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Community health workers navigating maternal and newborn health delivery in rural Somalia: a qualitative study of roles, barriers, and adaptive strategies

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Abstract

Background

Community health workers (CHW) are central to expanding access to maternal and newborn health (MNH) services in low- and middle-income countries (LMIC) and fragile settings. In rural Somalia, where MNH service access is limited, the International Rescue Committee (IRC) launched a program that mobilized female CHWs to deliver MNH services at home. This study explored the experiences of CHWs delivering MNH care as part of the Community-Based Maternal and Newborn Care (CBMNC) program in rural Somalia.

Methods

We conducted a qualitative descriptive study in eight rural Galmudug villages. Using stratified random sampling, we interviewed eight CHWs (one per village) and two supervisors (n = 10). Saturation was achieved through iterative assessment. Data were analyzed using deductive coding based on the Theoretical Framework of Acceptability alongside inductive coding to identify emergent themes beyond the framework.

Results

CHWs perceived their roles as extending beyond providing technical services to include social and cultural responsibilities. While CHWs' social embeddedness enabled trust, it also led to informal pressures such as providing *diiqista (*a traditional postpartum gift) and financial support. The key challenges included long travel distances, out-of-pocket expenses related to both logistics and cultural expectations, material aid expectations, and male gatekeeping, which restricted women's access to care. CHWs used adaptive strategies, including mobile phone follow-ups, central meeting points, and engagement with male elders, to increase program acceptability.

Conclusions

CHWs are essential in delivering MNH services in low-resource settings. However, CHWs' effectiveness is shaped by geographic, financial and sociocultural challenges. Structural support and gender-sensitive community engagement are necessary to ensure equitable service delivery and to inform future program development and policy integration.

Background

Community health workers (CHW) play a pivotal role in expanding the healthcare workforce, especially in low- and middle-income countries (LMIC) (1). CHWs enhance access to and coverage of essential

services(2, 3) and advance universal health coverage, leveraging their proximity and cultural alignment (4, 5). CHWs are crucial in advancing maternal and child health by delivering targeted, community-based interventions that can improve health outcomes (6–8). Somalia remains one of the most fragile and conflict-affected countries globally (9), with a maternal mortality ratio of 621 per 100,000 live births(10) and a neonatal mortality rate of 35 per 1000 live births (11). Decades of conflict have led to fragile healthcare infrastructure, pervasive insecurity, and limited access to facility-based services (12, 13). As a result, community-based health service delivery models have become essential, with CHWs increasingly positioned as central actors in maternal and newborn health (MNH) care (14–16). One such initiative is the community-based maternal and newborn care (CBMNC) program (an additional project description provides more detail), implemented by the International Rescue Committee (IRC), which began in December 2023 in rural Galmudug State, Somalia. The program mobilized female CHWs to deliver home-based services to pregnant women (17).

This study explored CHWs' lived experiences navigating community-based MNH delivery, including their role perceptions, operational barriers, and adaptive strategies. While existing research emphasizes program performance metrics (18, 19), we examined the understudied dimensions of informal labor, hidden costs, and sociocultural negotiations that shape CHW effectiveness in fragile settings.

Methodology

Study design and setting

The study presents select findings from a qualitative descriptive study exploring the acceptability of the CBMNC program. The theoretical framework of acceptability (TFA) (20) informed the development of the interview guide and guided the analytical approach.

This study was conducted in eight rural villages located 20-65 kilometers from Dhusamareb, Galmudug State. These regions face recurrent conflict, insecurity, drought, and limited health service access. A baseline survey revealed only 29% of women delivered in facilities, with most births (59%) attended by traditional birth attendants, though mobile phone access was nearly universal (96%) (21).

Description of CBMNC Program

A summary of the CBMNC program’s structure and components is provided in Table 1.

