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Original Article

'Sometimes they fail to keep their faith in us': community health worker perceptions of structural barriers to quality of care and community utilisation of services in Bangladesh

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Abstract

Community health workers (CHWs) have strong potential to extend health and nutrition services to underserved populations. However, CHWs face complex challenges when working within weak health systems and among communities with limited abilities to access and utilise CHW services. It is crucial to understand these challenges to improve programme support mechanisms. This study describes the results of qualitative investigations into CHW perceptions of barriers to quality of care among two groups of workers implementing community case management of acute respiratory infection, diarrhoea and severe acute malnutrition in southern Bangladesh. We explored systemic barriers to service delivery, pertaining to communities and health systems, which limited the usefulness and effectiveness of CHW services. Focus group discussions ($n = 10$) were conducted in March 2010. Discussions were analysed for themes related to CHWs' work challenges. Findings highlight several perceived barriers to effective service provision, including community poverty constraining uptake of recommended practices, irregular supplies of medicine from the health facility and poor quality of care for CHW referrals sent there. This study further documents interactions between demand-side and supply-side constraints including the influence of health system resource constraints on community trust in CHW services, and the influence of community resource constraints on the utilisation and effectiveness of CHW services. By documenting service delivery challenges from the perspective of the frontline workers themselves, this article contributes evidence to help identify appropriate support mechanisms for these workers, in order to develop scalable and sustainable CHW programmes in countries with under-resourced public health care infrastructure.

Keywords: community health workers, community case management, qualitative research, quality of care, barriers to effectiveness, severe acute malnutrition.

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Introduction

Community health workers (CHWs) are often defined as paraprofessional workers providing basic preventive and curative health and nutrition services to their own communities (WHO 1987). As part of the primary health care (PHC) approach advocated by the World Health Organization (WHO) with the Alma Ata Declaration in 1978, CHWs were envisaged as a way to expand access to health care with equity (WHO 1981, 1987). While this vision inspired the establishment of many national CHW programmes,

they failed to achieve the same success as the small-scale programmes upon which the optimism around PHC was based (Berman *et al*. 1987; Bhattacharyya *et al*. 2001; Standing & Chowdhury 2008; CHW Technical Taskforce 2011). Perceptions of CHWs as an inexpensive health care extension agent lead to insufficient resources allocated to their support (Berman *et al*. 1987); and problems of attrition and poor quality services soon arose among an over-worked, undertrained cadre of workers who were often engaged on a voluntary basis (Bhattacharyya *et al*. 2001; Bhutta *et al*. 2010). CHW programmes fell into progressive decline in the 1980s, due to their failure to meet the high expectations post Alma-Ata, in the context of a global economic recession, escalating political and economic instability and neoliberal economic policies encouraging privatisation of social services (Hall & Taylor 2003; Lehmann & Sanders 2007; Standing & Chowdhury 2008; CHW Technical Taskforce 2011).

Despite these historical challenges, evidence from the past two decades attests to CHWs' contributions to reductions in morbidity and mortality (Bhattacharyya *et al*. 2001; Bhutta *et al*. 2010; Lewin *et al*. 2010; CHW Technical Taskforce 2011). Where CHWs are carefully selected and supported, they serve as a trusted, familiar point person to explain new messages in a way that communities can understand, and to promptly treat or refer any urgent health issues (Gilson *et al*. 1989; Bhattacharyya *et al*. 2001; Lehmann & Sanders 2007; Rosato *et al*. 2008; Pinto *et al*. 2012a,b). Their ability to extend access to basic health services is particularly relevant given the fragile nature of health systems in many low-income countries, with shortages in trained health workers, drug supply, health financing and information systems among other shortfalls (Travis *et al*. 2004; Haines *et al*. 2007; Lehmann & Sanders 2007; Schneider *et al*. 2008; Liu *et al*. 2011).

However, the typical working environment of a CHW, delivering frontline services within weak health systems and among communities with limited abilities to access and utilise their services, presents a complex set of challenges that must be understood to improve CHW programmes and their mechanisms for supporting these workers.

