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Enablers and barriers of community health programs for improved equity and universal coverage of primary health care services: A scoping review

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Abstract

Background Community health programs (CHPs) are integral components of primary health care (PHC) systems and support the delivery of primary care and allied health and nursing care services. CHPs are necessary platforms for delivering health services toward universal health coverage (UHC). There are limited prior studies on comprehensive evidence synthesis on how CHPs strengthen community health systems for the demand and supply of PHC services. Therefore, this scoping review synthesized existing evidence on the interlinkage between CHPs and the community health system and beyond for delivering and utilising PHC services toward UHC.

Methods We conducted a scoping review of research articles on CHPs. We identified research articles in six databases (PubMed/Medline, CINAHL, Scopus, Cochrane, Web of Science, and Embase) and Google Scholar using search terms under three concepts: CHPs, PHC, and UHC. Of the 3836 records identified, 1407 duplicates were removed, and 2346 were removed based on titles and abstracts. A total of 83 articles were eligible for the full-text review; of them, 18 articles were removed with reasons, and the other 16 were included through hand search. Themes were identified and explained using Sacks and colleagues' "Beyond the Building Block" framework.

Results A total of 81 studies were included in the final review. Studies described CHPs as foundations for community health system readiness for PHC services, including decentralization in the health sector, community-controlled governance, resource mobilization, ensuring health commodities (e.g., through community pharmacies), and information evidence. These foundational inputs mediate the actions of CHPs by partnership with community organizations and health workforces (e.g., community health workers). CHPs contributed to improved access to health services by providing health services in public health emergencies, affordable and comprehensive care, and modifying social determinants of health.

Conclusions CHPs are platforms for implementing and delivering PHC services close to communities. They help to modify social determinants of health, promote health and wellbeing, reduce care costs, prevent disease progression, and reduce hospitalisation rates. CHPs are integral parts of community health systems and require investment to improve access to PHC services. Gaps and challenges of CHPs include inadequate funding, limited engagement

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of the private sector, poor quality of health services, and limited focus on non-communicable diseases (NCDs). Further implementation research is needed to mitigate the burden of NCDs. Health systems efforts focus on increasing resources (e.g., financial and human) required in CHPs to ensure the quality of PHC services provided through CHPs toward better service access, and reaching the unreached and achieve equity and universality of PHC services.

Keywords Primary health care, Community health programs, Health equity, Universal health coverage

Introduction

Community health programs (CHPs) are responsible for providing health services according to the needs of local communities. CHPs focus on delivering people-centred, readily accessible, and coordinated primary health care (PHC) services. CHPs provide health services to individuals with limited access to facility-based health services by considering the local contexts. CHPs are platforms to deliver preventive, promotive, and curative services to the community, as well as drug distribution, health counselling, and sharing of health information [1–3]. By implementing CHPs, health services can reach a wider population and expand geographical coverage [2, 4]. Community health workers (CHWs) are an example of CHP and are vital in providing health services in rural communities via home visits, or outreach clinics [5]. Nepal's Female Community Health Volunteers (FCHVs) program [6], and Ethiopia's Community Health Extension Program are other successful examples of delivering community health services [2]. Similarly, CHWs provide a major portion of PHC services in Afghanistan and Zambia, where they are essential contributors to improved health status [7]. These CHPs deliver health services, including community-based management of childhood illness (e.g., diarrhoea and pneumonia) and maternal and child health (MCH) services (e.g., dissemination of health messages for healthy pregnancy and childbirth) [2, 6, 8]. These CHPs have expanded the coverage of health services to the community, especially providing health services to those who have been left behind.

Health-related Sustainable Development Goal (SDG3) by 2030 aims to ensure quality health services to achieve universal health coverage (UHC) without financial hardship for individuals, families, and communities [9]. To meet this global target, health policies and strategies require focussing on improved access to PHC services in disadvantaged populations and remote areas through the design and implementation of CHPs. However, many low- and middle-income countries (LMICs) struggle to ensure health services among those needy populations [10]. The global targets of UHC cannot be achieved without financially sustainable CHPs [11, 12].

There has been an intricate linkage between PHC and CHPs towards a pathway of universality and equity. CHPs are platforms to meet the health needs of disadvantaged populations and those in inaccessible areas. Additionally, CHPs are the platforms for implementing the principles of PHC, such as multisectoral actions, empowering individuals, families and communities, and delivery of integrated health services [13]. Integrated health services through CHPs can effectively meet the health needs of disadvantaged groups towards improved health outcomes [14]. For example, CHW programs can improve access to services by providing health services in various contexts for marginalized communities [15]. Additionally, CHPs ensure equitable, integrated health services by identifying local health inequities and engaging local stakeholders [13, 16].

The World Health Organization's (WHO's) health system framework comprises six building blocks that emphasize the intricate linkage of governance, financing, information, health commodities, health workforce, and delivery of health services [17–19]. Nonetheless, such linkages cover internal factors of health systems and ignore the community contribution and social determinants of health (SDoH) of populations. The new framework proposed by Sacks and colleagues (named "Beyond the Building Blocks") reframes the WHO Building Blocks (BBs) framework, adding other components into foundational blocks (governance, financing, information, commodities); and intermediary blocks (health workforce, social partnerships, and community organisations) that lead to determinants of health (health service delivery, household-level health, and SDoH) [20]. A deeper understanding of CHPs is needed to determine how interventions under each BB in this expanded framework contribute toward improved population health. The current body of knowledge on CHPs primarily discusses service delivery; however, several CHPs contribute to strengthening health systems by addressing social and community factors and the foundations of health systems. Unpacking the contribution of CHPs is vital to how the community and health-system Building Blocks contribute to health service delivery. This review aims to synthesise the enablers and barriers of CHPs that influence the equity and universality of PHC services using the expanded framework of health system building block, emphasising implementation strategies for equity and universal coverage. The findings of this study provide new insights/perspectives to health policymakers on different CHPs and the contribution to the goal of health equity and universal coverage.

Methods

We conducted a scoping review of the literature reporting CHPs in the context of PHC/community health systems toward UHC. We used the Arksey and O'Malley framework (2005) to conduct this scoping review, which was later modified by Levac et al. (2010) [21, 22]. A scoping review helps synthesise and analyse existing research on a particular topic to map out the breadth and depth of the available evidence. The process involves six steps: identifying the research question, identifying relevant studies, selecting studies, charting data, collating, summarizing, and reporting results, and consultation (optional) [22, 23]. We used the PRISMA-ScR checklist to support comprehensive reporting of methods and findings (Supplementary Information, Table S1) [24].

Identifying the research question

We identified the research question focusing on the contribution of CHPs in delivering PHC services towards improving health equity and universality of health services. The key focus of this scoping review was to identify the enablers and barriers of CHPs that influence the equity and universality of PHC services. We conceptualized three concepts: CHPs, health services, especially PHC services, and contribution to UHC. These concepts helped to define the search strategy. Our research team assumed that the proposed research question is broad to provide a breadth of issues to be explored in the review. The research question was further clarified by preliminary discussion among authors, who agreed on the topic's scope, breadth, and significance and decided to proceed with the review.

Identifying relevant studies

We searched six electronic databases (PubMed/Medline, CINAHL, Scopus, Cochrane, Web of Science, and Embase) studies that described CHPs. This was followed by complementary searches, including citation searches of included studies to locate eligible articles further in the first ten pages of the Google Scholar. Grey literature was also searched on Google and organisational webpages (e.g., WHO and its regional offices). The keywords used in the search strategy were built on three key concepts (community health programs, primary health care, and universal health coverage), and search terms were tailored to each database (Supplementary Information, Table S2). Boolean operators and truncations varied depending on each database. The search included articles published in English from the inception of each database up to 30 December 2023. No time- or country-related limitations were applied.

Selection of studies

Based on the title and abstract, screening was undertaken initially by the first author (post-doctoral research fellow) and further assessed by the second author (PhD candidate). Any disagreements were resolved by discussion with the third author. We applied some post hoc inclusion and exclusion criteria based on the specifics of the research question and on new familiarity with the subject matter through reading the studies. For example, we included studies that considered the population (health service users, providers, and managers), concept (community health programs), and contexts (PHC/community health systems/services) of the study [25, 26]. We included all relevant studies (e.g., quantitative, qualitative, mixed methods studies, review studies) that dealt with the issue of CHPs in PHC services. We included studies whose findings and interpretation could answer our review question rather than the quality of individual studies included in the review [25–27].

Charting of data

A data-charting form was developed to extract data from each study covering author, year, country, type of study, key concepts, and main findings. A descriptive-analytical method was used to extract contextual or process-oriented information from each study. Data were extracted by the first author and double-checked by the second and last authors.

