THE ROLE OF COMMUNITY HEALTH WORKERS IN NON-COMMUNICABLE DISEASE IN THE HELDERBERG DISTRICT

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Declaration

I, the undersigned, hereby declare that the work contained in this assignment is my original work and that I have not previously submitted it, in its entirety or in part, at any university for a degree. I also declare that ethical approval for the study was obtained from the Health Research Ethics Committee of Stellenbosch University (Reference number: S16/11/241).

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Abstract

Introduction

Community health workers (CHWs) have been part of primary health care (PHC) for many years and are integral to the Department of Health's (DOH) strategy for the re-engineering of PHC. The DOH envision that the role of CHWs should be comprehensive, covering the breadth of health care issues and including health promotion and disease prevention interventions, treatment adherence support as well as rehabilitation and palliative care. However, their roles in non-communicable diseases (NCDs), are less clear.

Aim

The aim of this study was to explore the current role of CHWs with regard to NCDs.

Setting

The research was conducted at a non-governmental organisation, in the Helderberg sub-district of Cape Town, South Africa.

Methods

The study design was a qualitative exploratory descriptive study that made use of non-participant observation and qualitative interviews with community health workers, non-governmental organisation manager and nurse coordinator, and the sub-district manager of community-based services at the DOH.

Findings

CHWs displayed a strong sense of significance and pride in their work because they were embedded in the communities they served. Their role with regard to NCDs was potentially comprehensive, but limited by a lack of sufficient training, inadequate supportive supervision, poor inter-sectoral support from social services and a need for more clarity on their roles in rehabilitation and palliative care. Training might also have been limited by low educational backgrounds.

A number of opportunities and threats were identified such as poor remuneration and labour law issues, poor integration of community- and facility-based teams, the need for a more functional and electronic data collection system that was linked to the district health information system, and some deficiencies in terms of equipment and resources.

Conclusion

CHWs have the foundation to provide a comprehensive approach to NCDs, but their work needs to be strengthened in many of the key areas to support their activities. In relation to NCDs, they need training in basic and brief behaviour change counselling and risk factors as well as in the areas of rehabilitation and palliative care.

Introduction

The World Health Organization (WHO) estimated that non-communicable diseases (NCD) contribute 68% of the burden of disease and nearly 80% of NCD deaths occurred in low and middle income countries in 2012.[1] South Africa has a quadruple burden of disease with an increasing contribution from NCDs that particularly affects poor urbanised communities and has a major impact on the health services.[2] In the Western Cape, NCDs have become the third leading cause of death in the age group 25-65 years and the leading cause of mortality in people over 50 years.[3,4] In Cape Town 57% of deaths were due to NCDs in 2016.[5]

In the Western Cape, approximately 63% of the district health service's budget is spent on NCD pharmaceuticals, but only half of those receiving medication are controlled.[4] Empowering people to modify their lifestyle, self-manage their chronic conditions and adhere to the medication is also important. Underlying risky behaviours include, physical inactivity, unhealthy diet, tobacco smoking, and harmful alcohol use. These risk factors for NCDs leads to obesity, hypertension, nicotine addiction and diabetes and result in cancers, cardiovascular and respiratory diseases. [5,6] Modifying these behaviours and risk factors can happen at an individual level as well as at a community level. Social determinants of health, such as access to affordable healthy food and green spaces, also impact on the prevalence of these factors.

There are disparities between the public and private health sectors with regard to accessibility of health services as a result of the political legacy of South Africa.[7,8] The National Department of Health adopted the Primary Health Care (PHC) approach, outlined in the Declaration of Alma Ata, to reform the public health sector in order to overcome these inequalities.[8,9] A large proportion of the South African population are uninsured and utilize public health facilities. It was estimated in 2018 that only 22% of the Cape Town population had medical aid coverage, thus highlighting the inequities between the private and public health systems.[3,7] In the public sector the day to day realities of overcrowding, long waiting times, shortage of health professionals and excessive strain placed on staff employed in public health facilities, limits access to acceptable and high quality care.[7,10] In the public sector care is most often given by a nurse with limited training in the management of chronic diseases.[7,8]

The gradual introduction of National Health Insurance (NHI) and re-engineering of PHC is a strategy to improve health care delivery.[7] The National NCD Policy sets targets to reduce premature mortality from NCDs by 25% and to improve control for asthmatic, diabetic and hypertensive patients by 30%.[11] The mechanisms to achieve this are disease prevention, health promotion, strengthening of health systems as well as better monitoring, surveillance and research.[11,12] The re-engineering of PHC in South Africa includes a commitment to develop the Ideal Clinic and to introduce Ward-based Primary Health Care Outreach teams (WBPHCOTs), consisting mainly of community health workers (CHWs). The strengthening of WBPHCOTs is one of the four-streams in PHC reengineering.[13] As part of a community orientated primary care (COPC) approach, the core function of the WBPHCOTs was to provide health promotion and education; basic preventative care; support adherence in chronic care and those at risk through early detection and intervention of health issues; as well as to promote adolescent, child and women's health.[11,13,18,20]

The COPC approach is based on six principles namely: pro-active community- based services, geographically defined population, integrated PHC teams, comprehensive care, practice informed by local information, joint prioritisation of community needs and assets. [14,15]

The provision of home and community-based health services, with links to fixed PHC facilities, has been shown to be effective both in local settings and internationally, if they are incorporated into government health systems.[16,17] The South African model differs slightly with a professional nurse as head of the team instead of a family physician as in the Brazilian Family Health Programme. [13,17]

In South Africa, during the Apartheid era, CHWs were employed by non-government organisations (NGOs) and were not formally part of public health services. With the post-Apartheid government many of the CHW projects were unfunded and collapsed. However, a national department of health audit in 2011 estimated that we still had 72000 CHWs, but were unable to generate better health outcomes.[13,18,19] This was attributed to factors such as poor training, insufficient support and supervision, limited scope of practice and ineffective referral links to PHC.[13,18,19] The re-engineering of PHC in 2011 rediscovered the COPC approach and argued for the re-introduction of CHWs as a more comprehensive and integrated strategy.

