Role Development of Community Health Workers

An Examination of Selection and Training Processes in the Intervention Literature

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Background: Research evaluating community health worker (CHW) programs inherently involves these natural community leaders in the research process, and often represents community-based participatory research (CBPR). Interpreting the results of CHW intervention studies and replicating their findings requires knowledge of how CHWs are selected and trained.

Methods: A summative content analysis was performed to evaluate the description of CHW selection and training in the existing literature. First-level coding focused on contextual information about CHW programs. Second-level coding identified themes related to the selection and training of CHWs.

Results: There was inconsistent reporting of selection and training processes for CHWs in the existing literature. Common selection criteria included personal qualities desired of CHWs. Training processes for CHWs were more frequently reported. Wide variation in the length and content of CHW training exists in the reviewed studies. A conceptual model is presented for the role development of CHWs based on the results of this review, which is intended to guide future reporting of CHW programs in the intervention literature.

Conclusions: Consistent reporting of CHW selection and training will allow consumers of intervention research to better interpret study findings. A standard approach to reporting selection and training processes will also more effectively guide the design and implementation of future CHW programs. All community-based researchers must find a balance between describing the research process and reporting more traditional scientific content. The current conceptual model provides a guide for standard reporting in the CHW literature.
(Am J Prev Med 2009;37(6S1):S262–S269) Published by Elsevier Inc. on behalf of American Journal of Preventive Medicine

Introduction

In response to recent U.S. economic and demographic trends, many healthcare stakeholders have advocated for wider use of community health workers (CHWs).[1–3] Healthcare costs continue to rise as medical care becomes more complex and the burden of disease shifts toward chronic illnesses.[4] The current nursing shortage[5] and a projected physician shortage[6] fuel the search for lay professionals who can deliver and coordinate care effectively. A recent focus on racial and ethnic disparities in health outcomes has also motivated novel methods of serving disadvantaged populations.[1] The federal government, private insurers, employers, researchers, and community advocates have all considered the CHW role as one potential solution to these seemingly intractable problems facing the U.S. healthcare system.

Research involving CHW programs is inherently participatory, involving natural community leaders as members of research teams. Community health workers present opportunities for community-based participatory research (CBPR) by their unique position as a bridge between researchers and the communities they study. Community health workers can bring the end users' perspectives to academic investigators; successful programs often integrate feedback from communities to solve challenges that arise during implementation of CHW programs.[7] However, the published literature rarely reports on participatory processes that are central to the success of CHW programs. Practitioners, researchers, and other consumers of this literature learn very little about the development of published CHW programs, which is important when interpreting study findings and attempting to replicate them.

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0749-3797/09/$–see front matter
Published by Elsevier Inc. on behalf of American Journal of Preventive Medicine doi:10.1016/j.amepre.2009.08.011

Two particularly important processes that have received little attention in the CHW literature are the selection and training of CHWs—central components of role development. A recent national survey of CHW program directors revealed a wide range of training approaches—from state-mandated certificate programs to informal, on-the-job training.[8] The lack of a standardized approach for identifying and developing the CHW workforce has proven a substantial barrier to its mainstream acceptance.

The main purposes of this study are: (1) to perform a summative content analysis of selection and training processes in published CHW intervention studies; and (2) to present a conceptual model of CHW role development—informed by the current analysis—that will guide future researchers when reporting CHW selection and training processes.

Background

Role Development Theory

Professional roles define a set of work responsibilities and create performance limits where no legal definition exists.[9,10] Individual characteristics such as gender, race, educational background, and language proficiency impose limits placed on those roles.[10–12] Unclear roles can have a substantial impact on the resulting work, potentially causing duplication of effort, difficult work environments, and inefficient operations.[11,13] In the context of CHWs, an unclear role definition may compromise the quality of patient care, resulting in poor outcomes and wasted programmatic expenditures.

To clarify roles, relevant power structures establish rules or policies, such as job descriptions. Paying employees for the services they fulfill in their professional role formalizes those positions.[13] As roles develop greater complexity and pose substantial potential risk to members of society, legal and regulatory mechanisms protect both society at large and the person fulfilling a formal role.[10,11] This process of role development is particularly evident in the established healthcare workforce of doctors, nurses, and other medical professionals.

