



Published in final edited form as:

Health Promot Pract. 2014 January ; 15(1): 79–85. doi:10.1177/1524839913504416.

Case Study in Designing a Research Fundamentals Curriculum for Community Health Workers: A University - Community Clinic Collaborative

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Abstract

Introduction—Community health workers are increasingly incorporated into research teams. Training them in research methodology and ethics, while relating these themes to a community's characteristics, may help to better integrate these health promotion personnel into research teams.

Approach and Strategies—This pilot project involved the design and implementation of an interactive training course on research fundamentals for community health workers from clinics in a rural, predominately Latino setting. Curriculum development was guided by collaborative activities arising from a university - clinic partnership, a community member focus group, and the advice of community-based researchers. The resulting curriculum was interactive and stimulated dialogue between trainees and academic researchers.

Discussion and Conclusions—Collaboration between researchers and health agency professionals proved to be a practical method to develop curriculum for clinic staff. An interactive curriculum allowed trainees to incorporate community-specific themes into the discussion. This interaction educated course instructors from academia about the community as much as it educated course participants about research. The bidirectional engagement that occurs during the development and teaching of this course can potentially lead to research partnerships between community agencies and academia, better-informed members of the public, and research protocols that accommodate community characteristics.

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INTRODUCTION

Community engagement is a prominent element in medical research and an important component of the Clinical and Translational Science Awards (CTSA) program (Westfall et al., 2012). Funded by the National Institutes of Health, the CTSA program aims to speed the translation of basic science discoveries to new treatments accepted by clinicians and the general public. To improve health outcomes, investigators are encouraged to engage populations from diverse cultures who experience health disparities. Community health workers (CHWs) work in traditionally underserved community settings to promote health. Often called *promotores* in Latino/Hispanic communities, CHWs have been shown to successfully link community members to health providers (USDHHS Health Resources and Administration, 2007). In their combined roles as members of their communities and members of the health workforce, CHWs are well placed to facilitate research projects by bridging investigators with priority populations. Community health workers have recruited participants, collected data, delivered interventions, and educated community members about the research process (Rhodes, Foley, Zometa, & Bloom, 2007). In participatory models, they have shared responsibilities for study development, data interpretation and analysis, and dissemination of findings (Rhodes et al., 2007). Because of these contributions, training and support in research skills are recommended for CHWs (Otiniano, Carroll-Scott, Toy & Wallace, 2011).

BACKGROUND / LITERATURE REVIEW

Increased opportunities to engage CHWs in research have resulted in challenges to ensuring effective integration of these workers into research models. These challenges frequently stem from misalignments in researchers' and communities' interests and expectations (Terpstra, Coleman, Simon, & Nebeker, 2011). Peer-to-peer outreach, which characterizes the CHW model, is potentially coercive in a recruitment setting due to the subtle peer pressure to participate (Anderson et al., 2012). Given these potential complications, preliminary training of CHWs in research principles may be useful to achieve ethical recruitment, effective interventions, and optimal participant retention rates. Relatively few published studies utilizing CHWs discuss training these persons in research implementation, though CHWs typically manage confidential participant information (O'Brien, Squires, Bixby, & Larson, 2009). Even when CHWs are trained in specific study protocols, their lack of background knowledge in basic research methodology may obstruct protocol adherence (Terpstra et al., 2011).

Research training topics and formats for CHWs vary widely. Ethics of human subject research, among other themes, is recommended (Solomon & Piechowski, 2011). Participatory and interactive teaching techniques, including role-play and demonstration, have been suggested for trainees experiencing educational disparities (Catalani, Findley, Matos, & Rodriguez, 2009). Creating an understandable, culturally sensitive curriculum is also essential (Yu et al., 2007). The aims of this project were (1) to determine the feasibility and acceptability of a community-academic partnership to train CHWs, and (2) to develop and implement a curriculum for CHWs on fundamentals of research.