Collating, summarizing, and reporting of results

An analytic framework or thematic construction was used to provide an overview of the breadth of the literature. A numerical analysis of the extent and nature of the studies was presented. A thematic analysis was conducted, and themes were narratively explained. Data were organized and explained using Sacks and colleagues' "Beyond the Building Blocks" framework or expanded BB framework Fig. 1 [20]. The top level of the expanded BB framework consists of service delivery (health facility and community-based health services), household production of health, and SDoH). The next level of the framework consists of the health workforce (health facility and community-based), community organizations and societal partnerships. To analyse the findings, we considered the first level of components as determinants of health (including health services, household, and individual level SDoH). We next considered intermediary building blocks that included the health workforce (community-based trained health workers), community organizations (including community health volunteers), and social partnerships. The basic or foundational BBs in the framework (include medical products, vaccines, and technology; financing; leadership and

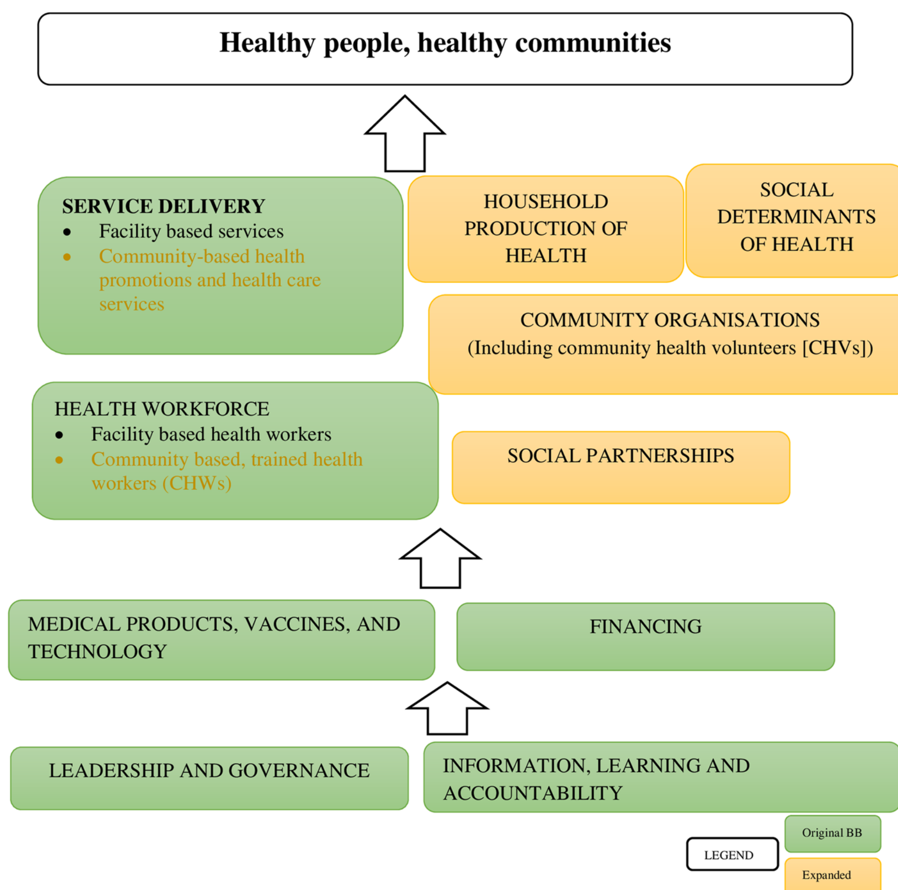

Fig. 1 Analytical framework adapted from Sacks and colleagues [20]

governance; and information learning and accountability) influence the intermediary and health determinants (health workforce, social partnerships, community/household and social determinants, and service delivery). We first summarised the factors under each block of the expanded framework in a table and later explained in narrative paragraphs under each building block.

Results

Figure 2 summarizes the study selection process. Of the 3836 records identified, 1407 duplicates were removed, and 2346 were removed based on titles and abstracts. A total of 83 articles were eligible for the full-text review; of them, 18 articles were removed with revision, and the other 16 were included through hand search. The final review selected 81 studies Fig. 2.

Descriptive analysis of studies

Most of the 81 studies included in the review were from LMICs, South and Southeast Asia, and Africa. Notably, 15 studies were from LMICs (multiple countries), four each from two countries (South Africa and Uganda), three studies from Nigeria, two each from seven countries (Ghana, China, India, Haiti, Ethiopia, Malawi, and Nepal), and one study each from 15 countries (Cuba, Guatemala, Ecuador, Liberia, Rwanda, Zimbabwe, Afghanistan, Indonesia, Pakistan, Sierra Leone, Malaysia, Tanzania, Central Africa, Niger, Bolivia). Eight studies did not mention any geographic region, and eight were global studies. A total of 12 studies were from high-income countries (five from the USA, four from Australia, two from Canada, and one from Croatia).

Summary of enablers and barriers of CHPs

Broadly, there are three categories of CHPs (Table 1). In the first category, some CHPs (yellow) contributed to people's health services and health by addressing household and SDoH. In the second category (Blue), CHPs were related to the health workforce, community organizations, and social partnerships. In the third category, CHPs(green) were related to the foundation of health

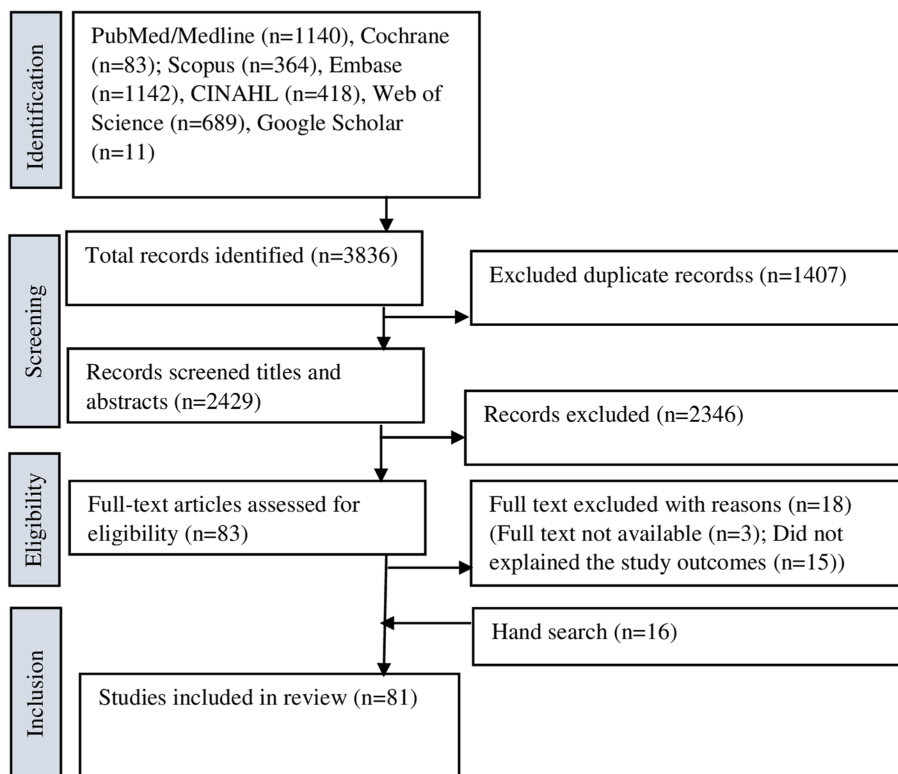

Fig. 2 Flowchart of the selection of studies for the review

systems that contribute to health services such as commodities, financing; leadership and governance; and information, learning and accountability.

Enablers and barriers of CHPs on determinants of health

Household production of health and social determinants of health

Public health and PHC services are the cornerstones of effective health systems. National public policies integrated with social systems, including social protection schemes, provided opportunities for addressing the SDoH [28]. Despite the economic hardship, Cuba's comprehensive public health approach (the neighbourhood/home clinics model) has led to progress in MCH indicators [29]. Modifying SDoH (e.g., changing lifestyle, increasing knowledge of healthy behaviours) at individual and household levels improved population health by increasing care-seeking, self-management, and reducing the risk of chronic diseases [28, 30]. Structural determinants are integral to social systems primarily influenced by power and resources, leading to health inequalities. For example, social exclusions and insufficient allocation of resources in the communities are attributed to increased poverty in families and communities, which influences health outcomes [31]. However, current health systems have a high focus on treating illness rather than addressing underlying structural and intermediary SDoH [32].

Access to emergency health services

CHPs effectively delivered health services in PHEs. For example, in response to the Ebola epidemic, the Sierra Leone government partnered with an international humanitarian agency (Partners in Health) and local non-governmental organisations (NGOs) [33]. Such partnerships contributed to emergency preparedness and the deployment of expatriate workers (clinicians and logisticians) in health facilities [33]. Primary caregivers were reluctant to treat patients, worried about taking children to the clinic during the Ebola epidemic, and sick patients were not getting services. In such contexts, trained and trusted CHWs provided a lifeline, were sources of advice, prevention, and treatment of outbreaks, and had a deeper understanding of communities' social and cultural complexity [34]. Integration of CHWs in the health system ensured disease surveillance and rapid health crisis response [35].

Affordable health care services in communities and peripheral facilities

With minimal training, CHWs can deliver health services to underserved populations through community-based

