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Evaluating the Training of Filipino American Community Health Advisors to Disseminate Colorectal Cancer Screening

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Abstract

Community health advisor-led interventions are associated with improved health promotion behaviors, such as cancer screening, but the process of training community health advisors is rarely described and evaluated. We trained 91 Filipino Americans from 19 organizations to conduct small-group sessions with members of their organizations to promote colorectal cancer screening. Community health advisors completed brief pre- and post-training surveys that included knowledge of colorectal cancer screening guidelines (4 items), perceived self-efficacy of performing specific tasks (15-item scale, Cronbach's alpha >.90) and satisfaction with the training itself (5 items). Community health advisors had high levels of knowledge and self-efficacy at pre-training, but levels increased significantly immediately after the 6-hour training (percent of knowledge items answered correctly: 63% to 94%; self-efficacy: 8.2 to 8.9 on a 10 point scale, both p<.001). Correlates of self-efficacy at pre- and post-test were high educational attainment, health care background, high level of participation in the organization, being perceived by others as a leader, and frequent participation in research activities in the past. Consistent evaluation measuring similar constructs across studies may help to standardize the quality of the training, and may improve the implementation of community health advisor-led programs.

Keywords

lay health educator; community health educator; evaluation of training; self-efficacy; knowledge; satisfaction

Introduction

Community health advisors are usually interested in the well-being of the group to which they belong, have a strong sense of community, and many are acknowledged as leaders in their communities. They can be trained to increase awareness of specific health problems, to disseminate health information and to support behavior change.(1–2) Community health advisors have been used in the African American community, (3–4) Hispanic community, (1, 5) and Asian American community.(6–7) Interest in employing community health advisors is increasing as several reviews indicate that community health advisor interventions are associated with improvement in health promotion behaviors, such as cancer screening in various settings and populations.(2, 8)

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Conflict of interest statement
The authors declare that there are no conflicts of interest.

A previous study has shown that characteristics of community health advisors can influence to what extent they implement a program.(9) Although this has not been well studied, they are usually selected based on demographic characteristics, previous experience and their interest in the specific project at hand. The process of selecting and training community health advisors is rarely described in the literature and few studies undertake an evaluation of the training that is provided.(1, 10–11) The few studies that have evaluated training have focused on intervention-related knowledge, self-efficacy to conduct specific tasks central to their role, and satisfaction with training.(1, 6, 10, 12–13)

We have recently conducted a randomized trial of a multi-component intervention to increase colorectal cancer screening among Filipino American community members. The intervention included a small group educational session conducted by a professional health educator at community organizations, distribution of free FOBT kits, a reminder letter to the participant and a letter encouraging the participant's physician to recommend colorectal cancer screening. It resulted in a significant increase in colorectal cancer screening.(14–15) In order to disseminate this intervention more widely, we have trained community health advisors from 19 community organizations to implement this intervention. The purpose of this paper is to describe the process and evaluation of the training, including changes in knowledge and self-efficacy between pre- and post training. We also examine what factors are related to their perceived self-efficacy to function as community health advisors. To our knowledge, this is the first project that is training a substantial number of community health advisors in the Filipino American community.

Methods

Recruitment of community organizations and community health advisors

We identified Filipino American organizations from various sources, including a directory of Filipino American community based organizations, an online search of churches with large Filipino congregations, community organizations that had partnered with us in a prior study, and referrals. We mailed a letter to these organizations briefly describing the Filipino Health Study and provided the telephone number of the project director/co-investigator who could provide further information to those interested in participating. Organizations that did not call us within 3 weeks received a follow-up call from the Filipino American co-investigator. All organizations that were interested in participating completed a short screening instrument to assess eligibility based on the size of their membership. We recruited 19 organizations that were interested in partnering with us and who had at least 150 Filipino American members between the ages of 50 and 75. Ten of the organizations were faith-based, and 9 were non-faith-based. Five of the non-faith organizations described the primary purpose of their organizations as socio-civic, two as service, one as civic, and one as both socio-civic and service. Ten of the organizations had previously participated in one of our prior studies that promoted colorectal cancer screening.(14) We asked participating organizations to identify from their leaders and members volunteers to be trained as community health advisors and provided them with a study abstract and recruitment flyer. Eligibility criteria for community health advisors were: 21 years of age or older, active in their church or organization, people- and service-oriented, willing to attend training and booster/debriefing sessions, and willing to perform research tasks including recruiting individuals and implementing small group sessions to promote colorectal cancer screening among members of their organization. Community health advisors 50 years and older were also asked to undergo colorectal cancer screening themselves if they were not adherent to screening guidelines, so they could serve as role models for their peers.

