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HHS Public Access

Author manuscript

J Health Care Poor Underserved. Author manuscript; available in PMC 2018 May 01.

Published in final edited form as:

J Health Care Poor Underserved. 2016 ; 27(2): 568–579. doi:10.1353/hpu.2016.0094.

Mujer Sana, Familia Fuerte: The Effects of a Culturally-Relevant, Community-Based, *Promotores* Program to Increase Cervical Cancer Screening among Latinas

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Abstract

Objective—Although cervical cancer can be prevented through screening and follow-up, Latinas' rate of Pap tests remains low due to knowledge gaps and cultural and attitudinal factors.

Methods—This study used a single-group pre-/post-test design to evaluate the effectiveness of *Mujer Sana, Familia Fuerte* (Healthy Woman, Strong Family), an intervention intended to improve Latinas' cervical cancer prevention knowledge, attitudes, self-efficacy to obtain a Pap test, and intention to get tested. The intervention is delivered through a single session by *promotores de salud*, who use a culturally competent, linguistically appropriate toolkit. A total of 5,211 Latinas participated in the study.

Results—The evaluation indicated that participants had increases in knowledge, positive attitudes, self-efficacy, and intention to test.

Conclusion—Latinas have a low rate of cervical cancer screening but a high rate of cervical cancer, and *Mujer Sana, Familia Fuerte* shows promise as a public health practice for use with this population.

Keywords

Community care network; health promotion; cancer screening; cervical cancer; Latinas; Hispanic

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The National Cancer Institute estimated that there would be 12,900 new cases of invasive cervical cancer and 4,020 related deaths in 2015.[1] More than 60% of cervical cancer cases in the United States occur in underserved populations, including racial and ethnic minorities and women living in rural areas or in poverty.[2–4] The incidence of cervical cancer among Hispanic women (11.1 per 100,000) is higher than that of all U.S. women (8.1 per 100,000).[1,5–7] Cervical cancer is one of the easiest cancers to prevent with screening and follow-up and is highly treatable when detected in early stages.[5]

Latina cervical cancer screening rates and barriers to screening

Despite the known benefit of regular screenings, about half of the diagnoses of cervical cancer in the United States are in women who have never had a Pap test, with an additional 10% in women who had not been screened in the past five years.[6] Hispanic, Black, and low-income women are diagnosed with cervical cancer at later stages and are more likely to die from the disease in comparison with White women.[8,9] Limited access to regular screening underlies this disparity and continues to place racial and ethnic minority and low-income women at higher risk for developing cervical cancer.[2,3,10]

The effects of education-based interventions for cervical cancer prevention may be enhanced by addressing attitudes, self-efficacy, and intentions to engage in screening behaviors. Attitudes have been shown to play a role in cervical cancer–related health-seeking behavior and health care utilization.[11] Researchers also have shown strong associations between self-efficacy and cervical cancer screening behaviors.[12–14] The results of a recent study among Latinas in the southeastern United States indicated that self-efficacy was the strongest predictor of cervical cancer screening behaviors and compliance with Pap test guidelines.[14] These studies suggest that education-based interventions that address attitudes, self-efficacy, and intention to obtain a Pap test may result in positive improvements in cervical cancer screening behaviors among Latinas.

The role of *promotores de salud* (community health workers) in cervical cancer prevention

Promotores de salud–led interventions have been well documented as an effective approach to providing culturally competent health care delivery, health promotion, and screening in underserved communities.[12,15,16] *Promotores de salud* typically live in the communities in which they provide services or education, are trusted community members, and serve as what might be called cultural brokers between their respective communities and the health care system.[17] Among Latinas, cancer education interventions delivered by *promotores de salud* may be more effective than conventional approaches.[18,19] For example, a study of an educational intervention among low-educated, Mexican-origin women found that *promotores de salud* facilitated increased cervical cancer screening knowledge and enhanced social support.[20]

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The *Mujer Sana, Familia Fuerte* (Healthy Woman, Strong Family) cervical cancer education program

The National Council of La Raza (NCLR) received funding in 2009 from the Centers for Disease Control and Prevention's (CDC's) Racial and Ethnic Approaches to Community Health (REACH) program to develop the *Mujer Sana, Familia Fuerte* (Healthy Woman, Strong Family) cervical cancer education program. The REACH program addresses racial and ethnic health disparities by implementing culturally tailored, community-led interventions addressing one or more health issues. The aims of the *Mujer Sana, Familia Fuerte* program were to develop and disseminate culturally competent health messages to help close the health disparity gap around cervical cancer. Through this program, NCLR developed, implement, and evaluated a *promotores de salud*–led intervention among Latinas 18 years and older. The purpose of the intervention was to increase cervical cancer knowledge, attitudes, self-efficacy, and intent to screen.