The national policy on PHC re-engineering states the following regarding the composition and roles of WBPHCOTs, and any specific strategy on NCDs for CHWs will have to align with these:[15,18,19,20]

- Consists of a professional nurse outreach team leader, six CHWs, a health promoter and environmental health officer.
- Provides information on risk factors for chronic diseases.
- Supports exercise, diet and smoking cessation campaigns.
- Identifies community resources.
- Identifies adults with hypertension, diabetes and depression.
- Identifies persons with other chronic diseases and disabilities.
- Facilitates access to facility or specialist services.
- Provides psychosocial support.
- Provides adherence support and counselling for new and existing persons on treatment.
- Provides an integrated approach to adherence support for TB, HIV and other chronic disease medication in close collaboration with facility- based counsellor and referral for social grants.
- Manages minor health problems.
- Provides basic stroke support and rehabilitation, support foot care in diabetics and elderly.

CHWs have been evaluated as a cost effective intervention in South Africa that should impact the economy, health sector and society at large.[21] CHWs can play a supportive role to the already over-burdened public health system by improving access to health care.[2,13,] Formerly their roles consisted of home based nursing care, but now they have a comprehensive role, including management of NCDs.[11,20,22] Multiple roles for CHWs, such as giving health education, distribution of medication, facilitation of support groups for chronic diseases and rehabilitation exercises at household level were suggested in Khayelitsha.[22] All interventions by CHWs in the fields of mother and child health, HIV/AIDs, TB, hypertension and diabetes should lead to a

reduction of up to 200,000 deaths over a 10 year period and 4.8 million Disability Adjusted Life Years (DALYs) should be averted.[21]

Most studies of CHWs have focused on their roles and effectiveness in HIV, TB and home-based care as part of more vertical health programmes.[16,23] Recent studies have focused on the implementation of WBPHCOTs as part of a COPC approach and identified strengths and weaknesses.[14,20] Few studies have explored or evaluated their roles with regard to NCDs and in Cape Town this issue is still unresolved. There remains a need to conceptualise more clearly what their role should be in relation to NCDs when visiting households and engaging with communities.[11,13,18,20]

Aim and objectives

The aim of this study was to explore the current role of CHWs with regard to NCDs in the Helderberg sub-district. Specific objectives included:

- To explore the experiences and expectations of CHWs with regards to their role in NCDs
- To explore the experiences and expectations of substructure and sub-district level managers with regard to the role of CHWs in NCDs
- To explore the experiences and expectations of NGOs with regard to the role of CHWs in NCDs

Methods

Study design

The study design was a qualitative exploratory descriptive study that made use of non-participant observation and qualitative interviews with key informants.[24]

Setting

Helderberg sub-district has a population of 204,481 in 2011.[25] Helderberg District Hospital provided secondary and emergency services to 10 community health centres. Masincedane was a NGO that was contracted by the Department of Health to serve the whole of the Helderberg sub-district. It provided an array of services, which included promotion of personal hygiene, client mobility for stroke survivors, dispensing of chronic medication, stoma care and support of TB treatment. For chronic diseases, they organised four support group meetings for diagnosed patients, where they offered health promotion, monitoring of blood pressure, foot screening and blood glucose testing and the dispensing of medication. CHWs received a 4-day chronic disease and lifestyle support group training.[26] Their working hours extended from 8H00 till 13H00 on weekdays. The educational background of CHWs was a minimum of a grade 9 certificate. The arena where CHWs worked, was mostly within the community support groups and at household level. Some CHWs were based at frail care centres or at health care centres and some had the role of doing HIV counselling. At one particular clinic health promotion was done by giving health talks and foot care for patients with diabetes.

Study population

All CHWs were regarded as equally important key informants and therefore 10 were randomly selected from a list provided by the NGO and invited to be interviewed. Initially five CHWs were interviewed and following initial analysis, a further five were interviewed to ensure all key topics were fully explored. CHWs had various years of experience and due to random selection CHWs with different experience had an equal chance of being selected. If new themes were still emerging after these 10 interviews, then further interviews would be considered to ensure data saturation were achieved. Key managers and co-ordinators of the CHWs employed by the NGO were also interviewed. In addition, the managers responsible for community-based services at the substructure (Eastern-Khayelitsha) and sub district (Eastern) levels were invited to be interviewed.

Data collection

The interviews with the CHWs were based on an interview guide and explored the following key topics. The topics were identified from the literature on COPC [14] and what is currently happening in health policy:[15]

- Their relationship with the community.
- Their perceived role in relation to NCDs and risk factors.
- The strengths and weaknesses of the current services for NCDs.
- Cooperation, referral to and partnership with primary care facilities and staff.
- Pros and cons of their current training in NCDs.
- Their perceptions of the future COPC model for CHWs.

The interview with NGO managers or co-ordinators focussed on the same topics as above with an interview guide and in addition explored:

- Inter-sectoral collaboration.
- Relationship with the department of health.
- Monitoring and evaluation of the CHWs and health information systems.

The interview with the DOH managers, focussed on the following topics with an interview guide:

- Relationship with the NGO and CHWs.
- Monitoring and evaluation of the CHWs and health information systems.
- Assessment of their current impact.
- Strengths and weaknesses of the current services for NCDs.
- Perceived roles of the CHWs in relation to NCDs now and in the future.
- Training needs and current training.
- Cost-effectiveness and financial issues.

All interviews were audio recorded and conducted by the principal researcher in English over a 60-minute period. The predominant language that the CHWs related to was in Afrikaans, therefore, the interview guide was translated into Afrikaans in addition to English. The principal researcher attended training in qualitative interviewing offered by the Division of Family Medicine and Primary Care. An initial pilot interview was conducted with a CHW in order for the supervisor to provide feedback on the interviewing and communication skills. Interviews were held at the participants' place of work or at a mutually convenient venue (e.g. the home of the CHW).

The researcher accompanied CHWs in their daily work as a non-participant observer to observe how they perform household visits, facilitated the four health clubs and other daily activities. Detailed field notes were made during observations or immediately afterwards. The focus of the observations was the activities of the CHW in relation to NCDs.

Data analysis

Audiotapes of the interviews were transcribed verbatim and field notes from the observations were also included as qualitative data. Transcripts were checked for accuracy against the audiotapes prior to analysis and corrected if necessary. Thematic analysis used the framework method and as well as Atlas-ti software.[24] Analysis had the following steps:

- Familiarisation: Potential codes were identified by reading the transcripts and field notes from observations.
- Coding index: Codes were finalised and organised into categories, while keeping the objectives of the study in mind.
- Coding: All data sources were coded.
- Charting: All the data derived from the same code was charted together.
- Interpretation: The charts were interpreted, looking for key themes and relationships between themes.

