



Role development of community health workers for cardiovascular disease prevention in India



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ABSTRACT

Cardiovascular disease (CVD) is the leading cause of mortality in India. Since community health workers (CHWs) have historically played a pivotal role in improving maternal and child health, it has been hypothesized that they have the potential to mitigate the impact of CVD in countries such as India. Project SEHAT is a cluster RCT to test the hypothesis that CHWs can improve the control of cardiovascular risk factors in a community in West Bengal, India. This study sought to quantitatively assess the training outcomes of CHWs recruited for Project SEHAT, and qualitatively assess their recruitment, training and fieldwork experiences.

CHWs were recruited through a 2 step process- a written test and an interview. Upon completion of training, their knowledge and experiences were assessed. All intervention CHWs scored > 80% on the knowledge test, implying a high rate of knowledge retention. Important themes identified during a focus group discussion with CHWs included satisfaction with a 2 step recruitment process, emphasis on communication skills, a preference for audio-visual aids in training and recognition of the importance of a supportive supervisory framework. Respect from society and a positive impact on people was consistently cited as the most satisfying aspects of the job, followed by financial compensation.

Recruitment and training processes for CHWs in CVD programs should be more standardized to enable replication, scalability and adequate assessment of their potential to mitigate CVD mortality in countries such as India.

1. Introduction

Cardiovascular disease is the number one cause of death and disability worldwide, including in low and middle-income countries (LMICs). The UN and WHO established a goal to control premature mortality from cardiovascular disease (CVD) by reducing the prevalence of cardiovascular risk factors and increasing access to essential medicines and technologies (Yusuf, Wood, Ralston, & Reddy, 2015).

2. Background

A shortage of trained health professionals limits effective screening and appropriate management of persons at high risk for CVD. Task-sharing (Schaefer, 2015) has the potential to offset this burden by shifting functions from health care professionals to health workers such as lay community health workers (CHWs). Given the success of CHWs in

improving maternal and child health outcomes, along with control of communicable diseases, they can play a major role in improving outcomes from CVDs in LMICs (Dawson, Buchan, Duffield, Homer, & Wijewardena, 2013). However, a review of the impact of CHWs in CVD prevention noted that the evidence for their effectiveness is heterogeneous, in part due to the lack of qualitative inquiries in study designs (Khetan, Purushothaman, Chami et al., 2017; Khetan, Purushothaman, Zullo et al., 2016). Very few studies have reported information on trial settings, CHW selection, training or compensation, making it difficult to assess the generalizability of their findings across different settings (Lewin et al., 2010). These reports often lack clear definitions for roles and expectations, and formal supervisory mechanisms are often deficient or poorly implemented (Abrahams-Gessel et al., 2015). Furthermore, there is evidence that CHWs personal beliefs about health, working conditions and interactions with other health professionals directly influence the effectiveness of programs and policies that use

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CHWs for task-sharing (Hermann et al., 2009; Mwai et al., 2013). Specifically in India, studies have utilized CHWs for cardiovascular health promotion, control of hypertension and secondary prevention (Joshi et al., 2012; Tian et al., 2015; Xavier et al., 2016). However, little information is available on the CHW selection, training, compensation and supervision structures. Moreover, information regarding the experience of CHWs while carrying out this work is lacking.

Therefore, it is important to facilitate optimal role development of CHWs for CVD prevention and identify barriers and facilitators for that process. Project SEHAT (Study to Expand Heart Associated Treatments) is a cluster randomized controlled trial of 3556 adults (aged 35–70 years) at a single town in India who were screened in their homes for hypertension, diabetes and smoking. Of these, 1242 adults had at least one risk factor (650 hypertension, 317 diabetes, 500 smoking) and were enrolled in the study. The hypothesis was that utilization of CHWs to screen for and manage these three principal cardiovascular risk factors—hypertension, diabetes and smoking, in an integrated manner would result in improved control of these conditions. The intervention group had health education through regular home visits from CHWs for 2 years (6 clusters, 1 CHW for each cluster) while the control group received usual care in the community (6 clusters). The study procedures have been published in a prior publication (Khetan, Purushothaman, Chami et al., 2017; Khetan, Purushothaman, Zullo et al., 2016).

The current paper describes our experience in optimizing role development of intervention CHWs, with the goal of maximizing the effectiveness of the program.

3. Methods

3.1. Recruitment

An evidence and experience based three-stage recruitment process was set up (“Trained Health Workforce, 2016 Trained Health Workforce «SughaVazhvu Healthcare | Health is Happiness,»” (Paraprofessional Healthcare Institute PHI, 2008). This consisted of a written application form, a written knowledge test, and an in-person interview.

