Salud es Vida: Development of a Cervical Cancer Education Curriculum for *Promotora* Outreach With Latina Farmworkers in Rural Southern Georgia

John S. Luque, PhD, MPH, Mondi Mason, PhD, MPH, Claudia Reyes-Garcia, Andrea Hinojosa, and Cathy D. Meade, PhD, RN

We developed and evaluated a lay health worker curriculum intended to educate Hispanic farmworker women on cervical cancer, human papillomavirus (HPV), and the HPV vaccine. We pilot tested the curriculum in 2010 with 7 volunteer *promotoras* for readability, attractiveness, content, comprehension, cultural appropriateness, persuasion, structure and organization of lessons, balance between didactic and participatory activities, and ease of diffusion to community members. Peer-led cervical cancer prevention education is a practical option for low-income, Hispanic farmworker women in newer immigrant-receiving areas of the United States with fewer Spanish-speaking health professionals. (*Am J Public Health.* 2011;101:2233–2244. doi:10.2105/AJPH.2011.300324)

Hispanics represent the largest racial/ethnic minority group in the United States. Cervical cancer is characterized by health disparities in incidence and mortality, disproportionately affecting Hispanic women compared with White women in the United States.[1] Hispanic women have the highest incidence rate of cervical cancer (11.5/100 000) of any ethnic group in the United States.[2] Efforts to improve cervical cancer prevention among Mexican immigrants, the largest Hispanic subgroup, will have a significant public health impact.[3] The aim of this study was to develop and evaluate a lay health worker (*promotora*) curriculum intended to educate Hispanic farmworker women on cervical cancer, human papillomavirus (HPV), and the HPV vaccine in rural southern Georgia. The curriculum comprised 2 learning modules that were designed and conceptualized by a multidisciplinary, bilingual team with expertise in cancer prevention and control, health communications and literacy, and design of lay health worker programs.

METHODS

In partnership with a Hispanic-serving nonprofit agency in southern Georgia, the study team developed 2 cervical cancer education modules, guided by previously developed curricula for diverse audiences, and earlier ethnographic research with Hispanic farmworker women in Florida.[4–6] We employed a theory matrix, coding health behavior constructs in appropriate sections of the curriculum.[7] We pilot tested the draft curriculum with 7 volunteer *promotoras* (Table 1) who completed a 2-session, 6-hour training during a 2-week period in August 2010. The *promotoras* evaluated the curriculum for readability, attractiveness, content, comprehension, cultural appropriateness, persuasion, structure and organization of lessons, balance between didactic and participatory activities, and ease of diffusion to community members. Training sessions were held in the classroom of our collaborating community partner, a site familiar and convenient to the *promotoras*.

The curriculum comprised 2 modules: module 1 covered female anatomy, cancer, and cervical cancer, and module 2 covered cervical cancer screening, HPV, HPV vaccine, and community health resources. The curriculum included accompanying slide presentations, vocabulary cards, problem cards for discussion, and a resource list to facilitate access to cervical cancer screening. The curriculum was designed with a popular education framework and coded throughout with cues for listening, dialogue, and action, and with constructs from social cognitive theory (Table 2).[8,9] Each module began with an icebreaker exercise and included interactive activities to facilitate colearning. *Promotoras* received a $75 stipend for their participation, and the study was approved by the Georgia Southern University institutional review board.

TABLE 1—Demographic Characteristics of *Promotora* Cervical Cancer Education Training Participants, Rural Southern Georgia

Characteristic (n = 7)	Mean (Range) or No. (%)
Age, years	41 (29–48)
Years of schooling	9 (6–12)
Years in United States	15 (9–23)
Household income per week,[a] $	250 (0–850)
Marital status	
Married or living together	2 (29)
Single or other	5 (71)
Currently employed	2 (29)
Regular health care provider	5 (71)

[a]Data reported represent median income values with categorical range.

We evaluated the curriculum content and delivery quantitatively through a 20-item pretest–posttest instrument and qualitatively through a posttraining focus group, posttraining reports from the educator or trainer, written session evaluations, and telephone exit interviews (a copy of the complete instrument is available as a supplement to the online version of this article at http://www.ajph.org). We used the Wilcoxon sign rank test to analyze the pretest–posttest scores. We used qualitative data analysis to analyze the written evaluations, focus group, and exit interviews to identify codes and themes.

RESULTS

We found a significant increase in posttraining cervical cancer knowledge based on an average pretest score of 66.4% (SD = 9.9), and an average posttest score of 80.0% (SD = 10.0; $z = -1.9$; $P < .05$). The *promotoras* indicated that what they liked most about the training included participating in the poster-making exercise, watching a tailored cancer screening educational video,[10] engaging in icebreaker exercises, and learning about the HPV vaccine. The single drawback expressed was not having more time for some activities.