The trustworthiness of the analysis was improved by triangulating data from different methods, (interviews and observations) and from different data sources (CHWs and managers). The supervisor provided peer review of the analysis process when the coding index was developed and when the data was interpreted and reported.

Ethical considerations

Permission were granted by the Health Research and Ethics Committee (HREC) at the University of Stellenbosch (HREC reference S16/11/214), the Department of Health and the Macincedane NGO. Written informed consent was obtained from all study participants. Confidentiality was maintained by keeping the participants anonymous in all transcriptions and in the analysis and reporting of data. Audio tapes were secured and deleted once the study was completed.

Results

Profile of respondents

A total of nine interviews were performed, which included 6 CHWs, the NGO manager, an NGO nurse coordinator and the district manager of community- based services (Table 1).

Table 1: Profile of the respondents

Interview	Title	Gender	Years of experience as a CHW
Interviewee 1	District manager	Female	-
Interviewee 2	NGO manager	Male	-
Interviewee 3	NGO nurse coordinator	Female	-
Interviewee 4	CHW1	Female	<5years
Interviewee 5	CHW2	Female	3-5 years
Interviewee 6	CHW 3	Female	5 years
Interviewee 7	CHW 4	Female	>5years
Interviewee 8	CHW 5	Female	>5years
Interviewee 9	CHW 6	Female	>5years

Overview of themes

The findings are presented as nine themes:

- Theme 1: The relationship of CHWs with their community.
- Theme 2: The relationship of the NGO with the Department of Health.
- Theme 3: The role of CHWs in NCD and risk factor management.
- Theme 4: Relationship with and referrals between CHWs and their primary care facility.
- Theme 5: Training of CHWs in NCDs.
- Theme 6: Inter-sectoral collaboration.
- Theme 7: Financial issues pertaining to employment and training of CHWs.
- Theme 8: Support and supervision of CHWs.
- Theme 9: Monitoring and evaluation of CHWs and the health information system.

Theme 1: Relationship of community health workers with their community.

CHWs were selected to work in the same community where they lived, had been working for many years and were well known in the community. Their relationship with the community was characterised by trust that was built up over time. Community members had to trust them to not disclose their confidential or private information and to give them access to their personal space (e.g. to help them wash). This continuity was also important for community members to trust the advice and information received from CHWs:

> *"Sometimes we go and we do baths with them (the patients) and assist them with self-care and personal hygiene and I can see that they feel uncomfortable especially if they are not familiar with and you know your body is a very private thing. I think are afraid that we (community health workers) will talk to other people (community members) about them. So, it is very important for the community members to earn your trust". (CHW 5)*

> *"They believe what you are saying is true because you have over a long- term period building that relationship." (CHW 6)*

> *"I had, for eight years I worked in the community. I had no problems with them, whenever they needed help, even if it was afterhours, I would go even weekends." (CHW 5)*

CHWs and the NGO manager felt that their work was meaningful and rewarding and their contribution was significant to the communities they served:

> *"I encountered a very dysfunctional family. Family members weren't there especially when they [the patient] needed to go for hospital appointments. The patient had to be there on a monthly basis and that on their side it just wasn't there (the patient had no support). And then I would always offer to accompany him". (CHW 5)*

> *"Well we have been around for a long time and we are based in the community and the community health workers live in the community. We have got a good reputation and we work closely with the community leaders and even the residents. They have come to know us and they have come to know what we are doing and what we are standing for. So, we are getting where we actually want to be, with the community people as well as the leaders and all the other stakeholders". (NGO manager)*

Theme 2: The relationship of the NGO with the Department of Health.

The services rendered by the NGO were defined by the Department of Health in a service level agreement. Services could be an adjunct to services in the primary care facilities that targeted specific patients or could be additional services that targeted the whole population at risk:

> *"The relationship with our NPO's in the Eastern South district is a professional relationship on behalf of where they are doing a service to the community, on behalf of Department of Health. So, the relationship is a service rendering, we give them an outline service agreement were we exactly say can you please do these duties for us and we measure in monitoring and evaluating on a quarterly bases to see how the service was rendering and that is the relationship. It's a nurse driven relationship that is more about promotion and prevention and that is the kind of relationship that we have at the moment." (District Manager)*

The advantage of the NGO being linked to the Department of Health was that funding and training was provided to CHWs and aligned to health targets that the department wanted to reach. The Department of Health monitored and evaluated the services provided by CHWs on a quarterly basis:

> *"Department of Health is funding us, so they, they are paying for the nurses and the community health workers, so it is a partnership and you know it's a very close partnership, we, they do a lot of training and we are invited to that training. We interact with the Department of Health in the clinics, the hospital and at departmental level" (NGO manager)*

Theme 3: The role of CHWs in NCD and risk factor management.

CHWs worked from different sites within the community including households, community halls, churches and the primary care facility. Their scope of practice was comprehensive from health promotion to home-based care although they were delivering a service that was more orientated towards health promotion and disease prevention.

Traditionally CHWs performed home based nursing care and assistance with basic physical care needs such as feeding, bathing, dressing, wound and pressure care, but their recent duties entailed household assessments. This was a task whereby CHWs systematically assessed the households that they were responsible for within the community. Information from the household assessment form was meant to give the Department of Health an idea of the health status of the residents in a particular area:

> *"We evaluate their clinic cards or the road to health charts of children, note all the illnesses people have whether you have asthma, hypertension or diabetes, if you are smoking, if the children's immunizations are up to date, note the condition of the home. You are then meant to go back to that household and see if there is an improvement, measure their (the patients) glucose and blood pressure and refer to the clinic if there are no improvements."* (CHW4)

The household visits identified individuals at risk who might require referral to health or social services. CHWs reported findings to their coordinator who then decided on appropriate action, such as referral. Needs that were identified included services from the South Africa Social Security Agency (SASSA), such as grants as well as access to sanitation and electricity, referral to old-age homes, testing for TB or HIV, incomplete immunisations or vitamin A prophylaxis, need for family planning or antenatal care or just information on healthy lifestyle:

> *"Some carers are equipped to help patients with SASSA grant referral" (Nurse Coordinator)*
> *"The household form identifies demographic information about the family, CHWs use the opportunity to see whether the child is immunised and vitamin A is up to date, this is how we also then refer back to the clinic.". (NGO manager)*

> *"So the impact would be to prevent illnesses and identify those with illness and act accordingly like referring, linkage to care e.g. old age homes and SASSA."(District Manager)*