Training of community health advisors

Two members of the research team, both Filipino American with professional degrees in nursing/sociology (LLD) and medicine (RC) conducted all training sessions. At each organization, 4–6 CHAs were trained in an informal small-group setting. Thirteen organizations identified 5 community health advisors, 5 organizations identified 4 community health advisors, and 1 organization identified 6 community health advisors for a total of 91 community health advisors. The initial training session lasted 6 hours and is the focus of this paper. One to 2 months later, we reviewed the study protocol and answered questions in a 1–2 hour session. One member of the research team took notes during each training session. Each community health advisor received $150 for attending the initial training session. Training covered information on colorectal cancer and colorectal cancer screening tests as well as information on study protocols, forms to complete, and human subjects issues (see Box 1). Since many community health advisors were not regular computer users and our study exposed participants to a minimal risk, we received permission from the UCLA Institutional Review Board to replace the online Collaborative Institutional Training Initiative (CITI) training with a face-to-face training. We provided information on the ethical conduct of research, discussing the following principles: Respect for persons, beneficence (maximize possible benefits and minimize possible harm), and justice. In addition, we stressed important concepts such as how to obtain informed consent, confidentiality of all collected information, voluntary nature of participation and the right of individuals to withdraw from the study throughout the entire training session. During the latter part of the training, we discussed 7 different forms that community health advisors were asked to complete for each participant to document their recruitment activities, the implementation of small-group sessions and other intervention components such as mailing a letter to participants' physicians and reminding participants to get screened at 1–3 months after the group session.

Box 1

Curriculum for Community Health Advisor Training

1. Pre-training workshop activities, including obtaining verbal informed consent from community health advisors ***(30 minutes)***
2. Assessments before and after the training workshop (***30 minutes)***
3. Small Group Educational Session – walk through the contents of the small group educational session that community health advisors will conduct with participants; covers anatomy of colon, survival rates after colorectal cancer in comparison to other malignancies, risk factors for colorectal cancer, signs and symptoms of colorectal cancer, screening tests, barriers to screening and how to overcome them, questions to ask physicians, and demonstration of how to do a stool blood test ***(1 hour)***
4. Human subjects research training ***(1 hour)***
5. Flowchart/overview of Community Health Advisors' activities ***(1 hour)***
6. Detailed explanation of Community Health Advisors' responsibilities and associated forms with role-playing ***(2 hours)***

Forms that Community Health Advisors are asked to Complete for each Participant

1. Short screening questionnaire to assess eligibility
2. Information Sheet used to obtain verbal informed consent
3. Baseline questionnaire

4. Checklist with dates of recruitment, educational session, FOBT distribution, and reminders to get screened
5. HIPPA Research Authorization for verification of self-reported colorectal cancer screening
6. Letter informing physician that their patient is participating in our study and may inquire about colorectal cancer screening
7. Consent form for community clinic that processes FOBTs free of charge for study participants (only for participants without health insurance)

Evaluation of the initial training session

Community health advisors completed paper and pencil pre-tests (6 pages) and posttests (3 pages) immediately before and after the initial 6 hour training session. Pre-tests assessed demographic information, level of involvement of the community health advisor with the community organization, and previous experience in conducting tasks such as distributing recruitment flyers, teaching adults in a group setting, interviewing, and keeping logs of activities (13 items, see Table 1). Pre- and post-tests assessed knowledge of colorectal cancer screening guidelines (4 questions) and perceived self-efficacy of performing tasks as community health advisor (15 items); the items are provided in Table 2. Each self-efficacy item asked the community health advisors to rate how confident or comfortable they were with performing specific tasks, e.g., "On a scale of 1 to 10, where 1 is 'very low' and 10 is 'very high,' how would you rate your comfort level in approaching other members of your church to discuss this project?" The post-test also included a short evaluation of the training session itself (5 items on amount of information presented, time allocated for training components, and overall satisfaction).

