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Research Article

From Community Participation to the Improvement of the Quality of Care Services in the Kadutu Health Zone: Challenges and Perspectives

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Abstract

Introduction: Community participation plays a key role in the development of primary healthcare. This study aims to analyze the impact of community participation on the quality of health services in the Kadutu Health Zone, Bukavu, South Kivu, DR Congo.

Methodology: Analytical cross-sectional study conducted between June and October 2024 in the Kadutu Health Zone. Data collection involved individual interviews targeting 422 household heads, nine primary nurses from health centers, one chief medical officer of the health zone, and two community facilitators. It also conducted nine focus groups with community health workers. The data was entered into the Excel file. The quantitative data, exported to EPI-INFO version 7.1.1.3, underwent both univariate and bivariate analyses. The qualitative data underwent a thematic analysis determining the strengths, weaknesses, opportunities, and threats of community interventions and their effects on the quality of health services in the Kadutu Health Zone.

Results: All household heads (100%) attest to the implementation of community interventions in the Kadutu health zone. Community work aimed at hygiene and sanitation (according to 89.33% of household heads) and awareness and education (according to 95.02% of household heads) are the main community interventions carried out. The majority of Community health workers (CHWs) feel motivated (71.32%) to voluntarily carry out community-level interventions. Individuals who participate in community activities are 4.15 times more likely to observe an improvement in service quality compared to those who do not participate (OR = 4.15, 95%, CI [2.39-7.21], $p < 0.001$). Moreover, home visits appear as an important lever: individuals who have benefited from regular or occasional visits are 4.83 times more likely to observe an improvement in services than those who never or rarely receive them (OR = 4.83, 95% CI [2.80-8.34], $p < 0.001$). Another major determinant is the state of hygiene and sanitation of the environment, with a nearly 11 times higher probability of observing an improvement in services in a well-sanitized environment compared to an unsanitary environment (OR = 10.97, 95% CI [4.90-24.56], $p < 0.001$).

Discussion and Conclusion: This study highlights the importance of community participation in improving the quality of primary healthcare services in the Kadutu Health Zone. Several challenges persist, including data management issues, a lack of resources, cultural barriers, and insufficient coordination. By strengthening community participation and optimizing available resources, it would be possible to significantly improve access to quality care.

Keywords: Community Participation; Quality of Services; Community Relay; Kadutu Health Zone; Bukavu; Democratic Republic of Congo

Introduction

Community participation in the development of primary healthcare in Africa is a complex and crucial issue that touches on public health, governance, culture, and the sustainability of health services. It faces numerous challenges, including unequal access to healthcare [2,3], the lack of training and involvement of local actors [4], the weakness in coordination between different levels (governments, local authorities, health organizations, communities) and governance marked by the non-adaptation of public policies to local realities [5], local resistance to public services related to socio-cultural factors and lack of trust [6], insufficient funding to support local initiatives [2], and inadequate healthcare infrastructure and maintenance [7,8]. To these challenges is added the lack of information for the community on participatory approaches, without which the community cannot actively engage in the mechanisms put in place to support access to quality care for the population.

Over time, community participation has emerged as an essential element of health interventions and is strongly linked to primary healthcare [10]. The Alma Ata Declaration supports community participation in health matters, reinforced by various other declarations and documents, including the Bamako Initiative. The forms of community participation vary from one country to another. It can consist of the supervision of health services through health center management committees [6,13], community volunteering allowing trained community health workers to provide basic services such as health awareness, patient follow-up, and sometimes even the distribution of essential medicines [9,14,15], the formation of community support groups to support mental health, social well-being, and specific health needs (e.g., HIV/AIDS) [16,17], health awareness and education [18], community financing [6], and the monitoring and evaluation of health services by collecting information on the quality of care, infrastructure, and user satisfaction [19]. Community participation can also involve partnerships with non-governmental organizations (NGOs) to provide health services, organize training on disease prevention, and facilitate access to healthcare.