CHWs provided health promotion to people at risk of NCDs to reduce risky behaviour. This could take the form of health talks in the clinic, clubs or counselling in the home. The communication style was often didactic as they had not received training in behaviour change counselling. The NGO manager iterated the need to integrate behaviour change counselling in the training of CHWs because behaviour change is not guaranteed with health education only:

> *"I think the difficult thing about non- communicable diseases is that it's very hard to change people's lifestyle and the weakness is really proper prevention and promotion of a healthy lifestyle. We are talking about the document the ichange4health [patient education leaflets from the campaign ichange4health on risky behaviour], but we never really got to it so yeah in that respect. For the HIV people we have got clubs where they can gather and talk about their status, checking to find out how they are doing and how to keep up with their healthy lifestyle. ".(NGO manager)*

> *"I talked to them (the patients) and explain the reasons to quit smoking. I'm not telling them to stop at once but to start by smoking one less on a daily basis. The patient would adhere to my advice and when I see her again she will say; 'can you see I'm not short of breath today because I didn't smoke so much, or I didn't eat so much' because I told her she must curb the*

> *salty food as well and told me that she had curbed it. Well that influence you have on them when they see you, they immediately start telling, you gave me this advice and I have followed it. Sometimes we have pamphlets and then we give them pamphlets regularly." (CHW 6)*

> *"We have got community health workers that work in the clinics and one of their roles in the clinic is to, is to give health talks, which would include chronic diseases of lifestyle." (Nurse Coordinator)*

CHWs also prevented disease through screening for high blood glucose and blood pressure:

> *"We do their BPs and we take their sugar levels. If it's a bit high, we refer them. We do have letters whereby we refer we fill it out and then we send them with the letter to the clinic where the clinic staff will take it up with them" (CHW 5)*

CHWs provided assistance to people with diagnosed diseases through support groups, clubs and at home in order to enable self-management and adherence to treatment. Lifestyle modification and health promotion (e.g. dietary advice), as well as diabetic foot care (e.g. cutting of toenails, removal of callus) and identifying patients with uncontrolled diabetes or hypertension, were all part of the daily activities observed. Challenges due to lack of equipment or supplies such as not having various blood pressure cuff sizes, scales or not being trained in brief behaviour change counselling were a barrier in addressing the health needs of patients and referral to primary health facilities:

> *"They have a weekly group of elderly people or people who are coming to collect their CDU (Chronic Dispensing Unit) at the group. Obviously we need to give some service, quick help, prevention, promotion, do the blood pressure, do the sugar testing and ABC in diet, dietary things and are you still okay, are you eating okay, you know all that kind of things that is what we do at the group…for chronic disease of lifestyle and then we offer also foot care and to look at their feet and do the foot care, and the cutting of the nails." (NGO manager)*

> *"We have a weekly Feet club where we monitor the feet of diabetics, do cutting of nails and treat corns and calluses. At the clubs also monitor the blood pressure and sugar levels of diabetics. If we find abnormal readings, we would do health talks and refer to the clinic." (CHW4)*

CHWs disseminated pre-packaged medication to stable patients at a monthly club instead of the pharmacy. This reduced the workload on the clinic and waiting times for the patients. Their role at the community health centres was to liaise with the pharmacists to collect chronic medication for club patients, give feedback on which patients collected their medication and to clarify any uncertainties related to medication. Although patients were meant to be stable and not needing regular clinic visits, CHWs often found patients with uncontrolled NCDs and referred them back to the primary care facilities.

CHWs also assisted primary care facilities with patients who have defaulted medication or missed their appointments for doctor's visits or medication collection. Those patients were either picked up via household assessment or health club visits. However, the clinics not make use of CHWs to trace patients with NCDs identified by the clinic itself:

> *"The one family was very dysfunctional. Family members weren't there, especially when they*

needed to go for appointments, like for instance to Tygerberg Hospital" (CHW2)

"If they pick up somebody with an unacceptable BMI (body mass index) or blood pressure they (CHWs) can fill in a referral form to the clinic and id we get it right there will also be feedback that they have been to the clinic" (Nurse coordinator)

CHWS might also help people at home with complications of their NCDs such as stroke. They might also provide basic home-based care to people with end-stage NCDs. Rehabilitation and support are given to stroke survivors either at household level or at support groups through partnership with other NGOs within the community. The stroke support group were also used as an opportunity to perform activities such as blood pressure and glucose readings:

"I even used to actually take him (a patient) for physiotherapy. I used to make it, because after the stroke, his family didn't want to take him down, there's a Stroke Foundation next to and then I would just take him. (CHW 1)

At the support group CHWs/NGO will get referral for new patients:

"For instance, we get a patient that is like a stroke patient and that patient didn't get referred by the hospital, it was through a support group, then we have to do all the excises, we have to make sure that the BP and everything is right. I think there is a big need for us to have that proper training so that we know what to do and when to refer them". (CHW 6)

Theme 4: Relationship and referrals between CHWs and primary care facility

The lack of a standardised referral process between the CHWs and their different primary care facilities was a barrier to helping people with NCDs. At some facilities the CHWs had easier access, due to good relationships with primary care providers, in comparison to facilities where the role of CHWs was not clearly understood or where no consensus was reached on the appropriate referral pathway. The team dynamics between the CHWs and clinical nurse practitioners (CNPs) could either be a barrier or advantage. Facility based services (FBS) and community- based services (CBS) worked in parallel in the same community with liaison, but not full teamwork. CHWs also struggled with their roles and scope of work, perceiving tensions between community needs and expectations and the services they were equipped and authorized to deliver:

"They will just ask the patient who sent you here and then they will say it's the nurses (referring to CHWs) in the community and then they will disagree with your referral. It makes me feel that some of the staff they are undermining the care, us as community workers." (CHW 4)

CHWs felt that in some instances, nurses at PHCs had misconceptions regarding their roles and responsibilities and this led to tension in their relationship:

"Once you send them (the patient) or make a referral you are told by the clinic you are just a community worker, you can't just do this and for us it challenging and you feel helpless because the family ask you what your job really is."(CHW 6)

"sometimes we wait long despite giving an explanation that we still have work in the community". (CHW5)

In some cases, the primary care facility lacked comprehensive primary care services and could not adequately support the CHWs when patients were referred:

> *"In Gordon's Bay, there is no doctor here and first of all when they come there to the clinic, they then tell the(the patients) they(the primary health care facility) don't have a doctor so they can't treat them, even if they are hypertensive, they can't monitor them, they must go to a clinic where there is a doctor. For them to go there, sometimes they don't have money, they don't have transport, so it's difficult for them and they end up not going" (CHW 2)*