Table 1: Key components of the CBMNC Program

Component	Description
Implementing partners	IRC in collaboration with Ministry of Health, Somalia
Program timeline	December 2023 – expected December 2025
Location	8 rural villages (Balicad, Ceeldheere, Faragoy, Gadoon, Haadful, Hananley, Maregur and Olol) located 20–65 kilometers from Dhusamareb, Galmudug State
CHWs deployed	34 trained female CHWs
Visit schedule	Maximum of 8 home visits during pregnancy and postpartum
Services delivered	Health education, counseling, and essential MNH commodities
Health education topics	Early initiation of breastfeeding, thermal care, clean cord care, danger signs in pregnancy and the newborn period, malaria prevention, anemia prevention, hygiene and sanitation, the importance of antenatal care and skilled birth attendance.
Supplies provided	Soap, Aqua tabs, long-lasting insecticidal nets, iron-folic acid
Referral mechanism	Identifying high-risk MNH cases for facility care

At the time of this study, the Federal Government of Somalia had begun rolling out the *Marwo Caafimaad* program, a national cadre of Female Health Workers tasked with providing community-level services under the Ministry of Health (22). While this program has been integrated into some of Somalia's federal member states, where this study was conducted had not yet been reached by the national rollout; hence, the CBMNC program was intended to serve as a precursor.

Data collection procedures

The parent study collected data from clients, male partners, community members, CHWs and their supervisors and health system stakeholders on the acceptability of the CBMNC program, but the data for this paper were taken from interviews with eight CHWs and two supervisors involved in the CBMNC program. From 34 CHWs, we randomly selected one per village (n=8), ensuring geographic representation across all sites, plus two supervisors for program-level triangulation. Sample size was determined based on established guidance for homogeneous populations with focused objectives, where saturation typically occurs within 9-17 interviews (23). Saturation was assessed iteratively during field team debriefings; by interview 8, no new themes emerged regarding role perceptions, barriers, or adaptive strategies. Supervisor interviews corroborated CHW accounts without introducing new constructs, confirming adequacy.

The interview guide was informed by the TFA domains per the intent of the parent study: affective attitude, burden, ethicality, intervention coherence, opportunity costs, perceived effectiveness, and self-

efficacy. The interviews additionally explored participants' understanding of the program, challenges in service delivery, community perceptions, and contextual barriers. This approach allowed inductive themes to emerge on CHWs' roles, barriers, and adaptive strategies.

The interviews were conducted in Somali by researchers from the Somali Research and Development Institute (SORDI) between November and December 2024. The interviews lasted for approximately one hour and were conducted in private locations chosen by the participants where the participants could speak freely and without interruption. The participants were informed that the interviewers were independent from program implementation and that participation was voluntary, with no consequences for their involvement in the CBMNC program. The interviews were audio-recorded with consent from the participants and transcribed and translated into English by bilingual transcribers who were fluent in both Somali and English and familiar with the study context. To ensure consistency and accuracy, the study team reviewed the transcripts against the original audio recordings to confirm that key terms and meanings were preserved. Somali terms with cultural significance were retained in the original language, and the transcribers provided a direct English translation to convey their meaning.

Data analysis

We applied a framework analysis approach using deductive coding guided by the TFA (20), alongside inductive coding, to capture themes that emerged beyond the framework. An initial codebook was developed based on TFA domains and was refined iteratively as new themes emerged. Coding was conducted in Dedoose (24) by two researchers (GWK and TM), who independently coded a subset of transcripts and resolved discrepancies through discussion. While the TFA structured our interpretation, key themes were identified inductively to reflect how CHWs themselves conceptualized their roles, challenges, and adaptations. To enhance transparency in how the study was designed, conducted, and reported, the Consolidated Criteria for Reporting Qualitative Research (COREQ) 32-item checklist is provided in additional file 2.

Ethical approval

Ethical approval was obtained from the SORDI Institutional Review Board (IRB) (SORDI-EA02_54), the IRC IRB (H 1.00.054) and research clearance from the National Institute of Health of the Federal Ministry of Health of Somalia. All participants provided written informed consent prior to participation. Written consent was deemed appropriate based on the CHWs' literacy.

Results

All participants were female (22-45 years, median age of 28). Six had completed primary education, one had completed a literacy course, two had completed secondary education, and one had attained a university degree. All the participants were literate, although one reported reading with difficulty. Nine participants had experienced between two and nine pregnancies, while one had never been pregnant.

