

“We wouldn't leave if our jobs changed a little”: Understanding the labour market choices of community health workers in Ethiopia

Nikita Arora (✉ nikita.arora@lshtm.ac.uk)

London School of Hygiene and Tropical Medicine Department of Global Health and Development
<https://orcid.org/0000-0001-5123-7751>

Kara Hanson

London School of Hygiene and Tropical Medicine Department of Global Health and Development

Neil Spicer

London School of Hygiene and Tropical Medicine Department of Global Health and Development

Abiy Seifu Estifanos

Addis Ababa University School of Public Health

Dorka Woldesenbet Keraga

Addis Ababa University School of Public Health

Alemtsehay Tewele Welearegay

Mekelle University College of Health Sciences

Freweini Gebrearegay Tela

Mekelle University College of Health Sciences

Yemisrach Ahmed Hussen

Addis Ababa University School of Public Health

Yordanos Semu Mandefro

Addis Ababa University School of Public Health

Matthew Quaife

London School of Hygiene and Tropical Medicine Department of Global Health and Development

Research

Keywords: Community health workers, labour market choices, motivation, Ethiopia, pro-social preferences, retention

Posted Date: February 6th, 2020

DOI: <https://doi.org/10.21203/rs.2.22803/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Background

The motivation and retention of community health workers is a challenge and inadequately addressed in research and policy. In Ethiopia, as part of the country's Health Extension Program, Health Extension Workers (HEWs) deliver essential primary healthcare services to communities, but low retention of experienced HEWs threatens sustained service delivery and efficient use of their health budget. We sought to identify factors influencing HEW retention and ways to mitigate their exit.

Methods

Following a review of literature on work motivation and community health worker (CHW) retention to identify a conceptual and theoretical framework to guide analysis, exploratory qualitative work was conducted using in-depth interviews with leavers of HEW positions (n=20), active HEWs (n=16), and key informants (n=11) in two regions in Ethiopia. Interviews were audio recorded, and simultaneously translated into English and transcribed for analysis. Data were analysed in NVivo 12 using an iterative inductive-deductive approach.

Results

The conceptual framework by Ormel et al, 2019, was adapted to analyse our results thematically. We identified a number of extrinsic and intrinsic motivational factors affecting the retention and labour market choices of HEWs. While financial incentives in the form of salaries, and material incentives in the form of improvements in health facility infrastructure and provision of childcare were reported to be important, non-material factors like HEWs' self-image, acceptance and validation by the community were found to be critical. A reduction or loss of these non-material factors proved to be the catalysts for many HEWs to leave their jobs. We also found a strong professional self-identity among HEWs, which influenced their willingness to remain in their jobs.

Conclusion

This is the first study to include job leavers in an analysis of factors affecting motivation of CHWs, aimed to improve retention. In addition to material incentives, our findings suggest that these workers are also socially motivated and identify strongly with their profession. Policy interventions, which also appeal to their social needs, could represent a simpler and more cost-effective means of improving retention of this workforce, especially in resource-constrained settings. Keywords Community health workers, labour market choices, motivation, Ethiopia, pro-social preferences, retention

Introduction

Over the last two decades, a large body of evidence has emerged on the importance of Community Health Workers (CHWs) in improving population health, particularly in previously underserved communities (1–

5). Their significance has also been recognised in two recent reports; a WHO guideline on optimising CHW programmes (6) and the CHW Assessment and Improvement Matrix (7) – both of which suggest strategies to optimize the functioning of CHW programmes in health systems, especially in low-and middle income countries (LMICs) (8).

Although now seen as critical to a well-functioning health system, poor motivation and retention of CHWs remains a challenge. While there is some, limited evidence of effective interventions to address poor motivation and retention (9–12), existing research has typically only explored how different incentive packages could improve performance (13–15). Importantly, studies have not explored the role that community context and group identification play in influencing CHWs' motivation, retention and performance in the long term. In particular, no study to date has studied CHWs who have left the health system to understand why they left, and what could have reduced attrition.

In 2003, Ethiopia launched the Health Extension Program (HEP), a primary healthcare delivery strategy designed to make up for a low number of doctors, nurses, and midwives. HEP focused on delivering essential health services using lay CHWs called Health Extension Workers (HEW), mainly targeting agrarian communities (16). HEWs complete a year-long training in delivering primary health interventions including family planning services, latrine construction, and basic preventive and curative services for communicable and non-communicable diseases (17). Unlike CHWs in other countries, HEWs are salaried government employees with currently more than 40,000 members deployed in the country (16, 18, 19).