The NGO developed a partnership with the district hospital and built relationships with local clinics to strengthen referral pathways to and from the NGO. Referral to and from the NGO; came from hospitals, intermediate care and primary care facilities. The referral from CBS to health services, were to achieve further control and optimisation of NCDs and included people with uncontrolled hypertension and diabetes. These patients were usually identified during household assessments and health club visits:

> *"And at first, we couldn't just go in and, and discuss our things, we had to wait, but if we make an appointment now, we do arrange meetings and we can discuss our problems and stuff. If they have a problem, they will call us also in but the referral has improved considerably". (Nurse Coordinator)*

> *"Referrals comes largely in faxes from intermediate care, the clinics and Helderberg Hospital" (NGO manager)*

People with end-stage NCDs that required palliative care were referred to CBS for assistance with such as personal hygiene and client and prevention and treatment of pressure sor*es:*

> *"We are doing the chronic care outside, taking care of the very frail people, where they are doing full body washes, pressure and wound care. (Nurse Coordinator)*

Socio-economic problems such as lack of transport and financial issues prevented patients from attending the nearest health facilities. One particular health club CHWs had difficulty referring patients with uncontrolled hypertension and abnormal glucose reading to the nearest clinic:

> *"they (the nurses at the clinic) then tell them they don't have a doctor so they can't treat them, even if they are hypertensive, they can't monitor them, they must go to a clinic where there is a doctor. So for them to go there, sometimes they don't have money, they don't have transport, so it's difficult for them and they end up not going and they are sitting there with a problem, and then every time they sometimes they are feeling shy to come and when they don't come anymore, then they just stay away from the club as well"(CHW1)*

Theme 5: Training of CHWs in NCDs

Each CHW had basic training in home- based care from the NGO through classroom as well as work-based training. NCDs were part of their curriculum and the NGO used allied health professionals such as physiotherapists and dieticians to teach on particular aspects of chronic disease, which included rehabilitation for stroke survivors or amputees and lifestyle modification:

> *"In their training session we get the physiotherapist in to show them the correct way of lifting people out of the bed into a wheel chair and back. CHWs get trained about the size of the wheelchair and how that should be corrected towards the body of the patient." (Nurse coordinator)*

CHWs expressed their need for more in- service training especially when they encountered challenges on home visits or at support groups because not all topics were covered by their curriculum:

> *"Some of my patients are on insulin and not all CHW are trained to administer insulin, you have to go for training to be able to teach your patient ". (CHW6)*

The Department of Health were also involved with the training of CHWs and the training was based on the perceived needs within the community, however the training was done on an ad hoc basis:

> *"Training is available, it's cost effective because it's us and we normally source people that like Medecins Sans Frontieres (MSF) that will do HIV and TB training at their expense. Financial issues, obviously state pays for it, but if there is formal training like the EPWP (Expanded Public Works Program) which can be costly and their course is four years ". (District Manager)*

The sub-district would then do a performance assessment to see whether CHWs were able to perform the duties for which they were trained in:

> *"So that is a consistently monitoring, evaluation because the community based platform it is evolving we have go back because every time they just add to the workload. So when it comes to the monitoring and evaluation we need to see constantly is it relevant, can they do it, are they trained to do it if they need to get some training to do a specific task.(District Manager)*

The training specifically for NCDs includes how to run a support group and distribute medication, give dietary advice and how to assist patients with complications of chronic diseases such as wound care. For stroke survivors or amputees they assisted with self-care and hygiene as well as mobilization. Health and social issues were a challenge for CHWs because their training did not equip them to have an approach to what they encountered during household assessments and club visits:

> *"To start off is each community health worker needs to have a basic community health care, which the NGO is doing. This is now your normal how to wash and dry and that type of things and obviously if you go further how to run CDU club, we get the partners in for maternal health and child care to give in service training, or just a refresher course and things like that. With regards to chronic disease the dieticians play a big role too. So all this training, all the actions we want them to do, I need to see that they get training, even if we have to retrain and retrain.* So the service level agreement says entails training in adherence clubs, HIV counselling course and so forth" *(District Manager)*

> *"We do, we do get some workshops from the department of health where we can attend. They also have to do projects on patients with chronic diseases where they do a practical on patients living with NCDs who resides within the community. They also observe what we (Nurse coordinators and other trained CHWs) are doing in practice" (Nurse Coordinator)*

Different educational backgrounds were a challenge when training CHWs. One particular CHW had done training through a college whilst the minimum requirement at this particular NGO was a grade 9 education. The different educational backgrounds appeared to influence their ability to achieve the learning outcomes and perform their roles:

> *"CHWs are lay workers so you can put ten community health worker in a class, five of them won't understand well and you have to go back and check 'do you understand what I am trying to say' "(District Manager)*

> *"What I did, was an extensive course, like I did it with a university and like every year you need to upgrade because I know there is a lot of challenges since the last time I went there." (CHW5)*

Patients needing rehabilitation were a challenge for CHWs:

> *"Say for instance we get a patient that is like a stroke patient and that patient didn't get down- referred by the hospital, it was through a support group, then we have to do all the excises, we have to make sure that the BP and everything is right. So I think there is a big need for us to have that proper training so that we know what to do and when to refer them" (CHW* 5)

Theme 6: Inter-sectoral collaboration

The NGO reported on a number of important inter-sectoral and stakeholder collaborations and appeared open to pursue and consolidate these relationships. They noted that other NGOs in the area could be useful allies in addressing health issues, even if they were funded from other sources. Primary health care services were not completely integrated due to dual services from the Department of Health and City of Cape Town despite serving within the same catchment areas:

> *"I'm working with funded NGOs, but your non-funded NGOs is just as important to pull them also in because obviously sometimes they are working in areas that you don't even know about or they know things that you are not aware of and they get for example, funding from City of Cape Town and then you can just pull them all together. (District Manager)*

Relationships with key role players such as religious leaders and ward councillors within the community had also benefited the NGO by having church buildings and other community halls available as health clubs close to patient's homes:

> *"I would say we engage with the community leaders to do out-reaches, it's all about recognition and also they can spread the word and go to the other forums, we have a relationship with this in the community because you are in the community, it's like part of their community profile. So that is one of the strengths that we can use for our services in the community (District Manager)*

The CHWs benefited from these relationships and knowledge of local stakeholders by referring people to these additional services, for example, environmental health officers:

> *"We have got a partnership, for example where, if we have got referral we can do it to social services, we can do it to environmental health, we are active in an organisation called Multi-*

sectoral action team (MSAT) which is a collective of NPOs and it's a service we offer in a sense."(NGO manager)

Some key collaborations were difficult to develop, particularly with Department of Social Development and the police:

"DSD (Department of Social Development) is one of our main co-partners but we just never get them around the table to plan together as well as collaboration with SAPS (South African Police Service) in terms of the safety of our CHWs to see that they are protected if they[are] entering into an area" (District Manager)

Other collaborations with private, alternative or complimentary practitioners were still to be explored.

