

# Impact of Culturally, Linguistically, and Literacy Relevant Cancer Information among Hispanic Farmworker Women

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**Abstract—Background.** This pilot investigation describes the impact of culturally, linguistically, and literacy relevant cancer information in terms of knowledge, satisfaction, comfort level, and intentional and actual breast/cervical cancer screening practices among Hispanic migrant and seasonal farmworker women. **Methods.** Study phases were: 1) formative research; 2) instrument development and pretesting; and 3) pilot evaluation among 65 women using a one-group pretest–posttest design. **Results.** Participants' reactions to the intervention were highly favorable. While an increase in knowledge ( $p < 0.001$ ) was observed, no change in comfort was noted. Ninety-seven percent stated that they would be willing to miss a day of work (intent) to get a health check-up. **Conclusion.** Educational tools that are culturally, linguistically, and low-literacy can be promising interventions to promote awareness about breast and cervical cancer screening. *J Cancer Educ.* 2002; 17:50–54.

Hispanic migrant and seasonal farmworker women represent a particular subgroup of women who face a number of barriers to cancer screening services, including: lack of insurance, chronic poverty, limited access to health care, cultural and linguistic differences, and immigrant and nomadic status. Moreover, women with the greatest health care needs may have the least ability to read and understand information about their health.<sup>1–9</sup> Non-printed interventions are needed to provide at-risk cancer populations with relevant information about cancer screening and early detection. Videotapes may convey such information in an easy-to-understand and vivid manner.<sup>10,11</sup> Therefore, the overarching goal of this pilot study was to develop and test the impact of a spanish-language educational tool, a videotape, in terms of knowledge, comfort, satisfaction, and actual and intended breast/cervical cancer screening practices.

## MATERIALS AND METHODS

This study consisted of three phases: 1) formative research, 2) instrument development and pretesting, and 3) pilot evaluation. The Institutional Review Board for the

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Protection of Human Subjects of the University of South Florida reviewed and approved the study.

### Phase I: Formative Research

Focus groups provide a rich and detailed set of data about group members' thoughts, experiences, perceptions, and impressions, and are helpful for obtaining broad and general information about how specific audiences view particular ideas and how those ideas fit into their lives.<sup>12,13</sup> Using recognized focus group procedures,<sup>14</sup> six focus groups ( $n = 35$ ) were conducted to explore how farmworker women conceptualize cancer, to identify their knowledge, beliefs, and attitudes about cancer screening practices, and to examine how they prefer to receive their information. Focus groups were held at convenient community sites and were led by a trained bilingual moderator. Analysis of the focus group data involved separating and organizing the data into useful parts and identifying themes.<sup>15</sup> Phase I themes (see Table 1) were then assessed in terms of implications for creating an appropriate educational tool.

### Phase II: Instrument Development and Pretesting

The instruments were developed by the investigators and based on current cancer literature, contributions from a panel of key informants from the community, and Phase I data. The instruments were created in English, translated into Spanish, pretested, and back-translated by bilingual/bicultural research staff.

**Videotape.** The research team incorporated emergent themes from Phase I into the development of a videotape

TABLE 1. Focus Group Excerpts

Topic	Emergent Themes	Quotes
Cancer knowledge	Cancer is dangerous and can affect anyone Lack of knowledge exists about cancer in general Unsure of reasons for early detection Lack of knowledge about when/where to get screened	"Is cancer the same as sugar (diabetes)?" "You should publicize why a woman should go for a check-up" "What age should we begin?"
Beliefs/values and fears	Bumps/bruises can cause cancer Avoid getting Paps because of fear, shame, and anxiety	"A hit/blow can cause cancer" "I feel weak when I go for the Pap . . . I feel like my legs are wobbly"
Learning preferences	Like the idea of using a videotape to learn Dislike pamphlets Want to learn about the body (anatomy) and see how it works	"I would like to have a videotape to show my daughters at home"
Presentation style/ tone	Telenovela or novela style Prefer serious but engaging tone	"Use 'usted' in the narration" [proper form of "you" in Spanish] "Reflect a family style that is believable" Follow an entertaining storyline

using systemic processes.<sup>11,16</sup> The concept of symbolic or role modeling, i.e., showing the desired behavior, attitude, or cognitive outcome, was used to enhance the effectiveness of the message.<sup>17</sup> The resultant videotape depicted a telenovela (short role-playing situations) showing family interactions about breast and cervical cancer screening and early detection interlaced with real-life testimonials of cancer patients and community leaders/gatekeepers.