Several studies explore the link between community interventions and the improvement of the quality of health services in a health zone [20,21]. Community interventions can indeed improve the quality of health services, particularly through participatory management, accountability of care providers, and improved access to care [20,22].

Although community participation has many advantages, it also has limitations that hinder its effectiveness, including a lack of resources, insufficient training of local actors, poor governance, and social and cultural inequalities [6,23].

In the urban health zones of Bukavu in the DRC, community participation appears weak due to insufficient commitment from health authorities, inadequate preparation of the health and area development committees members for their roles and responsibilities, and various motivational factors [9,24,25]. The present study thus aims to analyze community participation and its effect on the improvement of the quality of primary healthcare services in the Kadutu Health Zone, in Bukavu, Democratic Republic of Congo.

Methodology

Description of the study area and health zones selected for the study

The present study was conducted in the South Kivu province, in the East of the Democratic Republic of Congo, in Kadutu Health Zone (HZ), which is an integral part of Bukavu city. This health zone has an area of 15 km^2. Its total population was 429,505 inhabitants in 2023 and it has 13 health areas [26], of which nine were selected for the study as presented in Table 1.

No.	Health Area (AS) of Kadutu Health Zone	Total Population of the Health Zone	Population of Selected Health Areas for the Study	Number of Households	Number of Surveyed Households
1	BINAME	35,502			
2	BUHOLO 2	30,918	30,918	4,417	49
3	CECA MZEWE	31,640	31,640	4,520	50
4	CIMPUNDA	33,056	33,056	4,722	52

5	CIRIRI 1	58,880	58,880	8,411	93
6	CIRIRI 2	22,254	22,254	3,179	36
7	FUNU	25,621			
8	LURHAMA	20,898	20,898	2,985	33
9	MARIA	76,949			
10	NEEMA	23,692	23,692	3,385	37
11	NYAMUGO	28,973	28,973	4,139	46
12	NYAMULAGIRA	24,793			
13	UZIMA	16,329	16,329	2,333	26
TOTAL	429,505	266,640	38,091	422	

Table 1: Health Areas, Households, and Population in the Study.

Type and study period

This is an analytical cross-sectional study, using a mixed approach (quantitative and qualitative data). The study was conducted in 9 of the 13 health areas of the Kadutu Health Zone, chosen on the basis of their easy accessibility during interviews.

Data collection

The data were collected through a survey conducted with (1) local actors involved in community participation, namely community Health Workers (CHW) members of Community Animation Cells (CAC), and members of health and area development committees; (2) healthcare providers (health professionals working in the Kadutu health zone); and (3) household heads in the Kadutu health zone. The selection of study participants was done intentionally, based on each participant's experience. The interviews used a single questionnaire. For the collection of quantitative data, the questionnaire was closed on aspects related to the community interventions carried out in the HZ over the past year and their effects on the quality of health services. For the qualitative data, the questionnaire was open on aspects related to the strengths, weaknesses, opportunities, and threats of the community interventions carried out and their link to the quality of care in the Kadutu health zone on one hand, and on the other hand, the health services concerned by the community interventions.

Variables in the quantitative study: the improvement of service quality was analyzed as the dependent variable, and community interventions constituted the independent variables.

Table 2 presents the different variables of the study as well as their operational definitions.

No.	Variables	Operational Definitions of Variables
1	Dependent Variable	
	Quality of Health Services	Overall analysis of the effectiveness of health services based on criteria such as accessibility and population satisfaction.
2	Independent Variables (Types of Interventions)	
	Awareness and Education	Defined by the number of informative sessions held in the community to improve members' knowledge on specific health issues, measured by participation rates and participants' knowledge assessed through pre- and post-awareness questions.
	Participation in the Health Area Management Committee	Defined by the frequency of community meetings, the number of decisions made with community representatives' involvement, and the participation rate of members in the decision-making process.

