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Review Article

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Implementation of Community-based Health Insurance in Post-war Settings; A Systematic Review

Brhane Gebremariam[3*], Mussie Alemayehu[2], Letebrhan Weldemhret[1], Lemelem Legesse[1], Brhane Ayele[1] and Hayelom Kahsay[1]

[1]*Weill De 1 Tigray Health Research Institute, Mekelle, Ethiopia*
[2]*Mekelle University, College of Health Science, Mekelle, Ethiopia*
[3]*Tigray Institute of Policy Studies, Mekelle, Ethiopia*

[*]**Corresponding author**
Brhane Gebremariam, Tigray Institute of Policy Studies, Mekelle, Ethiopia.

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ABSTRACT

Background: Achieving universal health coverage is the biggest challenge in post-conflict situations. Community-based health insurance is an alternative mechanism to improve healthcare utilization and coverage through a prepayment mechanism and pooling health risks in the informal sector. However, there is limited data on the feasibility of community-based health insurance in countries emerging from conflict or war.

Objective: This systematic review aims to summarize the evidence on the feasibility of implementing community-based health insurance in post-conflict situations.

Methods: The search process included peer-reviewed and gray literature published between 1990 and 2023 in the electronic databases of Global Health, Pub Med, CINAHL, Science Direct, and Gray Publications. The search was conducted manually on December 10, 2023. We conducted a systematic review of articles published since 1990 using a search strategy. The Mixed Methods Assessment Tool (MMAT) was used for quality assessment to evaluate the methodological quality of various studies.

Results: In this review, a total of 30 articles were included and synthesized. Out of the eligible articles, cross-sectional studies, issue reports, and strategic documents were reviewed. In general, 66.7% of the studies were qualitative, and 33.3% were quantitative. We summarize and describe the feasibility of introducing community health insurance, its impact on universal health coverage, and the limitations of financial risk allocation and protection in the post-war period. Community-based health insurance (CBHI) schemes face several significant obstacles, such as poor financial risk protection, a limited risk pool, adverse selection, a lack of professional and standardized management, and a lack of availability and quality of services. Although they are less successful in reaching marginalized populations, community-based health insurance programs with access to external or additional funding sources are more successful in extending access to healthcare services and offering financial security. Regardless of scheme type, community-based health insurance schemes that involve the community in the design and implementation process are more effective at guaranteeing access to healthcare and financial protection. Furthermore, households with community-based health insurance have lower out-of-pocket medical costs, high odds of overall healthcare utilization, outpatient service use, health facility deliveries, and a lower frequency of catastrophic medical costs at various thresholds.

Conclusions: Community-based health insurance (CBHI) schemes have emerged as an alternative health financing mechanism in low- and middle-income countries. These schemes aim to improve access to healthcare and provide financial protection. However, their effectiveness is limited by several challenges. Studies have found that community-based health insurance schemes often exclude the ultra-poor and suffer from adverse selection. While there is evidence that community-based health insurance increases healthcare utilization, particularly for outpatient services, and reduces out-of-pocket spending, the overall impact remains small. Key challenges include limited risk pools, poor financial risk protection, and a lack of quality services. Factors influencing enrollment and sustainability include awareness, trust, perceived service quality, and community involvement. Despite some positive outcomes, community-based health insurance schemes are considered complementary to more effective health financing systems rather than a standalone solution.

Keywords: Community Based Health Insurance, Systematic Review, Post-war, Tigray.

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Abbreviations and Acronyms

CBHI	-	Community Based Health Insurance
CRR	-	Cost Recovery Ratio
MMAT	-	Mixed Methods Assessment Tool
OPE	-	Out of pocket expenditure
OPP	-	Out-of-Pocket Payments

Introduction

Low- and medium-income nations have supported health insurance to increase access to medical care since it distributes financial risk among all covered members and prevents individuals from paying fees directly [1]. One health insurance program called community-based health insurance (CBHI) was created primarily to lower out-of-pocket expenses, especially in rural areas and places where many people live and work informally [2]. People dying or suffering because they lack access to even the most basic medical treatment is becoming more and more unacceptable in a world of plenty. It is equally upsetting when poverty results from catastrophically high medical costs [3]. A total of 1.4 billion to 1.9 billion people experienced financial difficulty in 2017 because of about 1 billion people incurring catastrophic out-of-pocket payments (OPP) [4].