Table 1 Summary of drivers of community health programs under expanded framework

Building blocks specific drivers (enablers and barriers) of community health programs
Household production of health/SDoH • Enablers: Redistribution of SdoH [28], modifying SDoH(changing lifestyle, healthy behaviours, care-seeking, self-management) [28, 29], neighbourhood/home clinic model [30], social exclusions, poverty, transportation, housing, and rurality [31]. • Barriers: Illness-focused approach with little attention to health determinants [32].
Services delivery: Facility/community-based health care services • Enablers: Access to emergency services, affordable and comprehensive health services through a partnership of international humanitarian agencies and local NGOs [33].CHWs provided a lifeline, outbreak understanding communities[34], disease surveillance and rapid health crisis response [35], managing chronic diseases [36], counselling and education, awareness, and navigation of services [37], cost-effective in reaching disadvantaged groups [38–40], ward-based teams and FCHVs (promoters, dispensers contact trackers, counsellors, and information disseminators) [6, 41, 42].Health services assistants increased maternity care [42]. Effective services in case of unaffordable private care [43]. Maternity care provider- the effective risk of losing their babies [44]. Reducing low birth weight preterm birth decreased maternal deaths and stillbirths [45, 46]. Implemented comprehensive PHC [47], reduced OOPs in curative care [39], integrated community case management, and consumer empowerment [39, 48]. Multidisciplinary work, community participation, cultural respect and accessibility strategies, preventive and promotive work [47]. • Barriers: CHWs lacked the skills and funding support to provide NCDs services [49].
Community/facility-based health workforce • *Enablers*: CHWs in remote locations in the pandemic, community-based interventions [50, 51], linked community facilities, regular contact with households, community collaborations, and referrals, first-level facility care [50, 52, 53], CHW peer-to-peer education, psychosocial support, and community-based integrated care in collaboration with clinic staff [50, 52–54], reach underserved populations and large geographical areas [55, 56], integration of CHWs into care teams to implement diverse public health programs improved performance in the formal system [57, 58], perceived community views, and bridge between the community and facilities to ensure community accountability [59], contextual evidence of connectivity embeddedness, scope work and accountability, ongoing monitoring [60, 61], understanding and implementation of fit-for-purpose [62], performing their duties to cope with the health care and social needs of the specific groups [63], replicable holistic care continuum and patient-centred infrastructure [51, 60, 64]. Access to PHC services in areas within one hour of walking [65], training local volunteers to promote health awareness [66], support completing on-the-job training [54], the retention of village health teams monetary and nonmonetary support (e.g., transportation allowance) [67], transformed care delivery in a complex context [55, 57]. • *Barriers*: insufficient emergency care, mistreatment, indirect costs, lack of medicines, referral delays, high care costs with low-income families, lack of resources, insufficient training, lack of rapport with communities, difficult geography, lack of sustainability, high workload [6, 40, 41, 56, 58, 62, 68], working conditions and described a lack of respect [67].challenging geography, inadequate resources (infrastructure and equipment), difficult transportation (lack of network), cultural challenges (cultural beliefs and faith), and poor communication (accessibility of ambulance) [35, 40, 51, 68], low demand and poor quality, including emergency services [40].
Community organisations • *Enablers*: provided strong community–based health programs for community, local, authority, and community health projects (MATLAB; Deschapellies; Jhamkhet and Gadchiroli) [53], worked with principles (quality, equity, and community vitality and belonging) for comprehensive PHC [69].
Social partnerships • *Enablers*: community engagement- co-developing healthcare solutions to various causal factors and enhancing the design and delivery [29, 70]. Strategies to address SDoH towards health equity [31], private sector engaged in integrated community case management [71], community empowerment for disease prevention and health promotion building bottom-up cost-effective PHC-based systems [72], community communication (with trust, honouring partnerships), contributing to the community (capacity building, information sharing), and speaking the same language (hearing and respect) [73], community networking (based on faith and location) for collaborative opportunities to increase capacity, credibility, and confidence [74], sustainable collaboration and cross-sector alignment and reduced disparities towards improved health outcomes [75], community health planning scheme improved geographical access using a system approach working with communities to manage competing priorities [76], adopting a participatory process (e.g., co-design) for screening symptoms for chronic diseases, and establishing referral pathways [36], community ownership and partnerships and engaging internal and external champions generated public demand, social support, and PHC revitalization [35, 38, 66, 77], strengthening the public health system influenced health benefits towards improvement in MCH services [38, 66], community engagement depends on the organisational factors (culture capacity, community consultation, resources, and local government accountability to communities) [59, 61, 78], acceptable and socially connected primary care, inbuilt with social well-being, trust, and learning health system [61, 78], community acceptance and ownership, societal values and norms, and technical and political arguments to find strategies [38, 77]. • *Barriers*: Lack of funding and human resources, poor communication, limited time, risk aversion and mistrust [74].
Commodities • *Enablers*: Private sector engagement in community case management, standardisation of drug shops (e.g., record keeping, licensing), compliance with regulatory requirements [48], use of technologies, perceived efficacy legitimacy and trust in drug shop stakeholders [47], Smart Use of Medicines, a community pharmacy for improving rational and primary care [78], and community health systems need to revitalize logistics management systems [35, 49, 68].
Financing • *Enablers*: Motorcycle taxi entrepreneurs got loans [79], resource allocation and funding strengthened community health systems [35, 52], shifting of mid-level health workers decreased the cost of care in clinical practices and presented a viable option for cost savings and efficiency improvements [64, 80], health insurance for the probability of seeking care and reduced delays [28], rural-to-urban migrants linked with insurance programs [81], financial incentives and community performance-based financing in preventing NCDs [49, 56], domestic funding mechanisms overcome bottlenecks of community health programs [35], flexible community-funded integrated care outreach clinics approach increased domestic funding [71, 79], ongoing incentives (motivation, recognition, and remuneration) and ward-based care [41]. • *Barriers*: Volunteerism costs, a lack of funds for preventive care for NCDs, high and inequitable OOP, fragmentation of public and private systems and poor insurance coverage [38, 49, 52, 60], corruption, poor engagement of informal workers, and poor advocacy for funding and logistical support for the continuation of care [38, 49].

Table 1 (continued)

Building blocks specific drivers (enablers and barriers) of community health programs
Leadership and governance • *Enablers*: Decentralization-governments coordinating between administrative and political functionaries, community health committees, transforming power relations, increasing subnational responsibilities, and citizen participation [82–84], operational pathways of decentralization voting with feet, close to the ground, and watching the watchers [83]. Community-controlled governance: important for local health governance in financial planning and management and developing workforces for comprehensive PHC services [78, 85], community health planning scheme in leadership to ensure adequate resources [76]. Community Health Committees govern health programs through meetings, contacting the community, lobbying and arguing with governments for support, and taking control of health care [86]. • *Barriers*: Little government ownership of CHPs (e.g., low funding, poor coordination, and communication), strong donor influence, contradicting policies, a top-down reform process, and fragmentation of PHC [49, 71, 87]. Failure to address pre-existing negative contextual norms and practices, varied decision-maker values, limited priority-setting capacity, lack of community accountability, and focus on curative care [82]. Lack of convergence between governments' political and programmatic arms, a clash of values between rule-based administrative and a network-based political culture, and inadequate local capacity-building [84].
Information, learning and accountability • *Enablers*: Analysing real-time data and utilization of informed changes and engaged providers [61], information systems for ensuring supply chains (e.g., quantification, procurement and distribution of commodities) [38], evidenced-based health ecosystems in partnership with community [29], primary care with a state-of-the-art information system connecting specialist services, a single enterprise healthcare network [88].Health system and evidence-informed guidelines in policy decision-making [89]. • *Barriers*: Recruitment and mobilisation, including the role of digital technologies), management, and institutionalization [71, 90].

programs. For example, in Liberia, the Ebola epidemic overburdened facility-based services, and then CHWs renewed confidence in providing health services and life-saving treatment against childhood illnesses [34]. Furthermore, CHWs managed chronic diseases (e.g., asthma) within existing PHC programs [36]. Moreover, CHWs offered a range of care and services (counselling and education, awareness, navigation of services, and screening) [37].

The CHW model of care was cost-effective in community case management and made it possible to reach disadvantaged groups by improving health literacy [38–40]. Ward-based teams in South Africa and FCHVs in Nepal conducted home visits for vulnerable community groups and were health care providers (as promoters, dispensers, contact trackers, counsellors, and information disseminators) in many communities [6, 41, 42]. In India, accredited social health activists provide various services (counselling, preventive care, maternity advice) in their communities [40]. In Malawi, community health assistants provide maternity care to poor women [42]. The CHWs effectively delivered health services in the context of limited facility-based care and unaffordable private health services [43]. However, the challenges of CHWs included a lack of skills and funding support to provide health services related to NCDs [44].

Community-controlled health services

Several CHPs effectively provided comprehensive health services (promotive, preventive, and treatment) close to the community. For example, in Health Start Program participation, CHWs contributed to reducing low birth weight preterm birth among teen mothers among Indigenous and Latina women [45]. Women with high risk who attended waiting homes decreased maternal deaths and stillbirths [46]. Additionally, the Aboriginal Community Controlled Health Services model implemented comprehensive PHC to improve the health and well-being of Aboriginal populations in Australia [47]. This community-controlled approach effectively addressed SDoH and articulated health as a human right through multidisciplinary work with community participation, cultural respect and accessibility strategies, preventive and promotive work, advocacy, and intersectoral collaboration [47]. Additionally, community maternity care providers (such as community midwives) led the model of care, resulted in lowered episiotomies/instrumental births, and increased spontaneous vaginal delivery [48]. Women who received services from midwives were more cared for in labour and less experienced preterm labour and lowered stillbirths and neonatal deaths [48].

Private health services

The private sector contracted out reduced outcomes of pockets in curative care [39].The incentivized private providers' medical practice regulations contributed to the delivery of health services through integrated community case management programs in Uganda [49]. The private sector's role in providing health care and consumer empowerment is vital when limited government efforts affect poor access to health services among marginalized and poor communities [39, 49]. Community-based CHPs could be the best alternatives for unaffordable and poor health service delivery from public facilities [39, 49].

Enablers and barriers of CHPs on the intermediary of health systems and services

Community health workers program

Several CHPs contributed to health workforce and influenced health services and public health interventions.

The CHW model of care is a generalist care model that promotes health equity through the foundation of social networks in the community. The CHWs effectively implemented community-based interventions for infectious and non-communicable diseases (NCDs) to improve access to health services in remote locations during the pandemic [50, 51]. Additionally, the recruitment of CHWs usually is community-based recruitment, deployment, and training linked with local community facilities in collaboration with communities that support maintaining regular contact with households and refer patients to first-level facilities [50, 52, 53]. Peer-to-peer education, psychosocial support, and community-based integrated care were possible through the CHW program in collaboration with clinic staff [50, 52–54]. In China, financial aid, technical support, and integration for the CHW program provided valuable lessons for CHPs [55, 56]. Health systems' organisation and performance were improved after CHWs were integrated into care teams (e.g., recruitment, training, and career pathways) and effectively implemented diverse public health programs [55, 56]. Integrating CHW programs into the national health system can benefit large populations, including affordability, wider geographical coverage, and sustainable financial, administrative and regulatory support [57].

Furthermore, CHWs were considered service extenders, cultural brokers, social change platforms, and patient care, focusing on personal interest initiatives by bridging the community and facilities to ensure community accountability [58]. These cadres can understand the local political context by interacting with community-based organizations, community leaders, and support groups, and perceive community views [58]. CHWs' engagement in the health system is essential to adapt with contextual evidence of connectivity embeddedness and cadre differentiation (scope work and accountability, ongoing monitoring) [59, 60]. For example, in South Africa, CHW programs ensured understanding and implementation of fit-for-purpose decision-making in a broader community context [61].