The findings below reflect perspectives drawn from the TFA and additional themes that emerged from the lived experiences of CHWs

CHWs' conception of their roles

CHWs described their responsibilities as spanning technical, social, and cultural aspects. CHWs reported acting as educators, caregivers, and advocates and perceived themselves as community role models. CHWs emphasized being integrated within their communities, as they were selected directly from them. CHWs' social proximity and cultural familiarity fostered their trust in and access to households. This social positioning allowed them to deliver MNH health messages and influence care-seeking behaviors. This theme relates to the TFA domains of ethicality and affective attitude, as CHWs' work was grounded in moral responsibility and emotional commitment to care within their communities.

CHWs also described their role in terms of service integration, whereby CHWs linked households to formal health facilities through referrals, monitoring, and follow-up. They viewed themselves as personnel bridging the formal health system and community-based MNH practices. CHWs expressed pride in enabling women to seek timely care, detect warning signs, and deliver in health facilities. CHWs reported that their identity was also shaped by aspirations for professional growth, with some viewing the CHW role as a steppingstone to career progression.

I want to increase my knowledge so that I can do more for the community and so that the community will see me as an educated person (Respondent 3).

Barriers to service delivery and adaptive strategies

CHWs described encountering challenges, including geographic distance, financial strain, unmet community expectations, and gender-based constraints within households.

Geographic barriers

Geographic distance and dispersed settlement patterns emerged as common barriers, serving clients across wide rural areas with little or no transportation support. CHWs reported walking for more than an hour to reach some households, with terrain, weather, and the CHWs' health status often worsening the situation. This physical strain affected CHWs' ability to maintain regular visit schedules, particularly when the number of registered clients was high. These experiences align with the TFA domains of burden and opportunity cost, as CHWs described the physical strain and personal time required to deliver care across dispersed rural areas.

If there are 20 mothers, I need to reach each one to understand her condition, which becomes challenging, especially when some mothers live far away. Walking long distances to visit them can be exhausting, and the committee (IRC) does not allow me to skip any mothers (Respondent 4).

CHWs are expected to follow a structured schedule; however, in practice, CHWs adapted the visit frequency and modality based on the mother's location, health condition during pregnancy and availability. Clients living nearby were visited more frequently, sometimes daily, while those in remote areas were contacted less regularly or by mobile phones. Some CHWs reduced the frequency of visits or used mobile phones to check in when travel was not feasible.Other CHWs reported that they coordinated central meeting points with clients to reduce travel time and termed this approach beneficial for both parties.

The mother, who is far from me, lives one hour away, and I visit her once a week. The client who lives close to me lives with me. I visit her every day… I call all of them, and we meet either at my home or another client's home… I suggest that we meet at a central location, as it would be beneficial for both of us (Respondent 5)

CHWs reported that they scheduled visits based on local routines and market days. CHWs made phone calls to confirm appointments, which helped reduce the number of missed visits. The program offered monthly airtimes for all CHWs.

In some cases, especially during emergencies, illness, or for those CHWs who were pregnant, CHWs reported hiring local vehicles either for their own transport or to accompany clients to health facilities and covering the cost out of pocket, noting that "*the expenses I pay are not accounted for*." One CHW noted, "*I walk to reach that client, but some CHWs who are pregnant use rental cars to provide the service to the client (the CHW) herself pays the cost, which is usually $2 or $3 per visit"* (Respondent 4).

Once a mother I was visiting went into labor. I called (hired) for a car. She delivered in the car while we were going to the hospital. This cost me money. (Respondent 6)

Financial constraints

CHWs revealed a persistent pattern of out-of-pocket spending associated with the routine delivery of services. These expenses were not acknowledged in the formal program design but played a key role in sustaining community-based MNH service delivery and maintaining social credibility. Transport emerged as a common financial burden, as described above. This theme reflects elements of burden and affective attitude, highlighting both the financial costs and emotional motivations tied to fulfilling social expectations and maintaining trust.

In addition, CHWs frequently adhered to traditional expectations by bringing a *diiqista* (a gift given to mothers after giving birth) in this culture. They provided items such as soap, shampoo, sanitary pads, and sweets when visiting a new mother. CHWs felt that if they did not comply with customary expectations, they could risk being seen as disrespectful or insincere. These social norms added informal, recurring costs to each birth-related visit. The CHW supervisors corroborated these added costs.