Out-of-pocket costs made for 40% of total health spending in sub-Saharan African nations. Despite their greater health demands, an estimated 1.2 billion of the world's poorest people reside in fragile and post-conflict states, where they have little to no access to healthcare [5]. Hence, finding a way to finance and provide health care in post-conflict states is one of the major challenges to achieving universal health coverage [6]. Similarly, the World Health Organization (WHO) views medical fees as a significant obstacle to healthcare coverage and utilization [7].

High out-of-pocket costs, a reliance on donors, and a lack of government support for the provision and financing of healthcare services and system reconstruction are characteristics of the health financing systems in many post-conflict nations. Due to the destructive effects of war, the population of these countries has low economic income, which limits their ability to generate domestic revenue. Alternative funding sources are required as donor aid declines to strengthen the health systems' resilience in post-conflict nations [8]. WHO has stated and encouraged reducing reliance on direct payments through a risk-pooling prepayment approach [9]. From this point of view, community-based health insurance (CBHI) has emerged as an alternative to user fees. CBHI schemes are designed to ensure sufficient resources are available for members to access effective health care [10,11].

In the past 19 years, the 'health care crisis" led to the emergence of many CBHI in different regions of developing countries, particularly in sub-Saharan Africa [12]. CBHI is characterized by a voluntary nonprofit characteristic: a prepayment mechanism with pooling of health risks and funding taking place at the level of the community to cover the costs of health care services [12, 13]. Furthermore, most CBHI programs are run in rural regions, and their participants are typically low-income. These individuals frequently lack access to sufficient employer-sponsored, private, or governmental health insurance [14]. To offer risk protection measures for people working in the rural and unorganized sectors, the Ethiopian government approved and implemented CBHI programs in 13 pilot woredas in the Tigray, Oromia, Amhara, and Southern Nations, Nationalities, and Peoples (SNNP) regions in 2010–11. Following a successful three-year trial program, the government has chosen to expand CBHI, implementing programs in 161 woredas [15]. The introduction of the CBHI scheme has reduced catastrophic Out of Pocket Expenditure, and increased healthcare utilization, availability of drugs, and quality of services through retaining mobilized resources at health facilities [16]. However, the war in Tigray, North Ethiopia, which started in November 2020, has destroyed decades of the region's healthcare success [17]. As a result, Tigray devolved into a poor area with a severely damaged healthcare system that was reliant on foreign aid to deliver medical care. Furthermore, community health financing reforms and insurance in post-war or conflict contexts cannot be easily transplanted from one country to another due to the unique circumstances of each country and its initial health funding arrangements. Rather, the adjustments proposed in a health funding strategy must address the fundamental reasons for performance concerns, which vary from nation to nation. However, there are lessons learned from international experience that allow for the articulation of several guiding principles for reforms that support UHC's progress [18]. This paper therefore analyzes the experiences of post-conflict countries related to the implementation of CBHI and draws lessons from the success stories of these countries about the implementation of CBHIs and its effects on utilization and coverage of health care following the war.

Methods

Study Design

From December 5, 2023, to January 10, 2024, a systematic review was carried out to compile data on the application of community-based health insurance in post-conflict/war environments. The scant literature on community-based health insurance in post-conflict situations led to a deliberate, non-systematic examination of the evidence using an iterative approach.

Searching Strategy

Peer-reviewed papers and grey literature from electronic databases published in English between January 1, 1990, and December 2023 were included in the review. The search was conducted using a variety of databases, including Science Direct, Pub Med/Med line, Global Health, and grey literature. The search was conducted using the following keywords: "conflict" OR "post-conflict" OR "reconstruction" OR "fragile" AND (Community-based Health insurance) OR "CBHI" AND ("financing" OR "systems" OR "performance" OR "research" OR "user fees" OR "exemptions" OR "budgeting" OR "equity" OR "access" OR "performance-based" OR "output-based" OR "pay for performance" OR "incentives" OR "resource allocation" OR "contracting" OR "public expenditure" OR "public/private" OR "global health initiatives" OR "aid" OR "funding" OR "budgeting") AND "health".

Inclusion Criteria

Studies published since 1990 regardless of study designs (qualitative, mixed, or quantitative), publication kinds, English

language written, and at least one of the key terms in the title were taken.

Exclusion Criteria

Literature that did not address the post-conflict setting was excluded from the review.