	Community Mobilization	Defined and measured by the number of health projects or activities organized by the community and the amount of resources collected.
	Screening and Vaccination	Defined by the total number of people screened or vaccinated within a given period.
	Home Care and Patient Follow-Up	Defined by the number of home visits conducted, the frequency of these visits, and the improvement in patients' health indicators.
3	Health Services Impacted by Community Interventions	
	Prenatal Care	Defined by the number of pregnant women who attended at least four prenatal visits during their pregnancy.
	Family Planning Services	Defined by the number of new users of modern contraceptives.
	Nutrition	Defined by the number of children under five benefiting from nutrition programs, the reduction in malnutrition rates, awareness of exclusive breastfeeding, and community-based malnutrition screening.
	Sanitation and Hygiene	Defined by the reduction in waterborne diseases following interventions and hygiene promotion campaigns.
4	Strengths, Weaknesses, Opportunities, and Threats of Community Participation in Health	
	Strengths	Mobilization of local resources, deep understanding of local needs, active engagement and participation.
	Weaknesses	Lack of training and skills, inequalities in participation, limited institutional support.
	Opportunities	Partnerships with NGOs and external stakeholders.
	Threats	Poverty and lack of resources, weak support from health authorities.

Table 2: Operational Definitions of Variables in the Study.

Data collection involved individual interviews targeting 422 household heads randomly chosen, nine nurses from health facilities (one nurse per health area under study), 1 chief medical officer of the health zone, and two community facilitators intentionally chosen based on their experience. It also conducted group interviews targeting nine groups, with each group consisting of four community health workers per health area under study. We have chosen to present only the socio-demographic characteristics of the household heads in the results; the other respondents were part of the facilitators of the health services offered to the households.

Data processing and analysis

The collected data was entered into the Excel file by the principal researcher.

The quantitative data were then exported to the EPI-INFO software version 7.1.1.3, to perform the usual statistical analysis techniques:

- **Univariate analysis:** This analysis allowed for the calculation of descriptive statistics for the different variables under study (frequency, mean, and standard deviation). A 95% confidence interval was calculated.
- **Bivariate analysis**: This analysis allowed for the comparison of percentages using Pearson's Chi-square test. The Fisher's exact test was used when the sample sizes were small.

The qualitative data underwent thematic analysis, determining the strengths, weaknesses, opportunities, and threats of community interventions and their effects on the quality of health services in the Kadutu Health Zone.

Ethical considerations

The research protocol was approved by the research committee of the Department of Health Sciences at the Official University of

Bukavu, and permission to collect data in all health areas of the Kadutu Health Zone was granted by the chief medical officer of the Zone. Informed consent was obtained from all participants before their involvement in the study. Data confidentiality was maintained throughout the study by ensuring anonymity. We also ensured justice and fairness in the selection of study participants by avoiding any discrimination based on age, race, ethnicity, or other characteristics.

Results

Socio-demographic characteristics of household heads

The majority of household heads are aged between 21-30 (40.76%) with a median age of 32 years (17-67); the female gender is predominant (61.61%) with a secondary education level (61.85%), followed, with a significant gap, by a higher education level (16.82%). The proportion of household heads with no level of education is 6.49%. The Catholic religion is dominant (35.78%). The majority of heads (55.45%) manage households with a size of ≤7. Table 3 presents the socio-demographic characteristics of the household heads in the study.

Variables	N = 422	%	Mean ± SD/Median (Min-Max)
Age (in years)			
≤20	25	5.92	32 (17-67)
21-30	172	40.76	
31-40	128	30.33	
>40	97	22.99	
Sex			
Female	260	61.61	
Male	162	38.39	
Education Level			
Secondary	261	61.85	
Higher Education	71	16.82	
Primary	63	14.93	
No Education	27	6.40	
Religion			
Catholic	151	35.78	
Protestant	138	32.70	
Muslim	73	17.77	
Jehovah's Witness	45	10.66	
Brahmanist	15	3.55	
Household Size			
≤7 persons	234	55.45	7 (4-10)
>7 persons	188	44.55	

Table 3: Socio-Demographic Characteristics of Household Heads.

