OR "community mobilization"[tiab] OR "community-based"[tiab] OR "participatory"[tiab] OR "community health worker"[tiab] OR "relais communautaire"[tiab] OR "agent de santé communautaire"[tiab]) AND ("disease control"[tiab] OR "disease prevention"[tiab] OR "health

Database (platform)	Date searched	Search string
		program"[tiab] OR "malaria"[tiab] OR "paludisme"[tiab] OR "HIV"[tiab] OR "AIDS"[tiab] OR "VIH"[tiab] OR "SIDA"[tiab] OR "non-communicable disease"[tiab] OR "NCD"[tiab] OR "hypertension"[tiab] OR "diabetes"[tiab] OR "diabète"[tiab]) AND ("2000/01/01"[dp] : "2026/03/31"[dp])
Scopus (Elsevier)	January-March 2026	TITLE-ABS-KEY((Cameroon OR Cameroun) AND ("community engagement" OR "community participation" OR "community involvement" OR "community mobilization" OR "community-based" OR "participatory" OR "community health worker" OR "relais communautaire" OR "agent de santé communautaire") AND ("disease control" OR "disease prevention" OR "health program" OR "malaria" OR "paludisme" OR "HIV" OR "AIDS" OR "VIH" OR "SIDA" OR "non-communicable disease" OR "NCD" OR "hypertension" OR "diabetes" OR "diabète")) AND PUBYEAR > 1999 AND PUBYEAR < 2027
Web of Science Core Collection (Clarivate)	January-March 2026	TS=((Cameroon OR Cameroun) AND ("community engagement" OR "community participation" OR "community involvement" OR "community mobilization" OR "community-based" OR "participatory" OR "community health worker" OR "relais communautaire" OR "agent de santé communautaire") AND ("disease control" OR "disease prevention" OR "health program" OR "malaria" OR "paludisme" OR "HIV" OR "AIDS" OR "VIH" OR "SIDA" OR "non-communicable disease" OR "NCD" OR "hypertension" OR "diabetes" OR "diabète")); timespan 2000-2026
Global Health (CABI)	January-March 2026	(Cameroon OR Cameroun) AND ("community engagement" OR "community participation" OR "community involvement" OR "community mobilization" OR "community-based" OR "participatory" OR "community health worker" OR "relais communautaire" OR "agent de santé communautaire") AND ("disease control" OR "disease prevention" OR "health program" OR "malaria" OR "paludisme" OR "HIV" OR "AIDS" OR "VIH" OR "SIDA" OR "non-communicable disease" OR "NCD" OR "hypertension" OR "diabetes" OR "diabète"); limited to 2000-2026
African Journals Online (AJOL)	January-March 2026	Cameroon AND ("community participation" OR "community engagement" OR "community involvement" OR "community health worker") AND (malaria OR HIV OR AIDS OR hypertension OR diabetes); results restricted to 2000-2026
Cairn.info	January-March 2026	Cameroun AND ("participation communautaire" OR "engagement communautaire" OR "relais communautaire" OR "agent de santé communautaire") AND (paludisme OR VIH OR SIDA OR hypertension OR diabète); results restricted to 2000-2026
Total records identified		847 records identified; 234 duplicates removed; 613 records screened

Table 5: Databases, search period and search strategies.

REFERENCES

1. World Health Organization. Declaration of Alma-Ata. Geneva: WHO; 1978.
2. World Health Organization. WHO guideline on health policy and system support to optimize community health worker programmes. Geneva: WHO; 2017.
3. United Nations Development Programme. Human development report 2022. New York: UNDP; 2022.
4. Sherry R. Arnstein. A ladder of citizen participation. J Am Inst Plann. 1969; 35 (4): 216-224.
5. Susan B. Rifkin. Examining the links between community participation and health outcomes: a review of the literature. Soc Sci Med. 2014; 108:187-196.
6. Marc A. Zimmerman. Empowerment theory: psychological, organizational, and community levels of analysis. In: Rappaport J, Seidman E, editors. Handbook of community psychology. New York: Kluwer; 2000. p. 43-63.
7. Nina Wallerstein. Powerlessness, empowerment, and health: implications for health promotion programs. Am J Health Promot. 1992; 6 (3): 197-205.
8. World Health Organization. World malaria report 2023. Geneva: WHO; 2023.
9. Antonio-Nkondjio C, Ndo C, Poupardin R, et al. Review of malaria situation in Cameroon: technical viewpoint on challenges and prospects for disease elimination. Parasites Vectors. 2019; 12 (1): 1-14.
10. Joint United Nations Programme on HIV/AIDS. Global AIDS update 2023. Geneva: UNAIDS; 2023.
11. Echouffo-Tcheugui JB, Kengne AP. Chronic non-communicable diseases in Cameroon: burden, determinants, and policies. BMC Public Health. 2011; 11 (1): 1-9.
12. Mbanya JC, Motala AA, Sobngwi E, Assah FK, Enoru ST. Diabetes in sub-Saharan Africa. Lancet. 2010; 375 (9733): 2254-2266.
13. World Health Organization. Cameroon health system profile. Geneva: WHO; 2016.
14. Tandi TE, Cho Y, Akam AJ, et al. Cameroon public health sector: shortage and inequalities in geographic distribution of health personnel. Int J Equity Health. 2015; 14 (1): 1-12.
15. Ministry of Public Health Cameroon. National community health strategy 2020-2025. Yaoundé: MINSANTE; 2020.
16. Community-led strategies for communicable disease control in LMICs: a mixed-methods systematic review. London: LSHTM Research Online; 2024.
17. George AS, Mehra V, Scott K, Sriram V. Community participation in health systems research: a systematic review. PLoS One. 2015; 10 (10): e0141091.
18. Tricco AC, Lillie E, Zarin W, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. Ann Intern Med. 2018; 169 (7): 467-473.
19. Ebob Besem EO, Chestnutt EG, Donovan L, et al. Exploring existing malaria services and the feasibility of implementing community engagement approaches amongst conflict-affected communities in Cameroon: a qualitative study. Malar J. 2024; 23 (1): 155.
20. De-Graft Aikins A, Boynton P, Atanga LL. Developing effective chronic disease interventions in Africa: insights from Ghana and Cameroon. Cambridge: University of Cambridge; 2010.
21. Schmidt BM, Späth C, van Pinxteren M, et al. Barriers and facilitators of and strategies for successful community engagement in infectious disease clinical trials in low- and middle-income countries. Cochrane Database Syst Rev. 2022; 8.
22. Robert D Putnam. Bowling alone: the collapse and revival of American community. New York: Simon & Schuster; 2000.
23. Pierre Bourdieu. The forms of capital. In: Richardson J, editor. Handbook of theory and research for the sociology of education. New York: Greenwood Press; 1986. p. 241-258.
24. Ehsan A, Klaas HS, Bastianen A, Spini D. Social capital and health: a systematic review of systematic reviews. SSM Popul Health. 2019; 8:100425. doi:10.1016/j.ssmph.2019.100425.
25. Paul Farmer. An anthropology of structural violence. Curr Anthropol. 2004; 45 (3): 305-325. doi:10.1086/382250.
26. Mills CW. The Power Elite. New York: Oxford University Press; 1956.
27. Clinical and Translational Science Awards Consortium Community Engagement Key Function Committee Task Force on the Principles of Community Engagement. Principles of community engagement. 2nd ed. Bethesda (MD): National Institutes of Health; 2011. NIH Publication No.: 11-7782.