Barriers to effective service operate at many levels. Some of these reflect the background of the workers themselves such as education, socio-economic status and domestic responsibilities (Bhattacharyya *et al*. 2001; UNICEF 2004; Crispin *et al*. 2012). Others are specific to the intervention including the number and mix of work tasks, workload and supervision (Zeitz *et al*. 1993; Hadi 2003; Kallandar *et al*. 2006; Rowe *et al*. 2007). Additionally, community factors such as the CHWs' recognition, utilisation and acceptance by her community play a role (Robinson & Larsen 1990; Kelly *et al*. 2001; Mumtaz *et al*. 2003; Haq *et al*. 2008; Alam *et al*. 2012), as do other broad systemic factors beyond a CHWs' ability to influence, for example, poor infrastructure, entrenched poverty and weak health systems (Bhattacharyya *et al*. 2001; Abbatt 2005; Bhutta *et al*. 2010).

While others have examined the issues of barriers to effective service provision at the more proximal levels (i.e. personal, intervention and community-

Key messages

- This paper examines community health worker (CHW) experience delivering services within a weak health system.
- Our analysis found several interactions between resource constraints at the health system and community levels that challenged CHW service delivery.
- CHWs reported that caretakers often lacked the time and resources to follow their advice, particularly for feeding and care practices.
- CHWs described irregular supply of medicines from the formal health system as a major challenge to their work.
- CHWs perceived that the households they referred to the hospital were not treated seriously and did not receive adequate care.

level factors), this paper is one of the first to examine the interactions of structural barriers to CHW quality of care at multiple levels, including supply-side issues from the government health system and demand-side issues of community resource constraints. This analysis further contributes to the literature by using a social-ecological framework to describe the interaction of these barriers from the perspective of the frontline workers who are located at the nexus of these conflicting supply-side and demand-side issues, within the context of an under-resourced health system.

This study took place in Bangladesh, a country with poor public health care infrastructure, which is characterised by the WHO as having a severe health worker shortage, particularly in rural areas (WHO 2006; Ahmed *et al*. 2011). The non-state sector provides the majority of health services for both poor and wealthy households (Standing & Chowdhury 2008). In this setting, cadres of CHWs supported both by government and non-governmental organisations have played a role in the provision of health services since the 1970s (Standing & Chowdhury 2008).

Set within the context of a community-based maternal and child health and nutrition programme in southern Bangladesh implemented by Save the Children USA (SCUS), this study describes the results of qualitative investigations into CHW perceptions of barriers to quality of care among two groups of workers delivering both preventive care and community case management of common childhood illnesses. One group delivered treatment for acute respiratory infection (ARI) and diarrhoea (called the 'CCM group'), and the other group additionally treated cases of severe acute malnutrition (SAM; called the 'CCM SAM+ group').

Separate analyses have reported differences in quality of care between these groups of workers (Puett *et al*. 2012, 2013), with the higher workload in the CCM SAM+ group found not to detract from service quality, and higher self-efficacy expressed among CHWs treating SAM, due in part to the visible changes in recovered children. These separate analyses also explored CHWs' personal and intervention-specific barriers to effective service delivery.

The present analysis describes challenges common to both groups, focusing on CHW perceptions of structural factors pertaining to the communities and the health systems within which they worked, which limited the usefulness of their services. In particular, this analysis focuses on perceived limitations to community access and utilisation of CHW services, in terms of advice, treatment and referrals, which were beyond the CHWs' control. Documenting these challenges from the perspective of the frontline workers themselves will contribute evidence towards identifying appropriate support mechanisms in order to develop scalable and sustainable CHW programmes.

Methods

Descriptions of the intervention, study design and CHW characteristics have been reported elsewhere (Sadler *et al*. 2011; Puett *et al*. 2012). This section presents the methodology used to collect and analyse information from CHWs regarding their perceived barriers to effectiveness.

Theoretical framework

This analysis was conducted using a social-ecological framework. Social-ecological theories place individuals within a complex 'social ecology' in which they are both influenced by and able to influence factors related to their environments, namely, their relationships, communities, institutions and social systems, including public policy (Murphy 2005). Further, these influences are assumed to vary based on the characteristics not only of the individual, but also of the environmental context, and the interactions between the two (Bronfenbrenner 1994). Using this framework, CHW challenges were categorised into individual, social, programmatic and structural level influences. This analysis pays particular attention to interactions between individual and environmental factors, particularly as these influence CHWs' ability to effectively deliver services.