The context influences health staffing through multiple pathways: inserting cultural sensitivity, bridging the communities and health facilities, tailoring staff practices to needy populations, and training (staff reskilling, familiarizing with context, culture, and community needs); considering the needs of targeted people and contextual strategies; and targeting stakeholders and performing duties to cope the health and social needs of populations [62]. In Afghanistan and Zambia, successful nationwide scaling up of the CHW program provided a major portion of PHC services for their wide-ranging benefits and improved health status [7]. More robust community-based CHW programs can foster community empowerment and implement evidence-based interventions to achieve UHC by 2030 [63].

In primary care, CHWs effectively provide a holistic care continuum and co-supervisory and patient-centred care in resource-limited contexts [51, 59, 64]. CHWs can reach underserved populations of large geographical areas [65, 66]. For example, in Niger, CHWs provided access to PHC services in the regions that were more than one hour of walk from a facility [67]. In Canada, trained local volunteers promoted health awareness on the uptake of health services from community health centers [68].

Supervision of CHWs by their supervisors supported completing on-the-job training, debriefing, reviewing CHWs' daily logs and report compilation [54]. Clinic-based teams with senior nurses improved the skills of CHWs to fulfil duties that provided integrated healthcare [54]. In Thailand, the retention of village health teams in partnerships with community stakeholders was high due to incentive support (e.g., transportation allowance rubber boots) [69]. The strengthening of the CHW model of care (training, collaborative supervision and feedback, joint ownership, and evidence-informed monitoring systems) transformed care delivery in LMICs such as India [55, 65].

Common challenges of the CHW program included insufficient emergency care, mistreatment, indirect costs, lack of medicines, referral delays, inadequate training, lack of rapport with communities, challenging geography, lack of sustainability, high workload, and management challenges (poor remuneration, lack of sufficient supervision and mentorship), difficult working conditions, lack of respect, and fragmented roles [6, 40, 41, 56, 61, 66, 69, 70]. In addition, frontline workers faced financial burdens, inadequate resources (infrastructure and equipment), difficult transportation (lack of network), deeply rooted cultural beliefs and faith, and poor communication in countries such as Ghana, Ethiopia, and India [35, 40, 51, 70]. In some cases, health service demand was low and suboptimal quality, especially emergency services [40], mostly attributed to issues in recruitment and mobilization (selection, training, motivation, retention), management (supervision, supply chain), and institutionalization (governance, sustainability) [71, 72].

Community organisations

Community organizations have the potential to engage with communities at scale. Some CHPs, such as in Bangladesh (Matlab), Haiti (Deschapellies), and India (Jhamkhet and Gadchiroli), demonstrated reductions in maternal and neonatal deaths by implementing community-based comprehensive MCH and family planning services [53]. In Canada, a Model of Health Well-being

(MHWB) underpinned by principles of quality, equity, and community vitality and belonging provided a blueprint for comprehensive PHC services [73]. The MHWB, as a community-governed PHC Organization, endorsed, adopted, operationalized, and recognized optimum care delivery [73]. The experience of non-governmental and civil society organizations provided various public health services, including comprehensive routine immunization, surveillance, social mobilization, community engagement, and interpersonal communication and behaviour change communication skills [74]. The Core Group Polio Project, by implementing approaches such as community mobilization, mass media campaigns through radio and printed booklets, local skits and dramas, home visits, training workshops and opinion leaders, and imparting knowledge and skills were effective in the eradication of polio and controlling of vaccine-preventable diseases (measles and neonatal tetanus) [75] and increased coverage in the hardest-to-reach areas (e.g., in Ethiopia) [76].

Community engagement and partnerships were instrumental in learning, developing, developing, managing, and effectively addressing noncompliance in partnerships [77, 78]. Care groups represent an important and promising, low-cost approach to increasing the coverage of key child survival interventions in resource-constrained settings [79]. Community-based projects were effective in the largest implementation areas, achieving marked improvements in MCH indicators [77, 80].

Social partnerships

Social partnership with communities is important in addressing SDoH and contributing to service delivery. CHPs related to community engagement and participation can identify local context-specific problems and community adaptive solutions. Social partnership/community engagement is related to building common religious faith and friendships, enhancing sensitization and awareness, working directly with affected communities, and co-developing healthcare solutions [30, 81]. A partnership with local community leaders and support groups identified strategies for addressing SDoH to promote health equity [31]. In Uganda, the engagement of the private sector was vital in implementing integrated community case management [71]. Multilevel community engagement strategies include community empowerment for disease prevention, health promotion, and building bottom-up, cost-effective PHC services [82]. Innovative strategies used in community partnership were house-to-house mobilization, community dialogues, compound meetings, community health camps, and tracking of non-compliant families, missed children, and dropouts [74].

Communications with communities can consider the needs, language, context, and priorities of people through building partnerships (earned and sustained trust, valuing and honouring partnerships), contributing to the community (capacity building, information sharing, or logistical benefits), and speaking languages (hear and respect) [83]. Community networking (based on religious faith, location, and regional-based connections) enhanced collaborative opportunities to increase capacity, credibility, and confidence [84]. Involvement of community members in power-sharing between communities and researchers/ supported contextual adaption for sustainable collaboration and cross-sector alignment and reduced disparities towards improved health outcomes [85]. For instance, Ghana's community health planning scheme (CHPS) improved geographical access by using a system approach to work with communities to manage competing priorities [86]. In Nepal, adopting a participatory process (e.g., co-design) was potentially valuable for screening symptoms for chronic diseases, managing symptomatic patients, and establishing referral pathways [36].

Local CHPs prioritised attention to monitoring the health status, including the quality and coverage of basic services among marginalized groups with stronger community involvement [87, 88]. Community-based PHC projects provided services in readily accessible areas and strongly contributed to reducing child mortality in impoverished settings [89, 90]. Support from local and international nongovernmental organizations (NGOs) also formed a bridge between communities for polio eradication in India [91].

Strengthening community ownership and partnerships (through engaging internal and external champions) generated public demand, social support, and revitalization of PHC services [35, 38, 68, 92]. Furthermore, community support for marginalized populations and strengthening the public health system influenced health benefits towards improvement in MCH services in many LMICs (e.g., Pakistan) [38, 68]. The success of community engagement depends on organizational factors (e.g., culture capacity, community consultation, resources, and local government accountability to communities) [58, 60, 93]. Additionally, acceptable and socially connected primary care was built with social well-being, trust, and learning health systems [60, 93]. Addressing social value-based barriers can be possible through collaboration, priority-setting, decision-making among partners at the planning stage, community acceptance and ownership, societal values and norms, and technical and political arguments to find strategies in MCH programs [38, 92]. However, lack of funding and human resources, poor communication, limited time, risk aversion and mistrust,

negative attitudes toward campaigns and demotivation of community mobilization challenged community engagement [75, 84].

Enablers and barriers of CHPs on the foundation of health systems

Medical technologies and commodities

There were some programs to improve the logistics of CHPs. In Uganda, private sector engagement in community case management improved the standardization of drug shops (e.g., record keeping, licensing), supportive supervision, and compliance with regulatory requirements [49]. Furthermore, using technologies and perceived efficacy improved legitimacy and trust in drug shops [49]. In Indonesia, the Smart Use of Medicines program integrated community pharmacies into PHC service delivery, recognising pharmacists as change agents for improving the rational use of medicine and highlighting the pharmacist's contribution to pharmacy-related primary care (e.g., drug monitoring and home care) [94]. Medical commodities, especially essential medicines for preventing NCDs, require revitalization of the logistics management systems to improve health services [35, 44, 70].

Community financing

Some CHPs related to financing improved access to health services. Uganda's community-funded integrated care through outreach clinics was an alternative approach to healthcare financing where motorcycle taxi entrepreneurs got loans (covering overhead costs for outreach clinics) that supported overcoming transportation barriers to reach more patients in remote areas [95].

Innovative health financing and resource allocation strengthened community health systems to address the pressing health needs of communities [35, 52]. Task shifting of mid-level health workers decreased the cost of care in clinical practices, presenting a viable option for saving care costs and improving efficiency [64, 96]. In Tanzania, community health insurance programs improved the probability of seeking care and reduced delays [28]. China's rural-to-urban migrants linked with insurance programs reported similar primary care experiences to community health centres in urban areas [97]. Financial incentives and community performance-based financing prevented several NCDs [44, 66]. Domestic funding mechanisms for PHC services could overcome bottlenecks of community health programs (e.g., in collaboration with communities and local governments) [35]. In Uganda, increased domestic funding and flexible community-funded integrated care through outreach clinics approach was effective in addressing the needs of local populations [71, 95]. In South Africa, incentives (motivation, recognition, and remuneration) to CHWs were the success factors of ward-based PHC outreach teams [41].

There were issues with resource mobilization for CHPs, including conceptualization and implementation of CHPs. A marked increase in sustainable funding for CHW programs is needed through increased domestic political support for prioritizing CHW programs as economies grow and additional health-related funding becomes available [12]. Resource mobilization challenges included CHW volunteerism, costs, a lack of funds for preventive services for NCDs, high OOP, fragmentation of public and private systems and poor coverage of health insurance schemes [38, 44, 52, 59]. Additionally, corruption, poor engagement of informal workers, and poor advocacy for funding and logistical support for the continuation further challenged the integration of CHPs in health systems [38, 44].

Leadership and governance

Decentralization

Decentralization in the health sector was fundamental in health services equity, efficiency, resilience, institutional, socioeconomic, and geographical contexts. Influencing factors included governments coordinating between administrative and political functionaries, community health committees, transforming power relations, increasing subnational responsibilities, and citizen participation [98–100]. The operational pathways of decentralization were voting with feet (reflecting either exacerbates or assuages the existing patterns of inequities in the distribution of people, resources, and outcomes), close to the ground (reflecting how bringing governance closer to the people), and watching the watchers (reflecting mutual accountability and support relations between multiple centres of governance) [99].