Level of information and participation of households in community interventions

All household heads (100%) attest to the implementation of community interventions in the Kadutu health zone, and the majority of them (85.31%) say they are informed about the nature of these interventions by the CHW (61.37% of cases), during community meetings (25.12% of cases), through the radio (7.58% of cases), or at the church (5.92% of cases). The majority of household heads (60.43%) participate in community activities or meetings. The main reasons for non-participation mentioned are lack of time (47.3%), lack of interest (33.4%), and lack of information (19.3%). Community work aimed at hygiene and sanitation (according to 89.33% of household heads) and awareness and education (according to 95.02% of household heads) are the main community interventions carried out. The level of participation is presented in Figure 1.

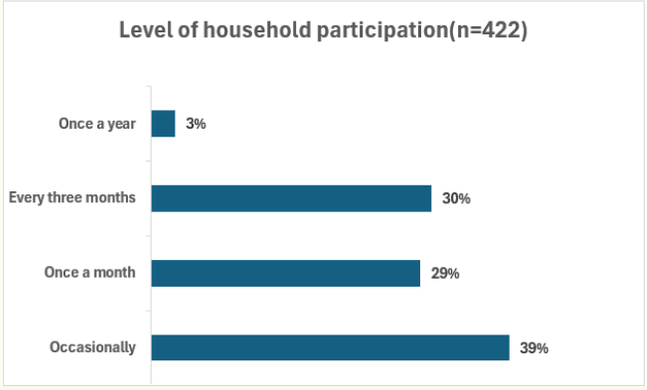

Figure 1: Level of participation in community interventions by households.

Perception of household heads regarding the effects of community interventions on the quality of services

According to 64.45% of the respondents, the quality of health services has improved thanks to community participation. Household heads also expressed their views on the effects of community interventions on the accessibility of health services, satisfaction with care, continuity of care services, their effectiveness, and the adaptation of care services to the needs of the population.

Basic services concerned by community interventions and perception of the evolution of their quality following community interventions

According to the order of citation, the study reveals that the main services concerned by community interventions are vaccination (37.20%), prenatal care (24.88%), patient consultations (14.21%),

hygiene services, sanitation of health facilities, education, and health promotion (16.82%). Regarding the types of community interventions, we find awareness campaigns (28.67%), community work (27.72%), home visits (22.27%), health advocacy (14.69%), and community support (6.63%). The majority of CHWs feel motivated (71.32%) to voluntarily carry out community-level interventions.

The perception of the evolution of the quality of healthcare services is presented in Figure 2.

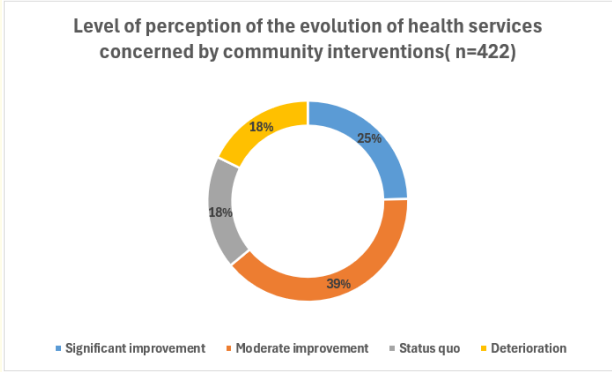

Figure 2: Perception of the evolution of the quality of healthcare services.