A recent evaluation of HEP found that work satisfaction among HEWs was low, suggesting poor retention, with high risk of losing a large number of HEWs if and when alternative job opportunities emerge (20). HEWs take up a large proportion of the Ethiopian health budget; 21% of the recurrent health expenditure in 2010/11 was spent on HEW salaries (21), and so it is critical to make sure that experienced HEWs are retained over time to use this budget efficiently but also to sustain the delivery of quality healthcare. Yet, to date, few studies have researched why HEWs leave their posts. Most research has sought to identify financial and non-financial incentives which motivate HEWs (22–27). Some ethnographic accounts of HEWs have also studied the context in which they work (28–30), and more broadly, research has been conducted on contextual factors influencing the performance of CHWs (24).

While material incentives that align with HEW preferences are clearly relevant to studying retention, previous studies have never studied the perspective of those who have left these positions ('leavers'). Empirical findings have also not been used to theorise the social behaviour of HEWs, which is tied in with the culture and social context in which they work, thereby influencing their labour choices.

This study identifies factors influencing the labour market decision of HEWs to leave or stay in their jobs, taking the perspectives of current HEWs, leavers, and the health system. Furthermore, we use the data generated from qualitative interviews to demonstrate how group identification can also influence the social behaviour and preferences of HEWs towards working conditions that ultimately influence retention in the health workforce.

Methods

We conducted this study between January and August 2019. In the first stage, we undertook a review of literature to identify conceptual frameworks that link motivational factors to health worker retention. We adapted the conceptual framework by Ormel et al, 2019 (31), shown in Fig. 1 which critically analyses the use of a mix of incentives and their relationship with CHW motivation and work behaviour, to include the role that pro-social preferences play towards prioritising non-material incentives, highlighted in red in the figure. This model was most in line with our study objectives and thus selected to inform our interview topic guides, and categorise the results from our exploratory qualitative work described in the section below. Following this, we conducted qualitative interviews with HEWs, leavers, and policy makers.

Study setting

Qualitative in-depth interview data were collected from one district in each of two Ethiopian regions: Tigray and Southern Nations Nationalities and People's Republic (SNNPR), between May and July 2019. Two regions were purposively sampled to capture the varying extent of HEP implementation and thus HEW retention in different regions, which is likely to differ due to the political set up in Ethiopia. Historically, Tigray has been a better performing region on health indicators, in comparison to SNNPR, and so we expected variation in perspectives from staff working in the two regions.

Sampling and participants

Data were collected from three key populations: active HEWs, leavers, and key informants. Key informants were policymakers at the national, regional and district level. Details on sampling and respondents per region are presented in Table 1.

Table 1
Interviews conducted per informant type

Study population	Active HEWs	Leavers of HEW positions	Key informants
Sample size	16 (8 per region)	20 (10 per region)	11 (5 per region, plus one from Federal Ministry of Health)
Gender	All female	All female	3 female, 8 male
Purpose of inquiry	To capture their perspective on factors affecting HEW motivation and labour choices	To understand factors influencing decisions to leave	To capture the perspective of key stakeholders and identify policy levers that could be modified to improve HEW retention
Sampling technique	Maximum variation sampling - for diversity of age, geographical location and years of experience	Snowball sampling	Purposive sampling, with variation in administrative levels, seniority and level of engagement with HEWs

We conducted 47 semi-structured interviews in total. The mean age of respondents across all three study groups was 31 years, and mean time worked in the health system was 5 years for HEWs, 7 years for key informants and 6 years for leavers. Key informants included HEW supervisors, senior officials at district health offices, HEW experts at district levels, HEW coordinators at regional levels, and a senior official at the HEP directorate, Federal Ministry of Health

Conduct of the interviews

Separate topic guides were drafted for each study population, informed by literature on factors affecting the motivation and labour choices of CHWs in LMICs, and the framework by Ormel et al (31). Key topics covered in the interviews included reasons for choosing HEW profession, motivating factors, challenges faced in their jobs, and preferences towards job attributes. For leavers, we additionally inquired about their reasons for leaving. Topic guides were piloted and pre-tested with interviewers and members of the study populations.

Data Analysis

Transcripts from the audio recordings were analysed using an iterative, inductive-deductive approach (32) in NVivo 12 (33). Themes were identified by: (1) reading and re-reading the transcripts and making notes on relevant issues; (2) listing out these issues in the form of a codebook and attaching codes to relevant sections; and (3) writing narrative summaries of relevant themes and sub-themes that emerged most frequently and/or were appropriate to the study (34).

Results

Since leavers were the key population of interest in the study, we first describe the jobs that they were engaged in now, and summarize factors that speeded up their exit from HEW positions. Key factors influencing HEW motivation and labour choices are then presented in detail.

Leavers' destinations

We found significant variation in the type of employment that the leavers were currently engaged in. Migration to non-health jobs in the Middle East, due to better pay was a particularly unanticipated finding. Notably, no participant reported leaving or wanting to leave Ethiopia to work in a health system abroad, perhaps because HEWs are relatively low skilled by international standards.