However, poor decentralization in CHPs influenced health system governance due to unclear guidance, failure to address pre-existing negative contextual norms and practices, varied decision-maker values, limited priority-setting capacity, lack of community accountability, and focus on curative health services [98]. In India, challenges of decentralization were a lack of convergence between governments' political and programmatic arms, a clash of values between rule-based administrative and a network-based political culture, and inadequate local capacity-building [100]. Such implementation was influenced by little government ownership of CHPs (e.g., low funding, poor coordination, and communication), strong donor influence, contradicting policies, a top-down reform process, and fragmentation of PHC services [44, 71, 101].

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Community-controlled governance

In Australia, the Aboriginal Community Controlled Health Service (ACCHS) model strengthened local health system governance by providing employment and training, designing and evaluating programs/policies, engaging with stakeholders, improving financial planning and management, and developing workforces for comprehensive PHC services [93, 102].

Ghana's CHPS contributed to leadership to ensure adequate resources (financial and material) [86]. In Nigeria, Community Health Committees played pivotal roles in governing health programs through meetings, reaching out to the community, lobbying and arguing for government support, taking control of health care, facilitating opportunities, promoting collective action for self-support, demanding accountability, and operating communities structure (social, cultural, and religious) [103].

Information learning and accountability

Efficient healthcare-related data and evidence support decision-making, healthcare resource spending, and health system strengthening. Analysing real-time data and utilization informed changes and engaged providers for effective service delivery in Canada [60]. Community-level data from health management information systems and feedback mechanisms strengthened supply chains (e.g., quantification, procurement and distribution of commodities) in integrated community case management programs [38]. Research stakeholders can maintain evidence-based health ecosystems in partnership with community health services for vulnerable populations [30]. In Croatia, PHC Information System has provided primary care with a state-of-the-art information system connecting specialist services with the Institutes of Health Insurance and Public Health [104]. The system served as the central integration platform for connecting all types of healthcare (e.g., hospitals, pharmacies, laboratories) into a single enterprise healthcare network to ensure health services for disadvantaged populations [104]. In South Africa, evidence producers and synthesizers in the health system and evidence-informed guidelines facilitated decision-making and policymaking in drug-resistant tuberculosis programs [105]. Gaps were a lack of information and evidence of CHPs, including community case management programs, inadequate monitoring, evaluation, and operational research, and limited use of digital technologies and institutionalization (performance, cost-effectiveness) [71, 72].

Discussion

This study synthesized interventions, activities, and factors of CHPs for improved universal access to and utilization of health services in addressing inequities. Firstly, CHPs are crucial in delivering health services to hard-to-reach areas and communities. Additionally, Additionally, CHPs contribute to the health system by addressing social and household determinants of health. Second, CHPs are related to intermediary building blocks such as the health workforce (e.g., CHWs), community organizations, and social partnerships supporting service delivery and SDoH modification. There were activities and actions of CHPs under foundational blocks (e.g., financing, medicine and commodities, leadership and governance, information, learning, and accountability) of the framework that influences the intermediate and delivery of health services. Intricately linked actions of activities of these building blocks could facilitate the service delivery that realizes achieving health equity.

Firstly, through CHPs, several health interventions are implemented to produce and ensure health services and address the household and SDoH. Examples include a learning case for LMICs that could address inequities among disadvantaged populations (e.g., migrants and indigenous populations) by preventing several disease conditions, designing, and integrating into health systems, and promoting expected service delivery packages. Unlike the physician-led clinic-based model of care, through CHPs, a wide range of services in the life course continuum of care delivery is possible to people living in hard-to-reach areas and marginalized communities [59]. Moreover, CHPs can reduce the health system and economic burden by preventing hospitalization rates. Additionally, CHPs could provide preventive and promotive health care in the early stages of illness. Health systems, especially in the context of LMICs, can use opportunities to strengthen community health systems [35]. Thus, the design and implementation of CHPs could be a strategy for strengthening the public health system to ensure service provision at the point of care. CHPs not only address

health service delivery, but also cover issues and underlying factors of health, including action on nutrition and problems in the family, such as gender-based violence [106]. The CHPs also include multisectoral approaches to PHC interventions and positively influence population health [107, 108].

Secondly, several CHPs related to intermediary blocks, such as the health workforce, social partnerships, and community organizations, contribute to the underlying factors of health services and population health. CHWs serve underserved communities in remote areas during health crises and epidemics. The CHWs' role is vital for primary prevention, screening, and care provision in resource-limited settings [69]. Health workforce recruitment, selection and training, performance, and quality control supervisors determine how services are delivered and how stakeholders manage their responsibilities [54]. Greater reliance on community volunteers or minimally paid staff merit implementation and evaluation [87, 88]. CHWs provide a range of health services across time (life courses) and places (community to health facility), a continuum of care, and comprehensive services (health promotion to treatment care) [109]. Social partnerships and community health organizations are intermediaries of CHPs as a means of health service delivery. For instance, Australia's community-controlled health organization model is a successful model for a wide range of care across the continuum of care [102].

The foundation of health services and people's health depends on the contexts and inputs in the health systems. Community pharmacies can be effective in ensuring essential commodities for PHC services. Sufficient resupply, product allocation and provision of health commodities require reasonable projections of demand and delivery of health services and strategies to address deficiencies in supply [17]. Additionally, data from local health information systems are needed to evaluate CHPs [17].

Creating an enabling environment is essential for health systems to function effectively. Decentralizing authority and resources, ensuring funding, and strengthening leadership and governance are the foundation of CHPs. Decentralization in the health sector can strengthen intersectoral coordination and integrative governance, thereby enhancing the performance of PHC systems [110]. Sustainable resources and nonfinancial inputs for CHPs are needed for the optimal efficiency of health system [111]. For example, the success of integrated community case management has created an ecosystem of governing structures (management partners, local policies) and the advocacy of influential political champions [17]. Health decentralization provides the opportunity to address local health problems using community engagement with stakeholders and local decision-makers [77, 79, 112].

CHPs contribute to equity and universal coverage by identifying local health inequities and engaging local stakeholders [16]. CHPs promote greater equity of services by recruiting workers locally, providing free services near households or in the home, linking to referral facilities and mobilizing the community [113]. Additionally, CHPs are a means for implementing community-based interventions; bridging communities and health systems through CHWs; providing outreach services; and working with traditional healers and non-profit private providers such as NGOs and faith-based organizations [15, 114]. Well-developed PHC systems and CHPs with outreach services integrated with hospital referral care and community development programs are low-cost approaches to increasing the coverage of key child survival interventions in resource-constrained settings [78, 89, 90]. Community-based projects have been effective in social involvement in eliminating or controlling diseases and ending readily preventable child and maternal deaths [78, 80, 91].

The CHPs are integrated into health national health systems in LMICs compared to the context of HICs. Community health programs are the backbone of the national health programs in many LMICs; for instance, the FCHVs program in Nepal [1, 6] and the HEW program in Ethiopia [2] are implemented nationwide, contributing to the delivery of health services to a wider geographical areas and people who are already left behind. In LMIC settings, preventive and screening services and treatment services are provided through CHPs, for example, community-based treatment of childhood illnesses in Nepal [115], Uganda [116], and many other LMICs [117, 118]. In HICs, CHPs enhance public health by focusing on health promotion, addressing social determinants of health, and playing a role in creating healthier, more informed communities, are implemented in the selected geographical settings or groups [16, 47, 60, 118]. For the Aboriginal and Torres Strait Islander population in Australia, Aboriginal Community-Controlled Health Organisations have an essential role in addressing immediate healthcare needs but also invest in driving change in the more entrenched structural determinants of health and have been contributing to overcoming cultural barriers and improving access to health services [47, 119] .

Implications for policy practices and research

CHPs are programs for the communities, by the communities and from the communities. Thus, implementing CHPs makes it possible to reach the already left behind communities and achieve universal coverage of quality health services. Firstly, the outputs of the CHPs are improved health service delivery, household health, and social determinants of people's health. Reaching wider populations, especially those already left behind,

is possible by implementing CHPs. CHPs are effective in reaching to disadvantaged populations (for instance, through CHWs) [120]. Secondly, CHPs are related to the intermediary building blocks of the expanded framework, such as health workforce (CHW programs), social organisations, partnerships, and enhanced health services for individuals, families, and communities. Finally, understanding the understanding of CHPs needs to go beyond health service delivery as system inputs influencing health system readiness and functioning toward achieving objectives and goals. Such system readiness issues are the foundation of CHPs and include health financing, health commodities and technology, governance and leadership, information learning, and accountability.

Strengths and limitations

We conducted a scoping review, synthesized data, and interpreted findings using the Sacks expanded framework. This framework captures all components of CHPs, starting from the foundations and intermediary blocks and leading to final health outcomes of service delivery and improved health of individuals, households and communities. Our findings are based on evidence from six databases and Google Scholar. Limitations include no quality appraisal of studies included in the review, inclusion of studies published only in English, and synthesizing the findings in the available literature. Expert opinions could have contributed to our findings. Future studies based on interviews with those who have extensively worked with CHPs would be helpful. Finally, this study included studies from high and LMICs. We synthesised the available evidence and explained using the framework in line with the research question; however, such analysis can miss the details of the country-specific findings and issues of a specific subsection of populations. Further studies can focus on the CHPs implemented in specific geographic regions (e.g., Sub-Saharan Africa or South Asia) or subsections of the population in LMICs or HICs.