Sample size and participant selection

All CHWs in this programme were female. The programme staff supervising the CHWs were requested

to randomly select participants from the list of CHWs participating in the overarching study and to invite them to participate in focus group discussions. Ten focus group discussions (FGDs) were conducted with 83 CHWs total (CCM group: $n = 34$; CCM SAM+ group: $n = 49$). Each FGD included between seven and nine CHWs (Krueger & Casey 2008).

Data collection instruments

Focus group discussions were guided by semi-structured questionnaires examining CHW perceptions of challenges related to their work. Before starting data collection, questionnaires were piloted in cooperation with SCUS programme managerial staff to determine clarity of language.

Data collection

Data were collected in March 2010. The researcher and a study assistant facilitated FGDs. Ethical approval was obtained for this study from the Institutional Review Board of Tufts University. Participants were informed that the research team was not affiliated with SCUS, that all comments would be kept anonymous and that the purpose of the research related to general interest in their experiences. Oral informed consent was given by all participating CHWs. Consent was obtained to audio record and to take notes during the sessions.

Data entry

Handwritten notes were translated into English by Data Analysis and Technical Assistance in Dhaka. Audio recordings were translated into English. Transcripts of both data sources were not back-translated.

Data analysis

The initial coding process followed a directed content analysis procedure (Hsieh & Shannon 2005). Transcriptions of CHW FGDs (both transcriptions of audio recordings and translation of handwritten notes) were categorised using provisional codes developed during piloting of questionnaires and initial analysis (e.g. workload, time allocation, pay/incentives, family stress, income generation, responsibility to community; Saldaña 2009). The categorised data were then analysed for themes related to CHWs' work challenges and the processes they employed in addressing these challenges, using an iterative approach to identify a discrete number of themes (Corbin & Strauss 2008; Saldaña 2009). Four manifest themes emerged from discussions: 'stretching their time to accommodate increased workload', 'low pay causes shame and problems with family', 'prestige gained from work' and 'limitations to usefulness of their services'. Each theme was further divided into sub-themes based on trends in the data common to both groups of CHWs under analysis. Rigor was ensured in thematic analysis by identifying themes through careful reading and re-reading of the data (Fereday & Muir-Cochrane 2008). Analysis of challenges related to workload and domestic responsibilities have been documented elsewhere (Puett *et al*. 2012). This analysis focuses on limitations to the usefulness of CHWs' services, in terms of their advice, treatment and referrals, that were due to structural factors beyond their own control.

Reliability and validity

Steps were taken to ensure reliability and internal validity of the data by asking the same questions to all CHWs, triangulating themes in the answers among different data sources (including among different FGDs and the different CHW groups), and including only those themes found across both groups of CHWs (Miles & Huberman 1994). To promote external validity of the data, perceptions of CHWs included in this study were triangulated with those found in the literature, from CHWs in other settings. The face validity and credibility of the research was strengthened by conveying CHWs' perceptions in their own words. Accurate representation of their words was ensured by recording discussions through audio tape and handwritten notes; these data sources were then translated by different individuals and compared for consistency.

Results

Several themes emerged during focus group discussions, regarding CHWs' perceived work challenges.

Barriers to adoption of CHW advice

Families counselled by CHWs have limited resources to provide appropriate foods to their children

Community health workers cited several instances in which the advice they gave their communities was not adequate for improving child nutrition status. For those children identified as having faltering growth, CHWs provided special advice and counselling using a Promise Sheet (a behaviour change communication tool related to child-feeding practices), and sometimes provided cooking demonstrations. CHWs commented that the families of malnourished children, often among the poorest in their communities, had the interest but not the ability to provide healthy food to their children, even in the relatively small amounts needed by a child. One reason cited was lack of financial resources to provide the nutritious foods suggested by the CHW.

Most of them are very poor, what will they do? What they do, that is not enough. We try to do our best for them. Last month I visited a home and I myself cooked special food for the baby. For practical experience to the mother, we teach them practically how to make special food for the baby, so that mothers can do it later. But sometimes mothers cannot manage that for their child; as a result they remain malnourished and affected by diseases frequently.

If we give advice to the mother of a serious patient and the mother works accordingly, still the weight of the child does not increase more than 100 grams to 150 grams.