When visiting a mother who has just given birth, I cannot go without gifts such soap, shampoo, and maternal pads... as it is a tradition. (Respondent 8)

In addition to traditional expectations, some CHWs reported paying for medicines or supplies that families could not afford even for health issues outside the scope of the CBMNC program. These purchases were often driven by a desire to avoid losing client trust or to fulfill unspoken community expectations that CHWs serve as a link to nongovernmental organization (NGO) resources.

Sometimes, mothers ask me for assistance, like buying fever medicine, and I often end up covering the cost myself. (Respondent 3)

During my duties, I meet elderly people... who ask me for supplies like mosquito nets. I cannot refuse, as the community expects me to have money, and I want to earn their trust. So, I send money to buy the mosquito nets. (Respondent 2)

The supervisors noted that CHWs had submitted reports requesting financial support to cover the cost of gifts and transport. However, no formal compensation or budgetary provisions were in place at the time of the interviews.

Misinterpretation of the NGO role

CHWs reported that there was widespread misperception that the CBMNC program was primarily a vehicle for material distribution rather than a health education and MNH service delivery program. These expectations were shaped by both previous NGO programming and the community's misunderstanding of the CBMNC program's intent. CHWs mentioned that many NGOs provided food, cash assistance, or tangible household goods for the community.

As a result, community members often viewed CHWs as agents of resource delivery, and the absence or insufficiency of physical supplies led to disappointment, skepticism, or rejection of services. These perceptions connect to the TFA domains of perceived effectiveness and intervention coherence, as CHWs navigated misunderstandings about their role and the limits of program support.

However, CHWs acknowledged that sometimes the supplies provided to pregnant mothers during enrollment helped win over hesitant clients and provided practical entry points for delivering health education.

The program's design also made it easy for mothers because of the supplies we provide, such as the mosquito net and tablets; some mothers would not listen to us without these supplies. (Respondent 8)

The mismatch between community expectations and the actual scope of the CBMNC program created reputational risks. CHWs reported that even when they brought commodities, the quantities were often insufficient to meet the needs of the whole household, which sometimes led to disappointment or criticism. Supplies such as mosquito nets or soap per pregnant woman against the community

expectations per household size clashed with household expectations of equity. To avoid accusations of favoritism or to prevent visible inequality since the CBMNC program targeted pregnant women, some CHWs resorted to discreet distribution methods, such as delivering items at night.

Sometimes, I take supplies... at night so that other people in the community could not see me because the program targets pregnant mothers, and others also need mosquito nets. (Respondent 2)

CHWs reported that they made efforts to clarify their role and educate communities about the objectives of the CBMNC program. Despite these explanations, the rooted assumption of the role of NGOs with connotations of material aid was difficult to change. CHWs also emphasized the need to manage community expectations around material aid, especially during initial visits that lacked physical supplies.

The first time you visited a mother to explain health messages without a supply, they didn't respect or listen because we didn't fulfill their expectation. (Respondent 3)

Supervisors acknowledged that such misinterpretations were widespread at the program inception but noted that perceptions had improved over time due to sustained messaging and visible health improvements (the program had been implemented for one year at the time of data collection).

Gatekeeping by family and community members

Gatekeeping by husbands, elders, and other household decision-makers emerged as a barrier to service delivery. A client's participation in the CBMNC program often depended on approval from male family members, especially the husband. In some households, CHWs were unable to register with clients, follow up, or even initiate health discussions without prior approval from the husband or an elder. This theme reflects the TFA domains of ethicality and self-efficacy, as CHWs balanced professional duties with household expectations and male authority in decision-making.

Before registering the mother, we provide awareness to the husbands and explain the benefits of the program... If the husband does not understand the program, the mother would not be allowed to register her. (Respondent 3)

CHWs reported that resistance from men was sometimes expressed through skepticism, surveillance, or verbal confrontation. CHWs noted that some men viewed CHW visits as interference in family matters or a disruption to domestic routines.