Methods

Promotores de salud recruitment and training

Ten *promotores de salud* from each of the two participating community health centers were recruited from the community by program staff at affiliate sites. Both sites had existing groups of *promotores de salud* that were available to assist, however additional *promotores de salud* were recruited as needed by program staff via word of mouth. *Promotores de salud* were selected because they were fluent in Spanish, self-identified as Latina, and were community leaders. Many *promotores de salud* were previous community health center clients. *Promotores de salud* were based out of the health education department at each community health center and were compensated for their time with stipends; they worked closely with programmatic staff, and were trained to refer participants to medical professionals for further advice. *Promotores de salud* completed initial and annual refresher training sessions conducted over two and a half days to learn how to implement the intervention, receive updates, and enhance adherence to protocol. Staff from NCLR trained them to use a culturally competent and linguistically appropriate curriculum to deliver *charlas*, or health education sessions, to Latinas in their community. *Promotores de salud* also were trained in data collection procedures, including the proper administration of the pre-and post-test surveys. In addition, they received institutional review board and human subjects research training and certification. All trainings were standardized across sites.

Toolkit content and development

The toolkit consists of an educational curriculum designed for use by *promotores de salud* to deliver cervical cancer–related information to predominately Spanish-speaking Latina women. The bilingual materials are packaged in a briefcase-like cardboard box with a bilingual flip chart containing double-sided pages, with an image related to each topic on one side, visible to the participants. On the other side, English and Spanish text outlines key talking points for the *promotores de salud*. A bilingual *charla* guide in English and Spanish provides a more detailed version of the flip chart information and includes frequently asked questions for the *promotores de salud* to use during the *charlas*. In addition, the toolkit

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includes bilingual educational brochures summarizing the curriculum and a one-page document listing local resources where participants can obtain a free or low-cost Pap test. Table 1 lists the curriculum content.

To ensure cultural competency, NCLR and Affiliate staff used a community-based participatory approach to develop educational materials. NCLR staff developed an initial collection of health information (i.e., materials) from two sources: (1) a literature review on cervical cancer and Latina-specific barriers to health and access of health care and (2) focus group interviews with *promotores de salud* and Latino community members. *Promotores de salud* and community health center staff then provided feedback on initial drafts. On the basis of this feedback, NCLR hired a professional photographer to take pictures of Latinas from the participating community to use in all of the materials. To ensure linguistic accuracy, the materials were developed in Spanish and then translated into English. A health literacy expert reviewed the language to ensure it was written for a fifth-grade reading level. Community members reviewed the materials to ensure that language, messages, and images reached the target audience. The materials were further refined on the basis of input from an advisory committee, which reviewed the materials for language use, medical accuracy, educational value, and cultural relevance.

Charla structure

The trained *promotores de salud* used the toolkit to deliver a one-time, two-hour *charla* around cervical cancer prevention over a four-year period. Each *charla* was led by at least two *promotores de salud* and included eight to 10 participants. Although the intervention was available in both English and Spanish, it was primarly delivered in Spanish, the first language of 94.9% of participants. The *charlas* were informal and held in a variety of locations within the community, including community-based organizations, schools, churches, or community members' homes.

Participant recruitment and retention

A total of 5,211 participants provided written consent to participate in this study. Affiliate staff conducted convenience and purposive sampling, and *promotores de salud* recruited Latinas through traditional community outreach methods, such as posting informational flyers in the waiting areas of community health centers and announcing the study at community events. In addition, snowball sampling occurred as participants suggested others who would be willing to participate. To be eligible for inclusion in the study, participants had to be age 18 or older and self-identify as Latina. Participants were recruited continuously from predominately low-income, Latino areas in Chicago, Illinois, and Washington, D.C. from 2010 to 2014. Participant retention was high and supported with face-to-face engagement strategies that included informing participants of the time commitment required and answering any questions that arose. Those who participated were given a $10 gift card.