Two points are important here, one is there are some poor mothers who have to work for their family, they have not enough time to take care of their children, they have to fight for surviving. Their first concern is to manage food for all, then special food for the child [after that]. It is the main problem. And another one is scarcity of enough food, some mothers try to arrange food but because of lack of available food they cannot manage it for their children.

Caring practices are constrained by inadequate time for childcare

Community health workers reported that another resource in short supply among poor families was time. As all family members were busy working, including the mothers, they had more urgent tasks than spending extra time for responsive feeding of their children.

Community health workers cited caring practices as a concern distinct from food quality. They faced difficulty in raising awareness about the importance of caring practices among remote communities. For CHWs providing therapeutic care for SAM children, it was easier to provide assistance when the cause was food shortage. When they perceived the cause of malnutrition to be care practices, CHWs often felt unable to spend adequate time with the caretaker in order to change these practices.

CHW: It is very difficult for the poor mother [to follow feeding advice], those who are well-off they can follow that. Some mothers cannot manage, there are some mothers they say, 'Apa, you tell me to feed my children this food. But it has been three days and *I* haven't eaten.'
Interviewer: But apa, I found one baby whose mother feeds him enough even if they sometimes have to stay fasting.
CHW: That may be, but how many mothers are conscious like that! Here are mothers, who don't want to give her baby time enough.

Interviewer: What do you think, why are the children getting sick? Don't they follow the instruction given by you?
CHW: What we advise them usually they don't follow that, we try to make them follow the instruction, they became sick because they don't provide right food for the child. We advise them to feed nutritious food. There are two type of SAM children: one cannot take food and another does not get food.
Interviewer: Does that mean one is unable to eat food, and for another their mother does not feed them?
CHW: Yes.
Interviewer: Then what do you do for them?
CHW: Those who cannot take food, we advise to feed them liquid food.
Interviewer: Those who do not provide food for their children are they poor?

CHW: No, some of them are poor, and some mothers don't give time to take care of their children.

Barriers to referrals

Caretakers cannot afford to go to the hospital

In the poor communities in which they worked, CHWs reported that households often could not afford either the cost of treatment at the hospital, nor the time away from work needed to go the hospital. CHWs recognised that this delay puts children at risk. In several sessions, discussions emerged over ways in which to remove this fear of payment, so that families would not delay seeking urgent care for their children.

Some poor mothers don't want to go to the hospital because of money, they usually go to the village doctor. The medicine provided by the village doctor most of the time is expired and not pure, and so often those children become high-risk. Then the mother brings her child to the hospital in emergency, she even borrows money to visit the hospital then . . . We only want that the doctor who will see these poor children will not take any fee. I mean in the hospital or health complex, whatever it is, that the poor children may get treatment free of cost. So that they want to go to the hospital and are not afraid about money.

Referred children receive inadequate treatment at the hospital

Many CHWs reported that households referred to the hospital often received inadequate care once they arrived. The hospital was seen as not taking seriously the referrals from CHWs, and giving these patients inadequate and inattentive treatment due in part to their lack of resources, and in part to their being referred by an 'informal' care provider. Further, there were several mentions of hospital staff allegedly asking bribes from poor patients, to receive basic services such as mosquito nets and meals which were normally provided without fee.

This inadequate care was a serious concern unto itself, and CHWs felt that it also reflected poorly on them because they had made the referral themselves. There were many heated discussions about this challenge, with CHWs expressing frustration and dissatisfaction with their interactions with doctors, and requesting more formalised integration of their work within the health system. They felt that doctors should give them guidance and support them in their work.

CHW: Sometimes we see that after taking our treatment the baby cannot recover, it seems that the baby may have a serious problem, if some special treatment can be arranged that would be good.
Interviewer: There is a referring system, you can refer them to the hospital, and don't you refer them?
CHW: Yes, we do, but the doctor does not give extra attention to them [to respond in full to the health problem], they just see it as a fever and then just give the treatment of fever, but the baby needs some more treatment.

Sometimes as for our limitation of instrument and knowledge we have to refer mothers to the hospital, but as they do not give enough care at the hospital, they do not want to visit the hospital. Even in serious cases they do not give any concern if we refer them to the hospital. Sometimes they disappoint us saying that, 'We have visited hospital spending money only for your advice, but it brought no good result. They ask for the money for different causes in the hospital, they don't care for us.'