Screening Process

All articles were subjected to two rounds of double screening by a group of authors. Titles and abstracts were initially evaluated according to the inclusion criteria. We talked about any disagreements that came up throughout the literature search at our weekly meeting. A comparable group held weekly meetings to resolve conflicts and undertake a full-text review during the second screening stage. The full text of research papers and publications that addressed the evaluation of evidence on the application of CBHI after war or conflict will be provided (Figure 1). Additional records found using Google Scholar and a Google search (n=5).

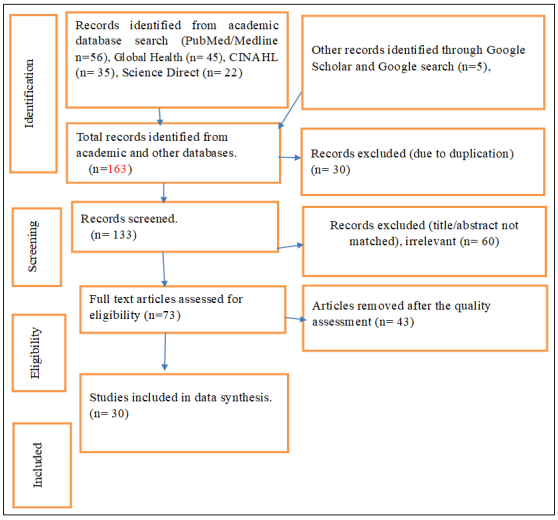

Figure 1: Schematic presentation of review evidence processes on the implementation of community-based health insurance in post-war settings.

Assessment of Data Quality

For the quality appraisal, the Mixed Methods Appraisal Tool (MMAT) was used to assess the methodological quality of the research studies (qualitative, quantitative, and mixed methods) (Table 2). This tool consists of two general screening questions as well as specific quality assessment questions for each type of study design. A study that did not fulfill the general screening questions was considered in the next quality assessment process.

Results

Description of the Reviewed Articles

A total of 30 articles were included and synthesized in this review (Table 2). Regarding study design, 13 (43%) of the eligible articles were reviewed, seven (16.7%) were cross-sectional studies, five (16.7%) were issue reports and five (16.7%) of them were strategic documents. In general, 20(66.7%) of the studies were qualitative and whereas 10(33.3%) were quantitative (Figure 1).

Political Commitments and Governmental Support

Establishing CBHI in post-war contexts requires demonstrating significant political intent and backing [19]. The governments of Rwanda and Afghanistan have demonstrated the most expertise in making health insurance mandatory for all citizens [19,20]. For CBHI to succeed, the governments were successfully focusing on revenue creation, a suitable legal framework, multisectoral collaboration, and efficient coordination. Furthermore, universal health care was a common sign of post-war recovery following Japan's loss in World War II, thus governments and politicians, in particular insurers, provided considerable support for the development of community health insurance [21].

Viability of Community-Based Health Insurance in Post-War

Although CBHI members used health services more frequently, community-based health insurance (CBHI) piloted in five Afghan provinces demonstrated modest enrollment and cost-recovery [22], Nevertheless, CBHI was regarded as a potential resource for the Afghan health system, in addition to tax, social insurance, and donor funding [19]. CBHI was seen as one of the other funding sources in Afghanistan due to the anticipated decline in donor support. Furthermore, poverty among individuals without health insurance and unable to pay for medical bills remained a recurring social issue in Japan after World War II [21]. To address this, the Japanese government created equity by ensuring that all Japanese people had access to healthcare after the war [21]. Because of this, the coverage of the community health insurance system has altered significantly since 1961, with insurers covering 70% of medical expenditures and the insured paying 30% [23]. On the other hand, a study from Afghanistan suggests that community-based targeting of waivers is feasible in a fragile setting [24,25]. In addition to prepayment, the Afghanistan government allowed waiver as a result waiver cardholder households were more curative (85.5%) and preventive care (83.7%) compared to the user fee health care [14,26].

There is a recognition of the potential use of CBHI to enhance healthcare access for low-income and rural communities in India, but obstacles like mistrust, coverage restrictions, and the requirement for a larger risk pooling still exist [27]. Resolving important issues such as adverse selection, a small risk pool, and inadequate financial risk protection is necessary for these schemes to succeed [28]. Moreover, the sustainability of CBHI depends on incentive design, which must reduce moral hazard and adverse selection while providing scheme managers with suitable incentives [29]. Additionally, there are potential, and problems associated with implementing community-based health insurance in post-conflict environments. The potential use of such programs to generate income and offer financial security is emphasized [30, 31]. But they also point out the necessity of a combination of funding sources as well as the significance of national laws and administrative frameworks emphasizing how community health workers can provide effective and efficient healthcare in these contexts, especially when it comes to increasing access to care and detecting diseases [32]. Moreover, community engagement, the involvement of community health workers, the establishment of efficient administrative frameworks, and national policies are all necessary for the successful implementation of community-based health insurance in post-conflict settings.