**Baseline demographic/health information survey.** The survey covered demographic and socioeconomic characteristics such as age, ethnicity, number of children, place of origin, length of time residing in the area, years of schooling, location where education was received, occupation, and selected health variables.

**Knowledge.** To evaluate breast/cervical cancer knowledge and recall, 15 questions were developed by the investigators based upon the content of the videotape. The questions were simple and dichotomous to appeal to the literacy skills of the audience. The tool was piloted among 15 farmworker women for ease of understanding and to determine item difficulty. In the subsequent version, the researchers reduced the number of questions to ten and revised the wording to enhance clarity. The final knowledge tool consisted of questions grouped by topic: breast cancer ( $n = 3$ ), cervical cancer ( $n = 3$ ); and general cancer knowledge ( $n = 4$ ).

**Comfort.** To evaluate subjects' comfort levels discussing themes of breast/cervical health and their bodies, before and after the class, the subjects were asked to consider the following question beginning with . . . how comfortable are you with talking about breast and cervical cancer and your body? While linear analog scales have been used in other studies, the researchers feel that this was one of the first attempts to use this approach among farmworkers to determine whether it is a useful approach for assessing difficult concepts. In the present study, the investigators used a 10-cm linear analog scale anchored at the zero-valued end with very uncomfortable and at the 10-cm end with very comfortable. Each subject was instructed to mark through the

line to show the point that best described her level of comfort with discussing topics of breast and cervical cancer and her body before and after the educational program. For each subject, a comfort score was measured in millimeters from the zero-valued end of the scale to the slashed mark. Each item was treated separately for purposes of analyses.

**Satisfaction.** Two yes/no items were developed by the investigators to assess level of satisfaction with the educational tool. They included: Did you like receiving information about health in a class?, and Did you like receiving information about your health from a videotape?

**Intentional/actual screening.** Following the American Cancer Society's<sup>18</sup> (ACS's) age-appropriate screening guidelines, the investigators determined the number of women qualifying by age for the screening tests and then actually completing the screening tests within a six-week designated follow-up period. While a longer and more intensive follow-up period would be ideal, time and resource constraints limited additional follow-up time. Verification of screening test completion was conducted through review of clinic/medical records or by phone attempts and home visits if unable to verify with health records.

**Pretesting of instruments.** To achieve satisfactory results the investigators employed pretesting measures extensively during the various stages of production: concept, draft, and execution. In total, investigators conducted 45 interviews among farmworker women and other community members. Results gained from the development and pretesting phases were used to ensure that content, tone, character development, length, music, and other elements of the message design were appropriate and that the data-collection instruments were understood.

### Phase III: Pilot and Evaluation

**Study design.** The researchers used a one-group pretest-posttest design to measure the impact of the educational tool (videotape) in terms of knowledge (pre/post), satisfac-

TABLE 2. Summary of Knowledge Scores

	Score Mean (SD)	Score Improvement (%)
Pre-score (range: 0, 9)	5.17 (2.01)	
Post-score (range: 3, 10)	6.57 (1.57)	
Score difference (range: 3, 7)	1.40 (2.04)	27.1
95% confidence interval	(0.90, 1.90)	

\*Post-score - pre-score/pre-score.

TABLE 3. Summary of Scores—Comfort Measures

	Score Mean (SD)	Score Improvement (%)
Pre-score (range: 7.7, 9.2)	8.46 (2.87)	
Post-score (range: 8.2, 9.4)	8.77 (2.41)	
Score difference (range: -9.2, 10)	0.31 (2.52)	3.7
95% confidence interval	(-0.33, 0.96)	

\*Post-score - pre-score/pre-score.

tion, comfort level, and intentional and actual breast/cervical cancer screening practices.

**Study population/setting.** Through flyers, personal contacts, and word-of-mouth, the investigators along with a lay community outreach worker recruited a convenient sample of Hispanic women 18 years old or older ( $n = 65$ ) from rural central locations where farm workers typically reside. The informal get-togethers (11 group classes) were held at such locations as missions, migrant centers, clinics, and women's homes. Refreshments were provided. The classes were conducted in Spanish and facilitated by a bilingual/bicultural research staff and assisted by a community outreach worker.