When we give referral slips to poor families, and they go to the hospital, the doctors don't care. They look at our referral slip and throw it away.

Proper treatment is not obtained if we refer to hospital. As a result, our importance has been lessened.

After referring to hospital, the doctors do not give importance. Steps should be taken to change this culture.

Barriers to treatment

We receive irregular medicine supply

Community health workers were trained to treat ARI, diarrhoea and in some cases, SAM. Therapeutic foods for treating SAM were managed by SCUS and were supplied regularly. ORS and Cotrim, used in treatment for ARI and diarrhoea, were supplied by the Ministry of Health and often experienced shortages and stockouts. The need for a timely supply of medicine was cited as a problem by CHWs in

all sessions. Even when they had some supply of these medicines, it often was not sufficient to meet community demand. This limited CHWs' ability to provide the treatment for which they were trained, and meant they could only offer advice and referrals.

If we can provide some medicine besides saline for diarrhea, then we may need not to refer to the hospital, we can manage this problem locally. As we cannot give medicine, it has been seen that for feeding only saline the baby vomits and lastly he needs to go to the hospital . . . There are a lot of mothers who have not enough money to go to the hospital, so it is painful. If they have to go other places for treatment even after coming to us, then why will they come to us? So sometimes they don't want to come to us.

This is a major problem, not having enough medicine. Often children return home empty-handed; we cannot give them saline.

When children suffer from cold and cough we only give them advice, nothing more to do.

Sometimes we found very sick baby but we have nothing to do except refer to the hospital, if we had enough medicine we could give this baby primary support.

From the hospital they have said, 'In the store we have no ORS, ORS supply has been finished'. There should be a system that hospital will be obliged to provide a certain amount of ORS for CHWs.

Even the hospital has no ORS. There should be more rules and regulations between [SCUS], or CHWs in general, and hospitals for who gets supplies when.

We would like to treat more diseases

Community health workers were seen by their community as a neighbourhood doctor who provided services at no charge; and CHWs reported that community members were often frustrated if they could not offer appropriate treatments for all their ailments. CHWs felt pressure, based on this community need, to offer more diverse treatments.

In all discussions, CHWs cited increased demand in the community for treatment of an expanding number of illnesses, such as fever, common colds and skin rashes. They appreciated this demand, as evidence that they were a trusted source of treatment for illnesses in their communities. All CHWs requested additional training for different types of curative care, so that they could offer their services for free to poor households. One common request was training in fever measurement and management, and provision of a thermometer. Another request was regular provision of zinc for diarrhoea treatment. In several sessions, CHWs expressed a need for training to provide antenatal check-ups for poor pregnant women, including iron tablets and equipment for blood pressure measurement. They stated that if they could provide these check-ups for free, poor mothers would avoid a 20 taka fee to have a nurse visit their homes.

The villagers are mostly unable to visit hospital because of poverty, we can make them understand, and they understood what to do, but because of less money they cannot carry on all advice. If we were able to give them money or assist them to take treatment they would pray for us. This makes us happy, we are not bothered about the money we received but the happiness of the poor mother is more important to us. If we can give more service, because of us a family is benefited.

Sometimes children are suffering from severe fever, they first time come to us, and we feel something should be done but we can then only give them advice. When they go to the doctor, and the doctor gives them medicine, so they think we are not for work, only to talk. Sometimes they fail to keep their faith in us.

Yesterday a mother came to me with a baby; the baby had skin diseases on his whole body. I could not give him any treatment except advice, then the mother insulted me saying 'What a doctor you are! You cannot give medicine. What are you doing?'

Discussion

This study has presented findings on CHW perceptions of the key structural barriers to effective service provision. There is limited evidence on the interaction between demand-side and supply-side constraints and its influence on CHW service delivery. Through applying a social-ecological analytical framework, this study found several such interactions, including the

influence of health system resource constraints on community trust in CHW services and the influence of community resource constraints on the effectiveness of CHW services.