Coverage and Utilization of Cbhi in Post-War Settings

In a country with a large population in the informal sector like Africa, CBHI is considered preferable as a means

of financing mechanism [21]. Furthermore, research has shown that community-based health insurance (CBHI) is the primary possible solution to the healthcare problems faced by underprivileged communities in developing countries [28,33]. The Rwandan genocide of 1994 and the civil war had a devastating effect on the healthcare system, creating a shortage of healthcare workers and destroying infrastructure. Since then, the country has faced an enormous challenge to reconstruct its healthcare system and infrastructure and improve coverage and quality of healthcare [34].

Studies from Rwanda suggest that voluntary, community-based health insurance improved the inequitable effects of user fees [35]. Due to this life expectancy fell sharply during the civil war and genocide, but it has steadily increased to 64 years which is higher than the life expectancy of 57 years in Sub-Saharan Africa [22]. The under-five mortality rate, which peaked in early 1990, is now 42 per 1000. Moreover. Utilization of health care increased from 31 percent in 2003 to 107 percent in 2012, and the under-five mortality rate, which was among the highest in the world in the early 1990s, has decreased to 42 per 1,000 maternal mortalities for 29 deaths per 10,000 live births [21,22,36]. Currently, between 90% and 95% of Rwandans working in the unorganized sector are registered with CBHI. For most of their populations, Rwanda and Ghana seem to have achieved great strides toward universal health care through national health insurance programs [21,22].

To achieve parity in the coverage of health services in both the formal and informal health sectors, the Ethiopian government approved the health insurance plan in 2008 [37]. Despite issues with access to necessary medications, health facilities' ability to diagnose patients, the affordability of healthcare for the underprivileged, and the standard of care, the CBHI has made impressive strides in its initial implementation, covering 45.5% of Ethiopia's target households [4,37,38]. Even though the CBHI approach has a good effect on health system coverage, there are real-world implementation issues, such as service inequity, and poor health service quality must be seriously addressed [39]. Additionally, the absence of a formal insurance culture and poverty lead to low levels of revenue that can be mobilized from poor communities [40]. However, a household's participation in Community-Based Health Insurance is influenced by several criteria, such as radio ownership, family size, the health facility's location, the health district in which the household resides, and the head of the household's educational attainment [41].

Out-of-Pocket Expenditure (Ope) and Financial Protection

There is mounting evidence that access to health treatments requires money, that people have limited financial resources, and that many lack health insurance or prepayment, especially in areas affected by war [42,43]. Equity funds and waivers are strategies to lessen the detrimental effects of user fees on populations' equity and use of health services, especially in nations recovering from crises or conflicts [44,45]. The goal of community-based health insurance programs is to lower unpredictable or unaffordable medical expenses by requiring regular, calculable monthly payments. In Ethiopia, householders' payments account for 37% of health financing, with 40% coming from donors.

Furthermore, Rwanda's community-based health insurance (CBHI) program has proved effective in lowering catastrophic health-related costs and raising the use of contemporary healthcare services [46,47]. Additionally, fifty percent of the CBHI funding comes from the Rwanda government's annual premiums, and the rest of the cost of CBHI is contributed by local and international organizations. Non-covered services (10%) are paid for by users at the point of service but are also free for the poorest [45]. The lowest out-of-pocket health expenditure was reported 10% in Rwanda followed by 20% in Angola [45]. Nonetheless, there has been growing evidence that the insured non-poor utilize the program at a higher rate than the insured poor which implies the program's advantages are biased towards the wealthy, even if it has a good effect on lowering out-of-pocket medical expenses and the frequency of catastrophic medical spending [1,45,46]. However, the impact of CBHI on financial protection is debatable [1]. Some studies indicated that CBHI has a limited positive effect on financial protection despite increased access to health care by the members [1].