"Most HEWs think about going to foreign countries. Like Arab countries. The salary in Arab country is relatively good in comparison with HEWs. [...] They think, here the workload is very high and the salary is very low so, why don't I go to an Arab country? And why don't I change my life in a short time?"

– Active HEW, SNNPR

A significant number of leavers reported to have become full-time homemakers. "I raise my children, I am a housewife" said a leaver from Tigray. Some women were currently self-employed and owned small businesses highlighting increased earnings and autonomy. "I have my own grocery. If you are an excellent worker, it provides higher income. It also has freedom; nobody can come and shout at you" reported a leaver from Tigray. Other respondents remained working in different health system roles, including as lab technicians and administrators in government health facilities.

Catalysts influencing exit: pro-social preferences

While HEWs did not generally anticipate leaving their jobs, they did leave when they felt they had lost the appreciation of their community or supervisors. These were the two main reasons for leavers to finally quit their jobs, despite other challenging working conditions reported by active HEWs and leavers alike.

We call these factors catalysts, or the triggers that speeded up the process of attrition:

Failure to receive support and validation from supervisors and senior staff

Conflict with supervisors and senior managers was the main reason why leavers claim to have quit.

These 'conflicts' often seem to have started with a senior official disrespecting the HEW, resulting in a negative shift in their status, social standing and esteem, and thus in their identity as a HEW. Supportive supervision, with appropriate acknowledgement and validation from their managers was identified as a critical factor in the retention of HEWs in Ethiopia.

"...the director came to my home and insulted me when I was very sick. He said this institution is neither your mother's nor father's; either perform your job appropriately or leave. I immediately left my job, and didn't even take my monthly salary"

-Leaver, Tigray

Reduced acceptance and validation from the community

Another key element for retention was receiving respect, acceptance and validation from the community for whom the HEWs worked. Despite tough working conditions, the opportunity to improve community health attracted many to their jobs. A negative shift in their social identity, due to low community acceptance, influenced working conditions and status, and their exit.

"There is no appreciation from the people in my woreda (district)... always they will criticize the HEW and service delivery... they are fault finders."

-Leaver, SNNPR

Key factors influencing HEW motivation and retention

Numerous factors reported by HEWs, leavers, and KIs were identified as those influencing HEW motivation, and retention in the workforce. Using our conceptual model from Fig. 1, we classified these into two categories: Extrinsic and Intrinsic.

Extrinsic motivational factors

Financial incentives

Financial incentives in the form of salaries or wages were found to be important among active HEWs as well as leavers. Current salaries were not considered to be commensurate with workload, their compensation not being enough to cover monthly household expenditure.

"HEWs do many overlapping tasks, but salary doesn't balance the work we do...the salary does not reflect living conditions of HEWs. Since we don't have additional income, and spend all our time at work, it's difficult to live on existing salary."

- Active HEW, SNNPR

Key informants, including HEW supervisors and senior officials at health centers agreed that HEW salaries were inadequate. HEWs cater to a large population, often in topographically difficult terrains and on foot, so physical strain due to their job came up as a common theme and a constraint to their motivation. "I still remember how horrible it was...the 4 hour walk in the mountains. It rains over us, and the sun burns so bad", remembers a leaver from SNNPR.

Material Factors

Material factors were also seen as important in influencing HEW motivation and retention. These often took the form of adequate drugs, equipment and infrastructure available at the health post. Such factors were found to be critical not only to support their daily work, but important to sustain the rapport and faith the community had in them by managing to do the tasks entrusted to them. Sometimes facilities were perceived so lacking that faith was the only answer:

"Sometimes I support the labouring mothers by praying to Gebriel (Angel), because what we learn is different from what we apply. The materials that we have are inadequate; we only have delivery kit, which contains scissor, and cord tie. When a mother delivers at hospital, many things are provided to her and her baby, but here we have nothing to give her".

-Leaver, Tigray

In addition, HEWs and leavers suggested that material incentives such as motorcycles for transportation should be provided as part of their work package, to decrease their physical burden.

Furthermore, the gender of HEWs results in a double burden, as many mothers with infants mentioned that it was hard for them to do their daily tasks as a HEW, alongside caring for their infants.

"It is very difficult having a child. I leave from my home early morning at 6 am [...] I may stay up to 6 pm, sometimes I don't even have time to drink water after coming back from field work. So, imagine doing all things having a baby

-Leaver, Tigray

For HEWs with young children, the absence of childcare was a disincentive to continue in their jobs after giving birth.

HEWs also mentioned not always feeling safe in travelling to rural areas. "Facilities like motor for transportation should be fulfilled. This security issue also needs attention since in rural areas females can be abused," stated a leaver from Tigray.

Non-material factors

Most importantly, HEWs and leavers mentioned highly appreciating the non-material factors such as appreciation from their communities and supervisors. The opportunity to improve community health, especially that of mothers and children, and gain their community's trust, respect and acceptance, was unanimously described as the top factor motivating them in their jobs.