Role development theory also provides insight into how to create new formal roles, such as CHWs, in the U.S. healthcare system. Creating a new formal role requires that the developer identify a need, determine the selection criteria and training requirements, establish performance guidelines, and outline the evaluation process. Failure to do so creates the risk of poor role clarity and inconsistent role performance, with a resulting threat to the quality of work that is produced.

Community Health Workers

The existing literature shows a wide diversity of roles and responsibilities for CHWs. Published programs have required that CHWs provide health education, serve as role models and community advocates, increase access to healthcare resources, and collect data for research purposes.[14] The Community Health Worker National Workforce Study, conducted by the Health Resources and Services Administration (HRSA), grouped CHW roles into the following five categories: (1) member of care delivery team; (2) navigator; (3) screening and health education provider; (4) outreach–enrolling–informing agent; and (5) organizer.[3] Similarly, the health targets for CHW programs are diverse, including cardiovascular disease, diabetes, asthma, maternal/child health, cancer screening, and general health promotion.

The results from published CHW interventions also vary widely.[3,8,15] The challenges of conducting research in a community setting and defining appropriate outcome measures have an impact on the observed efficacy of CHW interventions. Lack of role clarity and the absence of standardized procedures for CHW selection and training also affect program results. The current study focused on these two central components of CHW role development—selection and training processes—in an effort to develop a model that will help future researchers design and report their CHW programs in the scientific literature. This focus was chosen a priori, because of the importance of selection and training processes to the development of a nascent workforce.

Methods

Qualitative content analysis was used to study descriptions of CHW selection and training in published intervention studies. Qualitative content analysis is "a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes."[16] A theoretic framework informs the analysis, and researchers can use published studies as data sources.[17] In the current case, role development theory provided the underlying framework for the analysis and the domestic CHW literature served as the data.

To evaluate descriptions of CHW role development in the existing literature, a review was conducted of articles included in the 2007 HRSA Community Health Worker National Workforce Study,[3] with a specific focus on selection and training processes. This HRSA study evaluated only domestic CHW programs, which is therefore also the focus of the current analysis. The HRSA study evaluated articles between 1990 and 2005. A secondary search was completed using MEDLINE and CINAHL to select articles published between 2005

Table 1. Summary of characteristics of reviewed studies

Characteristic	Number of articles (%)
Ethnicity/race	
Caucasian	6 (14)
African-American	7 (16)
Hispanic	15 (34)
Asian	2 (5)
Native American	2 (5)
Mixed, nonspecific	6 (14)
Specific population targets	
Low income	6 (14)
Children (aged <18 years)	7 (16)
Elderly	2 (4.5)
Families	2 (4.5)
Only women	12 (27)
Only men	3 (7)
Setting	
Urban	22 (50)
Suburban	1 (2)
Rural	10 (23)
Combination	9 (20)
Disease/condition target	
Type 2 diabetes	8 (18)
Asthma	7 (16)
Cancer screening	12 (27)
Immunization	3 (7)
Cardiovascular	4 (9)
General health promotion	2 (5)
Maternal/child health	3 (7)
Lead exposure	1 (2)
Smoking cessation	1 (2)
CHW title[a]	
Promotora/consejera	8 (18)
Community health worker/advocate/advisor	20 (45)
Lay health advisor/worker/advocate	7 (16)
Other	9 (20)
Type of outcome evaluated	
Behavioral	33 (75)
Clinical	19 (43)
Psychological	7 (16)
Educational	5 (11)
System	5 (11)

[a]Authors often used multiple names to describe their CHWs in the same article.
CHW, community health worker

and 2008 using the same search criteria.[3] Duplicate studies and review articles were eliminated; and several references from the HRSA National Workforce Study were not available at the time of review.

Upon final selection of the articles, a summative content analysis was performed to focus specifically on CHW selection and training. Summative content analysis first searches for specific words or themes, counts them, and then synthesizes the counts into larger themes.[16] Both researchers analyzed half of the articles. The first-level coding focused on the following contextual information about CHW programs: target population, health-related focus, name used to describe the CHW role, geographic location, types of outcomes, and academic disciplines of authors (Table 1). Following this step, an examination was made of how researchers described the selection and training process (Table 2). After completing the analysis process described above, the researchers reviewed each other's analyses to ensure congruency in the evaluation process.