Analysis

A knowledge score was obtained as the percentage of colorectal cancer screening guideline questions correctly answered. A total self-efficacy score was obtained as the mean of the 15 self-efficacy items. This score had excellent internal consistency reliability (Cronbach's alpha >0.9 for pre- and post-training scores). Differences in pre- and post-training knowledge and self-efficacy scores were assessed using mixed effects linear regression with difference between pre- and post-score as the dependent variable and random intercepts for organizations to account for clustering of community health advisors within organization. Predictors of self-efficacy at pre- and post-training and change in self-efficacy were also assessed using mixed effects linear regression with random intercepts for organization.

This study was approved by the University of California, Los Angeles Institutional Review Board and all participating community health advisors provided oral informed consent.

Results

Between January and August 2011, we conducted 19 training sessions, one at each of the organizations, with a total of 91 Filipino American community health advisors (23 males, 68 females). On average, they were 61 years old and had lived in the United States for 26 years (see Table 1). More than half (55%) had a health care background. They reported a high level of participation in their organization, on average 8.2 on a 10 point scale and highly endorsed that other members perceived them as a leader, on average 7.6 on a 10 point scale. Most had been involved in previous research activities in the past, including participation in discussion sessions (86%), teaching a group of adults (73%), recording their activities on a form or log (68%), and interviewing people face to face (79%) or by phone (56%). On

average, they had participated in 10.7 out of 13 research activities that were listed in the baseline survey. Fifty out of 72 community health advisors 50 years of age and older (69%) were adherent to colorectal cancer screening guidelines. No differences were detected between community health advisors from faith-based versus other organizations and between those who came from organizations who had previously partnered with us versus from new organizations. Community health advisors that were adherent to colorectal cancer screening were, on average, older (64 versus 60 years of age, $p<.05$) and had lived longer in the United States (29 years versus 22 years, $p<.05$) than community health advisors who were not adherent to colorectal cancer screening, but there were no differences in other demographic characteristics, self-efficacy or knowledge between the two groups (data not shown).

Prior to the training, 75% of community health advisors knew at what age colorectal cancer screening is recommended; knowledge regarding the recommended screening intervals for stool blood test, sigmoidoscopy and colonoscopy ranged from 42 to 68% (see Table 2). Immediately after the training, more than 90% knew the correct responses to these questions. The mean knowledge score increased significantly between pre- and posttest ($p<.001$). The intraclass correlation coefficients (ICCs) measuring the proportion of the total variance in the outcome accounted for by between-organization variation were 0.22, <0.0001 and 0.23 for pre-training knowledge, post-training knowledge and change in knowledge, respectively At pre-test, most community health advisors had very high self-efficacy regarding their ability to perform the tasks that would be required of them (see Table 2), for an average self-efficacy score of 8.2 on a 10-point scale. After the training, self-efficacy increased significantly to 8.9 ($p<.001$). The ICCs were <0.0001 for pre- and post-training self-efficacy as well as change in self-efficacy.

Similar characteristics of community health advisors were associated with pre- and post-training self-efficacy to function as community health advisor (Table 3), although some of the relationships had only borderline statistical significance, possibly due to the limited sample size. These characteristics included graduate level education, health care background, high level of participation in their organization, high perception by others as a leader, previous experience in conducting similar activities, and ability to devote more than 10 hours per month to work as community health advisor. Characteristics that were not associated with self-efficacy included age, length of residency in the United States, gender, being employed, length of membership in the organization, and number of people the community health advisor would be able to approach to discuss the study. Self-efficacy increased from pre- to post-training to a similar extent in most subgroups shown in Table 3, with all mean changes between 0.6 and 1.0 points.