Association between participation in community interventions and the improvement of service quality

Variable	Improvement in Service Quality	OR (95% CI)	p-value
	Yes (%)	No (%)	
Participation in Community Activities			
Participants	233 (91.4)	22 (8.6)	4.1481 (2.3881-7.2051)
Non-Participants	120 (71.9)	47 (28.1)	
Level of Participation			
Active	188 (73.7)	67 (26.3)	2.7726 (1.8362-4.1863)
Not Active	84 (50.3)	83 (49.7)	
Motivation of Community Health Workers (CHWs)			
Motivated	205 (68.1)	96 (31.9)	0.5810 (0.3769-0.8956)
Not Motivated	67 (55.4)	54 (44.6)	
Effectiveness of Community Interventions			
Effective	243 (67.3)	118 (32.7)	0.4401 (0.2543-0.7616)
Not Effective	29 (47.5)	32 (52.5)	
User Satisfaction			
Satisfied	226 (63.3)	131 (36.7)	1.4034 (0.7887-2.4970)
Not Satisfied	46 (70.8)	19 (29.2)	

Table 4. Association Between Community Participation and Improvement in Service Quality.

The results of Table 4 show that community participation is a determining factor in the improvement of service quality. Individuals who participate in community activities are 4.15 times more likely to observe an improvement in service quality compared to those who do not participate (OR = 4.15, 95% CI [2.39-7.21], p < 0.001). This probability increases with the level of engagement: active participants are 2.77 times more likely to observe an improvement in services compared to those who participate passively (OR = 2.77, 95% CI [1.84-4.19], p < 0.001). Moreover, the motivation of community health workers (CHWs)influences this improvement, with a 42% reduction in the risk of no service improvement when the CHW are motivated (OR = 0.58, 95% CI [0.38-0.90], p = 0.013). Similarly, the perception of an effective community intervention reduces the probability of no improvement in services by 56% (OR = 0.44, 95% CI [0.25-0.76], p = 0.002). On the other hand, user satisfaction does not seem to be a significant factor in this dynamic, with the odds ratio being non-significant (OR = 1.40, 95% CI [0.79-2.50], p = 0.247). These results suggest that active community involvement and the motivation of community relays play an essential role in the perceived improvement of services, regardless of the satisfaction reported by users.

Association between community interventions and service quality

Variable	Improvement in Service Quality	OR (95% CI)	p-value
	Yes (%)	No (%)	
Services Adapted to Community Needs			
Adapted	170 (73.6)	61 (26.4)	0.4112 (0.2735-0.6184)
Not Adapted	102 (53.4)	89 (46.6)	
User Satisfaction			
Satisfied	226 (63.3)	131 (36.7)	1.4034 (0.7887-2.4970)
Not Satisfied	46 (70.8)	19 (29.2)	
Home Visits			
Regularly and Sometimes	291 (89.5)	34 (10.5)	4.8316 (2.7993-8.3394)
Never and Rarely	62 (63.9)	35 (36.1)	
Service Utilization			
Frequent Users	255 (66.2)	130 (33.8)	0.4333 (0.2195-0.8555)
Non-Frequent Users	17 (45.9)	20 (54.1)	
Hygiene and Environmental Sanitation			
Hygiene and Sanitation	342 (87)	51 (13)	10.973 (4.902-24.5620)
No Hygiene and Sanitation	11 (37.9)	18 (62.1)	

Table 5: Associations Between Service Adaptation, Community Interventions, and Improvement in Service Quality.

The analysis of Table 5 highlights several key determinants of service quality improvement. The adaptation of services to the specific needs of the community is associated with a 59% reduction in the risk of no service improvement (OR = 0.41, 95% CI [0.27-0.62], p < 0.001), suggesting that services that better meet the expectations of the populations are more likely to be perceived

as improved. Moreover, home visits appear as an important lever: individuals who have benefited from regular or occasional visits are 4.83 times more likely to observe an improvement in services than those who never or rarely receive them (OR = 4.83, 95% CI [2.80-8.34], p < 0.001). Similarly, regular use of services is a favorable factor, reducing the risk of not observing an improvement in service quality by 57% (OR = 0.43, 95% CI [0.22-0.86], p = 0.013). Another major determinant is the state of hygiene and sanitation of the environment, with a nearly 11 times higher probability of observing an improvement in services in a well-sanitized environment compared to an unsanitary environment (OR = 10.97, 95% CI [4.90-24.56], p < 0.001). In contrast, user satisfaction is not a statistically significant factor in this analysis (OR = 1.40, 95% CI [0.79-2.50], p = 0.247). These results show that the improvement of service quality relies mainly on structural and organizational factors, notably the adequacy of services to community needs, the availability of home visits, the effective use of services, and hygiene conditions, rather than solely on the subjective perception of users.