Conclusion

Community health programs deliver health services to serve hard-to-reach communities (people left behind and marginalized groups) and remote areas, offer the opportunity to implement PHC services and provide services close to the communities. Interventions and health services through CHPs can potentially reduce care costs and improve the efficiency of health systems towards equitable universality of PHC services. Gaps and challenges include inadequate funding, limited engagement of the private sector, poor quality of health services, and limited focus on NCDs. Further implementation research can be designed and implemented focusing on preventing and screening the NCD risk factors to mitigate the burden of NCD-related morbidities and mortalities. Health systems efforts focus on increasing resources (e.g., financial, and human) required in CHPs to ensure the quality of PHC services provided through CHPs toward better service access, reaching the unreached and achieve equity and universality of PHC services.

Supplementary Information

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Supplementary Material 1.

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Authors' contributions

RBK collected data, analyzed it, and prepared the first draft of the manuscript. RBK and YA conceived the study and interpreted the findings. YA supervised the study. RBK, DE, AE, EW, FN, AZ, and YA provided critical comments in revising the manuscript. All authors agreed and approved the final version of the manuscript.

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Data availability

All data generated or analyzed during this study are included in this published article [and its supplementary information files].

Declarations

Ethics approval and consent to participate

This paper synthesizes evidence from other published studies; thus, ethics approval was not required.

Consent for publication

No datasets were generated or analyzed for this study, so consent for publication does not apply.

Competing interests

The authors declare no competing interests.

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References

1. Panday S, Bissell P, van Teijlingen E, Simkhada P. The contribution of female community health volunteers (FCHVs) to maternity care in Nepal: a qualitative study. BMC Health Serv Res. 2017;17(1):623.
2. Assefa Y, Gelaw YA, Hill PS, Taye BW, Van Damme W. Community health extension program of Ethiopia, 2003–2018: successes and challenges toward universal coverage for primary healthcare services. Global Health. 2019;15(1):24.

3. Woldie M, Feyissa GT, Admasu B, Hassen K, Mitchell K, Mayhew S, McKee M, Balabanova D. Community health volunteers could help improve access to and use of essential health services by communities in LMICs: an umbrella review. Health Policy Plan. 2018;33(10):1128–43.
4. Exemplars in global health: primary health care. 2022. Available online: https://www.exemplars.health/topics/primary%20health%20care. Accessed 10 Oct 2023.
5. Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. Milbank Q. 2005;83(3):457–502.
6. Khatri RB, Mishra SR, Khanal V. Female community health volunteers in community-based health programs of Nepal: future perspective. Front Public Health. 2017;5: 181.
7. Perry H. Health for the people: national community health worker programs from Afghanistan to Zimbabwe. In: Maternal and child survival program. 2020.
8. Thomas LS, Buch E, Pillay Y. An analysis of the services provided by community health workers within an urban district in South Africa: a key contribution towards universal access to care. Hum Resour Health. 2021;19(1):22.
9. World Health Organization. Primary health care on the road to universal health coverage: 2019 global monitoring report. In. Geneva: World Health Organization; 2021.
10. Mills A. Health care systems in low- and middle-income countries. N Engl J Med. 2014;370(6):552–7.
11. Kuate Defo B. Demographic, epidemiological, and health transitions: are they relevant to population health patterns in Africa? Glob Health Action. 2014;7:22443.
12. Perry HB, Chowdhury M, Were M, LeBan K, Crigler L, Lewin S, Musoke D, Kok M, Scott K, Ballard M, et al. Community health workers at the dawn of a new era: 11. CHWs leading the way to health for all. Health Res Policy Syst. 2021;19(Suppl 3):111.
13. Sacks E, Schleiff M, Were M, Chowdhury AM, Perry HB. Communities, universal health coverage and primary health care. Bull World Health Organ. 2020;98(11):773–80.
14. Braveman P. Health disparities and health equity: concepts and measurement. Annu Rev Public Health. 2006;27:167–94.
15. Javanparast S, Windle A, Freeman T, Baum F. Community health worker programs to improve healthcare access and equity: are they only relevant to low- and middle-income countries? Int J Health Policy Manag. 2018;7(10):943–54.
16. Windle A, Javanparast S, Freeman T, Baum F. Evaluating local primary health care actions to address health inequities: analysis of Australia's Primary Health networks. Int J Equity Health. 2023;22(1):243.
17. Karim A, de Savigny D, Awor P, Cobos Munoz D, Mausezahl D, Kitoto Tshefu A, Ngaima JS, Enebeli U, Isiguzo C, Nsona H, et al. The building blocks of community health systems: a systems framework for the design, implementation and evaluation of iCCM programs and community-based interventions. BMJ Glob Health. 2022;7(6):e008493.
18. Agarwal S, Sripad P, Johnson C, Kirk K, Bellows B, Ana J, Blaser V, Kumar MB, Buchholz K, Casseus A. A conceptual framework for measuring community health workforce performance within primary health care systems. Hum Resour Health. 2019;17(1):1–20.
19. Manyazewal T. Using the World Health Organization health system building blocks through survey of healthcare professionals to determine the performance of public healthcare facilities. Arch Public Health. 2017;75(1):50.
20. Sacks E, Morrow M, Story WT, Shelley KD, Shanklin D, Rahimtoola M, Rosales A, Ibe O, Sarriot E. Beyond the building blocks: integrating community roles into health systems frameworks to achieve health for all. BMJ Global Health. 2019;3(Suppl 3): e001384.
21. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. Int J Soc Res Methodol. 2005;8(1):19–32.
22. Levac D, Colquhoun H, O'Brien KK. Scoping studies: advancing the methodology. Implement Sci. 2010;5(1):69.
23. Peters MDJ, Marnie C, Colquhoun H, Garritty CM, Hempel S, Horsley T, Langlois EV, Lillie E, O'Brien KK, Tuncalp Ö, et al. Scoping reviews: reinforcing and advancing the methodology and application. Syst Rev. 2021;10(1):263.
24. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, Moher D, Peters MDJ, Horsley T, Weeks L, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. Ann Intern Med. 2018;169(7):467–73.
25. Munn Z, Peters MDJ, Stern C, Tufanaru C, McArthur A, Aromataris E. Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. BMC Med Res Methodol. 2018;18(1):143.
26. Tessema GA, Kinfu Y, Dachew BA, Tesema AG, Assefa Y, Alene KA, Aregay AF, Ayalew MB, Bezabhe WM, Bali AG. The COVID-19 pandemic and healthcare systems in Africa: a scoping review of preparedness, impact and response. BMJ Global Health. 2021;6(12): e007179.
27. Pawson R, Greenhalgh T, Harvey G, Walshe K. Realist review-a new method of systematic review designed for complex policy interventions. J Health Serv Res Policy. 2005;10(1suppl):21–34.
28. Chomi EN, Mujinja PG, Enemark U, Hansen K, Kiwara AD. Health care seeking behaviour and utilisation in a multiple health insurance system: does insurance affiliation matter? Int J Equity Health. 2014;13:25.
29. Swanson KA, Swanson JM, Gill AE, Walter C. Primary care in Cuba: a public health approach. Health Care Women Int. 1995;16(4):299–308.
30. DeHaven MJ, Gimpel NA, Kitzman H. Working with communities: meeting the health needs of those living in vulnerable communities when Primary Health Care and Universal Health Care are not available. J Eval Clin Pract. 2021;27(5):1056–65.
31. Jimenez DJ, Sabo S, Remiker M, Smith M, Samarron Longorio AE, Williamson HJ, Chief C, Teufel-Shone NI. A multisectoral approach to advance health equity in rural northern Arizona: county-level leaders' perspectives on health equity. BMC Public Health. 2022;22(1):960.
32. White F. Primary health care and public health: foundations of universal health systems. Med Princ Pract. 2015;24(2):103–16.
33. Cancedda C, Davis SM, Dierberg KL, Lascher J, Kelly JD, Barrie MB, Koroma AP, George P, Kamara AA, Marsh R, et al. Strengthening health systems while responding to a health crisis: lessons learned by a nongovernmental Organization during the Ebola virus disease epidemic in Sierra Leone. J Infect Dis. 2016;214(suppl 3):S153–63.
34. Siekmans K, Sohani S, Boima T, Koffa F, Basil L, Laaziz S. Community-based health care is an essential component of a resilient health system: evidence from Ebola outbreak in Liberia. BMC Public Health. 2017;17(1):84.
35. Simen-Kapeu A, Reserva ME, Ekpini RE. Galvanizing action on Primary Health Care: analyzing bottlenecks and strategies to strengthen community health systems in West and Central Africa. Glob Health Sci Pract. 2021;9(Suppl 1):S47–64.
36. Yadav UN, Lloyd J, Baral KP, Bhatta N, Mehta S, Harris MF. Using a co-design process to develop an integrated model of care for delivering self-management intervention to multi-morbid COPD people in rural Nepal. Health Res Policy Syst. 2021;19(1):17.
37. Hand T, Rosseau NA, Stiles CE, Sheih T, Ghandakly E, Oluwasanu M, Olopade OI. The global role, impact, and limitations of Community Health Workers (CHWs) in breast cancer screening: a scoping review and recommendations to promote health equity for all. Glob Health Action. 2021;14(1):1883336.
38. Strachan C, Wharton-Smith A, Sinyangwe C, Mubiru D, Ssekitooleko J, Meier J, Gbanya M, Tibenderana JK, Counihan H. Integrated community case management of malaria, pneumonia and diarrhoea across three African countries: a qualitative study exploring lessons learnt and implications for further scale up. J Glob Health. 2014;4(2):020404.
39. Odendaal WA, Ward K, Uneke J, Uro-Chukwu H, Chitama D, Balakrishna Y, Kredo T. Contracting out to improve the use of clinical health services and health outcomes in low- and middle-income countries. Cochrane Database Syst Rev. 2018;4(4):CD008133.
40. Blanchard AK, Ansari S, Rajput R, Colbourn T, Houweling TAJ, Isac S, Anthony J, Prost A. Understanding the roles of community health workers in improving perinatal health equity in rural Uttar Pradesh, India: a qualitative study. Int J Equity Health. 2021;20(1):63.
41. Mhlongo EM, Lutge E, Adepeju L. The roles, responsibilities and perceptions of community health workers and ward-based primary health care outreach teams: a scoping review. Glob Health Action. 2020;13(1):1806526.
42. Callaghan-Koru JA, Nonyane BA, Guenther T, Sitrin D, Ligowe R, Chimbalanga E, Zimba E, Kachale F, Shah R, Baqui AH. Contribution of community-based newborn health promotion to reducing inequities in healthy newborn care practices and knowledge: evidence of improvement from a three-district pilot program in Malawi. BMC Public Health. 2013;13:1052.