After data collection, the findings were dichotomized with respect to the presence or absence of discussion of CHW selection and training (Figure 1). Using author descriptors for CHW roles, a joint analysis was performed of trends regarding CHW role development that emerged from first-level coding. Axial coding was used to synthesize and describe the themes that emerged from the first-level coding to create the final analysis.

Results

Forty-four articles were included in the study. Of these, only four studies explicitly stated that a CBPR approach was followed.[7,18–20] Table 1 contains the complete listing of article characteristics collected from first-level coding.

The Selection Process for CHWs

Only 41% of reviewed studies included any discussion of the CHW selection process (Figure 1). The most commonly reported feature of CHW selection was a list of desired personal qualities, such as interest in the subject material, willingness to learn, and compassion. Many authors used language suggesting that their CHWs had natural leadership qualities or were already acting as leaders within their communities. Ethnic and racial concordance of CHWs with the target population was reported in 68% of the reviewed articles, although it was very rarely mentioned as a selection criterion. Bilingual status was required in only 4 of 19 programs serving Asian, Native American, or Hispanic communities.[7,21–23] In another small subset of studies, program directors required that CHWs have previous experience

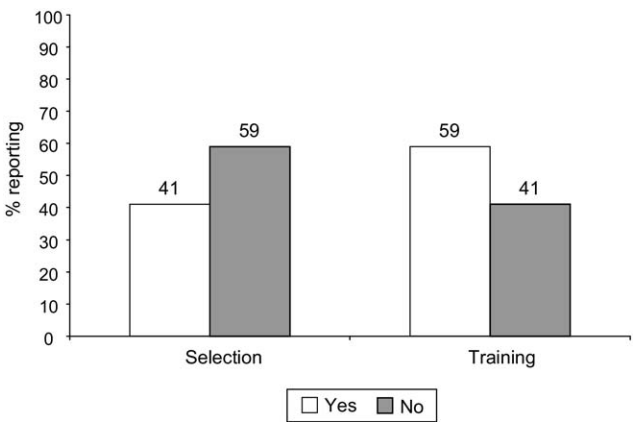

Figure 1. Articles including descriptions about CHW selection and training
CHW, community health worker

with the program's disease target, either as patients, survivors (in the case of cancer), or providers.[23–26]

Much debate in the CHW literature has focused on the educational background required of this emerging workforce. In the current review, only four of 44 studies (9%) mentioned possession of a high school diploma or its equivalent as a selection criterion.[22,26–28] This paucity of stated education criteria likely represents under-reporting. A recent national survey demonstrated that 21% of CHW program directors required a high school diploma for employment, and 32% required a bachelor's degree.[3] Most healthcare educational materials are written at an 11th-grade reading level, which has important implications for training CHWs if a high school diploma is not mandatory.[29] Further, the work of CHWs often requires cognitive and didactic skills that may be difficult to acquire without much formal education. Illustrating this challenge, one study reported that CHWs without a high school diploma had difficulty understanding basic concepts and explaining them to study participants.[27] The lack of a required educational level may therefore compromise the effectiveness of individual CHWs and contribute to inconsistent outcomes reported in the literature.

Only a minority of the reviewed studies mentioned criteria for selecting CHWs, and discussion of the selection process was nearly absent. Only one study reported that CHWs were selected by a formal process that included an application and interview.[30] The lack of consistent discussion in the existing literature of the selection of CHWs compromises the generalizability of the reported findings and ultimately hinders the development of best practices necessary to develop a standardized role for CHWs.