Some men say to us, 'What are you telling my wife? Leave us alone; don't bother my wife. She has work to do.' (Respondent 5)

To address these barriers, CHWs developed indirect engagement strategies. In cases where husbands were unresponsive or opposed, CHWs turned to neighbors, other women in the household, or community leaders to help influence the husbands' attitudes toward MNH services and gain permission for program participation.

If I find out that one of the mothers is pregnant but hides it from me, I tell her husband about the program and explain it to him... If it becomes more difficult, we tell the mother's neighbors, and they help us convince the family. (Respondent 2)

Some gatekeeping was rooted in broader cultural dynamics and gender norms. CHWs reported that men's authority in household decisions, especially those related to reproductive health or facility-based care, often overrode women's preferences or needs.

The mother tells her husband to take her to the hospital... The challenge is that men often say we are creating conflicts with their wives. After giving awareness to the mothers, they tell us to stop the awareness campaigns. (Respondent 8)

Over time, some resistance softened, particularly as gatekeepers observed positive health outcomes from the program. CHWs explained that once the benefits of community-based MNH services, such as safer deliveries or healthier newborns, became apparent, the acceptance of the CBMNC program gradually improved.

Community resistance of community-based services

Community acceptance of community-based MNH services was not immediate. Initially, CHWs reported encountering barriers, including suspicion, fear, and lack of awareness about the program. CHWs reported that community members, unfamiliar with structured MNH outreach, questioned the intentions of CHWs or viewed CHW visits as unnecessary.

Initially, there was a lack of acceptance because there was no prior awareness. Some mothers felt that these services were unnecessary or even harmful... but, after receiving proper education, they have become more receptive. (Respondent 10)

...people didn't understand what they were doing and were asking, "Why are you visiting us? Do you give us money or something similar?" (Respondent 4)

In particular, culturally ingrained beliefs about maternal care and infant feeding posed resistance to health messaging. For example, the promotion of exclusive breastfeeding was challenged as described below.

They say, 'Are you mad? Breast milk alone is not enough for my baby for 10 days... and you are talking about six months!' (Respondent 3)

Mothers used to say they didn't have enough milk when asked to breastfeed for six months. This caused some difficulties. They were also unaware of the benefits of exclusive breastfeeding, but now they understand its advantages. (Respondent 2)

Discussion

This study revealed that CHW effectiveness in delivering community-based MNH services in rural Somalia extends beyond technical competence, being fundamentally shaped by social embeddedness, informal financial obligations, and gendered household power dynamics. These findings echo documented CHW challenges including geographic isolation, supply gaps, male gatekeeping, and burnout (25–27), while exposing hidden labor costs rarely captured in program evaluations.

The CHWs in this study described a multifaceted identity of technical, educational, and moral responsibilities that positioned them as service providers, community advocates, and role models (28–30). Social proximity fosters trust and improves access (27,31–34) but also adds to informal obligations. In our study, CHWs reported being expected to meet informal household needs. While these actions support service uptake, they impose emotional and financial burdens on CHWs and reflect a hidden dimension of labor that is not accounted for in the program design. CHW programs should include support mechanisms that acknowledge and compensate for informal, socially driven labor that CHWs routinely perform in communities.

Our findings confirm that geographic distance remains a significant barrier to community-based service delivery. This echoes a time-use study in Sierra Leone, where CHWs in remote settings spent substantial portions of their workday walking, limiting their reach (35). To maintain contact with clients, the CHWs in our study relied on creative adaptations such as mobile phone check-ins (21), adjusted visit schedules, or central meeting points. However, while such logistical adaptations might be effective in the short term, they often result in uneven access to care across different geographic zones. To improve equitable access, CHW programs should invest in transport infrastructure and context-specific logistical support while also leveraging mobile technologies to reduce geographic barriers (36). Effective interventions have been documented, including mobility support such as bicycles and motorcycles (31,37), geospatial optimization of CHW deployment (35), and mobile outreach clinics (38), though long-term sustainability in fragile settings warrants further exploration.

Our study findings demonstrate that CHWs experienced out-of-pocket expenses related to transportation and culturally required postpartum gifts, which were integral to maintaining trust within the community. These expenditures are rarely reimbursed or acknowledged in program budgets (39). These hidden costs reflect systemic inequities that affect sustainability and morale. Studies support the use of regular stipends, performance-based incentives, and mobile payment systems to reduce out-of-pocket costs and sustain motivation (2). There is a critical need for budgeting mechanisms that formally account for the routine, culturally embedded expenditures required to maintain CHW legitimacy.