Community resource constraints were a clear challenge to CHWs' provision of care. CHWs reported that caretakers often lacked the time and resources to follow their advice, especially in terms of responsive feeding recommendations. This finding suggests to the study team that time constraints, a common barrier to responsive feeding, (Pelto *et al*. 2003; Aboud *et al*. 2008; Bentley *et al*. 2011; Black & Aboud 2011) may need more explicit focus in CHWs' counselling, and that counselling alone may not be effective without a strong behaviour change component encouraging negotiation with mothers to identify and brainstorm solutions to their constraints. While behaviour change communication is an established component of CHW training modules (WHO 2012), this finding seems to indicate that not all trainings are successful at adequately building capacity in this important skill. Further, this reinforces findings from other studies indicating that inadequate resources constrain mothers' ability to provide adequate nutrition to their children regardless of their level of knowledge (Reed *et al*. 1996). Within this complex environment, CHW programmes could offer psychosocial support along with supportive supervision to help workers cope with these realities. In addition, this indicates that appropriate choice of intervention is a key factor affecting CHW motivation, and that in areas of extreme poverty, supplementary feeding or other income-generating programmes could be appropriate in combination with nutrition counselling and behaviour change communication activities (World Bank 2005).

Research shows that communities prefer to utilise those CHWs who they see as treating illnesses that are common in their communities (Bhattacharyya *et al*. 2001). In contrast, they are disinclined to utilise those CHWs whose services are seen as less relevant (Sauerborn *et al*. 1989a). Well-designed programmes can support CHWs by including work tasks that reflect the actual needs of the community (Sauerborn *et al*. 1989a; Walt *et al*. 1989; Robinson & Larsen 1990; Abbatt 2005) in order to motivate CHWs to provide quality care (Kelly *et al*. 2001). Community preference must be balanced with the need for skilled attendants where necessary in order to ensure safe health care for vulnerable populations (Curtale *et al*. 1995; Abbatt 2005).

The CHWs in this study were able to prescribe some basic medications needed for the community case management of childhood illness. A challenge noted frequently by CHWs in this study was the irregular supply of medicines provided by the formal health system, for treating common childhood illness such as ARI and diarrhoea. Past research shows that this is a common issue for CHW programmes, highlighting 'the vulnerability of CHWs at the last mile of the supply chain' (Chandani *et al*. 2012). A recent review cited shortage of medical equipment and drugs as a major barrier to service provision affecting many CHW programmes, which at times did not allow them to fulfil their work responsibilities (Bhutta *et al*. 2010). In an analysis of the Lady Health Workers programme in Pakistan, 70% of CHWs reported inadequate supplies as among the most significant challenges affecting their work (Haq *et al*. 2008). Moreover, in many contexts, CHWs are not permitted to prescribe medicines at all, with this task delegated only to medical professionals by national policy. This presents a further constraint to decentralising PHC service provision through CHW networks.

A lack of supplies was concerning to CHWs on several levels. First, they were unable to provide care to children who needed it, stating that '[o]ften children return home empty-handed'. Other studies have shown that provision of appropriate supplies of drugs and equipment, such as hanging scales and breath counters, can make CHWs more effective (Bang *et al*. 1994; Stekelenburg *et al*. 2003; Bhutta *et al*. 2010). Additionally, research indicates that this lack of medicine reflects poorly on the CHWs, starting a negative cycle wherein CHWs with inadequate supplies are not well utilised by the community (Bhattacharyya *et al*. 2001; Stekelenburg *et al*. 2003). Some research has shown that a regular shortage of drugs and supplies can lead to a loss of job satisfaction (Haq *et al*. 2008), thereby contributing to poor quality of care (Stekelenburg *et al*. 2003).

An underlying theme in CHW discussions was the lack of support from the health system. Previous

research cites this disconnect from the health system and the individuals within it as a primary reason for the failure of many CHW programmes (Abbatt 2005; Bhutta *et al*. 2010). CHWs cannot be a 'panacea for weak health systems' (Haines *et al*. 2007), and concerted efforts will need to be applied to strengthen these systems alongside CHW programmes.

Weak health systems, characterised by resource shortfalls limiting availability of medicines and other critical supplies (Travis *et al*. 2004), can also drive a wedge between CHWs and the communities they serve. Other research has shown that shortage or complete absence of critical medical supplies (i.e. stockouts) at the level of the health care system can challenge a community's trust and reliance on CHW services (Gopalan *et al*. 2012; Pinto *et al*. 2012a); this is a serious threat to CHW effectiveness given the strong influence of community feedback on CHW job performance (Robinson & Larsen 1990). By threatening a CHW's standing in the community as a source of reliable care, resource constraints in the public health care system can affect her self-efficacy and motivation to strive for high-quality service provision.