"Also your private sector, I am coming with the option if you go and sell the idea that instead of clients going for family planning I can come monthly and do your family planning and your pap-smear so the woman don't need to go to the clinic and for a full day". (District Manager)

Theme 7: Financial issues pertaining to employment within the substructure

The challenges that CHWs faced in delivering an integrated service were influenced by their working hours, educational and career progression within their field. CHWs were paid below minimum wages, which led to lack of job satisfaction and little opportunity for professional development. Currently CHWs at this particular NGO were receiving a stipend determined the department of health:

"It's very little money for the community health workers. I believe they are going from next year they are going to pay them the minimum wage and there *are financial issues pertaining things "(District Manager*)

The District Manager recognised that due to the progress in the community- based platform it was vital that salaries paid to CHW were cost effective in terms of the services delivered by CHWs.

" We need to evaluate how much they(CHWs) can do in a given time because they are working half day and we giving them a specific package and that is our role to see what we ask from them is it feasible for them to do that task in a given time. So that is a consistently monitoring, evaluation because the community based platform is evolving and the workload of the CHW are increasing and we have to evaluate whether the work of CHW are relevant, can the CHW 's do it, are they trained to do it, to see where more training is needed to do a specific task" (District Manager)

The perception was that workloads were increasing due to the expectation of the DOH on what CHWs should do:

"Every time they (Department of Health) just add to the workload." (District Manager)

Theme 8: Support and supervision of community health workers

They were supervised by nurses who were also employed by the NGO. Their role entailed in-service training, accompanying CHWs on household visits, analysing and reporting on household data,

monitoring CHW performance, assessing the need for referral and assisting clinically with complicated cases or housebound individuals who did not have easy access to primary care facilities. Nurse coordinators looked after groups of CHWs and indicated that due to competing demands they were not able to go with CHWs on a daily basis. Work plans and challenges were discussed at a gathering point within the community prior to each work day:

> *"Okay they are supervised by us as the coordinators, in the morning we get together and we, we have our work plan set out for the week or sometimes it changes and then we have it for that day, but actually it's been worked out, what we are going to do the next day. We get together and we discuss and we also give in-service training. Uhm while they (CHWs) are there and they have a problem we will discuss it if they don't know how to do it, we (nurses) will actually go with them and we will supervise them while they are busy or otherwise if they still seem to be unsure, we will do that ourselves and then they can learn from the way that we are doing things (referring to practical tasks and activities. "(Nurse coordinator)*

> *"So, we don't go out with them every day but if they find difficulty with a client they already have we go out and, and see at least, the patients at least once a month, but assessments that we need to do for a new client we will go out immediately, we have got a time span of 72 hours that we need to respond."(Nurse coordinator)*

> *"Every half year we do an appraisal on the community health workers. The coordinators carry that out". (NGO manager)*

Theme 9: Monitoring, evaluation and the health information system

Data collected on paper from household assessments were not captured and analysed, but stored at the NGO. Currently the data that was captured provides information on performance of CHWs for provincial and national department of health and were not used to make a community diagnosis or identify health needs. Data were not integrated into the PHC information systems and therefore not used for the purpose of health- related decision making and planning:

> *"How we measure it is obviously we say we want you to do ten per month (household assessments). Now out of that household assessment form that I call a census form you can gather a lot of information. You can measure a lot of things, you can pick up for instance the main house consists of five informal houses, each with their own household. So CHWs must register each household on a different form due to the informal settlements residing on the same yard. You get different disease profiles from each household. We want to have an idea what is happening in the community so we can plan accordingly. Say for instance here in block A has a lot of diabetes or hypertension or then we know we must have outreach pertaining to the disease profile. We informally measured what the impact is of community health workers." (District Coordinator)*

Currently cell phone technology and m-health solutions were being piloted whereby data collected by CHWs was integrated with data from health facilities. An electronic data collection system, called Catch and Match, was being piloted. There was an attempt through the provincial data centre to link this data collected from CHWs with health facility data via a single patient viewer system. This was an opportunity to analyse the health status of the community. At the time of this research the

district manager expressed concerns in some areas CHWs might not want to do "regular work" and other tasks might be neglected if they only focus on capturing data on their cell phones. The CHWs had limited understanding of the Catch and Match system.

> *"Okay, all of these things normally start out with pilots and it takes long to change the mind of the community health worker because it's almost like you are trained to do that and that's it. So that is my, my perception about it and that is their perception too, we have lots of challenges with that and they have very strong managers, she told them never mind going for catch and match, I am telling you 'ABC'". (District Manager)*

The NGO had positive views about the Catch and Match and were applying principles from the training other areas of their work:

> *"We have fourteen trained. They have all been issued with for example a scale, that's carried in a backpack so they can weigh the babies on a regular basis when they go and visit. I think we are very positive, very excited about it and it's in the pipeline that would be expanded to the whole of Nomzamo and Lwandle. One would hope that it is expanded to the whole of community health workers and we are actually drawing informally from the training on Catch and Match and we are implementing it elsewhere.*

Discussion

CHWs had a number of roles and performed a range of comprehensive health care activities for people with NCDs, from health promotion, disease prevention, adherence and treatment support, assistance with rehabilitation and palliative care. However, CHWs identified a need or further training as they were unprepared for many of the health and social challenges that they encountered. The key findings are summarised in Table 2 and categorised into strengths, weaknesses, opportunities and threats .

