

# Educating Hispanic Women About Breast Cancer Prevention: Evaluation of a Home-Based *Promotora*-Led Intervention

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## Abstract

**Objectives:** Trained community health promoters (i.e., *promotoras*) conducted home-based group educational interventions (home health parties) to educate Hispanic women from the Lower Yakima Valley of Washington state about breast cancer and mammography screening.

**Methods:** Women aged 40–79 participating in the parties completed baseline and follow-up surveys 6 months postintervention ( $n = 70$ ). Changes in general cancer knowledge, breast cancer screening practices, and intentions to be screened among participants from baseline to follow-up were measured using McNemar's test for marginal homogeneity to evaluate the effectiveness of the parties.

**Results:** The average age of the sample was 50.0 years (standard deviation [SD] 10.0), 84% reported less than an eighth grade education, and 54% were covered by the state's Basic Health Care Plan. Significant changes between baseline and follow-up were observed with respect to (1) believing that risk of cancer could not be reduced (41% vs. 15%, respectively,  $p = 0.001$ ), (2) ever having a mammogram (83% vs. 91%,  $p = 0.014$ ), (3) discussing a mammogram with a doctor (37% vs. 67%,  $p < 0.001$ ), and (4) intending to have a mammogram within the next few months among women who did not report having a mammogram between baseline and follow-up (61% vs. 81%,  $p = 0.046$ ).

**Conclusions:** Participation in home-based group educational interventions delivered by *promotoras* may be associated with improved breast cancer screening practices among Hispanic women.

## Introduction

HISPANIC WOMEN IN THE UNITED STATES have a lower incidence of breast cancer than non-Hispanic white women.<sup>1,2</sup> Between 1999 and 2003, the average annual age-adjusted incidence of breast cancer for Hispanic women was 92.6/100,000 compared with 130.8/100,000 for non-Hispanic white women.<sup>3</sup> Despite a lower incidence of disease, age-adjusted 5-year relative breast cancer survival rates between 1992 and 2002 suggest that the risk of death is significantly greater for Hispanic vs. non-Hispanic white women.<sup>1</sup>

Hispanic women tend to be diagnosed with breast cancer at more advanced stages of disease than non-Hispanic white women.<sup>4</sup> This ethnic disparity in stage at diagnosis may be explained in part by less frequent receipt of mammography screening among Hispanic women. The U.S. Preventive Services Task Force (USPSTF) currently recommends that all women aged  $\geq 50$  receive mammograms every 1–2 years, and that the decision to undergo biennial mammography before the age of 50 should be an individual one, weighing potential benefits and harms, although, prior to November 2009, biennial mammography screening was recommended for all

women  $\geq 40$ .<sup>5,6</sup> However, according to the 2003 National Health Interview Survey (NHIS), only 63.3% of Hispanic women reported ever having a mammogram compared with 71.1% of non-Hispanic white women.<sup>7</sup> Further, only 58.1% of Hispanic women between the ages of 40 and 64 reported having a mammogram within the last 2 years compared with 68.4% of all white women within the same age range.<sup>8</sup> Improvements in regular mammography screening in the United States are needed in light of these less than optimal national screening rates, particularly among Hispanic women.

Hispanic women face a variety of barriers to having their first mammogram and to receiving regular breast cancer screening every 1–2 years. Compared with non-Hispanic white women, Hispanic women may lack access to preventive services,<sup>9</sup> given lower income and more limited health insurance coverage.<sup>10–15</sup> Additionally, cultural beliefs and lack of knowledge or awareness about cancer risk are likely to influence screening and preventive behaviors and result in disparities in stage at diagnosis and subsequent survival.<sup>13,16–20</sup> Fear of pain associated with the mammogram itself as well as fear of finding cancer have also been cited as psychological barriers to breast cancer screening among Hispanic women in the United States.<sup>21</sup>

The U.S. Task Force on Community Preventive Services has recommended implementation of breast cancer screening interventions involving the use of client reminders, small media materials, one-on-one education, and reduction of structural barriers and out-of-pocket costs, as outlined in their Community Guide.<sup>22</sup> It has not been well-established, however, if these types of interventions have the same impact on screening behaviors specifically among Hispanic women, a growing segment of the U.S. population. Further, there is insufficient evidence from the existing literature for the Task Force to determine if client-oriented group educational interventions are effective for improving breast cancer screening rates either for Hispanic women or for others, as study findings have been inconclusive.<sup>22</sup>