The health system was in charge of delivering these supplies that CHWs lacked; as a result, CHWs perceived that there should be more 'systems' and 'rules and regulations' governing the provision of these supplies to CHWs. This points to a perceived disconnect between CHWs' work and that of the formal health system, a finding reinforced by the lack of support for CHW referrals reported here, which is itself a common challenge in CHW programmes (Bhutta *et al*. 2010). Other studies have found that a formal connection with and recognition by health systems lends credibility to CHWs' work and contributes to feelings of work satisfaction (Walt *et al*. 1989; Schneider *et al*. 2008). Further, previous research shows that CHWs are most effective when they are recognised as an important component of the formal health system (Haines *et al*. 2007; CHW Technical Taskforce 2011). Promoting this connection is recommended as a necessary step to establishing cadres of professional, competent CHWs and to creating scalable CHW programmes (Liu *et al*. 2011).

One aspect of this problem is the often ambiguous link between CHWs and the formal health system. CHWs frequently work on a volunteer basis, and are located at the margins of these systems (Schneider *et al*. 2008). On the other hand, health systems in low-income countries are usually weak themselves. If CHW referrals increase utilisation of health services, it is critical to ensure that the care they are accessing is of good quality (Winch *et al*. 2005; Liu *et al*. 2011). This issue is of particular importance in areas where community perception of government health services is negative or distrustful (Paine & Wright 1989; Sauerborn *et al*. 1989b).

There are several potential limitations to this study. Findings from this analysis reflect the experience of CHWs participating in this study, who we believe to represent the CHWs employed in this programme; findings cannot necessarily be generalised to CHWs working in other contexts. However, the barriers to quality of care identified in this study are consistent with those in the literature; therefore, these findings are relevant to other similar programmes in developing countries that employ CHWs for service delivery.

A strength of the qualitative study design is that it provided an appropriate methodological approach for obtaining a rich understanding of this under-researched topic. While the findings pertain to this particular setting, the value of a feedback loop from the frontline workers is more general. The use of a sound theoretical framework and consideration of influences at multiple levels were further strengths of this analysis. We feel that the major contribution of this study is the inclusive description of the perceptions and experiences of CHWs in providing curative and preventive health and nutrition services in communities with limited access to health care, in a country with an under-resourced public health care infrastructure. This study adds to the literature by describing CHW perceptions of limitations to their effective service delivery, in terms of barriers to community access and utilisation of services, the influence of weak health systems on their services and the interaction of these supply- and demand-side factors.

This study has examined CHW perceptions of structural barriers to quality of care and community utilisation of services. The findings have several implications for future research, as well as programme and policy development. Future studies should examine in

more depth the breadth and complexity of challenges faced by CHWs at various levels, rather than ignoring or taking for granted the seemingly intractable problems at more distal levels. This would help in the formulation of more relevant and effective support mechanisms for these frontline workers. CHWs cited many perceived challenges to quality of care and community utilisation of services originating at structural levels, which may be beyond a non-governmental institution's ability to influence. However, there are programmatic support mechanisms that could be put in place to assist CHWs. Rather than repeat past mistakes of under-resourcing programmes delivered by these workers, future programmes should invest adequately in broad-ranging support mechanisms to ensure CHWs are not overwhelmed by the breadth of issues they must face in delivering essential services. These could include provision of psychosocial support, adequate training in behaviour change communication and ensuring that work tasks reflect actual community needs and priorities, among others. There is also a need for advocacy to governments and donor agencies about the potential contribution of CHWs to the health workforce and the institutional support required to enable their provision of quality care.

Community health workers have strong potential to extend health services with equity to populations with limited access to health care, and yet they face many challenges. These come from national policies – particularly those which do not support their use of essential medicines, from weak health systems that do not provide adequate resources or supervision and from a low level of effective demand and utilisation from communities. Both policies and programmes should focus concerted effort on determining adequate and appropriate support measures to ensure that CHWs have the resources necessary to perform their work effectively.

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Conflicts of interest

The authors declare that they have no conflicts of interest.

Contributions

CP, JC, HA and KS designed the research; CP and KS conducted the research; CP, JC, HA and KS analysed the data; CP, JC, HA and KS wrote the paper. All authors read and approved the final manuscript.

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