"When I get the acceptance of healthy mothers and children, I am satisfied. Otherwise, the salary is not enough; the high workload is as I told you before".

- Active HEW, SNNPR

Sometimes, HEWs were not as easily accepted by their community, which demotivated them. Often respondents claimed that these demand-side barriers existed because of low levels of education and awareness among community members, which also led them to reject healthcare interventions such as family planning and latrine construction.

"The community's behaviour is difficult. For example, when we go to their home to educate them about environmental hygiene, they may close their door and leave from home. They say, oh! She is coming! When I enter through the front door, they will leave the house from the back door. It is for them but they do not understand. To teach them about something we will take many days. They have a shortage of knowledge."

- Leaver, Tigray

Other non-material demotivating factors were things that HEWs and leavers identified as lacking in HEW jobs. For example, the placement of HEWs in health posts, often far away from their hometowns where their husband and children are based, limited their motivation and retention. All three study populations agreed that the absence of opportunities to transfer to a facility closer to their family was frustrating, unfair, and led HEWs to leave their positions. "This was my main reason to leave my job... Imagine that you can't meet with your husband as well as your children for a long time because there is no transfer (opportunity)", mentioned a leaver from Tigray.

In addition, two key issues around career progression were identified. First, HEWs that were keen to upskill to the next level had to take a competitive exam in English – a language they are not generally proficient in and do not normally use in their jobs, and on topics in which they had not received enough training. The success rate for these exams was thus found to be low. HEWs complained that while many of them are excellent field workers with many years of experience in delivering healthcare, their inability to do well in an exam should not be the sole determinant of career progression.

The second key issue was for HEWs who did manage to upgrade to the next level, but despite upskilling, were expected to return to their old jobs at the health post. Many HEWs agreed that while after upgrading, their remuneration increased (or was expected to increase in the following months); they were expected to undertake the same tasks, in the same health post as before.

"After we get back from our level 4 study, we will be placed to the same kebele (village) as before. We need to be refreshed, be in a new place! Alongside with transfer, we should also be assigned to health centres (promoted to a higher health facility)",

-Active HEW, SNNPR

Another reason why HEWs and leavers felt de-motivated was the lack of support, oversight, and acknowledgement from supervisors and managers, who said that supervision was based on a model of faultfinding, not mentorship.

"...[...]. I was so tired that night that I could not clean all the blood and every mess (after single-headedly doing a delivery at the health post). Next morning the woreda (district) officials showed up and insulted me without considering what I have been through. It was so painful not to be understood to this level."

- Leaver, SNNPR

Intrinsic motivational factors

Many HEWs mentioned that the key reason for joining the profession was to serve the community where they were raised.

"Most of the time in our environment, the mothers don't use contraceptives, they don't give birth in health centres and they don't get ante-natal care. The mothers normally give birth in their home with a traditional birth attendant. Because of this, many mothers die. When I saw these types of problems in my community, I decided to become a HEW."

- Active HEW, SNNPR

Some HEWs also insisted that financial incentives were less important than intrinsic factors and that the profession requires women to be truly dedicated to the community's health improvement, to survive in their jobs.

Many leavers mentioned having left their jobs out of frustration with challenging conditions, but confessed to have really enjoyed working towards improving community health. "Regarding the profession, health extension work itself has no concerns. I believe as a HEW you get to serve or work for the community which is great... it's the working conditions that are problematic," said a leaver from Tigray.

Discussion

Our study findings from two regions in Ethiopia contribute new empirical evidence to the debate on factors influencing the motivation and retention of CHWs in LMICs. Interviewing those who had left the service was a novel contribution of our study design. Many of the extrinsic motivational factors we identified, such as wages and allowances, were similar to those identified for CHWs in other settings (9, 22, 25, 31, 35, 36). A study in Bangladesh reported lack of time to attend to their own children and other household responsibilities, insufficient profit/salary, and their families' disapproval as reasons cited by CHWs for leaving their posts (37). In Nigeria, village health workers reported low work satisfaction due to the lack of career advancement opportunities, low salaries and poor supervision (38).

Other key conditions for retention

Discussion around an adequate career path for CHWs in LMICs is ongoing (6, 31, 35). Despite WHO's recommendation for a set career ladder for CHWs to be established in individual country contexts (6), the uptake of this recommendation has been low, as seen in Ethiopia. This was also a key topic of discussion during a recent international symposium on CHWs in 2019 (39).

Other material and non-material incentives affecting retention in this context were better living and working conditions that included their ability to live close to their family, have easy access to water and electricity at home and at work. According to a study published in 2007 (40), the living and working conditions of HEWs during early stages of HEP had not met basic standards. A more recent study suggested that many health posts were still missing basic infrastructure like water supply, electricity in 2012 (41). The mean availability of tracer items for basic facilities, infection prevention, malaria

diagnosis, and essential medicines at health posts was 37, 29, 52 and 47%, respectively, according to data from a service availability and readiness assessment, in 2016.