The Training Process for CHWs

In the articles analyzed here, 59% included some discussion of how CHWs were trained (Figure 1). Wide variations were found in the length of CHW training, ranging from 5 hours to 6 months. In general, the length of training depended on the complexity and extent of the CHW role. CHWs serving diabetic populations received the most complex and structured training programs, followed by those working with hypertensive patients. Both groups were likely to receive training through standardized curricula provided by national organizations. Only four articles (9%) described the professional qualifications of those training CHWs, who were either nurses or other staff members.[26,31–33] The most commonly used pedagogic methodologies for training CHWs were role playing, didactic sessions, and mentored one-on-one learning. Three studies described follow-up assessments to evaluate the efficacy of CHW training.[22,32,34]

Topics covered in CHW training fell into three broad areas: skills-based knowledge (SBK), relevant health knowledge (RHK), and research implementation knowledge (RIK). Of these three areas, the majority of CHW training was devoted to SBK, including clinical skills, interpersonal skills, and managerial skills. Training on interpersonal skills was particularly prevalent in programs in which CHWs were expected to lead support groups and serve as case managers. Managerial skills, such as team and relationship building, record keeping, time management, and navigating resources were covered by a majority of CHW training programs.

Relevant health knowledge consisted of content related to the target disease. Community health worker programs focused on general health promotion, for example, some offered specific training on principles of healthy eating and lifestyles. Only three studies mentioned providing CHWs with a specific orientation to their role, which serves as an important guide for both trainers and CHWs during the training process.[22,35,36] Research implementation knowledge was covered in one third of the studies, even though all studies required that CHWs manage confidential patient information. Common topics for research training included reviewing study protocols, discussing ethical concerns and confidentiality, protecting human subjects, and teaching procedures for survey administration and subject recruitment.

As with other healthcare professionals, the effectiveness of CHWs largely depends on the training they receive and how well that training prepares them for their subsequent work. The current study reveals substantial heterogeneity in CHW training processes, in stark contrast to the training required of the established healthcare workforce. Many different institutions offer CHW training, including community colleges, nonprofit organizations, and academic researchers.[3] Few states, such as Texas and Ohio, have mandated certification programs for training CHWs.[8] This heterogeneity in CHW training likely produces programs with varying intensity and quality.

Discussion

As seen in the results, this summative content analysis generated rich data about the selection and training of CHWs. The current analysis also highlighted a common pathway leading from implementation to evaluation of the CHW programs. A conceptual model was developed to illustrate that pathway (Figure 2). Each of the themes outlined in the model presented here—selection, training, role enactment, and outcomes—was described in the articles reviewed here. During the axial coding process, these themes, and their constituent components, were organized into a conceptual model. It is hoped that this model puts CHW selection and training in a larger context, demonstrating the connec-

tion of these processes to the roles CHWs fulfill and the outcomes of CHW programs.

Figure 2 illustrates the linkages described in the previous paragraph. The model is called the role-outcomes linkages evaluation model for CHWs, or the ROLE model. The model consists of four steps that researchers are advised to consider when developing CHW intervention studies and reporting them in the literature: selection, training, role enactment, and program outcomes. The selection step highlights the necessary conditions that researchers must define prior to recruiting CHWs into their study or program. The training step outlines the components of CHW training that will ultimately influence both the role CHWs perform and the outcomes of their intervention.