Community-Based Health Insurance and Cost Recovery

The cost recovery ratio (CRR) indicates the proportion of monthly operating costs which were recovered through cost-sharing (premiums and user fees). A study indicated that 16% of the clinics' operating costs were recovered through community health insurance funds [24]. The estimated CRR based on non-salary costs ranged from 12% to 32%, with a median of 24% [22] whereas the CRR of non-salary costs is double those of the CRR based on all costs since salaries were estimated to account for half the operating costs. Additionally, the CBHI program was able to recover a modest fraction (12%) of the clinic's total operating costs though it recovered up to 24% of a clinic's non-salary operating costs [24]. Another study from Tanzania reported that 8% of the district health budget was recovered; 2% from premiums, and 6% from user fees [48]. The CHF-type scheme from Rwanda recovered between 6 and 9% of the district health. On the other hand, the system does not have enough money to cover new drugs and administration due to such as dropping out of health centers. Higher treatment costs and failing national drug supply [49].

Community-based health insurance (CBHI) schemes are effective in reducing out-of-pocket payments and improving access to health services [38]. However, their ability to recover costs is limited, with only a quarter to a half of health service costs being recovered [40]. While they do provide some financial protection and improve cost recovery, their effects are small, and they serve only a limited section of the population [1]. The success of CBHI schemes is influenced by factors such as management, quality of government health services, and the resources available for health care financing [40]. Affordability and altruism are key considerations in the design of effective CBHI schemes. The determination of premiums based on health costs and the willingness to pay is crucial in ensuring the sustainability and effectiveness of these schemes [50].

Risk Pooling

One essential feature of the health system is risk pooling, which distributes the financial risk of medical procedures across

several donors. By increasing population health and decreasing uncertainty, this not only advances equity but also improves efficiency. The use of risk pooling in hospitals is examined in a study, with a focus on lowering lead time and demand uncertainty [49]. Furthermore, a study indicates that risk pooling techniques like product replacement and inventory pooling can help hospitals' financial status. According to a study conducted in Afghanistan, a community health fund was established to provide funding for the several communities that make up the catchment area of medical institutions [24]. This study emphasized that community-based savings groups (microfinance programs) have shown that individuals and households are able and willing to save and pool funds within the community/village unit [24].

Furthermore, risk-pooling and risk-sharing arrangements are needed to address the challenges of providing healthcare to the poor in low and lower-middle-income countries [51]. These agreements, like health insurance and prepaid plans, can support health care and work toward universal health coverage. Regardless of size, risk pooling and prepayment enhances the communities they serve in terms of financial safety. For people in high- and middle-income nations, health financing policies that use pre-payment plans and public resources with a higher risk of sharing have a progressive financing system and less financial risk burden. Compared to individuals who do not have insurance, people who buy individual health insurance are typically in better health.

Discussions

The implementation of community-based health insurance (CBHI) in post-conflict settings presents unique challenges and opportunities. In these environments, health systems are often weakened, and access to healthcare is severely disrupted. CBHI schemes can play a crucial role in rebuilding and strengthening health systems by providing affordable and accessible healthcare to communities. For example, in the Central African Republic and South Sudan, integrated public health approaches have been piloted to deliver community-based health services, showing that CBHI can be feasible even in conflict-affected areas [1]. Additionally, in Limu Kossa district, Ethiopia, the implementation status was found to be partially successful, with only 60.43% of health institutions partially meeting the required standards. To improve CBHI implementation, stakeholders need to enhance community engagement, ensure the availability of essential resources, and strengthen health care financing mechanisms

These findings are consistent with existing literature highlighting community engagement and trust-building are key to community-based health insurance [3,4].

However, the success of CBHI in post-conflict settings depends heavily on community engagement and trust. In regions where community awareness and involvement are high, CBHI schemes have seen better enrollment rates and improved health outcomes. This highlights the importance of involving local communities in the planning and implementation of CBHI schemes to ensure their relevance and sustainability [2].

In regions with strong community engagement and robust administrative systems, CBHI schemes have flourished. These regions typically see higher enrollment rates, better financial management, and improved health outcomes. For example, in certain parts of Rwanda, the CBHI model has been highly successful due to strong government support and effective community mobilization efforts, leading to high enrollment rates and significant improvements in health indicators [5].

Resource allocation is another critical factor in the successful implementation of CBHI in post-conflict settings. Many post-conflict regions face significant resource constraints, making it challenging to maintain the financial viability of CBHI schemes. Adequate funding and efficient resource management are essential to ensure that CBHI schemes can provide continuous and reliable healthcare services to their members [2].

Training and capacity building of healthcare workers are also vital components of successful CBHI implementation in post-conflict settings. Inadequate training and limited health worker capacity can hinder the effective delivery of healthcare services. Therefore, investing in the training and development of healthcare workers is crucial to improving the quality and accessibility of healthcare in these regions.