Table 2: SWOT analysis of key findings

Strengths: **What are the strengths of what CHWs are currently doing?**	**Weaknesses** **What are the weaknesses of what CHWs are currently doing?**
• CHWs were embedded in the culture of the community and have good relationships with community members • Health clubs: Promoting self-management and lifestyle change, checking control (blood pressure, blood glucose and weight) and referring to the clinic if uncontrolled, and evaluating feet in people with NCDs at health clubs. • Do household assessments to identify people with NCDs and smokers. Provide	• Reducing the risk factors for NCDs required more training in behaviour change counselling, knowledge of the risk factors and who can assist further in the community. • Insufficient numbers of Nurse Coordinators to adequately supervise and support CHWs at health clubs were noted during observations. • Inter-sectoral collaboration is weak and this particularly hinders the ability of CHWs to access social services and help with social issues.

advice, such as smoking cessation, and check on adherence. • Adherence support: disseminating pre-packaged medication to patients at health clubs and sometimes via home visits. Assist patients to make new clinic appointments when they have defaulted. • Home based nursing care and assistance with basic physical care needs such as feeding, bathing, dressing, wound and pressure care. • Professional Nurses (also known as Nurse Coordinators), supervise and support CHWs, for example by doing home visits for complicated cases where they assess the patient and advise on management. • Nurse Coordinators coordinate referrals to the clinic from CHWs and from the clinic to the CHWs.	
Opportunities **What do the NGO and DOH think needs to happen to develop NCD care in the future?** • A multi-sectoral action team (MSAT) already exists whereby the DOH and other sectors participate in. • There is an opportunity for more standardised and comprehensive training through the DOH once the training programme has been finalised. • There is an opportunity to do more especially during the household assessment and to screen for people at risk of NCDs e.g. cardiovascular risk score, screening for substance or alcohol abuse. • There is an opportunity to evaluate the data gathered at the household assessment more accurately as part of a community diagnosis, to plan interventions and to integrate into the broader health information system.	**Threats** **What are the key issues that might hinder or prevent the development of NCD care?** • The work of the CHWs is threatened by a poor relationship with the facility-based members of the PHC team. Poor coordination between the facility and community based teams with a lack of respect, support and collaboration. • Inadequate or lack of enough equipment to perform their duties in the health clubs e.g. scales, various BP cuff sizes, patient information leaflets. • Lack of clarity on the scope of practice of the CHWs, particularly in relation to NCDs. • Salaries for CHWs and number of contracting hours are low for the duties expected to perform • CHWs selected at too low educational levels to adequately perform all of their tasks.

• There is an opportunity to enhance the roles of CHWs in rehabilitation processes (e.g. support of stroke survivors) and palliative care (e.g. pain management)	

CHWs have an integral role in the National Development Plan, which envisages a comprehensive role for CHWs in NCDs; including health promotion, disease prevention, palliative and rehabilitation care.[11,13,27] There is also an expectation that CHWs will play a pivotal role in the provincial strategy to reduce the prevalence of NCDs by 28%.[4,27] The findings of the study showed that CHWs already undertook a wide range of health care activities relating to NCDs (e.g. wound care and personal hygiene in palliative care, assist patients with transfers to wheelchair, distribute pre-packaged medication, advised on lifestyle modification, advise on smoking cessation), but were not completely comprehensive. At the time of this study in 2016 there was no well-defined scope of practice and consensus on this was only reached in 2018.

This study highlighted the lack of skills to perform the tasks specified in the service level agreement with the NGO and this can be attributed to the quality of training and supervision. There is also a need to finalise the details of the new scope of practice[15] and to have standardized training that is tailored to the context in which CHWs are working and addresses the burden of NCDs.[20,28,29] One challenge in this study was that the competency of CHWs appeared to differ with different educational backgrounds.

In order for CHWs to perform certain tasks, they need essential equipment. CHWs had to share kitbags within their groups because they often lacked equipment such as a variety of BP cuff sizes, scales, or patient information leaflets. Other studies have also found that CHWs are handicapped by a lack of essential equipment and the budget commitment to provide such equipment.[14,20] These CHWs were fairly well equipped and had access to essentials such as uniforms, transport, and stationary, but needed additional equipment for some of their specific activities.

The Department of Health envisage that CHWs will address the risk factors for chronic diseases through lifestyle modification strategies aimed at tobacco smoking cessation, physical activity, healthy diet and alcohol reduction.[11,20,27] The risk factors for NCDs such as smoking cessation, unhealthy diets, lack of exercise and obesity were poorly addressed and this also highlighted the need for training in communication skills for basic and brief behaviour change counselling. Although CHWs were addressing these risk factors, the weakness is the manner in which the task was performed. In particular CHWs with less educational foundation and less experience had difficulty conducting health talks and explaining nutritional concepts. Key issues, which have also been noted previously, are the selection of CHWs with a sufficient educational level, a standardised training programme with the focus on health promotion and disease prevention for NCDs and alignment of the programmatic learning outcomes with the roles expected of CHWs in policy. [22,28,29]

The roles of CHWs in rehabilitation and palliative care are not well defined in policy although this forms part of the National Developmental Plan for 2030.[13,20,27] Their roles in palliative care and

rehabilitation entailed basic home based nursing care, helping patients to attend stroke support groups and assisting debilitated patients with self-care and personal hygiene. CHWs expressed the need for further training, despite having some prior training in rehabilitation, as they felt unequipped for this role. A recent study indicated that there is a need to develop and improve home-based stroke services delivered by CHWs.[30] Services were of short duration and fragmented and referral pathways to health services were not integrated. CHWs were trained to train and support family caregivers in the immediate post-stroke period.[30] It was beyond the scope of this research to clarify their roles in palliative and rehabilitative care.

The NDOH recommended that CHW teams should consist of six to ten CHWs supervised by a nurse coordinator (professional nurse) to ensure adequate coverage of the defined population.[20] In this study context, nurse coordinators were employed by the NGO and were responsible to offer support and supervision to groups of CHWs that exceeded the 1:10 ratio. Support and supervision were not completely absent, but nurse coordinators struggled with the numbers and often prioritised their administrative role. It was also not uncommon for CHWs to experience difficulties with complicated patients during their health club and household assessment visits, but struggle to obtain immediate assistance from the nurse coordinator. Problems with supportive supervision have been noted elsewhere[14], but were often due to nurses from primary care facilities being asked to supervise CHWs in addition to their other duties, whereas here the problem seemed to be with the ratio of CHWs to nurses and conceptualisation of their clinical roles.[14,15,20]

Inter-sectoral collaboration forms a pivotal part of the COPC approach.[14] Health services, both facility and community-based, and other sectors take joint responsibility for the health of a defined population. In this study the NGO identified important inter-sectoral and stakeholder partnerships that could provide venues as well as services for people identified by CHWs. At the time of the study, collaboration between the City of Cape Town (COT) and Department of Health required improvement in order to fully support the COPC model and community-based services that needed to refer to both service providers. The NGO was part of a multi-sectoral team (MSAT) along with the Department of Health, but developing relationships with some key role players, such as SASSA, was difficult. Weaknesses in inter-sectoral collaboration, particularly between health and social services, in support of CHW, has also been noted in other parts of South Africa. [14,19]