Participants were very satisfied with the training, as a whole: 93% were highly to very highly satisfied (average rating of 9.4 on a 10-point scale). However, a substantial proportion felt that too much time was devoted to the training overall (24%), for lectures and discussion (41%) and for role-playing and demonstrations (38%) and that the amount of information and materials presented were also too much (48%).

Discussion

Working with lay health advisors or community health workers poses a number of ethical and methodological challenges.(10, 16–17) One of the challenges is to provide training that is culturally sensitive, linguistically appropriate, and concise but comprehensive and understandable for lay persons who may not have a health care background.(6, 17) The development of standard methods and metrics for community health worker research and practice has been recommended.(18) Consistent evaluation using similar measures across

studies may help to standardize the quality of the training, and may improve the implementation of community health advisor-led programs.(10–11, 17) However, there is a lack of published measures to evaluate the training. We have described our evaluation of training as an example that might be helpful for others who want to add an evaluation component to their training. The pre- and post-training surveys (available upon request; most items are shown in Tables 1–3) were self-administered and relatively short, but they assessed constructs that have been included in similar evaluations: knowledge, perceived self-efficacy to perform specific tasks and satisfaction with the training.(1, 6, 10, 12) The items we used in the evaluation can easily be adapted for other populations and other health topics.

To our knowledge, this is the first study that describes an evaluation of a training of Filipino American community health advisors. Because of the background of our sample, which was highly educated and included high proportions of individuals with a health care background and previous experience in activities that they were expected to undertake in their role as community health advisors, we found relatively high levels of knowledge and self-efficacy prior to the training. Despite these high levels, however, knowledge and self-efficacy increased significantly after the training. Behavioral theory postulates that perceived self-efficacy is a major determinant of a person's choice of activity, how much effort they dedicate to this activity and whether or not this activity will be maintained.(19) Bandura postulates that personal mastery experiences in a particular area increase one's self-efficacy in that area, and also enhance self-efficacy in other non-related situations. We found that a high level of education, health care background and history of performing related activities predicted self-efficacy, which confirms this premise. One might expect that members of community organizations who have relatively high self-efficacy are more likely to volunteer to serve as community health advisors. These volunteers may also see themselves as leaders in their organizations.

The proportion of community health advisors that was adherent to colorectal cancer screening guidelines was high compared to a population-based sample of Filipino Americans in California that participated in the 2005 California Health Interview survey (69% versus 49%; (20). This may be due to demographic characteristics of our sample (high level of education, high proportion with a health care background) and a secular trend. We did not assess why more than 30% of the community health advisors age 50 and over had not received colorectal cancer screening according to the guidelines. However, other studies have shown that a physician's recommendation is an important factor in promoting CRC screening in the Filipino community (21) and that a substantial proportion of Filipino Americans report that they did not receive a physician's recommendation to get screened. (22) It should be noted that screening status was unrelated to perceived self-efficacy to serve as community health advisor and knowledge of screening guidelines.

Prior studies have used a number of strategies to identify community health advisors, including advertisement in ethnic newspapers and radio programs, or requesting names of potential community health advisors from a number of agencies, key informants and community members and selecting those who were mentioned by multiple respondents.(6, 17) We asked participating organizations to identify from their leaders and members volunteers to be trained as community health advisors and provided them with a recruitment flyer, and organizations were easily able to identify suitable individuals. The fact that we offered stipends for community health advisors probably helped with recruitment efforts.

Despite the stipends and the general satisfaction with the training, a substantial proportion of trainees felt that the training was too long and included too much information and too many materials. Several community members had recommended a one-day training for our study

for ease of scheduling, especially for trainees who were employed. We suspected after the first few training sessions that some trainees were overwhelmed with the different forms that we asked them to complete to document their research activities (see Box 1) and we added a 1–2 hour follow-up session 1–2 months after the initial training session to review the most important points. We may have to scale down our documentation requirements in future studies. Other studies have trained community health advisors for a total of 10–12 hours, (3, 23–26) but their training was conducted over several days.