**Data collection procedures.** Oral and written consent was first obtained from every subject. Next, subjects answered questions about their demographic and health backgrounds and completed the knowledge and comfort pretest measures. Women who stated difficulty in completing the data forms were assisted by bilingual/bicultural research staff. Then the subjects viewed the 14-minute videotape, followed by group discussion and a question-and-answer period led by a bilingual/bicultural health educator. They were administered the knowledge and comfort posttest measures and asked to evaluate their satisfaction with the educational tool and the group class. Classes lasted approximately one hour. Women who were eligible according to ACS age-appropriate criteria signed up for mammography and/or Pap tests (scheduled within six weeks). These tests were offered at no charge/minimal charge through the migrant health clinic and/or our cancer center as part of an established outreach program.<sup>9</sup> Follow-up was conducted to determine screening adherence within the six-week follow-up period.

**Statistical analyses.** Assessment of knowledge of breast and cervical cancer was obtained from 65 women before and after videotape intervention using a ten-question survey. Additionally, each subject's comfort level was determined

pre- and post-intervention using the 10-cm linear analog scale. The difference between the pre- and post-measurements was calculated. Improvements in knowledge and comfort were assessed for significance using paired *t*-tests. The educational level of each subject was evaluated based on her stated years of schooling. Subjects were classified into two subgroups:  $\leq 6$  years of schooling and  $\geq 7$  years. Analyses to assess improvements in knowledge and comfort were repeated by educational level using paired *t*-tests. All analyses were two-sided, and performed using SAS.

## RESULTS

The final sample included 65 Hispanic women, ranging in age from 18 to 72 years, with a mean age of 35 years. All subjects considered Spanish to be their primary language and completed the instruments in Spanish. The women participating in the pilot study were employed as farmworkers at the time of the study (40%) or had at some time performed work as farmworkers (89%). Among the 63 subjects for whom educational data were available, educational levels ranged from no schooling to grade 12. A total of 32 women (51%) reported years of schooling at grade six and below. Many of the participants ( $n = 44$ , 68%) were originally from Mexico. For 52% of the study population, Mexico was the country where they had received their education. The majority of the subjects (91%) had been given a Pap test during their lifetimes, and of women aged 40+, 75% had had mammography during their lifetimes. Eighty percent of the women reported having had Pap tests within the preceding year, and of women 40 and over, 75% reported having had mammography within the preceding year.

Knowledge pre-scores and post-scores and score differences were calculated (Table 2). The score improvement (post-score - pre-score)/pre-score, showed an overall 27% increase in knowledge. Paired *t*-tests showed a significant difference ( $p < 0.001$ ). The subjects were subdivided into two groups according to their stated years of schooling ( $\leq 6$  years;  $n = 32$ ;  $\geq 7$  years;  $n = 27$ ). Subjects with higher educational levels had significantly higher pre-scores and post-scores (6.07, 7.59) than did subjects with lower educational levels (4.62, 5.78); however, a comparison of the groups revealed no significant difference according to overall score improvement (1.15, 1.51).

Comfort pre-scores, post-scores and score differences were calculated (Table 3). The score improvement (post-score - pre-score)/pre-score showed an overall 4% change. Using paired *t*-tests, no significant difference was found in the score differences.

Eighty-five percent of the women ( $n = 51$ ) said that they were satisfied receiving information about their health from the videotape, and 89% ( $n = 54$ ) were satisfied receiving information about health in a class or group. Comments from the women revealed that they liked the friendly, open group discussions, liked giving their opinions, and wanted to learn more.

The educational tool (videotape) was designed to educate and to encourage regular Pap testing and mammography. Of 63 women who responded, 97% indicated that they would be willing to miss a day of work (intent) over the next year to obtain a health checkup. Of the 65 subjects, 12 women qualified according to ACS age-appropriate guidelines for a Pap test (age 18+ and had not had a Pap test within the year preceding the study). Six women qualified according to ACS age-appropriate guidelines for mammography (age 40+ and had not had mammography within the year preceding the study). Of 12 women who signed up for Pap tests, six actually were screened (50%), and one woman (17%) obtained mammography within the six-week follow-up period. Women who were not screened cited the following barriers: 1) lack of transportation, 2) migrating north for summer harvest, 3) cost, 4) family responsibilities, and 5) work responsibilities.