CHWs and other staff employed by the NGO, were doing work as stipulated in their annual service level agreements with the DOH.[4,7,15,31] Outsourcing of certain health services to NGOs was a cost-effective strategy for the DOH, but concerns were raised by the CHWs' unions in some provinces that this approach might disregard the Labour Relations Amendment Act No 6 of 2014 and inadvertently exploit vulnerable CHWs who were often paid below the minimum wage.[31,32,33] Of note is the implication in the Act that NGO staff are not temporary employees and therefore can technically be considered employees of the DOH who should receive similar benefits as permanent workers.[31,33] The perspective of the district coordinator and the CHWs were that the workload sometimes exceeded the amount of contracted hours and this was corroborated with the interview with CHWs. This caused frustration amongst CHWs because they were unable to complete their work planned for the day, often due to accompanying patients to health facilities or primary care facilities where they waited long. The work of the CHWs is threatened by a poor relationship with the facility-based members of the PHC team and poor coordination between the facility and community based teams.

Although CHWs were liaising with PHC facilities they were not yet completely part of the PHC team and this was a threat to their ability to provide services, particularly for NCDs. The perceived resistance to cooperate with the CHWs was attributed to a lack of respect for CHWs and a lack of an agreed scope of practice. This was evident in the theme on relationship and referral between the CHWs and primary care facilities. CHWs particularly struggled with referring patients to the primary care facilities. In local studies, CHWs performed better in their collaboration with the HIV and TB programmes, but little was known about NCDs and how adherence was supported.[16,17,20,34] CHWs were observed to trace patients who failed to collect their medication at the health club, but patients were not referred for tracing to the NGO from the clinic if they had missed their appointments. CHWs could contribute to supporting adherence of patients with NCDs but need to be better integrated with the facility-based services in order to do so. The implementation of community-based services that are fragmented and not fully integrated into a well-functioning PHC team is likely to be less effective both locally and internationally. [14,16,17,34,35] The referral process was not well developed and barriers in the referral pathways were identified such as disagreement on the appropriateness of referrals, lack of access to clinics, referrals not attended to within due time and a lack of awareness of the working hours and the scope of practice of CHWs.

Although CHWs collected data from household assessments and health clubs (such as data on collection of medication, weight, blood pressure and blood glucose) this was paper-based, not captured and not analysed or integrated into the health information system in a way that made it available for clinicians or managers. The health information system was not fit for purpose and only monitored the performance of the CHWs despite having valuable information. The NDOH intends to develop standardised data collection tools for all WBPHCOTs and to integrate with data from primary care facilities.[20] The NDOH developed m-health strategies to assist CHWs to collect data and to capture this data within the broader health information system, although the Western Cape Department of Health have developed their own solution called Catch & Match.[36] Health information systems can be utilized in the COPC approach to contribute to analysis of local health needs and assets (community diagnosis), prioritization of health needs, and development of interventions in an evidence-based and scientific decision making process.[14] Although CHWs collected data from household assessments and health clubs (such as data on collection of medication, weight, blood pressure and blood glucose) this was paper-based, not captured and not analysed or integrated into the health information system in a way that made it available for clinicians or managers.

Limitations

As with all qualitative research the findings are highly contextual, however many of the findings could be transferred to similar settings in the Western Cape or South Africa where CHWs are trying to provide a service for chronic diseases.

Strengths of the study included the triangulation of data sources (CHWs and managers from NPO and DOH) and data types (interviews and observations) and the assessment that data saturation was achieved when no new themes emerged from the interviews. Although data collection and analysis were performed by DW, the process was supervised by RM.

Another limitation was the willingness of CHWs to participate in the research. Their response could have been influenced by power dynamics and a perceived hierarchy between participants and the

researcher who was affiliated with the district hospital. However, CHWs were not familiar with the researcher and she had no supervisory or formal role in their work. In an attempt to empower CHWs, they spoke their preferred language (English or Afrikaans) and viewed the interview guide beforehand. A focus group discussion would have allowed CHWs to speak openly in a group of their peers and reassure those who were less experienced.

The researcher, being a family medicine registrar, approached the study in a fairly neutral manner as she had little prior experience in the work that CHWs do and minimal interaction with community-based services.

Recommendations

Based on the findings of this study a number of recommendations can be made:

- CHWs can contribute to a comprehensive approach to NCDs from health promotion, disease prevention, treatment support, rehabilitation and palliative care. Their roles in rehabilitation and palliative care need further definition and training.
- More standardised training should be aligned with the scope of practice of CHWs.
- Basic counselling and brief behavioural counselling techniques are essential skills that CHWs can use to assist patients with lifestyle modification. Standardized training should be given in how to manage the risk factors for NCDs which are smoking and alcohol cessation, dietary advice and nutritional concepts as well as physical inactivity.
- Attention must be given to improving the functional integration of community-based CHW teams with facility-based primary care providers. The referral pathways for patients to and from CBS should be strengthened.
- The ratio of professional nurse coordinators to CHWs should be reduced to enable more effective clinical support and supervision.
- Inter-sectoral collaboration should be strengthened between the NGO, DOH and key stakeholders to plan and implement strategies that targets NCDs at community level. Partnerships with other sectors such as DSD, SAPS and Education as well as Private sector and City of Cape Town can strengthen the platform for NCDs management.
- CHWs can provide useful information on community health needs, particularly through household assessment and registration. However, data from household assessments needs to be captured more efficiently and electronically, analysed to provide information, and integrated with other data from facilities to assist with community diagnosis, planning and implementation of health promotion and disease prevention strategies.

The NGOs and clinics had not adopted the COPC framework at the time of the research and therefore improvement could have subsequently occurred at the research learning sites.

Conclusion

CHWs displayed a strong sense of significance and pride in their work because they were embedded in the communities they served. Their role was potentially comprehensive, but limited by a lack of sufficient training, inadequate supportive supervision, poor inter-sectoral support from social services and a need for more clarity on their roles in rehabilitation and palliative care.

A number of opportunities and threats were identified such as poor remuneration and labour law issues, poor integration of community- and facility-based teams, the need for a more functional and electronic data collection system that was linked to the district health information system, and some deficiencies in terms of equipment and resources.

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