Description of community participation in the Kadutu health zone

In the Kadutu health zone (HZ), the community actively participates in improving health services through concrete actions such as mobilization, health awareness, hygiene and sanitation, as well as advocacy for better quality services. Participation is carried out through the health and area development committees, allowing community members to monitor health activities, give their opinions, and identify possible improvements. Awareness campaigns focus on essential topics such as vaccination and prenatal care. Community members also use participatory community bulletins to share their opinions and concerns about health services. One of the stakeholders attests to this community participation in these terms: "…in addition to the involvement of the population through their representatives in the health and area development committees, Review, Management Plan Meetings, inventories; the members of the community of the Kadutu Health Zone write directly their complaints or their appreciations on health services via individual participatory community bulletins…" Head of the Kadutu HZ.

Community participation has led to several significant improvements, such as the provision of free antenatal and vaccination services, as well as the reduction of cholera cases through prevention campaigns. Community interventions have also increased attendance at health centers, strengthened community ownership of health, and contributed to the reduction of maternal and infant mortality. Moreover, thanks to community advocacy, infrastructures such as bridges and health centers have been built or improved. Another stakeholder states: "The entire population witnesses the change and the improvement in the quality of services. Thanks to our participation efforts through community interventions, prenatal and vaccination services have become completely free. We have advocated for the 3000 Congolese Francs that the population previously paid to access these services to be eliminated. In previous years, there was never a July or August without a resident of CIRIRI 1 being hospitalized at the Reference General Hospital due to cholera. But today, we are already in the month of September and no cases of cholera have been reported. All of this is the result of collective efforts in community work and informative awareness campaigns, particularly on preventive measures". CHW CIRIRI 1.

The key factors for improving healthcare services include active community involvement, motivation of healthcare personnel, investments in infrastructure, and regular training for community actors. The results show positive effects on adherence to care and on maternal and child health, as highlighted by another actor in these terms: "Not long ago, the community, through the CHW, undertook the construction of a drainage ditch located right next to the commune of Kadutu to combat the proliferation of flies, mosquitoes, and to prevent the occurrence of diseases". Head of the Kadutu HZ.

Strengths, weaknesses, opportunities, and threats

Strengths	Weaknesses
Committed CHWs (70% of CHWs are motivated)	Overlapping community activities due to poor planning
Knowledge of the real needs of the population	Poor data management by CHWs, with incomplete or incorrect reports, hindering community intervention monitoring

Skills and dedication of healthcare professionals	Demotivation of some CHWs (30% of CHWs report being demotivated) due to a lack of resources for carrying out their activities
Geographical accessibility of the health zone	Low community involvement in decision-making at health facilities level
Support and endorsement of official information	Poor communication and lack of coordination
Active community mobilization	Weak supervision of CHWs by the health zone management team
Adaptation of services to population needs	
Increased health awareness and education	
Promotion of solidarity and mutual aid	
Opportunities	**Threats**
Improved user-provider relationship	Withdrawal of some partners who had committed during the drafting of the operational plan for the year
Participation of the Congolese state in setting norms and regulatory documents	Unexpected outbreaks of certain epidemics (cholera, MonkeyPox, etc.)
Presence of NGO partners and United Nations agencies supporting community participation, such as Louvain Cooperation, UNICEF, WHO, BDOM, CEBCA, and 8th CEPAC	Insufficient technical and financial support from the State
Coordination and collaboration of partner interventions during certain activities	Lack of trust and full community involvement in some interventions or health services (e.g., low utilization of vaccination services)
Training of CHWs during awareness campaigns	