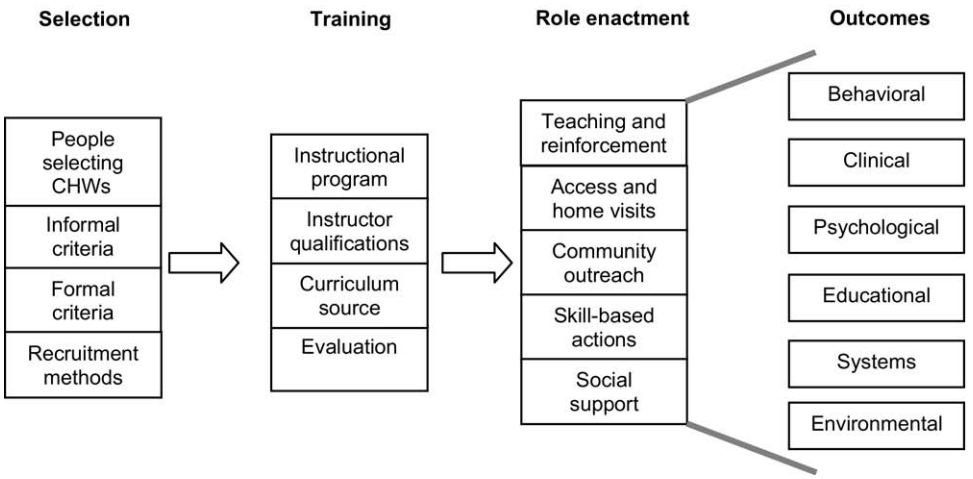

Figure 2. ROLE model
ROLE, role-outcomes linkage evaluation

The role enactment step illustrates the responsibilities required of CHWs. Examples include providing social support and teaching and reinforcement. It is common for CHWs to perform more than one of the tasks outlined here, but they are unlikely to fulfill all of them in the same program. A clear understanding of CHW role enactment helps to frame the evaluation of CHW programs. These programmatic outcomes constitute the final step in the natural history of CHW interventions. In well-designed CHW programs, relevant and appropriate outcome measures emerge naturally from the process of role development outlined in the previous steps of the current conceptual model.

In the studies analyzed here, patient outcomes are divided thematically into the following six areas: behavioral, clinical, psychological, educational, environmental, and systemic. Behavioral outcomes were defined as those that measure attempts to motivate or change patient behavior. Examples of measured behaviors include medication compliance, physical activity, and vaccine receipt. Clinical outcomes consist of relevant laboratory values or physical exam findings that suggest how well a disease is controlled. Psychological outcomes encompass measures of patients' mental health status, such as depression and perceived stress. These three types of outcomes were most common among the articles included in the current analysis.

Educational outcomes measure changes in patients' knowledge about a particular health issue. Environmental outcomes were most commonly found in asthma programs focused on eliminating disease triggers from participants' homes. Similar environmental outcomes may apply to CHW programs targeting lead exposure or occupational hazards. Several studies reported systemic outcomes, such as changes in healthcare utilization. Emergency room use and outpatient physician visits were common examples of systemic outcomes. One study reported a restructuring of local healthcare delivery as an outcome of its maternal/child health program.[25]

Our conceptual model illustrating CHW role development and its influence on programmatic outcomes provides researchers with a guide for shaping their CHW-based interventions and reporting them in the literature. To illustrate a practical application of this conceptual model, a description is provided of the process used in selecting and training CHWs for a cervical cancer education study in a Philadelphia Hispanic community (Appendix A). This CBPR study involves implementing and evaluating a randomized educational intervention led by CHWs in this population.

Conclusion

Our analysis of the existing literature reveals marked heterogeneity in reporting CHW selection and training processes. The variable reporting of these critical steps in the role development of CHWs has important implications for interpreting research findings. Community

Table 2. Thematic presentation of the role development process of community health workers

Selection	Training
Personal qualities	Length of time
Geographic location	Health topic
Same culture	Teaching strategies
Same disease group	Curriculum source
Language	Skills training
Educational background	Research training
Previous experience	Evaluation method
Hiring process	Identity of trainers

health worker interventions may differ greatly depending on how the CHWs were selected or trained, even when they fulfill similar roles. Omitting CHW selection or training procedures from the published literature neglects central information about the very intervention that is under scientific review and therefore hinders a complete understanding of the findings. Consistently reporting CHW selection and training is necessary so that other researchers, practitioners, and governmental agencies can best learn from the published CHW experience. The conceptual model (Figure 2) and practical application (Appendix A) presented here are intended to guide such reports.

Our analysis also underscores wide variation in CHW selection and training processes. This marked heterogeneity serves as a barrier to developing the CHW workforce. Creating standardized procedures for selecting and training CHWs is necessary for their mainstream acceptance into the healthcare workforce. In order to accomplish this acceptance, future research must evaluate specific selection and training practices to help direct the professional development of CHWs. Generating consistent processes for CHW selection and training will not only help strengthen the intervention literature, but also allow consumers of this research to more effectively translate study findings into practice.

Although most of the studies reviewed here do not explicitly define their approach as following the principles of CBPR,[37] CHW research inherently includes some degree of participation with the communities being studied. In contrast to the studies included in the current analysis, the CBPR literature has focused primarily on the process of the research.[38] However, placing an exclusive focus on process at the expense of more traditional scientific content creates an incomplete picture that is also difficult for readers to evaluate critically.[39] When disseminating the results of their work, researchers engaged in community settings must find an appropriate balance between displaying scientific rigor and describing important processes that enable the research and contribute to its effectiveness. The CHW literature provides one example of these tensions at play, and the conceptual model presented here (Figure 2) attempts to provide some resolution by outlining essential content that researchers should report about their CHW programs. Similar guides may prove useful in other areas of community-based research.