28. Okalla R, Le Vigouroux A. Cameroun : de la réorientation des soins de santé primaires au plan national de développement sanitaire. Bulletin de l'APAD. 2001; 21. doi:10.4000/apad.181.
29. Bau V. Communicating social cohesion in forced displacement: a framework for protracted situations of encampment. Soc Sci. 2024; 13(10):542. Doi:10.3390/socsci13100542.
30. Naing C, Htet NH, Aung HH, Whittaker MA. Community engagement in health services research on elimination of lymphatic filariasis: a systematic review. PLOS Glob Public Health. 2023; 3 (1): e0001226. doi:10.1371/journal.pgph.0001226.
31. Durrance-Bagale A, Marzouk M, Tung LS, et al. Community engagement in health systems interventions and research in conflict-affected countries: a scoping review of approaches. Glob Health Action. 2022; 15 (1): 2074131. doi:10.1080/16549716.2022.2074131.
32. Michener JL, Williams A, Oto-Kent D, Aguilar-Gaxiola SA. Community engagement: a foundation for health equity and resilience. Am J Public Health. 2025; 115 (S2): S104-S109. doi:10.2105/AJPH.2025.308029.
33. Mbuagbaw L, Shurik E. Community participation in HIV/AIDS programs. In: HIV Infection - Impact, Awareness and Social Implications of Living with HIV/AIDS. InTech; 2011. p. 12.
34. Azhar MAM, Akhir NM, Mohamad MS. Community empowerment in disaster management: a systematic review. Int J Acad Res Bus Soc Sci. 2022; 12 (4):1401-1418. doi:10.6007/IJARBSS/v12-i4/13221.
35. Kouanfack C, Mvilongo M, Zemsi S, et al. Contribution of community-based organizations in the improvement of Joint United Nations Program on HIV and AIDS 90-90-90: case of the Yaoundé Central Hospital. Pan Afr Med J. 2023; 45 (173). doi:10.11604/pamj.2023.45.173.38466.
36. Enongene-Kome C, Nguouakam H, Egbe OT, Nsagha DS. Community participation in the retention of adults in HIV care in the Muyuka Health District, South-West Region, Cameroon. Pan Afr Med J. 2019; 33:32. doi:10.11604/pamj.2019.33.32.17174.
37. Fezeu L, Fointama E, Ngufor G, Mbeh G, Mbanya JC. Diabetes awareness in general population in Cameroon. Diabetes Res Clin Pract. 2010; 90 (3):312-318.
38. Mbako JD, Barffo D, Nuotol RK, Alebshehy R, Shuai NM. Enhancing malaria prevention in Cameroon through community participation: an in-depth review. Cent Afr J Public Health. 2017; 3 (6): 97-109. doi:10.11648/j.cajph.20170306.12.
39. Kamdem Thiomo D. Local perceptions of community participation in health in Cameroon. The Global Health Network; 2023. doi:10.21428/3d48b0a7.hlkv4e3m.
40. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006; 3 (2): 77-101. doi:10.1191/1478088706qp063oa.
41. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. Int J Soc Res Methodol. 2005; 8 (1): 19-32. doi:10.1080/1364557032000119616.
42. Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. Implement Sci. 2010; 5:69. doi:10.1186/1748-5908-5-69.
43. Peters MDJ, Marnie C, Tricco AC, et al. Updated methodological guidance for the conduct of scoping reviews. JBI Evid Synth. 2020; 18 (10): 2119-2126. doi:10.11124/JBIES-20-00167.
44. Hong QN, Fàbregues S, Bartlett G, et al. The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers. Educ Inf. 2018; 34 (4): 285-291. doi:10.3233/EFI-180221.