Table 6

Discussion

The present study aimed to analyze community participation and its effect on the improvement of the quality of primary healthcare services in the Kadutu Health Zone, Bukavu, Democratic Republic of Congo. Its main limitations are the reduced representativeness both at the level of health zones (9 out of 13 in the health zone) and the population (422 households and some actors in the health zone), the lack of multivariate analysis, and the absence of complete data on community participation and the full production of primary services influenced by community participation. Although the collection of this information was not planned, the reporting of data usually collected by CHWs presents significant gaps in the Democratic Republic of Congo despite their prior training [27].

We discuss in the following paragraphs (1) the identified determinants of community participation, (2) the factors that associate community participation with the improvement of the quality of frontline services, and (3) the issues and challenges of community participation.

Determinants of community participation in the Kadutu Health Zone

The main determinants of community participation identified by the study are (i) certain socio-demographic characteristics of household heads, (ii) the level of information of the population about the interventions, (iii) the nature of community interventions, including those adapted to the needs of the population, and (iv) the strengths and opportunities of community interventions.

Socio-demographic characteristics: age can influence the perception and participation in community activities, as well as

engagement in health initiatives [8]. This is the case in the present study where the vast majority of household heads were under 40 years old (77%) with a median age of 32 years. Community engagement by young people prepares them to take on leadership roles and contribute positively to the development of their society [28,29]. On the contrary, the elderly may not possess the dynamism of the young but often play the role of transmitting knowledge and cultural values, helping to maintain a strong community identity [30]. Differences in participation may exist between genders, with some studies showing differences in the involvement of men and women in community activities related to health [8], the vast majority of household heads in the study being women (61%). Some socio-demographic characteristics not explored in the study may also influence community participation. It is notably the professional situation, which can influence the time available to participate in community activities and the motivation to engage in initiatives to improve health services [31]. Income can affect access to healthcare services, the ability to participate in community activities, and interest in initiatives to improve healthcare services [8,32]. Marital status can impact the type of social and community responsibility, as well as the availability to participate in collective actions. Place of residence and cultural factors can play an important role in access to healthcare services and the type of community participation available [33].

The level of public awareness about community interventions

Information directly influences how individuals and groups interact with local initiatives, their level of engagement, and their ability to actively contribute to development processes [10,13,34]. In poorly informed communities, misunderstandings, fears, or resistance to community interventions may arise, especially if the objectives are unclear or perceived as foreign or imposed from outside [35,36]. A lack of information can create tensions or hostility toward initiatives intended to help, which may hinder participation.

The nature of community interventions

Community work aimed at hygiene and sanitation (according to 89.33% of household heads) and awareness and education (according to 95.02% of household heads) are the main community interventions carried out. They play a crucial role in improving the quality of health services, particularly in health centers in the Democratic Republic of Congo (DRC) [4,9,15,25,37,38]. Community interventions, which encourage the active participation of local communities in the management and organization of health services, allow services to be tailored to the real needs of the populations. In the DRC, where some regions are far from urban centers, communities can offer solutions tailored to local challenges, such as the lack of qualified personnel or adequate infrastructure. Community interventions help disseminate relevant information on disease prevention, vaccination, nutrition, etc. [37]. This helps populations better understand the importance of primary healthcare, reduce risky behaviors, and improve access to health services [39]. The involvement of communities in the monitoring and evaluation of health services allows for the identification of gaps, obstacles, and areas for improvement. Community actors can report issues such as the lack of medications, delays in services, or inappropriate behavior by certain healthcare professionals. This promotes more transparent management and allows health authorities to respond quickly to identified issues [6,8]. Community interventions often provide training to community members, particularly CHWs and local health agents [40,41]. In the DRC, where healthcare human resources may be insufficient, these training sessions help strengthen the capacity of local structures to provide quality care. By training communities in basic healthcare practices and increasing local capacities, the quality of health services improves in health centers.