Moreover, the financial sustainability of CBHI schemes remains a significant concern in post-conflict settings. Many schemes struggle with maintaining a balance between premium collection and the cost of providing healthcare services. Ensuring the financial viability of CBHI schemes is essential for their long-term success and ability to provide continuous healthcare coverage to their members.

Limitations

This review was not supported by quantitative study that may depict the numerical problems or reasons of the implementation which limits the ability to draw causal interference of community-based health insurance. Secondly, the heterogeneity of the included studies in terms of context, intervention and outcome measure made it difficult to conduct meta-analysis. There are also limited articles focusing on CBHI in post conflict settings which restricted the scope of the review.

Recommendations

- **Challenges in Implementation:** Post-conflict settings often face weakened health systems and disrupted healthcare services, making the implementation of CBHI schemes challenging. Limited resources, lack of trained personnel, and poor infrastructure are common obstacles.
- **Community Engagement:** Successful CBHI schemes in post-conflict settings rely heavily on community engagement and trust. High levels of community involvement led to better enrollment rates and improved health outcomes.
- **Resource Allocation:** Adequate funding and efficient resource management are crucial for the sustainability of CBHI schemes. Many post-conflict regions struggle with maintaining financial viability due to resource constraints.
- **Training and Capacity Building:** Investing in the training and development of healthcare workers is essential for improving the quality and accessibility of healthcare services in post-conflict settings.

- **Financial Sustainability:** Ensuring the financial sustainability of CBHI schemes is a significant concern. Balancing premium collection with the cost of providing healthcare services is essential for long-term success.
- **Overall Impact:** Despite the challenges, CBHI has the potential to significantly improve access to healthcare in post-conflict settings. Effective community engagement, adequate resource allocation, and strong financial management are key to overcoming obstacles and ensuring the success of CBHI schemes.
- Does this summary capture the essence of what you were looking for Aid coordination and introduction of cross-subsidization (the rich households pay a higher premium) facilitate the implementation of CBHI in conflict-affected communities.
- Risk pooling shares a financial risk of health interventions across a pool of contributors
- Saving and pooling funds within the community level (large population/village) will be effective for CBHI.

Conclusions

In post-conflict settings, financial access deteriorates because of a combination impact of conflict on livelihoods and incomes, the collapse of financial protection of the health system, and an increasing reliance on user fees. There is little data regarding the viability and possible function of CBHI in post-conflict environments. Our review's conclusions, however, highlighted that community-based health insurance can serve as a substitute for taxes, social insurance, and donor funding. Full or partial waivers of these taxes offer financial security, especially to vulnerable groups, for the provision of high-quality and equitable health care. Low out-of-pocket costs or partial or whole waivers to the poor or vulnerable population are also highly encouraged in post-conflict environments, which was a lesson learned from Rwanda and Afghanistan. With a mandate, the government's public health funding system helps shield citizens from the devastating impact of paying for care out of pocket during times of war or conflict. To provide fair physical access, a crucial component of equality in post-war contexts, there has also been a growing need to lower financial barriers in conflict situations. Successful implementation of community-based health insurance in post-conflict situations depends on several factors, including national CBHI policies or methods, community engagement, the participation of community health workers, and the creation of effective and efficient CBHI frameworks. One important function that distributes the financial risk of health interventions among a group of donors is risk pooling. If saving groups are prepared to save and pool money at the local level, community-based health funds will be successful. Additionally, the CBHI program was able to recover a modest fraction (12%) of the health facilities' total operating costs and up to 24% of the health facilities' non-salary operating costs. However, the CBHI scheme has limited ability to recover the operating costs of health expenditure, with only a quarter of health service costs being recovered through this scheme.

While CBHI has the potential to significantly improve access to healthcare in post-conflict settings, its success depends on various factors. Effective community engagement, adequate resource allocation, and strong financial management are key to overcoming the challenges and ensuring the long-term sustainability of CBHI schemes. By addressing these critical areas, stakeholders can enhance the implementation and impact of CBHI, ultimately leading to better health outcomes for communities in post-conflict settings.

Declarations

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Consent for Publication: Not Applicable

Data availability statements: All data are available within the manuscript

Competing Interest: The authors declared no competing interest.

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Authors' Contribution

The study was conceptualized by HK, BA, MA and LL, LW and BG drafted the manuscript. BA, LL and HK critically reviewed the initial draft and MA, BG and LW reviewed and approved the final manuscript.

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