Limitations

Compared to other studies, we trained a relatively large number of community health advisors but a sizable number had a health care background. Thus, results may not generalize to other populations. Evaluation was limited to knowledge of colorectal cancer screening guidelines, self-efficacy and satisfaction with the training. Future evaluation efforts should also include an evaluation of the human subjects protection training which is required if community health advisors engage in research activities. See (27), appendix 2 for sample questions. Finally, future longitudinal analyses should determine if high self-efficacy translates into successful recruitment and intervention implementation by community health advisors.

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Table 1

Characteristics of community health advisors (n = 91)

General demographics	**Mean ± SD**	**Range**
Age	61.5 ± 11.4	22–86
Years living in the US	25.7 ± 12.9	1–55
	N	%
Female	68	75
Graduate school	37	41
Employed	41	45
Have health care background	50	55
Involvement in the church/organization	**Mean ± SD**	**Range**
Years of membership	17.2 ± 13.6	1–73
Level of participation in the church/organization *(scale of 1 to 10 with 10 as very high)*	8.2 ± 2.2	1–10
Degree of others' perception of CHA as a leader *(scale of 1 to 10 with 10 as very high)**	7.6 ± 2.3	1–10
Time able to devote for study *(in hours per month; missing for 8 respondents)**	22.4 ± 21.7	2–100
Number of people able to approach for study *(missing for 14 respondents)* *	18.2 ± 18.0	0–100
Total number of previous research activities *(out of 13 activities)*	10.7 ± 3.2	0–13
Previous research activities	**N**	**%**
Approached people to sign-up	77	85
Distributed recruitment flyer	80	88
Planned for a small meeting	75	82
Taught a group of adults	73	80
Used handouts to teach	76	84
Gave others health advice	77	85
Encouraged others to do healthy behavior	82	90
Interviewed people face-to-face	79	87
Interviewed people by phone	56	62
Answered and returned a questionnaire form	78	86
Prepared and mailed letters	64	70
Recorded activities on a form	68	75
Participated in discussion sessions	86	94

Table 2

Knowledge and self-efficacy of community health advisors at pre- and post-training (n = 91)

	Pre-training	Post-training	p
Knowledge (4 items)	**% Correct**	**% Correct**	
Age when to start CRC screening	75	95	
Recommended FOBT interval	68	97	
Recommended sigmoidoscopy interval	67	92	
Recommended colonoscopy interval	42	92	
	Mean (± SD)	**Mean (± SD)**	
Mean knowledge score (percent correct)	63 (± 26)	94 (± 16)	**< .001**
Self-efficacy (15 items) *			
Comfort level in approaching members	8.1 (± 1.9)	9.0 (± 1.4)	
Confidence to convince to do CRC screening	8.1 (± 1.6)	8.8 (± 1.3)	
Confidence to handle rejections	8.3 (± 1.6)	8.8 (± 1.5)	
Confidence to answer questions/barriers	8.1 (± 1.8)	8.8 (± 1.4)	
Confidence about planning/conducting educational session	8.1 (± 1.6)	8.8 (± 1.4)	
Enthusiasm about role as CHA	8.8 (± 1.4)	9.1 (± 1.4)	
Comfort in screening potential participants for eligibility	8.0 (± 1.7)	8.8 (± 1.4)	
Comfort in obtaining consent for study	8.1 (± 1.7)	8.8 (± 1.5)	
Comfort in interviewing participants at baseline	8.1 (± 1.8)	9.0 (± 1.4)	
Comfort in passing out FOBT kits and CRC brochures	8.1 (± 1.8)	9.1 (± 1.3)	
Comfort in conducting CRC small group educational sessions	7.8 (± 1.9)	8.7 (± 1.4)	
Comfort in demonstrating FOBT	7.8 (± 2.1)	9.1 (± 1.3)	
Comfort in reminding participant to complete CRC screening	8.3 (± 1.7)	9.1 (± 1.2)	
Comfort in reminding providers to offer CRC screening	8.0 (± 1.9)	8.9 (± 1.4)	
Comfort in keeping record of contacts with participants and other study activities	8.5 (± 1.7)	9.2 (± 1.1)	
Mean self-efficacy score	8.2 (± 1.5)	8.9 (± 1.2)	**< .001**

Differences in pre- and post-training means were assessed using mixed effects linear regression with difference between pre- and post-scores as the dependent variable and random intercepts for organizations.