(42) (43).

Additionally, there is growing recognition for achieving gender inclusiveness and equity in healthcare, which entails transforming the systems within which women work, such as highlighted in a recent report from the World Health Organization's Gender Equity Hub (44). In a Cochrane review, socio-cultural norms that restrict movement of female CHWs and govern acceptable male-female communications were also identified as barriers to doing their jobs successfully (45). In Ethiopia, since majority HEWs are women of reproductive age, providing them with childcare, particularly for the time they are away for fieldwork, could be a good way to make the work environment more inclusive and supportive for these women.

Social behaviour and preferences of HEWs

While our evidence supports the importance of material incentives, we also identified other influences on social preferences of CHWs, which could help understand how they prioritize across multiple factors. Such insights could inform the development of new interventions to motivate and satisfy CHWs and retain them in the long term.

In this context, while conventional models have identified motivation as intrinsic and extrinsic, our empirical results identified two further additions – pro-social preferences as a non-material motivator, and social identity as a factor that could influence how CHWs trade among attributes. The social identity approach demonstrates how processes within an individual that influence behaviour are dependent upon interpersonal relationships and group memberships, as well as their perceived value and significance to the individual (46, 47). This approach states that when a person identifies as a member of a group, and when a given group identity is relevant to an individual; their behaviour becomes more focused towards what is seen to be in the group's interest, rather than their own (47, 48).

Thus, when workers define themselves more in terms of personal identity it could be expected that individual motivators such as personal advancement and financial incentives may be more influential. But when defining themselves in terms of social identity, motivators that impact on the group one identifies with, such as their status, standing and acceptance in the group may become more influential (49), like in the case of HEWs. This is a hypothesis that merits further empirical investigation. While the social identity approach is increasingly being applied in high-income countries (9, 49), it is less common in LMICs. To our knowledge, the inSCALE project, which operated in Uganda and Mozambique (9), is the first to use the social identity approach in a LMIC context to address these constraints in motivation of CHWs. Our study is the first to apply the social identity approach for establishing a link between identification and motivation (50, 51) in the context of CHWs in Ethiopia.

Conclusion

Our study showed that CHW jobs in Ethiopia continue to be challenging, and incentives that align with their preferences have the potential to improve their motivation, influencing retention. However, changing material incentives alone might not improve retention in the long term. Using empirical data from our study and theories of CHW motivation from the literature, we have demonstrated that CHWs identify themselves as members of a group (in this case their community and team). Thus, appealing to their social needs may therefore represent a relatively simple, cost-effective and complementary strategy to the traditional approach of tailored material incentive packages for improving retention, particularly in resource-constrained settings. Further research is also needed to understand the pro-social preferences of CHWs and how they trade-off between material and psychosocial attributes in their jobs, in order to understand how closely their needs prioritization is influenced by benefits to the group, to identify new ways to optimize CHW programs.

Declarations

List of abbreviations

CHW	Community health worker
HEP	Health extension program
HEW	Health extension worker
LMIC	Low- and- middle income country

Ethics approval and consent to participate

Ethical approval was obtained from the London School of Hygiene and Tropical Medicine, UK (ref no. 16177), as well as Addis Ababa University, Ethiopia (ref. no. 015/19/SPH) in March 2019. Research Assistants, experienced in qualitative research, conducted interviews after receiving two days of orientation on the study aims, topic guides and ethics of research and its conduct. They were all Ethiopian women between the age of 24 and 35 years. Respondents above the age of 18 and willing to participate were approached by Research Assistants through telephone calls. Principles of confidentiality and informed written consent were upheld during interview administration, in compliance with the ethical approval conditions of the project. Each interview was conducted in the language local to that region, in private spaces - normally at a health post - and took on average 45 minutes to complete. All interviews except two were audio-recorded, translated and transcribed in English by interviewers, who also took detailed notes, and discussed daily in debriefing sessions between researchers. During analysis, each interview was assigned a unique alphanumeric identification code, and personally identifiable information was removed from transcripts during coding.

Consent for publication

Not Applicable.

Availability of data and material

The data sets generated and analysed in the study are available on reasonable request made to the corresponding author.

Competing interests

None declared.

Funding

The Fieldwork for this study was funded by the Wellcome Trust (grant 212771/Z/18/Z), and the IDEAS project, London School of Hygiene and Tropical Medicine.

Author's contributions

All authors were involved in the original design of the qualitative study in Ethiopia. AW, FT, YH, YM conducted and translated all the interviews. DK, AE provided extensive in-country support. NA was the principal investigator who oversaw the fieldwork and conducted majority of the analysis, reviewed and approved by MQ and KH. NS provided expert guidance on manuscript development and analysis. All authors read and approved the final manuscript.