METHODS

Setting and population

Clinicas de Salud del Pueblo (“*Clinicas*”) is a private, non-profit corporation and designated federally qualified health center comprised of eleven community clinics that provide comprehensive primary health care and enabling services to low-income residents, predominantly in California’s rural Imperial and Riverside Counties. Environmental and economic factors, along with the region’s proximity to the U.S./Mexican Border, contribute to significant health disparities in this region. In Imperial County, where the training took place, the median household income is approximately 33% below that of California in general (U.S. Census Bureau, 2011a). About 80% of Imperial County residents are Hispanic / Latino, primarily of Mexican descent (U.S. Census Bureau, 2011b), and 71% of the population speaks Spanish in the home (U.S. Census Bureau, 2010). *Clinicas*, the community partner for this study, has a history of embracing the CHW model of health promotion. *Clinicas*’ CHWs integrate skills and knowledge in a culturally competent manner to link the community to the *Clinicas* health care network, and provide information to community members.

The academic partner is the University of California, San Diego’s Clinical & Translational Research Institute, a recipient of a Clinical and Translational Science Award.

Curriculum Development

In addition to above cited literature, development of this curriculum was informed by this group’s previous training experiences and collaborative discussions with *Clinicas* and other local partners. Previous trainings included: (a) an interactive curriculum used in local high schools to teach fundamentals of clinical research by conducting a mock dental hygiene experiment and (b) *Project TRES* research ethics curriculum for promotoras, available at <http://www-rohan.sdsu.edu/~gra/grad/research/projecttresinfo.html>.

Community /Stakeholder Involvement

Clinicas and community stakeholders informed the format and content of the curriculum as part of a project initiated to improve collaboration between an academic research center and a community clinic system. Through this project, a focus group with eight community members was conducted in Spanish at *Clinicas* to learn about the community’s perceptions of clinical research and research participation. This effort revealed that members of the Spanish-speaking Imperial Valley community are motivated to volunteer for research if the research is likely to benefit the local community.

Along with data collected from the focus group, input was solicited from *Clinicas* administrative and clinical leaders regarding that organization’s research priorities, previous experiences with research, and perceptions of the community’s interest. The process revealed that *Clinicas* is a research-interested organization with previous experience collaborating in large research grants and with universities. Furthermore, *Clinicas* leaders emphasized the importance of a systemic approach to research training. They recommended that both CHWs and the clinic’s multi-function clerks attend the workshop, because these

clerks would likely be involved in research initiatives. *Clinicas* leaders also elected to compensate their staff for the evenings they would spend taking the course (which was free of charge).

Lastly, we interviewed two rural-based clinicians in practice who conduct research from their clinical offices. Their input was consistent with the outcomes of the focus group. They reported that poor retention in some studies was not uncommon, and postulated that individuals may be initially motivated to join a study because of personal appeals from a CHW or recruiter, rather than a sincere interest in the research itself.

Training Objectives

Based on input from these sources, a set of course learning objectives was developed. The objectives were that participants should be able to: (i) explain and discuss basic themes of human participant research (i.e., methodology and ethical considerations); (ii) understand CHWs' dual roles (community educators/advocates and research recruiters /interventionists) and mitigate key conflicts that occur as a result; (iii) recognize what characteristics of the local community may pose challenges to investigators (e.g. cultural norms, language, geographic or transportation limitations); and (iv) identify and effectively articulate their community's priorities and preferences to academic researchers.

Curriculum Content

The curriculum was divided into six separate activities designed to emphasize group work, discussion, and role-play activities. Although the course was taught in Spanish, consistent with the primary language spoken by most trainees, all materials were also available in English. Learning activities were presented in sequence, emphasizing basic research knowledge during initial activities, and subsequently focusing on application of knowledge to specific case scenarios and discussion. Case scenarios were designed to explore and informally assess trainees' understanding of research concepts such as ethical recruitment and retention, randomization, blinding and confidentiality. Table 1 describes in more detail the types of activities introduced to the curriculum to meet the four objectives.

Delivery of the curriculum

The training consisted of three weekly evening sessions of three hours per session. The curriculum was taught by a team of three bilingual instructors, chosen for their experience in research and community health. Trainees were invited by *Clinicas* leaders and by two investigators who also conduct research as a component of their clinical practices.