The strengths and opportunities of community interventions: community health interventions have considerable strengths, such as the engagement of local communities (70% of CHWs are motivated in the Kadutu Health Zone), the involvement of community leaders, and the ability to adapt services to the specific needs of the populations. Additionally, the Health Zone of Kadutu benefits from significant opportunities, including decentralization reforms, support from partners, and the rise of mobile technologies, which were not identified in this study and constitute an asset for the CHW [42]. By maximizing these strengths and leveraging these opportunities, it is possible to enhance the impact of health interventions, improve access to care, and contribute to the reduction of diseases and health inequalities in the country.

Factors associating community participation with the improvement of healthcare service quality
In the present study, 60% of household heads participate in community activities. When community members are informed,

involved, and mobilized in the planning and evaluation of health services, they are more likely to contribute to the improvement of care quality. This includes participation in health center management committees, where residents can propose solutions to identified problems and ensure the transparency of processes [6]. Community participation allows for the conduct of awareness and education campaigns on health behaviors and preventive practices, as evidenced by the present study. An informed population is more inclined to adopt positive health behaviors and to utilize available health services [8]. Community participation improves communication and trust between care providers and users. When communities have a voice in the management of health services and are involved in decision-making, they have greater trust in the services provided [35]. This strengthens the patient-provider relationship and encourages community members to use health services. Community participation allows for the mobilization of local resources, including human, material, and financial resources [20]. Community interventions promote the training of community leaders and community health workers, who are key players in improving health services. These agents are well-positioned to promote health in the community, address health questions, and provide frontline services. The continuous training of healthcare providers and community health workers improves the quality of the services provided [20,37].

The Kadutu Health Zone, like many other areas in the DRC, is facing epidemics including cholera. Community participation strengthens epidemic preparedness and response, as communities are better equipped to detect signs of infection, implement preventive measures, and apply control measures. Community engagement allows for the quicker implementation of preventive actions, such as isolating cases, distributing prevention materials, and raising awareness about hygiene. Community participation also facilitates partnerships between local actors (NGOs, health authorities, etc.) and international organizations. These collaborations help attract resources and support to strengthen local health services. These partnerships can offer training, funding for new equipment, and opportunities for continuous improvement of health services.

Issues, challenges, and perspectives of community participation

Despite its effectiveness, community participation in the Kadutu Health Zone is confronted on one hand with issues, notably the improvement of access to quality healthcare, the strengthening of local management of health services, the enhancement of health prevention and promotion, and the reduction of inequalities in access to care; and on the other hand with challenges such as lack of resources, cultural obstacles, and infrastructure problems. Several elements identified in the weaknesses and threats support these issues and challenges. For example, the poor management of data by the CHWs, with incomplete or incorrect reports, which hinders the monitoring of community interventions; the demotivation of about 30% of the CHWs, the low involvement of the community in decision-making at the health centers, poor communication and insufficient coordination, the withdrawal of some partners who had committed during the drafting of the operational plan for the year, or the unexpected outbreak of certain epidemics (cholera, MonkeyPox, etc.).

By overcoming these challenges and leveraging the opportunities offered by training, partnerships, the use of ICT, and the improvement of local governance, it is possible to strengthen community participation and significantly improve the health of local populations [20,21].

Conclusion

This study highlights the importance of community participation in improving the quality of primary healthcare services in the Kadutu Health Zone, Bukavu, Democratic Republic of Congo. Although socio-demographic determinants, an adequate level of information, and community interventions tailored to the needs of the population play a key role, several challenges remain. These include data management issues, a lack of resources, cultural barriers, and insufficient coordination. However, leveraging the opportunities offered by training, local partnerships, and improving local governance can help overcome these obstacles. By strengthening community participation and optimizing available resources, it would be possible to significantly improve access to quality care and the management of health services in the region, thereby contributing to the reduction of health inequalities.

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