Acknowledgements

The authors would like to thank all the respondents who participated in the interviews.

References

1. Bhutta ZA, Lassi ZS, Pariyo G, Huicho LJGhWA. Global experience of community health workers for delivery of health related millennium development goals: a systematic review, country case studies, and recommendations for integration into national health systems. 2010;1(249):61.
2. Lewin S, Dick J, Pond P, Zwarenstein M, Aja GN, van Wyk BE, et al. Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases Cochrane Database Syst Rev. 2005(1).
3. Perry H, Zulliger R. An overview of current evidence with recommendations for strengthening community health worker programs to accelerate progress in achieving the health-related Millennium

- Development Goals. . Baltimore: Johns Hopkins Bloomberg School of Public Health. 2012:84.
4. Perry HB, Zulliger R, Rogers MM. Community health workers in low-, middle-, and high-income countries: an overview of their history, recent evolution, and current effectiveness. *Annual Review of Public Health* 2014;35:399-421.
 5. Cometto G, Ford N, Pfaffman-Zambruni J, Akl EA, Lehmann U, McPake B, et al. Health policy and system support to optimise community health worker programmes: an abridged WHO guideline. *The Lancet Global Health*. 2018;6(12):e1397-e404.
 6. World Health Organization. WHO guideline on health policy and system support to optimize community health worker programmes. 2018.
 7. Madeleine Ballard MHB, Jodi-Ann Burey, Jennifer Foth, Kevin Fiori Jr, Isaac Holeman, Ari Johnson, Serah Malaba, Daniel Palazuelos, Mallika Raghavan, Ash Rogers et al. . Community Health Worker Assessment and Improvement Matrix (CHW AIM): Updated Program Functionality Matrix for Optimizing Community Health Programs. 2018.
 8. Brown C, Lilford R, Griffiths F, Oppong-Darko P, Ndambo M, Okoh-Owusu M, et al. Case study of a method of development of a selection process for community health workers in sub-Saharan Africa. *Human Resources for Health*. 2019;17(1):75.
 9. Strachan DL, Kallander K, Nakirunda M, Ndima S, Muiambo A, Hill Z, et al. Using theory and formative research to design interventions to improve community health worker motivation, retention and performance in Mozambique and Uganda. *Hum Resour Health*. 2015;13:25.
 10. Bhattacharyya K, Winch P, LeBan K, Tien M. Community health worker incentives and disincentives: how they affect motivation retention and sustainability. 2001.
 11. Mueller D, Kurowski C, Mills A. Managing health workforce performance. Component–literature review: determinants and levers of health worker motivation and satisfaction. *Health Economics Financing Program London: London School of Hygiene Tropical Medicine International Health*. 2005.
 12. Chandler CI, Chonya S, Mtei F, Reyburn H, Whitty CJ. Motivation, money and respect: a mixed-method study of Tanzanian non-physician clinicians. *Social science and medicine* 2009;68(11):2078-88.
 13. Agarwal S, Anaba U, Abuya T, Kintu R, Casseus A, Hossain S, et al. Understanding incentive preferences of community health workers using discrete choice experiments: a multicountry protocol for Kenya, Uganda, Bangladesh and Haiti. *BMJ Open*. 2019;9(12):e033601.
 14. Shiratori S, Agyekum EO, Shibanuma A, Oduro A, Okawa S, Enuameh Y, et al. Motivation and incentive preferences of community health officers in Ghana: an economic behavioral experiment approach. *Human resources for health*. 2016;14(1):53.
 15. Abdel-All M, Angell B, Jan S, Howell M, Howard K, Abimbola S, et al. What do community health workers want? Findings of a discrete choice experiment among Accredited Social Health Activists (ASHAs) in India. 2019;4(3):e001509.
 16. Federal Ministry of Health (FMOH). Health Sector Strategic Plan (HSDP-III) 2005/6-2009/10. 2005 2 December 2019.
 17. The World Bank. The Health Extension Program in Ethiopia 2012.