Group educational interventions for cancer screening are defined by the Task Force as interventions that provide information about the reasons for and benefits of cancer screening and ways to overcome barriers to screening. They are delivered in a lecture or interactive format. A trained layperson or health educator uses slide presentations and role modeling to inform, encourage, and motivate participants to receive cancer screening. A broad spectrum of groups, settings, educators, and topics can be included.<sup>22</sup> To date, only a limited amount of research has been conducted to explore the effectiveness of group educational mammography interventions specifically targeted toward Hispanic women.<sup>23-29</sup>

To help address some of the gaps in the current mammography intervention literature with respect to the effectiveness of group educational mammography interventions, specifically those targeted toward Hispanic women, a home-based group educational intervention led by trained health promoters from the community (i.e., *promotoras*) was implemented among Hispanic women in the Lower Yakima Valley of Washington State in an effort to improve general cancer knowledge and breast cancer screening practices among participants. The intervention met the Task Force's definition of a group educational intervention but was delivered in a unique setting, the home. The breast cancer home health parties were conducted as part of a larger cancer prevention study in this community aimed at evaluating several different culturally appropriate, targeted interventions to promote preventive strategies, enhance knowledge and awareness, and increase cancer screening rates in the community.

Our objectives were to deliver a home-based group educational intervention addressing the topics of general cancer and breast cancer-specific awareness and screening and to measure the impact of the intervention on a target population of Hispanic women between the ages of 40 and 79, as these women were age-eligible to receive mammography. The impact of the intervention was measured by comparing responses to items from surveys administered preintervention and postintervention assessing general cancer knowledge, breast cancer screening practices, and intentions to be screened. We hypothesized that the intervention would lead to improvements in general cancer knowledge, breast cancer screening practices, and intentions to be screened.

## Materials and Methods

### Study setting

The study took place in the Lower Yakima Valley of Washington State, an ideal setting to conduct this research given

that the region is largely Hispanic;<sup>30</sup> approximately 61% of the population in the Lower Yakima Valley is Hispanic.<sup>31</sup> According to the U.S. Census, only 50% of Hispanic men and women in Yakima County over the age of 16 were employed in 2000.<sup>32</sup> Forty-three percent of Hispanics living in Yakima County in 2000 were born outside of the United States,<sup>33</sup> and 83% of those over the age of 5 spoke Spanish (some Spanish or Spanish exclusively).<sup>34</sup> As nearly 95% of Hispanics in the Valley are of Mexican origin,<sup>30</sup> the term "Hispanic" throughout the article is used to refer to a population primarily of Mexican origin.

Mexican settlement in the Yakima Valley has been a relatively recent phenomenon that began with the enactment of the Bracero Program (1942-1964) after World War II when there was a high demand for agricultural labor in the United States. Under the program, more than 35,000 Mexican laborers came to Washington State to work under contract.<sup>35</sup> Since the end of the program, Mexican immigrants have continued to migrate to the Valley in search of low-skill employment and to join family or friends living in the area.

Given this demographic profile, this community was an ideal setting in which to carry out a *promotora*-led home health party intervention. Home health parties can provide a safe environment for underserved populations to receive health information.<sup>36</sup> Home health parties are designed to help participants feel comfortable about discussing health topics that might normally be difficult to discuss. In areas where deportation is a concern, home-based education may alleviate fears and build trust by bringing information and resources into the home. Delivering an intervention in this type of setting can overcome commonly faced barriers of transportation and child care. Home health parties have been used previously by the investigators in this community to provide education on a variety of health topics, and community members have been receptive to their use.

The use of the *promotora* in this setting was also intended to facilitate participants' discussion of health issues, as the *promotoras* were trained health educators from the participants' own communities who spoke and understood their language and understood the potential cultural barriers to breast cancer screening. In general, *promotoras* serve as a bridge between healthcare providers and groups who lack access to adequate care.<sup>23,37-39</sup> *Promotoras* are trained to talk to community members in need about preventive health practices and are encouraged to share their personal experiences with preventive health. They provide social support for the target population and assist community members in engaging in preventive behaviors.