Data collection

The study used a community-based, single-group pre-/post-test design to evaluate the intervention. The evaluation materials were available in English or Spanish and consisted of

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a consent form, a demographic information form, and pre-and post-test paper surveys. The surveys took an average of 40 minutes per individual participant to complete through self-reporting. Surveys were confidential, distinguished only by a unique identification number for each participant. Before the *charla*, participants completed the consent and demographic information forms and the pretest survey. Immediately after the *charla*, participants completed the post-test survey. Those who could not read or write received assistance from the *promotores de salud*. The *pro-motores de salud* collected the paper surveys, made one photocopy of each document, and mailed the originals to NCLR staff, who documented the number of evaluations received from each site, made an additional photocopy, and sent the originals to the evaluation team (California State University Long Beach [CSULB]). The evaluation team manually entered all survey data into the master database, using SPSS version 21.[21] Per NCLR protocol, all completed surveys, including originals and photocopies, are being stored in a locked cabinet for up to three years. All study procedures were approved by the California State University, Long Beach, Institutional Review Board.

Measures

Demographic characteristics—Participant age was measured in whole years. Education was reported by selecting one of nine options, ranging from “I did not attend school” to “University degree/Bachelors” or “Other.” Participants marked the marital status that best matched their current status; they were then categorized as single (never married, separated, divorced, widowed) or having a partner (married, living with partner). In addition, the survey inquired about country of origin, time living in the United States for those who were foreign-born, and number of children. Finally, questions were asked about Pap test history.

Knowledge—The survey adapted elements from three previously validated instruments,[22–24] and participant knowledge of cervical cancer was assessed with nine multiple-choice questions, including “What causes cervical cancer?” and “Which of the following signs or symptoms are associated with advanced stage cervical cancer?” Responses were coded as correct or incorrect, and all correct responses were summed to obtain a knowledge score.

Attitude—Four items measured attitude toward cervical cancer screening; these were developed from different previously validated sources.[25–27] Participants were asked to state their agreement (i.e., “I disagree,” “I am not sure,” “I agree”) with each of four statements, such as “Pap tests are important for a woman your age.” Negatively stated items were reverse coded, and a mean score was calculated, with a higher score indicating a more positive attitude.

Self-efficacy—Self-efficacy data were collected with three items developed by combining and adapting previously validated tools.[26,27] Participants responded to each item (e.g., “You can get a health care professional to give you a Pap test”), using a three-point scale ranging from “I am not sure” to “I am sure.” The mean of all items was used as the self-efficacy score.

Intention—Intention was measured by two items: intention to get a Pap test (answered by marking “Yes” or “No”) and the timeframe in which participants intended to get a Pap test

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("Within six months," "Between six months and one year," "Between one and two years from now," "In over two years from now"). Data were analyzed using the raw, nominal-, and ordinal-level response options.

Statistical analysis

Descriptive analyses were conducted to obtain sample characteristics and to summarize variables of interest. Paired-samples t-tests were used to test for significant changes in continuous outcomes between pre-and post-test assessments. Wilcoxon signed-rank tests were used to assess change in nominal and ordinal outcomes. Because of the large sample size, normality was assumed. Pearson's correlation coefficients were calculated to provide estimates of effect size, and 95% confidence intervals provide indicators of precision for all t-tests. All data were entered into databases and analyzed using SPSS version 21.[21] Individual participants were the unit of analysis. Pairwise deletion was used to address missing data; thus, no data were imputed, and the sample size for each analysis varies. Statistical significance was set at $p < .05$.

Results

Characteristics of the sample are displayed in Table 2. On average, the participants were about 40 years old, and about half (46.6%) had completed high school or college. Most participants were married and had an average of two to three children. Half of the participants were born in Mexico, and the average length of time living in the United States was just over 13 years. The large majority of the sample (93.2%) responded "Yes" to the question, "Have you ever had a Pap test?"