Evaluation

Instructors made written records of group discussions. Flip chart notes generated in case study activities were retained. Two months after training, participants were reconvened in a group setting and asked to evaluate the curriculum through a written questionnaire (available in Spanish and English) with both open-ended and Likert scale questions. Surveys completed in Spanish were then translated to English. Survey forms were not identifiable by respondents' names and were anonymous to those analyzing the data.

RESULTS

Course Attendance

Thirteen trainees, all Spanish-speaking women living in Imperial County, CA, completed the workshop. Ten were current or former CHWs or administrative staff with *Clinicas*, two were from a local private research clinic, and one worked for a UC San Diego study based in Imperial County. Three had no previous experience with research; three were currently employed in research studies. The remaining trainees had minimal to moderate research experience.

Curriculum

The process of development and implementation of this course (at all stages, from formative to evaluation) offered benefits to the community, CHWs and researchers. During the pre-course academic-community engagement period, for example, it was determined that ethical and practical challenges that arise when CHWs recruit and conduct research within their own community were of special significance for this population. Other benefits of the collaborative process of curriculum formation and its delivery are outlined in Table 2.

Trainee Evaluation

All 13 trainees reported satisfaction with the curriculum (12 scored it 5 on a scale of 1-5). All reported changes in knowledge, perceived value, and/or intent to change because of the workshop. Of 11 trainees asked to write definitions of three key research terms (randomization, consent form, and control group), 1 accurately defined all three concepts, 6 accurately defined two concepts, and 4 could define one or none.

DISCUSSION

There are several practical implications that can be drawn from this effort to engage communities for clinical research. First, a robust formative process, which includes input from the public directly as well as discussions with the community's clinical leaders, can lead to a capacity building curriculum for CHWs that reflects local public and institutional perceptions of research, as well as explores ways to overcome barriers to conducting research in a given community. This course provoked reflective discussion regarding the role of promotoras in research and explored the pitfalls of CHWs playing the dual roles of health educator and research professional.

Another outcome of this effort, of practical use to others, is that we found it feasible to create a curriculum that is community tailored, acceptable to trainees, and comprised of interactive group activities. Although the curriculum was designed to meet the research-relevant needs in this rural, Spanish-speaking community, most of its content can likely be adapted to meet the needs of CHWs in very different communities. The reactions and responses of CHW trainees to exercises offered during the training make this curriculum community-specific.

In the course of training CHWs in research, academics and CHWs established a forum for bidirectional communication, mutual understanding and respect. As such, a third outcome

was that a training focused on capacity building for CHWs to participate in research, can also provide an opportunity for investigators to understand the community. Academics can learn as much or more from CHWs about unique aspects of the community relevant to research, as CHWs learn from academics about research. For example, CHWs reported during the course of one exercise, that they recognize how community members may enroll in a program primarily because they want to honor the CHWs' role as valued promotoras. This is a valuable lesson for investigators who recruit participants in this community and face retention challenges. Based on content analysis of case scenarios discussions introduced during training, CHW trainees can inform researchers about health issues that are of primary concern to their community, as well as information such as incentives most valuable to community members, people's attitudes towards scientists and conventional medicine, and logistical barriers to participation. As a result of such interactions, investigators may conceivably modify their research; for example, change a location or its hours of operation, consider providing childcare when it is not culturally acceptable to leave children at home, and introduce opportunities to socialize. In this particular training, CHWs suggested that they stay in contact with participants throughout the research process, and not solely for recruitment. These exchanges support the concept of co-learning between academic and engaged community partners as a central principle in the practice of community-based participatory research (CBPR) (Wallerstein & Duran, 2006).

Trainees' recall of key concepts on the written evaluation was disappointing. However, the evaluation method chosen may have underestimated course participants' retention of knowledge and their ability to apply it to their work. Low levels of formal education among many course participants correctly led us to avoid written assignments in the course delivery. This rationale should have extended to the evaluation methodology. In future attempts, we recommend asking participants to respond verbally to case scenarios to determine how well course concepts were retained and to assess trainees' abilities to apply concepts to their future work in research. This supports what has been previously reported: Testing based on memorization and recall of terms is an inappropriate method to assess skills with this group (Catalani et al., 2009).