* Each self-efficacy item was rated on a 10 point scale from 1 (very low) to 10 (very high). CRC, colorectal cancer; FOBT, fecal occult blood test, CHA, community health advisor; SD, standard deviation

Table 3

Predictors of pre- and post-training self-efficacy of community health advisors (n = 91)

	n	Pre-training mean (± SD)	p	Mean change (±SD)	p	Post-training mean (±SD)	p
Age							
63 or older	47	8.2 (± 0.3)		+0.7 (± 0.9)		8.9 (± 1.1)	
62 or younger	44	8.1 (± 1.6)	.87	+0.8 (± 0.8)	.49	9.0 (± 1.3)	.76
Years living in the US							
25 or more	52	8.3 (± 1.3)		+0.6 (± 0.7)		8.9 (± 1.1)	
Less than 25	39	7.9 (± 1.6)	.24	+0.9 (± 1.0)	.09	8.9 (± 1.4)	.84
Gender							
Men	23	7.9 (± 1.7)		+0.7 (± 0.7)		8.5 (± 1.6)	
Women	68	8.2 (± 1.4)	.31	+0.8 (± 0.9)	.48	9.0 (± 1.0)	.07
Education							
Bachelors or less	54	7.9 (± 1.5)		+0.7 (± 0.8)		8.6 (± 1.3)	
Graduate school	37	8.5 (± 1.4)	.05	+0.9 (± 1.0)	.40	9.4 (± 0.7)	**.002**
Healthcare background							
Yes	50	8.4 (± 1.3)		+0.8 (± 1.0)		9.2 (± 1.0)	
No	41	7.8 (± 1.7)	.06	+0.7 (± 0.7)	.88	8.6 (± 1.4)	**.014**
Employment							
Yes	41	8.3 (± 1.4)		+0.8 (± 1.0)		9.0 (± 1.0)	
No	50	8.1 (± 1.5)	.46	+0.8 (± 0.7)	.91	8.8 (± 1.3)	.40
Length of membership							
15 years or less	42	7.9 (± 1.6)		+1.0 (± 1.0)		8.9 (± 1.2)	
More than 15 years	49	8.3 (± 1.4)	.19	+0.6 (± 0.8)	.06	8.9 (± 1.2)	.81
Level of participation in organization/church							
Low	40	7.7 (± 1.6)		+1.0 (± 0.9)		8.6 (± 1.4)	
High	51	8.5 (± 1.3)	**.003**	+0.6 (± 0.8)	**.03**	9.1 (± 0.9)	**.04**

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	n	Pre-training mean (± SD)	p	Mean change (±SD)	p	Post-training mean (±SD)	p
Others perception of CHA as a leader							
Low	31	7.6 (± 1.7)		+0.9 (± 1.1)		8.5 (± 1.5)	
High	58	8.4 (± 1.3)	**.02**	+0.7 (± 0.8)	.42	9.1 (± 1.0)	**.02**
Number of previous research activities							
Low	31	7.6 (± 1.7)		+0.9 (± 1.1)		8.5 (± 1.5)	
High	60	8.4 (± 1.3)	**.01**	+0.7 (± 0.8)	.50	9.1 (± 1.0)	**.01**
Time able to devote to study							
≤10 hours/month	41	7.9 (± 1.6)		+0.7 (± 0.8)		8.6 (± 1.5)	
> 10 hr/month	43	8.4 (± 1.4)	.13	+0.8 (± 0.9)	.73	9.2 (± 0.9)	**.04**
Number of people able to approach for study							
≤10 people	38	8.0 (± 1.6)		+0.7 (± 0.7)		8.8 (± 1.4)	
> 10 people	43	8.4 (± 1.4)	.30	+0.8 (± 1.0)	.71	9.2 (± 0.9)	0.11

P-values obtained using mixed effects linear regression with random intercepts for organization.