Table 3 shows statistically significant increases in knowledge (R^2=53.64%), positive attitudes (R^2=8.37%), and self-efficacy (R^2=8.66%) to obtain a Pap test after the *charla* education session. The results from nonparametric tests indicate that intentions to get a Pap test also changed from pre-to post-test assessments ($z=-8.94$; $p<.001$); before the *charla*, 92.2% intended to get a Pap test, whereas 96.1% intended to get a Pap test after the *charla*. Further, the intended time until next Pap test decreased from pre-to post-test ($z=-9.56$; $p<.001$). At pretest, 47.7% intended to get a Pap test within six months, 28.2% within six months to a year, and 2.4% did not plan to get a Pap test in the future; at post-test, the percentages changed to 51.0%, 28.8%, and 1.2%, respectively.

Discussion

As the U.S. health care system increases prevention and screening under the Affordable Care Act, the high incidence of cervical cancer and low rates of cancer screening among Latinas represent an opportunity for action. This study aimed to evaluate whether a culturally relevant, *promotores*-based intervention using a brief health education session (*charla*) could successfully increase psychosocial mediators of cervical cancer screening. Results indicate that the *Mujer Sana, Familia Fuerte* achieved this aim. These findings confirm the utility of tailoring community-based interventions and employing *promotores de salud* to improve knowledge, attitudes, self-efficacy, and intentions among Latinas to obtain a Pap test. Change in screening behavior remains to be seen, as data collection is still underway.

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Latinas currently have one of the highest incidence rates of cervical cancer out of all racial and ethnic groups and *Mujer Sana, Familia Fuerte* shows promise as a public health practice for reaching this population.[28] Notably, the intervention shows promise among a diverse sample of female immigrants, who represented 93.6% of the sample. Furthermore, the diversity of the Latina immigrant sample itself, with 32.0% of the participants being from Central America (two-thirds of whom were from El Salvador), 9.9% from South America, and half from Mexico, points to the effectiveness of using a *promotores*-based intervention with Latina immigrants from a variety of countries.

Considering that current data indicate that, overall, Latinas have low cervical cancer screening rates, the fact that 93.2% of participants in the current sample had ever had a Pap test warrants further discussion. One possible explanation for this high screening rate is that these participants self-selected into the program, which may indidcate that they are a health-conscious group of women. This notion is supported by the fact that 87.0% said their most recent exam was within the last three years, i.e., they are following recommended screening guidelines. Thus, those in the current study may not be representative of the overall population. Another possibility is that the responses may be attributed to social desirability, meaning that partiicpants answered “Yes” even though they never had a Pap test because it was what they believed was the “right” answer.

Limitations

The fact that participants self-selected into the program, and thus may represent a unique health-seeking segment of the population, limits generalizability of findings to the general Latina population. The self-reported nature of the study’s data collection methods introduces limitations related to measurement. As indicated above, validated measures were adapted to meet the linguistic and literacy needs of participants. Since adapted versions of the instruments were used, it is unknown if the psychometric properties from the validated measures remained in tact; however, ensuring participants understood the questions they were being asked was assumed to increase validity of responses.

Further, known issues with self-reported assessments include extreme response bias and acquiescence or social desirability bias, which also reduce reliability. For example, as mentioned above, self-report allows for social desirability bias to be introduced. Modifications, such as a reduction in response options (e.g., from five to three), may have reduced the variability in responses. Either the adaptations and/or response bias may have affected reliability, resulting in perfect estimates of internal consistency. However, face validity and suitability of wording were assessed with feedback from multiple constituents, which increase confidence in the quality of data collected.

The current study does not yet include the results of follow-up assessment to measure sustained changes in knowledge, attitudes, and self-efficacy, as well as whether intention to screen materialized into actual screening, but the authors expect to present these results very soon. Nonetheless, results indicate potential for increased screening, considering the effect sizes that support practical significance of the results, and assuming these factors are indeed the mechanisms of behavior change. Sustained changes in knowledge, attitudes, and self-

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efficacy, as well as whether intention to screen materialized into actual screening behavior, will be studied with follow-up analyses.

Conclusions

Promotores de salud offer a low-cost, culturally and linguistically appropriate method to access and motivate underserved Latinas into health screening, as exemplified by the ability to recruit and retain such a large sample for intervention and evaluation. The effectiveness of *Mujer Sana, Familia Fuerte* demonstrates that *promotores de salud* are not only culturally and linguistically appropriate but also experienced and resilient, and are able to improve the health of their communities despite living within the socioeconomic contexts accompanying the impoverished communities where many Latinas reside.