Community members often assumed that CHWs are agents of resource distribution. This perception, shaped by previous NGO interventions, led to disappointment when CHWs delivered only health education or small quantities of commodities. The mismatch between program design and community expectations eroded trust. In aid-dependent contexts, programs must distinguish between material aid and health services to avoid dependency and resistance to education-based interventions. Program

implementers need to work closely with CHWs to determine service delivery designs that increase the perceived value of services that are not commodities.

Our findings illustrated that husbands and elders often controlled women's participation in the CBMNC program and, in some cases, opposed CHW visits altogether. This dynamic reflects broader patriarchal norms that restrict women's autonomy in health decision-making (40,41). CHWs employed indirect strategies, such as enlisting the support of neighbors or respected elders, to gain access to clients. In Tanzania, for example, conducting household visits in pairs (male and female) appeared to reduce gender-related barriers to MNH service delivery and promoted greater male involvement (40).

These findings offer practical insights for Somalia's *Marwo Caafimaad* program, which aims to scale up female health workers across the country (22). The CBMNC program surfaced context-specific barriers, including transport challenges, social expectations for gift-giving, and gendered household restrictions that affect CHW motivation and performance. Operational adaptations such as transport stipends, structured mobile check-ins and microbudget allocations for culturally expected items could help reduce the burden and increase trust between CHWs and families (4).

Limitations

This study focused on female CHWs implementing the CBMNC program and might not reflect the perspectives of CHWs engaged in other health initiatives in Somalia. In addition, the female CHWs in this study represented a newly introduced cadre in a region without prior community-based MNH service delivery. The early-stage status of the program might have shaped findings by enhancing CHWs' motivation, adaptability, and personal investment while limiting community acceptance and role legitimacy. Social desirability bias might have influenced the responses, given the CHWs' close connection to the implementing organization. Although the data collection was not conducted by the program implementing organization, the perceived association with the implementer might have shaped how CHWs described sensitive issues such as gift-giving, financial support and community expectations around material aid.

Conclusion

CHWs are indispensable to community-based MNH care in fragile settings, yet their effectiveness depends on factors beyond technical training: geographic accessibility, informal financial obligations, cultural gift-giving expectations, and patriarchal gatekeeping. These hidden demands of community-based service delivery require program designs grounded in lived realities rather than idealized assumptions. Sustainability requires three elements: (1) formal compensation mechanisms for routine culturally-embedded costs, (2) transport infrastructure or stipends addressing geographic barriers, and (3) gender-sensitive community engagement strategies mitigating male gatekeeping. As Somalia scales the *Marwo Caafimaad* program nationally, integrating these contextual adaptations will determine whether CHW programs achieve equitable coverage or inadvertently burden already-marginalized health workers with uncompensated social labor.

Abbreviations

CBMNC Community-Based Maternal and Newborn Care

CHW Community health worker

COREQ Consolidated Criteria for Reporting Qualitative Research

IRC International Rescue Committee

LMIC Low- and middle-income countries

MNH Maternal and newborn health

NGO Non-governmental organization

SORDI Somali Research and Development Institute

Declarations

Ethics approval and consent to participate

The study protocol was reviewed and approved by the SORDI Institutional Review Board (IRB) (SORDI-EA02_54), the IRC IRB (H 1.00.054), and the National Institute of Health of the Federal Ministry of Health of Somalia. Before commencing data collection, written informed consent was obtained from all participants, affirming their willingness to participate. All research procedures adhered to the principles of the Declaration of Helsinki.

Consent for publication

Not applicable

Clinical trial number

Not applicable

Availability of data and materials

The data collected and analyzed are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

GWK: Conceptualization, analysis and drafting; AMM and MAO: Data collection, data management and review; NK and GN: Conceptualization, drafting and reviewing; MJ, HAA and AA: Data collection and review; TM: Data analysis and review; HAM: Data management and review; AAD: Conceptualization and review; MAA: Data collection and review. All authors read and approved the final manuscript.

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