TABLE 2—Theory Matrix Used to Code Curriculum for *Promotora* Cervical Cancer Education Training Participants, Rural Southern Georgia

Components	Participant Definition	Content Output	Learner Outcomes
		Social cognitive theory[8]	
Environment	Factors physically external to the person	Instructor provides resource list and contact information for Vaccine for Children (VFC) providers	*Promotoras* can state locations of local OB/GYNs, primary care, and VFC providers
Situational	Person's perception of environment	Instructor provides information on free or low-cost health care options and human papillomavirus (HPV) vaccination	*Promotoras* relate cost barriers to screening and common misperceptions about HPV vaccination
Behavioral capability	Knowledge and skills to perform a behavior	Instructor shares with *promotoras* how screening and HPV vaccination reduces cervical cancer risk	*Promotoras* state how screening and HPV vaccination can reduce risk for cervical cancer
Expectations	Anticipatory outcomes of a behavior	Instructor relates to *promotoras* the health benefits of regular Papanicolaou tests	*Promotoras* state benefits of Papanicolaou tests and getting screened regularly
Self-control	Personal regulation of goal-directed behavior	Instructor shows how to maintain a calendar for medical scheduling	*Promotoras* relate the importance of scheduling doctor's visits in advance
Observational learning	Behavioral acquisition after watching outcomes of others' behavior	Instructor explains the Papanicolaou test procedure, shows video, and explains how to interpret results	*Promotoras* are able to explain the Papanicolaou test procedure and how to interpret results
Reinforcements	Responses to a person's behavior that increases or decreases the likelihood of recurrence	Instructor provides opportunity for *promotoras* to record and discuss ideas for client reminders	*Promotoras* develop reminder systems to help clients remember Papanicolaou tests and discuss ideas
Self-efficacy	Person's confidence to perform a behavior	Instructor guides discussion of "excuses" and ideas for coping and screening	*Promotoras* acknowledge the number of possible reasons for individuals not getting screened
Emotional coping responses	Strategies used by a person to deal with emotional stimuli	Instructor guides discussion of challenges and solutions to challenges	*Promotoras* are able to think of challenges related to regular screening
Reciprocal determinism	The dynamic interaction of the person, the behavior, and environment in which the behavior is performed	Instructor guides discussion of common reasons for delayed screening and offers ideas to deal with "excuses" for not getting regular screening	*Promotoras* are able to address individual's reasons for delayed screening and offer suggestions
		Empowerment theory[9]	
Listening	Understand community's issues	Instructor shares with *promotoras* statistics on cervical cancer	*Promotoras* state the health disparities with cervical cancer in their community
Dialogue	Investigating issues using problem posing	Open discussion between instructor and *promotoras*	*Promotoras* discuss how cancer affects their community
Action	Positive changes that people envision	Instructor provides resource list and guides activities to increase access	*Promotoras* obtain information on resources, insurance access

The focus group highlighted cultural barriers for cervical cancer screening that the *promotoras* had heard expressed by friends, primarily regarding feelings of embarrassment, but also fear of the procedure and not having permission from their husbands to go to the clinic. These barriers were also repeated during the individual exit interviews, as well as monetary costs, transportation, language, lack of motivation, and time constraints. *Promotoras* indicated their willingness to share the information they learned, assuage fears that others might have about the examination, and inform others about preferred health care providers and services. During individual exit interviews, all *promotoras* expressed positive self-efficacy to receive regular Papanicolaou tests in the future and to promote screening behavior to their fellow community members.

DISCUSSION

Peer-led education on cervical cancer screening and the benefits of the HPV vaccine is a practical option for educating low-income, Hispanic farmworker women in newer immigrant-receiving areas of the United States where there are fewer Spanish-speaking health professionals to connect women to health services. This study shows that development of a cervical cancer curriculum can be highly informed by the involvement of community partners and *promotoras*. The piloted modules were attentive to culture and literacy issues, but they will be further refined (e.g., modify the flipcharts) for greater adoption by other *promotora* programs based on their input.

A positive study outcome was the increase in community collaboration in research, by involving our community partner in the design of the curriculum. Importantly, our community partner valued the program, and the *promotoras* are now being incorporated into regular migrant health education and outreach activities. Increasing awareness and access to

screening and the HPV vaccine through peer education is critical to reducing the cervical cancer burden in medically underserved Hispanic communities. ■

About the Authors

John S. Luque, Mondi Mason, and Claudia Reyes-Garcia are with the Jiann-Ping Hsu College of Public Health, Georgia Southern University, Statesboro, GA. Andrea Hinojosa is with the Southeast Georgia Communities Project, Lyons, GA. Cathy D. Meade is with the Department of Health Outcomes and Behavior, Moffitt Cancer Center, Tampa, FL, and with the Department of Oncologic Sciences, University of South Florida, Tampa.

Correspondence should be sent to John S. Luque, Assistant Professor, Jiann-Ping Hsu College of Public Health, Georgia Southern University, PO Box 8015, Statesboro, GA 30460-8015 (e-mail: jluque@georgiasouthern.edu). Reprints can be ordered at http://www.ajph.org by clicking the "Reprints/Eprints" link.

This article was accepted June 3, 2011.

Contributors

J.S. Luque developed the curriculum, analyzed the data, and wrote the article. M. Mason, C. Reyes-Garcia, and C.D. Meade contributed to the curriculum design and assisted with the writing of the article. A. Hinojosa recruited the *promotoras* and contributed to the writing of the article.