Acknowledgments

This paper was supported in part by a (cooperative agreement) (contract) with the Centers for Disease Control and Prevention (#CDC-RFA-DP09-905). Portions of this project's work involve the Racial and Ethnic Approaches to Community Health initiative supported by CDC funding. However, the findings and conclusions in this paper are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention. Users of this document should be aware that every funding source has different requirements governing the appropriate use of those funds. Under U.S. law, no Federal funds are permitted to be used for lobbying or to influence, directly or indirectly, specific pieces of pending or proposed legislation at the federal, state, or local levels. Organizations should consult appropriate legal counsel to ensure compliance with all rules, regulations, and restriction of any funding sources.

The authors thank the following: Monica Aguilar, MPH (data entry manager); Monica Villarruel, BA (data collection assistant); Paola Rossell, MSW (data collection assistant); Alicia Wilson (Affiliate Executive Director); Dilcia Molina (*Promotora de Salud*); Carmen Velázquez (Affiliate Executive Director); Maria Pesquería (Affiliate Executive Director); and Bertha Morin (*Promotora de Salud*). We also thank Kathleen Whitten and Janice Vick of ICF International for providing manuscript assistance during its Scientific Writing 101 course and for review of the paper before publication.

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Table 1

CERVICAL CANCER PREVENTION *CHARLA* CONTENT FROM *MUJER SANA, FAMILIA FUERTE*, NATIONAL COUNCIL OF LA RAZA, CHICAGO, IL, AND WASHINGTON, DC

Section	Content
I	Cervical cancer among Hispanic women
II	The female reproductive system
III	What is cervical cancer
IV	What causes cervical cancer
V	The human papillomavirus (HPV) and how it is transmitted
VI	How cervical cancer is developed
VII	Signs and symptoms of cervical cancer
VIII	Risk factors
IX	How to protect yourself from HPV
X	The pap test and other tests
XI	Myths about pap tests
XII	How is the pap test performed
XIII	What questions will you be asked before your pap test
XIV	When should a pap test be performed
XV	Why don’t women get their pap tests
XVI	Pap test results
XVII	How can I reduce my risk for developing cervical cancer

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Table 2

CHARACTERISTICS OF PARTICIPANTS IN THE *MUJER SANA, FAMILIA FUERTE* CERVICAL CANCER PREVENTION PROGRAM, CHICAGO, IL, AND WASHINGTON, DC (N = 5,211)

	Mean	SD
Age[a] (years)	39.07	11.73
Number of Children[a]	2.84	1.56
Time in the United States[a] (years)	13.37	8.45
	N	**Percent**
Education		
None–Elementary School	1103	21.7
Middle–Some High School	1616	31.7
High School/GED	1112	21.8
College/Vocational	1262	24.8
Married/Living with Partner	3361	67.1
Place of Birth		
Caribbean	75	1.5
Central America	1619	32.0
Mexico	2530	50.0
Other	11	0.2
South America	499	9.9
United States	324	6.4
Ever Had Pap Smear	4733	93.2

[a]Ranges for continuous variables: Age 18–89 years, # Children 0–19, Time in U.S. 8 days–71 years.

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Table 3

PRE-POST CHANGES IN KNOWLEDGE, ATTITUDES, AND SELF-EFFICACY FOR CERVICAL CANCER PREVENTION AMONG PARTICIPANTS IN THE *MUJER SANA, FAMILIA FUERTE* EDUCATIONAL PROGRAM, CHICAGO, IL, AND WASHINGTON, DC (N=5,211)[a]

	Mean (SE)				
	Pre	**Post**	**t (p-value)**	**95% CI**	**r (effect size)**
Knowledge	1.88 (0.02)	4.48 (0.03)	−77.08 (<.001)	−2.67, −2.53	0.73
Attitude	2.68 (0.41)	2.82 (0.37)	−21.26 (<.001)	−0.15, −0.12	0.29
Self-Efficacy	2.71 (0.08)	2.88 (0.01)	−21.60 (<.001)	−0.18, −0.15	0.29

[a]Possible ranges: Knowledge 0–8, Attitude 1–3, Self-Efficacy 1–3