For community agency leaders and clinicians, there was motivation to have a pool of better-trained research assistants to attract studies to this region. This finding may not be broadly generalizable, but it may be characteristic of those health care providers and administrators working in rural communities who feel isolated from academic medicine. Because this training course was not offered to recruit for any one specific research project, there was inherent trust that the project was of benefit to the community clinic as much as academic researchers.

Clinical and Translational Science Awards are designed to expedite the translation of research from laboratory science to clinical applications, as well as from clinical applications to evidence-based practices that are disseminated and adopted. Building research capacity for CHWs may facilitate research in diverse communities where many academics would most like to see these innovations adopted. As CHWs work in community settings as natural conduits of health behavior interventions, it is realistic to predict utility for courses.

Further study is needed in this field. As this was a pilot project, there was not yet a comprehensive evaluation of whether the community-based health agency benefited from the CHW training by experiencing better research readiness in the long term, or whether they went on to enjoy more collaboration with academic researchers. In addition, as we found that the process of training CHWs in research stimulates engagement between academicians and communities, it would be useful to measure how engagement from teaching a course does influence research designs or methodologies.

CONCLUSION

It appears to be feasible to develop courses in research for CHWs, and there appears to be much to be gained. Training in research fundamentals, if done in an interactive way, has the potential to create bidirectional communication between researchers and diverse communities, increase the inclusion of underrepresented populations as research participants, tailor research protocols and informed consent so that they are compatible with the communities' understanding for and appreciation of research, and create true laboratories to determine the applicability of evidence-based practices. These courses require formal evaluation of their effectiveness in improving the capacity of CHWs to assist with research, the capacity of community organizations to collaborate in research, and the capacity of investigators to conduct research in communities where CHWs are primary conduits of health promotion to the public.

References

- Anderson EE, Solomon S, Heitman E, DuBois JM, Fisher CB, Kost RG, Ross LF. Research ethics education for community-engaged research: A review and research agenda. *Journal of Empirical Research on Human Research Ethics : JERHRE*. 2012; 7(2):3–19. doi: 10.1525/jer.2012.7.2.3. [PubMed: 22565579]
- Catalani CE, Findley SE, Matos S, Rodriguez R. Community health worker insights on their training and certification. *Progress in Community Health Partnerships : Research, Education, and Action*. 2009; 3(3):227–235. doi: 10.1353/cpr.0.0082.
- O'Brien MJ, Squires AP, Bixby RA, Larson SC. Role development of community health workers: An examination of selection and training processes in the intervention literature. *American Journal of Preventive Medicine*. 2009; 37(6):S262–S269. doi: 10.1016/j.amepre.2009.08.011. [PubMed: 19896028]
- Otiniano AD, Carroll-Scott A, Toy P, Wallace SP. Supporting Latino communities' natural helpers: A case study of promotoras in a research capacity building course. *Journal of Immigrant and Minority Health / Center for Minority Public Health*. 2011 doi: 10.1007/s10903-011-9519-9.
- Rhodes SD, Foley KL, Zometa CS, Bloom FR. Lay health advisor interventions among Hispanics/Latinos: A qualitative systematic review. *American Journal of Preventive Medicine*. 2007; 33(5): 418–427. doi: 10.1016/j.amepre.2007.07.023. [PubMed: 17950408]
- Solomon S, Piechowski PJ. Developing community partner training: Regulations and relationships. *Journal of Empirical Research on Human Research Ethics : JERHRE*. 2011; 6(2):23–30. doi: 10.1525/jer.2011.6.2.23. [PubMed: 21680974]
- Terpstra J, Coleman KJ, Simon G, Nebeker C. The role of community health workers (CHWs) in health promotion research: Ethical challenges and practical solutions. *Health Promotion Practice*. 2011; 12(1):86–93. doi: 10.1177/1524839908330809. [PubMed: 19346410]
- U.S. Census Bureau; 2006–2010 American Community Survey 1-Year Estimates. [Retrieved December 6, 2012] Selected Social Characteristics in the United States. 2010. from http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_10_SF4_DP02&prodType=table