Acknowledgments

This publication was supported by grant R03 CA138123, Small Grants for Behavioral Research in Cancer Control, National Cancer Institute.

The research was previously presented at the Third American Association for Cancer Research Conference, Science of Cancer Health Disparities (September 2010), Miami Beach, FL.

Note. The article's contents are solely the responsibility of the authors and do not necessarily represent the official views of the National Cancer Institute.

Human Participant Protection

The Georgia Southern University institutional review board approved this study.

References

1. Flores K, Bencomo C. Preventing cervical cancer in the Latina population. *J Womens Health (Larchmt).* 2009;18(12):1935–1943.

2. U.S. Cancer Statistics Working Group. *United States Cancer Statistics: 1999–2007 Incidence and Mortality Web-Based Report.* Atlanta, GA: Department of Health and Human Services, Centers for Disease Control and Prevention, and National Cancer Institute; 2010.

3. Scarinci IC, Garcia FA, Kobetz E, et al. Cervical cancer prevention: new tools and old barriers. *Cancer.* 2010;116(11):2531–2542.

4. Fernandez ME, McCurdy SA, Arvey SR, et al. HPV knowledge, attitudes, and cultural beliefs among Hispanic men and women living on the Texas–Mexico border. *Ethn Health.* 2009;14(6):607–624.

5. Luque JS, Castañeda H, Martinez Tyson D, Vargas N, Proctor S, Meade CD. HPV awareness among Latina immigrants and Anglo-American women: cultural models of cervical cancer beliefs and risk factors. *NAPA Bull.* 2010;34(1):84–104.

6. Taylor VM, Coronado G, Acorda E, et al. Development of an ESL curriculum to educate Chinese immigrants about hepatitis B. *J Community Health.* 2008;33(4):217–224.

7. Helitzer D, Peterson AB, Thompson J, Fluder S. Development of a planning and evaluation methodology for assessing the contribution of theory to a diabetes prevention lifestyle intervention. *Health Promot Pract.* 2008;9(4):404–414.

8. Bandura A. Health promotion by social cognitive means. *Health Educ Behav.* 2004;31(2):143–164.

9. Freire P. *Pedagogy of the Oppressed.* New York, NY: Herder and Herder; 1970.

10. Meade CD, Calvo A, Cuthbertson D. Impact of culturally, linguistically, and literacy relevant cancer information among Hispanic farmworker women. *J Cancer Educ.* 2002;17(1):50–54.

Community Participatory Research With Deaf Sign Language Users to Identify Health Inequities

Steven Barnett, MD, Jonathan D. Klein, MD, MPH, Robert Q. Pollard Jr, PhD, Vincent Samar, PhD, Deirdre Schlehofer, EdD, Matthew Starr, MPH, Erika Sutter, MPH, Hongmei Yang, PhD, and Thomas A. Pearson, MD, PhD, MPH

Deaf people who use American Sign Language (ASL) are medically underserved and often excluded from health research and surveillance. We used a community participatory approach to develop and administer an ASL-accessible health survey. We identified deaf community strengths (e.g., a low prevalence of current smokers) and 3 glaring health inequities: obesity, partner violence, and suicide. This collaborative work represents the first time a deaf community has used its own data to identify health priorities. (*Am J Public Health.* 2011;101:2233–2244. doi:10.2105/AJPH.2011.300247)

Deaf people who use American Sign Language (ASL) are medically underserved and often excluded from health research and public health surveillance.[1,2] ASL is different from English[3] and, as is the case with many of the world's languages,[4] has no written form. Many ASL users have been deaf since birth or early childhood. Biological and social determinants of health suggest that communities of ASL users should be predisposed to health inequities.[2]

Rochester, New York, has a large population of deaf ASL users. The Rochester Prevention Research Center's National Center for Deaf Health Research (NCDHR) used a community participatory approach to develop and administer an ASL-accessible health survey to estimate deaf individuals' health status and health risk and to compare results with data from the local general population as a means of identifying health inequities.

METHODS

Deaf and hearing researchers and community members worked collaboratively to develop a linguistically and culturally appropriate survey based on the Behavioral Risk Factor Surveillance System (BRFSS).[5] We worked with community members to prioritize health survey topics and developed items to measure important deaf-related demographic information (e.g., age at onset of deafness).[6,7] We adapted existing English-language survey items through a process that included translation,[8] back-translation, and in-depth individual cognitive interviews. A computer interface was used to present survey items in sign language (via video) and written English on a touch-screen kiosk. The NCDHR Deaf Health Survey contained 98 items.

We recruited deaf individuals through deaf community organizations, via e-mail and posters, and face-to-face during community events; 339 deaf adults from the Rochester metropolitan statistical area completed the survey over a period of 6 months in 2008. Results were compared with BRFSS data collected via random-digit dialing in the Rochester community in 2006.[9] We used SAS version 9.2 survey procedures[10] to adjust for possible biases introduced by telephone survey methodology. The Rochester deaf community contributed to interpretation of the survey findings and identified health inequities in need of future research and intervention.