Application forms were advertised and distributed in the clusters through local elected politicians and officials. The goal of application distribution was to obtain at least 5 applicants for each position and advertising efforts were intensified in areas where 5 people did not apply. Basic eligibility criteria included being a female resident of the study area for at least the past two years, between 18 and 45 years of age, having a tenth grade level of education and possessing spoken and written knowledge of the local language.

The applicants were scheduled for a written test, which was held at a community hall. The test consisted of 30 questions, covering diet, human anatomy/physiology and math. All applicants who scored above 40% on the written test were called for an interview. The passing rate was set low to accord maximum importance to the interview, thereby giving interpersonal skills greater weight. The recruitment workflow is summarized in Fig. 1.

The interview was conducted by two study investigators, using a standard form and guide (Insert Supplementary Fig. 1 here). The process was designed to address specific challenges in recruiting for non-communicable diseases. Since a large part of CHW work involves dealing with men who have jobs outside the home, CHWs often have to make early morning, late evening or weekend visits—quite different from providing maternal and child care. Moreover, family members of potential CHWs often object to females touching other male members of society, which is necessary while checking blood pressure or finger stick blood sugar. The interview form, detailing the various criterion used while interviewing applicants, is summarized in Fig. 2. Particular emphasis was paid to communication skills, motivation, family support, prior healthcare experience, strength of social networks, personal health beliefs and problem solving ability. The final decision to hire the CHW was based on consensus between the two interviewers and

depended on the combined written test and interview score.

3.2. Training

Prior to interacting with community members, all CHWs were trained for 7 days (3 h per day). Training was delivered in 1–2 week blocks, followed subsequently by 5 h of supervised field work. Any new field activity was initiated slowly, gradually increasing through the first week and reaching goal activity level by the end of the first week. Intense support was provided in the first week by supervisors and study investigators through frequent debriefing sessions. The training timeline is summarized in Table 1.

Training sessions usually began with didactic lessons, covering content from training manuals. Didactics was enhanced through the use of pictures, videos and animations; many sourced through YouTube. Emphasis was placed on group discussions, acquiring relevant communication skills, model demonstrations, role playing and feedback. Towards the end of most training blocks, the trainer would hold mock sessions with each CHW individually, simulating challenging patient situations, while other participants observed. The small class size of less than 10 participants allowed a personalized approach, and all CHWs were trained in a single batch. A sample training schedule is provided as Supplementary Fig. 2.

We started our intervention with hypertension, which was followed by diabetes and finally, smoking. We aimed to start with the simplest intervention and therefore chose hypertension, as the material needed to master was the least of the three interventions. This was followed by diabetes, which required a more exhaustive knowledge base than hypertension. Smoking was the last intervention as we expected patients who smoked to show less motivation and the intervention required greater use of complex behavioral principles. After having some experience in the more concrete interventions of hypertension and diabetes, we felt CHWs would be better prepared to move on to the behavioral aspects of smoking training.

The gap of 6 months between training for hypertension and diabetes was felt to be important to allow CHWs to grow into their role and get comfortable with taking care of patients with hypertension, before teaching them a second skill set. Similarly, the gap of 3 months between diabetes and smoking was to allow adequate buffer so that CHWs grew comfortable with their existing patient census (patients with hypertension and diabetes) before they started taking care of an additional set of patients that required a separate skill set. We felt that if intervals between trainings were shortened, the learning curve would be excessively steep and CHWs would face the risk of burnout. Given that we were dealing with chronic conditions where complications accrued over years, a slight delay in providing care (months) was an acceptable price to pay for the efficiencies and sustainability gained by staggering the training. In addition to these training sessions, we also had hourly meetings every 1–2 months, attended by CHWs and supervisors. During these meetings, CHWs were encouraged to share their success stories, strategies and tips. They were also encouraged to individually reflect on challenging patients and situations, and solutions were sought through group discussions. These meetings were usually moderated by the project manager, and sometimes a study investigator was present.

The control arm CHWs were only trained to carry out screening and data collection, and did not receive any training in hypertension, diabetes or smoking.

3.3. Compensation

The CHWs were paid a fixed honorarium of Rs. 2000 per month [around \$350 annually, median per capita annual income in India in 2013 was \$616 (Gallup, 2013)]. In addition, they were given Rs. 100 (< \$2) per month as phone credit which was directly transferred to their phone, and was worth around 200 min of outgoing call time. There was no monitoring or limits on talk time usage, but they were

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