43. Srinivas SC, Yu P, Bodenstab EM, Chhetri P, Pearse NJ, Nagaraju K, Jessee W, Sharma S, Govender K. Leadership and Task shifting to address the challenges of Antimicrobial Resistance in South Africa. Asian J Pharm Res Health Care. 2018;10(1):1–11.
44. Langlois EV, McKenzie A, Schneider H, Mecaskey JW. Measures to strengthen primary health-care systems in low- and middle-income countries. Bull World Health Organ. 2020;98(11):781–91.
45. Sabo S, Wightman P, McCue K, Butler M, Pilling V, Jimenez DJ, Celaya M, Rumann S. Addressing maternal and child health equity through a community health worker home visiting intervention to reduce low birth weight: retrospective quasi-experimental study of the Arizona Health Start Programme. BMJ Open. 2021;11(6):e045014.
46. van Lonkhuijzen L, Stekelenburg J, van Roosmalen J. Maternity waiting facilities for improving maternal and neonatal outcome in low-resource countries. Cochrane Database Syst Rev. 2012;10(10):CD006759.
47. Freeman T, Baum F, Lawless A, Labonte R, Sanders D, Boffa J, Edwards T, Javanparast S. Case Study of an Aboriginal Community-Controlled Health Service in Australia: Universal, Rights-Based, Publicly Funded Comprehensive Primary Health Care in Action. Health Hum Rights. 2016;18(2):93–108.
48. Sandall J, Soltani H, Gates S, Shennan A, Devane D. Midwife-led continuity models versus other models of care for childbearing women. Cochrane Database Syst Rev. 2016;4(4):CD004667.
49. Kitutu FE, Mayora C, Johansson EW, Peterson S, Wamani H, Bigdeli M, Shroff ZC. Health system effects of implementing integrated community case management (iCCM) intervention in private retail drug shops in South Western Uganda: a qualitative study. BMJ Glob Health. 2017;2(Suppl 3): e000334.
50. Mushamiri I, Belai W, Sacks E, Genberg B, Gupta S, Perry HB. Evidence on the effectiveness of community-based primary health care in improving HIV/AIDS outcomes for mothers and children in low- and middle-income countries: findings from a systematic review. J Glob Health. 2021;11: 11001.
51. Shaw B, Amouzou A, Miller NP, Tafesse M, Bryce J, Surkan PJ. Access to integrated community case management of childhood illnesses services in rural Ethiopia: a qualitative study of the perspectives and experiences of caregivers. Health Policy Plan. 2016;31(5):656–66.
52. Talukder MD, Rob U. Equity in access to maternal and child health services in five developing countries: what works. Int Q Community Health Educ. 2010;31(2):119–31.
53. Perry HB, Rassekh BM, Gupta S, Freeman PA. Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal, neonatal and child health: 7. Shared characteristics of projects with evidence of long-term mortality impact. J Glob Health. 2017;7(1): 010907.
54. Tseng YH, Griffiths F, de Kadt J, Nxumalo N, Rwafa T, Malatji H, Goudge J. Integrating community health workers into the formal health system to improve performance: a qualitative study on the role of on-site supervision in the South African programme. BMJ Open. 2019;9(2): e022186.
55. Ignoffo S, Margellos-Anast H, Banks M, Morris R, Jay K. Clinical integration of community health workers to reduce health inequities in overburdened and under-resourced populations. Popul Health Manag. 2022;25(2):280–3.
56. Huang W, Long H, Li J, Tao S, Zheng P, Tang S, Abdullah AS. Delivery of public health services by community health workers (CHWs) in primary health care settings in China: a systematic review (1996–2016). Glob Health Res Policy. 2018;3:18.
57. World Health Organization. What do we know about community health workers? A systematic review of existing reviews. In. Geneva: WHO; 2020.
58. Schaaf M, Warthin C, Freedman L, Topp SM. The community health worker as service extender, cultural broker and social change agent: a critical interpretive synthesis of roles, intent and accountability. BMJ Glob Health. 2020;5(6):e002296.
59. Lehmann U, Twum-Danso NAY, Nyoni J. Towards universal health coverage: what are the system requirements for effective large-scale community health worker programmes? BMJ Glob Health. 2019;4(Suppl 9): e001046.
60. Nash DM, Brown JB, Thorpe C, Rayner J, Zwarenstein M. The Alliance for Healthier Communities as a Learning Health System for primary care: a qualitative analysis in Ontario, Canada. J Eval Clin Pract. 2022;28(6):1106–12.
61. Jobson G, Naidoo N, Matlakala N, Marincowitz G, Railton J, McIntyre JA, Struthers HE, Peters RPH. Contextual factors affecting the integration of community health workers into the health system in Limpopo Province, South Africa. Int Health. 2020;12(4):281–6.
62. D'Apice C, Ghirotto L, Bassi MC, Artioli G, Sarli L. A realist synthesis of staff-based primary health care interventions addressing universal health coverage. J Glob Health. 2022;12:04035.
63. Perry HB. Engaging communities for improving mothers' and children's health: reviewing the evidence of effectiveness in resource-constrained settings. Edinburgh University Global Health Society; 2017.
64. Gunderson JM, Wieland ML, Quirindongo-Cedeno O, Asiedu GB, Ridgeway JL, O'Brien MW, Nelson TM, Buzard R, Campbell C, Njeru JW. Community Health Workers as an extension of Care Coordination in Primary Care: A Community-based Cosupervisory Model. J Ambul Care Manage. 2018;41(4):333–40.
65. Naimoli JF, Perry HB, Townsend JW, Frymus DE, McCaffery JA. Strategic partnering to improve community health worker programming and performance: features of a community-health system integrated approach. Hum Resour Health. 2015;13:46.
66. Condo J, Mugeni C, Naughton B, Hall K, Tuazon MA, Omwega A, Nwaigwe F, Drobac P, Hyder Z, Ngabo F, et al. Rwanda's evolving community health worker system: a qualitative assessment of client and provider perspectives. Hum Resour Health. 2014;12: 71.
67. Oliphant NP, Ray N, Bensaid K, Ouedraogo A, Gali AY, Habi O, Maazou I, Panciera R, Muniz M, Sy Z, et al. Optimising geographical accessibility to primary health care: a geospatial analysis of community health posts and community health workers in Niger. BMJ Glob Health. 2021;6(6):e005238.
68. Only H, Bingley H, Lowe N, Mehdi R, Haq ZU, Zaman M. Developing health service delivery in a poor and marginalised community in North West Pakistan. Pak J Med Sci. 2018;34(3):757–60.
69. Mays DC, O'Neil EJ Jr, Mworozi EA, Lough BJ, Tabb ZJ, Whitlock AE, Mutimba EM, Talib ZM. Supporting and retaining Village Health teams: an assessment of a community health worker program in two Ugandan districts. Int J Equity Health. 2017;16(1):129.
70. Bassoumah B, Adam AM, Adokiya MN. Challenges to the utilization of community-based Health Planning and Services: the views of stakeholders in Yendi Municipality, Ghana. BMC Health Serv Res. 2021;21(1):1223.
71. Awor P, Kalyango JN, Stalsby Lundborg C, Ssengooba F, Eriksen J, Rutebemberwa E. Policy challenges facing the Scale up of Integrated Community Case Management (iCCM) in Uganda. Int J Health Policy Manag. 2022;11(8):1432–41.
72. Agarwal S, Kirk K, Sripad P, Bellows B, Abuya T, Warren C. Setting the global research agenda for community health systems: literature and consultative review. Hum Resour Health. 2019;17(1):22.
73. Rayner J, Muldoon L, Bayoumi I, McMurchy D, Mulligan K, Tharao W. Delivering primary health care as envisioned: a model of health and well-being guiding community-governed primary care organizations. J Integr Care (Brighton). 2018;26(3):231–41.
74. Duru JI, Usman S, Adeosun O, Stamidis KV, Bologna L. Contributions of Volunteer Community mobilizers to Polio Eradication in Nigeria: the experiences of non-governmental and Civil Society Organizations. Am J Trop Med Hyg. 2019;101(4Suppl):74–84.
75. Chimpololo A, Burrowes V. Use of Social Mobilization and Community Mobilizers by Non-governmental Health Organizations in Malawi to support the eradication of Polio, improve Routine Immunization Coverage, and Control Measles and neonatal tetanus. Am J Trop Med Hyg. 2019;101(4Suppl):85–90.
76. Tessema F, Bisrat F, Kidane L, Assres M, Tadesse T, Asegedew B. Improvements in Polio Vaccination Status and Knowledge about Polio Vaccination in the CORE Group Polio Project Implementation Areas in Pastoralist and Semi-pastoralist regions in Ethiopia. Am J Trop Med Hyg. 2019;101(4Suppl):52–8.
77. Usman S, Bologna L, Stamidis KV. The CORE Group Partners Project in North East Nigeria: Community Engagement Strategies to Combat Skepticism and Build Trust for Vaccine Acceptance. Am J Trop Med Hyg. 2019;101(4Suppl):68–73.
78. Awale J, Choudhary M, Solomon R, Chaturvedi A. Effective Partnership mechanisms: a legacy of the Polio Eradication Initiative in India