## DISCUSSION

This study is the first stage of larger planned studies to address concerns of this group of rural farm-worker women, mainly of Mexican descent, and to create relevant cancer control interventions, educational tools, and community-based programs. The study contributes to the literature on the systematic process for developing culturally, linguistically, and literacy relevant educational media for cancer education, screening, and early detection, and confirms the value of using a videotape.<sup>19</sup> Key to the educational development process was the inclusion of community members to ensure that content fit their reality.<sup>9</sup>

The process of recruiting women for the study was difficult. Simply put, farmworker women live hard lives. They work in the field while at the same time taking care of their children and their husbands. Hispanic women would like to participate in studies such as this, but the reality of their hard lives often prevents them from doing so. Nonetheless, the use of bilingual/bicultural community outreach workers to aid in the recruitment of women was a valuable asset to this study. While a small monetary incentive was provided to each focus group participant, no incentive was given to participants in Phase III. It is recommended that incentives be considered in all phases of data collection to further enhance farmworker participation in future studies such as this and acknowledge their time in the study.<sup>20,21</sup>

While the researchers had strong relationships with community members before the study began, they were able to sustain and strengthen these relationships. The trust described here is an essential component for the conduct of future population-based community studies aimed to more rigorously evaluate cancer control evaluations.<sup>22-24</sup> Results revealed that the videotape was effective in increasing knowledge and achieving satisfaction with this method of learning. We observed that this high-priority population is hungry for health knowledge. While the increase in satisfaction might indicate a reflection of subjects' wanting to please investigators, the women expressed their feelings of appreci-

ation that an educational tool had been developed especially for them and tailored to their needs and wants. Women with whom the research team interacted with in the community conveyed a strong interest in more educational classes and voiced a profound desire for more cancer interventions for the remaining family members. Thus, the dissemination of cancer information through media within an established community infrastructure may be a powerful way to influence knowledge and to foster individual self-esteem.<sup>9,23,25,26</sup>

Our data suggest that the women in this study had already engaged in relatively high levels of cancer screening behaviors. This finding most likely reflects established outreach efforts among this population and the cancer center's extensive use of mobile mammography services (offered low cost/free). No significant change in comfort levels in discussing breast/cervical cancer health topics was found. This is viewed as a relatively positive finding, since the topics are personal and intimate.

*Limitations.* There were several limitations to this study. A sample of convenience and a straightforward one-group pretest-posttest design were used in Phase III. However, from a practical point of view, the selected sample was relevant to the study questions. The primary aim of this pilot study was to develop an educational tool; our extensive formative research approaches supported this aim. Also, the main intervention under study, i.e., the videotape, was used as part of a group class, and thus the results of the pilot study may reflect the effects of combined educational modalities. A sample of convenience also affected the number of women eligible for screening, since this community is heavily outreached. While a true randomized study in Phase III would have been stronger in principle, the investigators' approach provided the necessary insight to answer the study question. In sum, it is concluded that the design for all phases did achieve a balance between the practicalities of the study population, community reality, and systematic rigor.

Another limitation was a function of subjects who did not complete all aspects of the study instruments. It was found that the incompleteness of some of the study measures was due to subjects' having difficulty in completing written forms. Even though the instruments were low-literacy, many of these farmworkers did not know how to read or did not read well. In some instances, the researchers were able to read the instruments aloud to subjects to avoid confusion, but it was not always readily apparent which women required special assistance. Results showed that the mean years of stated schooling was 6.6 grade levels, with most women being educated outside the United States. While instruments can be produced at low reading levels, these results remind the research team that personalized face-to-face data-collection methods may achieve the most desired outcomes for certain types of data-collection methods, especially among the farmworker population. It should be noted that the qualitative approaches used in Phases I and II, e.g., focus groups and pretesting, in which reading was not essential, resulted in high subject participation, suggest-

ing that narrative data might be more available from this study population in future studies.

## CONCLUSION

Reaching at-risk populations in a way that addresses their underlying knowledge, attitudes, and beliefs and in consideration of reducing educational barriers positively contributes to building effective community-based cancer control programs.<sup>5,24,27-30</sup> Creating relevant educational interventions can be achieved by working closely with community members and involving them in various aspects of the development process. It is recommended that videotapes be considered as a vehicle to communicate cancer information to low-literacy multicultural populations. Key to the design and development of community-based interventions is getting in touch with the realities of the study population.

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