18. Federal Ministry of Health E. Health Sector Transformation Plan (HSTP) 2015/16 - 2019/20. 2015.
19. World Bank. Ethiopia health extension program: an institutionalized community approach for universal health coverage 2016.
20. MERQ Consultancy Plc. NATIONAL ASSESSMENT OF THE ETHIOPIAN HEALTH EXTENSION PROGRAM, ABRIDGED REPORT 2019.
21. Wang H, Tesfaye R, NV Ramana G, Chekagn CT. Ethiopia health extension program: an institutionalized community approach for universal health coverage: The World Bank; 2016.
22. Kok MC, Kea AZ, Datiko DG, Broerse JEW, Dieleman M, Taegtmeyer M, et al. A qualitative assessment of health extension workers' relationships with the community and health sector in Ethiopia: opportunities for enhancing maternal health performance. *Human Resources for Health*. 2015;13(1):80.
23. Kok MC, Ormel H, Broerse JEW, Kane S, Namakhoma I, Otiso L, et al. Optimising the benefits of community health workers' unique position between communities and the health sector: A comparative analysis of factors shaping relationships in four countries. *Glob Public Health*. 2017;12(11):1404-32.
24. Kok MC, Kane SS, Tulloch O, Ormel H, Theobald S, Dieleman M, et al. How does context influence performance of community health workers in low- and middle-income countries? Evidence from the literature. *Health Res Policy Syst*. 2015;13:13.
25. Mohammed S, Tilahun M, Kote M, Mama M, Tamiru D. Validation of Health Extension Workers Job Motivation Scale in Gamo-Gofa Zone, Southern Ethiopia: A Cross-Sectional Study. *Int Sch Res Notices*. 2015;2015:250610.
26. Yayehyirad Kitaw YY-E, Amir Said, Hailay Desta, and Awash Teklehaimanot. Assessment of the Training of the First Intake of Health Extension Workers. *Ethiopian Journal of Health Development* 2007.
27. Kane S, Kok M, Ormel H, Otiso L, Sidat M, Namakhoma I, et al. Limits and opportunities to community health worker empowerment: A multi-country comparative study. *Social Science & Medicine*. 2016;164:27-34.
28. Maes KC, Kohrt BA, Closser S. Culture, status and context in community health worker pay: pitfalls and opportunities for policy research. A commentary on Glenton et al. (2010). *Social Science & Medicine*. 2010;71(8):1375-8; discussion 9-80.
29. Maes K, Closser S, Kalofonos I. Listening to community health workers: how ethnographic research can inform positive relationships among community health workers, health institutions, and communities. *Am J Public Health*. 2014;104(5):e5-9.
30. Maes K, Closser S, Tesfaye Y, Gilbert Y, Abesha R. Volunteers in Ethiopia's women's development army are more deprived and distressed than their neighbors: cross-sectional survey data from rural Ethiopia. *BMC Public Health*. 2018;18(1):258.
31. Ormel H, Kok M, Kane S, Ahmed R, Chikaphupha K, Rashid SF, et al. Salaried and voluntary community health workers: exploring how incentives and expectation gaps influence motivation.

- Human Resources for Health. 2019;17(1):59.
32. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology*. 2006;3(2):77-101.
 33. QSR International Pty Ltd. Version 12. NVivo qualitative data analysis software 2018.
 34. Takemura T, Kielmann K, Blaauw D. Job preferences among clinical officers in public sector facilities in rural Kenya: a discrete choice experiment. *Journal of Human resources for health*. 2016;14(1):1.
 35. Li L, Hu H, Zhou H, He C, Fan L, Liu X, et al. Work stress, work motivation and their effects on job satisfaction in community health workers: a cross-sectional survey in China. *BMJ Open*. 2014;4(6):e004897.
 36. Chevalier C, Lapo A, O'Brien J, Wierzba TF. Why do village health workers drop out? *World Health Forum*. 1993;14(3):258-61.
 37. Khan SH, Chowdhury AM, Karim F, Barua MK. Training and retaining Shasthyo Shebika: reasons for turnover of community health workers in Bangladesh. *Health Care Superv*. 1998;17(1):37-47.
 38. Gray HH, Ciroma J. Reducing attrition among village health workers in rural Nigeria. *Socio-Economic Planning Sciences*. 1988;22(1):39-43.
 39. International Centre for Diarrhoeal Disease Reserach B. CHW 2019 Symposium [Available from: <http://chwsymposium2019.icddrb.org/>].
 40. Kitaw Y, Ye-Ebiyo Y, Said A, Desta H, Teklehaimanot A. Assessment of the training of the first intake of health extension workers. *The Ethiopian Journal of Health Development*. 2007;21(3).
 41. Medhanyie A, Spigt M, Dinant G, Blanco R. Knowledge and performance of the Ethiopian health extension workers on antenatal and delivery care: a cross-sectional study. *Human resources for health*. 2012;10(1):44.
 42. Ethiopian Public Health Institute (EPHI). *Ethiopian Service Availability and Readiness Assessment 2016 Summary Report* Addis Ababa, Ethiopia.
 43. Assefa Y, Gelaw YA, Hill PS, Taye BW, Van Damme W. Community health extension program of Ethiopia, 2003–2018: successes and challenges toward universal coverage for primary healthcare services. *Globalization and Health*. 2019;15(1):24.
 44. World Health Organization. *Delivered by women, led by men: a gender and equity analysis of the global health and social workforce*. 2019.
 45. Sarin E, Lunsford SS. How female community health workers navigate work challenges and why there are still gaps in their performance: a look at female community health workers in maternal and child health in two Indian districts through a reciprocal determinism framework. *Hum Resour Health*. 2017;15(1):44.
 46. Turner J, Reynolds K. Rediscovering social identity: core sources. *The Story of Social Identity*. 2010:13-32.
 47. Lewis T. Assessing social identity and collective efficacy as theories of group motivation at work. *The international journal of human resource management*. 2011;22(04):963-80.