and their potential for addressing other Public Health priorities. Am J Trop Med Hyg. 2019;101(4Suppl):21–32.
79. Perry H, Morrow M, Davis T, Borger S, Weiss J, DeCoster M, Ricca J, Ernst P. Care Groups II: a Summary of the Child Survival Outcomes Achieved Using Volunteer Community Health Workers in Resource-constrained settings. Glob Health Sci Pract. 2015;3(3):370–81.
80. Blanco S, Valdez M, Stollak I, Westgate CC, Herrera A, Perry HB. Reducing inequities in maternal and child health in rural Guatemala through the CBIO + approach of Curamericas: 3. Expansion of population coverage of key interventions. Int J Equity Health. 2023;21(Suppl 2):196.
81. Preston R, Waugh H, Larkins S, Taylor J. Community participation in rural primary health care: intervention or approach? Aust J Prim Health. 2010;16(1):4–16.
82. Ndejjo R, Musinguzi G, Musoke D, Wanyenze RK. Unlocking the power of communities to achieve universal health coverage in Africa. South East Eur J Public Health. 2021;2021(2):1–11.
83. Wallington SF, Noel A. Communicating with community: Health disparities and Health Equity considerations. Med Clin North Am. 2022;106(4):715–26.
84. Grills NJ, Robinson P, Phillip M. Networking between community health programs: a case study outlining the effectiveness, barriers and enablers. BMC Health Serv Res. 2012;12: 206.
85. Petiwala A, Lanford D, Landers G, Minyard K. Community voice in cross-sector alignment: concepts and strategies from a scoping review of the health collaboration literature. BMC Public Health. 2021;21(1):712.
86. Assan A, Takian A, Aikins M, Akbarisari A. Universal health coverage necessitates a system approach: an analysis of community-based Health Planning and Services (CHPS) initiative in Ghana. Global Health. 2018;14(1):107.
87. Perry H, Robison N, Chavez D, Taja O, Hilari C, Shanklin D, Wyon J. The census-based, impact-oriented approach: its effectiveness in promoting child health in Bolivia. Health Policy Plan. 1998;13(2):140–51.
88. Perry HB, King-Schultz LW, Aftab AS, Bryant JH. Health equity issues at the local level: socio-geography, access, and health outcomes in the service area of the Hopital Albert Schweitzer-Haiti. Int J Equity Health. 2007;6:7.
89. Schleiff M, Kumapley R, Freeman PA, Gupta S, Rassekh BM, Perry HB. Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal, neonatal and child health: 5. Equity effects for neonates and children. J Glob Health. 2017;7(1): 010905.
90. Perry H, Cayemittes M, Philippe F, Dowell D, Dortonne JR, Menager H, Bottex E, Berggren W, Berggren G. Reducing under-five mortality through Hopital Albert Schweitzer's integrated system in Haiti. Health Policy Plan. 2006;21(3):217–30.
91. Solomon R. Involvement of Civil Society in India's Polio Eradication Program: lessons learned. Am J Trop Med Hyg. 2019;101(4Suppl):15–20.
92. Lim SC, Yap YC, Barmania S, Govender V, Danhoundo G, Remme M. Priority-setting to integrate sexual and reproductive health into universal health coverage: the case of Malaysia. Sex Reprod Health Matters. 2020;28(2):1842153.
93. Jongen C, Campbell S, McCalman J, Fagan R, Pearson K, Andrews S. Transitioning to Aboriginal community control of primary health care: the process and strategies of one community-controlled health organisation in Queensland. BMC Fam Pract. 2020;21(1):230.
94. Hermansyah A, Wulandari L, Kristina SA, Meilianti S. Primary health care policy and vision for community pharmacy and pharmacists in Indonesia. Pharm Pract (Granada). 2020;18(3): 2085.
95. Kinney RG, Zakumumpa H, Rujumba J, Gibbons K, Heard A, Galarraga O. Community-funded integrated care outreach clinics as a capacity building strategy to expand access to health care in remote areas of Uganda. Glob Health Action. 2021;14(1): 1988280.
96. Seidman G, Atun R. Does task shifting yield cost savings and improve efficiency for health systems? A systematic review of evidence from low-income and middle-income countries. Hum Resour Health. 2017;15(1):29.
97. Zhong C, Kuang L, Li L, Liang Y, Mei J, Li L. Equity in patient experiences of primary care in community health centers using primary care assessment tool: a comparison of rural-to-urban migrants and urban locals in Guangdong, China. Int J Equity Health. 2018;17(1):51.
98. McCollum R, Limato R, Otiso L, Theobald S, Taegtmeyer M. Health system governance following devolution: comparing experiences of decentralisation in Kenya and Indonesia. BMJ Glob Health. 2018;3(5): e000939.
99. Abimbola S, Baatiema L, Bigdeli M. The impacts of decentralization on health system equity, efficiency and resilience: a realist synthesis of the evidence. Health Policy Plan. 2019;34(8):605–17.
100. Rao Seshadri S, Kothai K. Decentralization in India's health sector: insights from a capacity building intervention in Karnataka. Health Policy Plan. 2019;34(8):595–604.
101. Eckhardt M, Carlfjord S, Faresjo T, Crespo-Burgos A, Forsberg BC, Falk M. Universal Health Coverage in marginalized populations: a qualitative evaluation of a health reform implementation in Rural Ecuador. Inquiry. 2019;56: 46958019880699.
102. Campbell MA, Hunt J, Scrimgeour DJ, Davey M, Jones V. Contribution of Aboriginal Community-Controlled Health Services to improving Aboriginal health: an evidence review. Aust Health Rev. 2018;42(2):218–26.
103. Abimbola S, Molemodile SK, Okonkwo OA, Negin J, Jan S, Martiniuk AL. The government cannot do it all alone': realist analysis of the minutes of community health committee meetings in Nigeria. Health Policy Plan. 2016;31(3):332–45.
104. Koncar M, Gvozdanovic D. Primary healthcare information system–the cornerstone for the next generation healthcare sector in Republic of Croatia. Int J Med Inf. 2006;75(3–4):306–14.
105. Mathews C, Goga A, Loveday M, Zembe W, Daviaud E, Siegfried N, Lewin S. Moving towards universal health coverage: strengthening the evidence ecosystem for the South African health system. S Afr Med J. 2019;109(11b):8–14.
106. Nandi S, Schneider H. Addressing the social determinants of health: a case study from the mitanin (community health worker) programme in India. Health Policy Plan. 2014;29(Suppl 2):ii71–81.
107. de Leeuw E. Engagement of sectors other than health in integrated health governance, policy, and action. Annu Rev Public Health. 2017;38(1):329–49.
108. Druetz T. Integrated primary health care in low- and middle-income countries: a double challenge. BMC Med Ethics. 2018;19(Suppl 1):48.
109. Perry HB, Hodgins S. Health for the people: past, current, and Future Contributions of National Community Health Worker Programs to Achieving Global Health goals. Glob Health Sci Pract. 2021;9(1):1–9.
110. Kweku M, Amu H, Awolu A, Adjuik M, Ayanore MA, Manu E, Tarkang EE, Komesuor J, Asalu GA, Aku FY, et al. Community-Based Health Planning and Services Plus programme in Ghana: a qualitative study with stakeholders in two systems Learning districts on improving the implementation of primary health care. PLoS One. 2020;15(1): e0226808.
111. Brunie A, Wamala-Mucheri P, Otterness C, Akol A, Chen M, Bufumbo L, Weaver M. Keeping community health workers in Uganda motivated: key challenges, facilitators, and preferred program inputs. Glob Health Sci Pract. 2014;2(1):103–16.
112. Tsofa B, Molyneux S, Gilson L, Goodman C. How does decentralisation affect health sector planning and financial management? A case study of early effects of devolution in Kilifi County, Kenya. Int J Equity Health. 2017;16(1):1–12.
113. McCollum R, Gomez W, Theobald S, Taegtmeyer M. How equitable are community health worker programmes and which programme features influence equity of community health worker services? A systematic review. BMC Public Health. 2016;16(1):419.
114. Gizaw Z, Astale T, Kassie GM. What improves access to primary healthcare services in rural communities? A systematic review. BMC Prim Care. 2022;23(1):313.
115. Subedi RK, VanderZanden A, Adhikari K, Bastola S, Hirschhorn LR, Binagwaho A, Maskey M. Integrated Management of Childhood Illness implementation in Nepal: understanding strategies, context, and outcomes. BMC Pediatr. 2024;23(Suppl 1):645.
116. Awor P, Kalyango JN, Lundborg CS, Ssengooba F, Eriksen J, Rutebemberwa E. Policy challenges facing the scale up of integrated community case management (iCCM) in Uganda. Int J Health Policy Manage. 2022;11(8):1432.

117. Hazel E, Requejo J, David J, Bryce J. Measuring coverage in MNCH: evaluation of community-based treatment of childhood illnesses through household surveys. PLoS Med. 2013;10(5): e1001384.
118. Perry HB, Zulliger R, Rogers MM. Community health workers in low-, middle-, and high-income countries: an overview of their history, recent evolution, and current effectiveness. Annu Rev Public Health. 2014;35(1):399–421.
119. Pearson O, Schwartzkopff K, Dawson A, Hagger C, Karagi A, Davy C, Brown A, Braunack-Mayer A. On behalf of the Leadership Group guiding the Centre for Research Excellence in Aboriginal Chronic Disease Knowledge T, Exchange: Aboriginal community controlled health organisations address health equity through action on the social determinants of health of Aboriginal and Torres Strait Islander peoples in Australia. BMC Public Health. 2020;20(1):1859.
120. Ahmed S, Chase LE, Wagnild J, Akhter N, Sturridge S, Clarke A, Chowdhary P, Mukami D, Kasim A, Hampshire K. Community health workers and health equity in low- and middle-income countries: systematic review and recommendations for policy and practice. Int J Equity Health. 2022;21(1):49.

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