- U.S. Census Bureau; 2011 American Community Survey 1-Year Estimates. [Retrieved December 6, 2012] Selected Economic Characteristics. 2011a. from http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_1YR_DP03&prodType=table
- U.S. Census Bureau; 2011 American Community Survey 1-Year Estimates. [Retrieved December 6, 2012] ACS Demographic and Housing Estimates. 2011b. from http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_1YR_DP05&prodType=table
- USDHHS Health Resources and Services Administration. [Accessed April 2, 2013] Community Health Worker National Workforce Study. 2007. from <http://bhpr.hrsa.gov/healthworkforce/reports/chwstudy2007.pdf>
- Wallerstein NB, Duran B. Using community-based participatory research to address health disparities. *Health Promotion Practice*. 2006; 7(3):312–323. [PubMed: 16760238]
- Westfall JM, Ingram B, Navarro D, Magee D, Niebauer L, Zittleman L, Fernald D, Pace W. Engaging communities in education and research: PBRNs, AHEC, and CTSA. *Clin Transl Sci*. 2012; 5(3): 250–258. [PubMed: 22686202]
- Yu MY, Song L, Seetoo A, Cai C, Smith G, Oakley D. Culturally competent training program: A key to training lay health advisors for promoting breast cancer screening. *Health Education & Behavior* : The Official Publication of the Society for Public Health Education. 2007; 34(6):928–941. [PubMed: 17965228]

Table 1

Learning objectives, activities, and examples for workshop curriculum.

Objective	Activity	Content / Discussion Example
Basic human subjects research themes	Mock Experiment / Discussion	CHWs role play randomized experiment Key concepts discussed at end
Basic human subjects research themes	Consent Form Analysis / Discussion	Consent form worksheet used to identify key concepts in consent forms Both hypothetical and actual consent documents may be used
Basic human subjects research themes CHWs' dual roles Local challenges to study participation	Study Design Activity / Discussion	Discussion of legal, scientific, ethical, logistical and other considerations to formulate successful research protocol Creation of basic research plan to test/prove commonly held health beliefs
CHWs' dual roles Local challenges to study participation	Guided Discussion – Role of CHW	Self-reflection and perceptions of research from CHW and community points of view Topics include random assignment, control groups, and blinding
Basic human subjects research themes CHWs' dual roles Local challenges to study participation	Case Study Analysis and Discussion	Discussion of possible scenarios that might occur during community research work in local setting Topics include adherence to protocol, randomized assignment, participant perceptions, and defining research
Community priorities	Guided Discussion – Local Community	Reflection on local research priorities and ideas for future university-community collaboration

Table 2

Practical Implications of this case study

Training Process Components	Benefits for Researchers	Benefits for Community Clinics/ Organizations	Benefits for CHWs/ Community
Focus group with community members prior to piloting the training course	Knowledge of local motivations, barriers and perceptions of research	Increased confidence that the course would be relevant to their community's characteristics	Opportunity to share experiences and initiate dialogue with investigators regarding community priorities
Discussions with clinic leaders / local researchers prior to piloting the training course	Knowledge of clinic's research strengths and needs Knowledge of local motivations and barriers to research participation	Knowledge of academic community's motivations and barriers in community-engaged research Gaps in organizational capacity addressed	CHWs' and community's characteristics better addressed in training curriculum
Training for CHWs that is interactive and dialogue-based	Allows for informal assessment of trainee's level of understanding for research fundamentals during the training session. Knowledge of community and institutional motivations, barriers and perceptions of research	Confidence that their employees' training in research fundamentals incorporates these CHWs previous experiences (if any) with research	Increased professional capacity for CHWs Community's characteristics are addressed during training, allowing for more relevant future interactions with researchers and members of their community