The project described was supported by Grant UL1RR024134 from the National Center for Research Resources. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Center for Research Resources or the NIH.

Dr. Squires acknowledges support for her postdoctoral fellowship from the National Institute for Nursing Research, NIH award "Advanced Training in Nursing Outcomes Research" (T32-NR-007104, Linda Aiken, PI).

We thank the following community health workers for their dedication to this shared project and the inspiration that they have provided during the course of our work together: Guadelupe Canchola, Claudia Sandoval, Celmy Delgado, Bertha Gonzalez, Irma Zamora, and Rita Banegas.

We also recognize Dr. Ana Navarro for her mentorship in the development of the cervical cancer education intervention. Her curriculum, entitled "La Mujer y el Cáncer: Por La Vida Cuidandome" (© 2005 The Regents of the University of California), was the guide used to train our CHWs.

We also thank Dr. Katrina Armstrong, MD for her help in the conceptualization of this article, and Giselle Dutcher for her assistance in preparing the manuscript.

No financial disclosures were reported by the authors of this paper.

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Appendix A. Practical Application of the Role-Outcomes Linkage Evaluation Model—Selection and Training Process

Selection of CHWs

The study nurse coordinator, who has substantial clinical experience with the target population, was responsible for selecting the CHWs. As a bilingual practicing nurse and a board member of the largest nonprofit organization serving this recent Hispanic immigrant population, she undertook the CHW selection process equipped with a rich understanding of the culture and informal leadership structure of the community. Formal selection criteria included Hispanic ethnicity, bilingual status, completion of high school in their home country, and ability to fulfill all study responsibilities. Interest in the subject material, organizational skills, interpersonal ability, leadership skills, and dedication to their community were considered as informal criteria. The nurse coordinator explored all selection criteria during a telephone interview with each prospective CHW and informal conversations with community leaders who knew them personally.

Prospective CHWs were recruited by placing a job advertisement in the local Spanish-speaking newspaper and by networking in the community. Two of the six CHWs were identified through responses to the advertisement. The study nurse coordinator identified the remaining four CHWs through their respective connections with the community's social service nonprofit. This organization's executive director provided input on the aptitude and capacity of the prospective CHWs, which influenced the study nurse's ultimate selections. The CHW selection process highlights the important role that nonprofit institutions can play—a fact mentioned by only three articles included in this literature review.[18,40,41]

Training CHWs

The training of CHWs consisted of four 6-hour sessions led by the study nurse coordinator and the PI, who is a physician. The domains of skills-based knowledge (rSBK), relevant health knowledge (RHK), and research implementation knowledge (RIK) were covered in the four training sessions held at a local community center. The instructors used a previously studied cancer prevention curriculum as a guide for the training, with supplemental materials developed by the research team.[42–47] A combination of didactic approaches and role-playing exercises were employed throughout the training sessions.

The first training session began with a brief overview of CHW programs, presenting the wide range of CHW roles, responsibilities, and outcomes. Specific skills covered in the training program included time management, pedagogic strategies, record-keeping, and team-building skills. Relevant health-related knowledge taught during training sessions included the following topics: female pelvic anatomy, the epidemiology of cervical cancer in U.S. Hispanic women, the natural history of cervical cancer, the pathogenic role of

human papillomavirus (HPV), screening guidelines, and strategies for prevention.

The final training session covered research implementation knowledge. The study nurse coordinator focused specifically on recruitment and enrollment procedures, confidentiality, survey administration, and data management. In closing, the professional boundaries of the CHW role were discussed in depth, generating dialogue about specific scenarios that warrant referral to a medical professional or social worker.

To evaluate the training process, the CHWs took a six-item cervical cancer knowledge questionnaire developed by the research team for the current CBPR study. Before beginning the training sessions outlined above, the CHWs' mean score was 53%. Upon completion of training, the mean score was 93%.