48. Postmes T, Haslam SA, Jans L. A single-item measure of social identification: Reliability, validity, and utility. *British journal of social psychology*. 2013;52(4):597-617.
49. Haslam SA. *Psychology in organizations*: Sage; 2004.
50. Van Dick R, Wagner U. Social identification among school teachers: Dimensions, foci, and correlates. *European Journal of Work Organizational Psychology*. 2002;11(2):129-49.
51. Wegge J, Van Dick R, Fisher GK, Wecking C, Moltzen K. Work motivation, organisational identification, and well-being in call centre work. *Journal of Work Stress*. 2006;20(1):60-83.

Figures

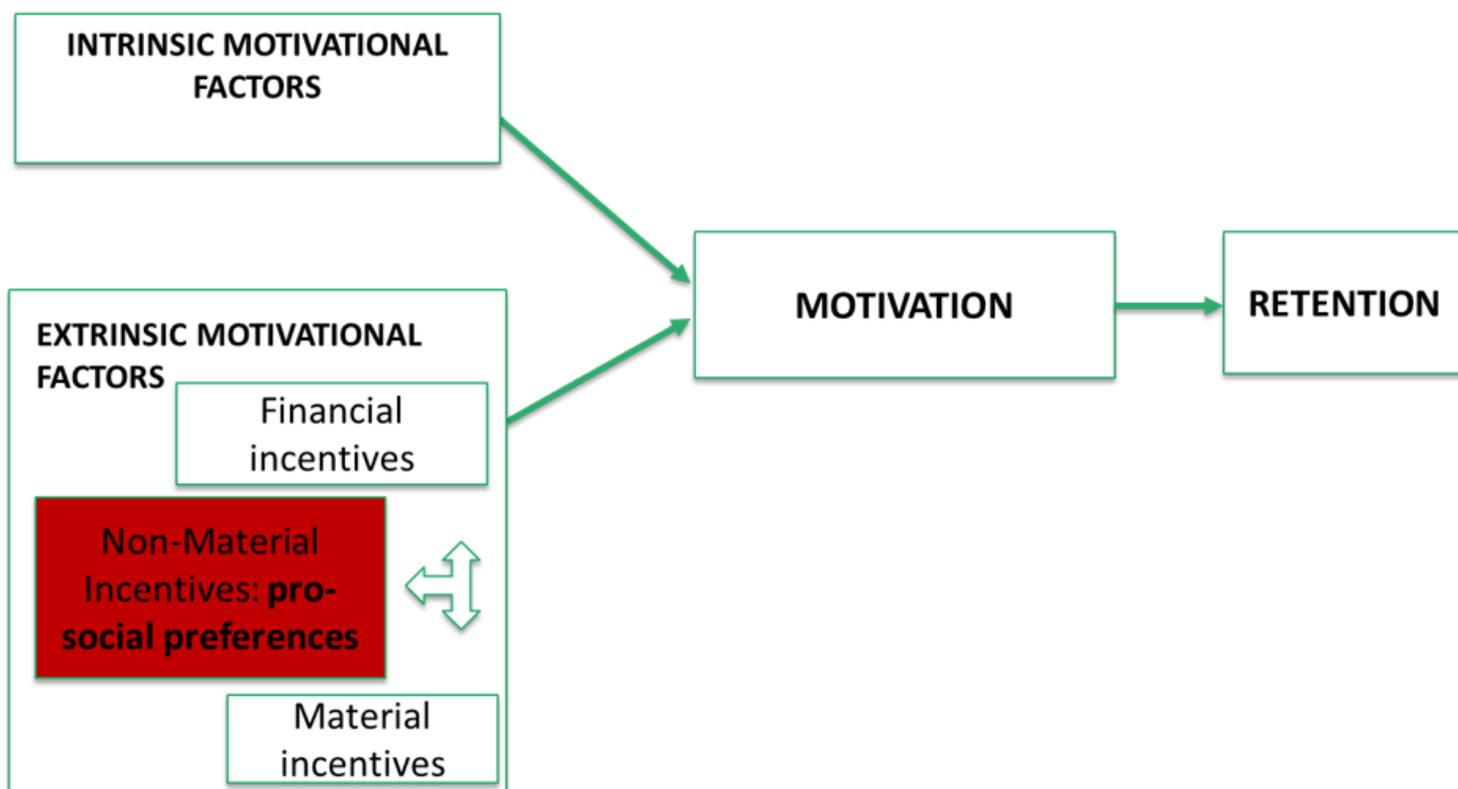


Figure 1

Model of relationships between motivational factors, motivation and CHW work behavior. Modified from Ormel et al.