### Study procedures

For our breast cancer home health party intervention, residents in the community were invited to participate in cancer prevention home health parties led by the *promotoras*, who recruited participants at community meetings, through display tables at churches and community events, and from various other locations in the community. Community members who were interested in hosting a party at their homes were recruited first and were asked to invite family, friends, and relatives to attend the home health party. Any interested community members were eligible to host a party. All party attendees who were interested in participating in

our evaluation were asked to sign an informed consent before participating in the party and completed baseline questionnaires assessing demographic characteristics, general cancer knowledge, and breast cancer screening practices and intentions. Participants also agreed to be contacted 6 months after the home health party to complete a follow-up questionnaire by telephone. Individuals who did not sign consent forms to participate in the evaluation piece were still welcome to attend the parties but were not asked to complete the surveys.

During the breast cancer home health parties, the *promotoras* led the breast cancer discussions, informed participants about cancer in general and mammography screening, and provided other breast cancer-related information. Trained bilingual interview staff in the Yakima Valley followed up with participants 6 months after their home health party had taken place. At that time, participants were asked to complete telephone interviews to assess their general cancer knowledge, beliefs, screening practices, and intentions after the intervention. Telephone interviews were conducted in Spanish or English according to the preference of the participant. *Promotoras* went to the homes of participants who were unable to complete the follow-up survey by telephone.

### Study sample

A total of 23 breast cancer home health parties were held in the Lower Yakima Valley between April 2007 and September 2008, and an average of 4 people (range 3–8) attended each party. Although they were not the intended target of the intervention, men were eligible to attend the home health parties with their wives or loved ones, as we did not wish to exclude anyone who was interested in learning more about cancer in general or breast cancer specifically. All participants who signed consent forms completed the baseline questionnaire before the home health party, which assessed their general cancer knowledge and beliefs. Female participants between the ages of 40 and 79 years were asked to complete a separate baseline questionnaire to assess their breast cancer screening awareness and practices. A total of 87 women completed the breast cancer baseline questionnaire, and of those, 77 women completed the follow-up questionnaire approximately 6 months after baseline. Of these 77 women, 2 were excluded from the final analysis because they were under the age of 40 (ages 38 and 39), and 1 was excluded because she did not report her age. An additional 4 women were excluded from the analysis because of incomplete information on use of mammography, yielding a final sample of 70 women for the evaluation.

### Home health party description and content

As indicated, the home health parties consisted of guided discussions about breast cancer that took place in an informal setting (i.e., in someone's home) where families, friends, and neighbors gathered to learn about this health topic from a trained *promotora* in their community. The *promotoras* were community members in Yakima Valley who were trained in general health education and in breast cancer education specifically by bilingual Fred Hutchinson Cancer Research Center staff located in Sunnyside, Washington. The breast cancer home health parties were meant to encourage participants to learn about breast cancer and to better understand methods of prevention and screening. The sessions addressed the fol-

lowing topic areas: What is cancer? What is breast cancer? Who is at risk? How can the risk of cancer be reduced? What types of breast cancer screening are available? What is mammography? What types of treatments are available for breast cancer? Specific content of the slide presentation included definitions of cancer and breast cancer specifically, a breakdown of established risk factors for breast cancer, a description of potential ways to reduce breast cancer risk (including maintaining a healthy weight, eating a healthy diet, exercising, avoiding smoking, and lowering alcohol consumption), an introduction to breast cancer screening (what methods of screening are available, and who is eligible to receive screening), and finally, an introduction to the main types of breast cancer treatment, including surgery, radiation, chemotherapy, and hormonal therapy.

Flip charts and visual displays were used in the educational session to supplement the slide presentation. Participants were encouraged to ask questions and to discuss issues or concerns with *promotoras* and other participants. A resource guide was provided for all participants with information about where to receive a mammogram locally at no cost or at a reduced cost. *Promotoras* also assisted in making appointment for the mammograms if the participants asked for assistance. Presentations and discussions were held in the participants' preferred language, and written materials that were distributed were bilingual and appropriate for those with low literacy levels. The site supervisor from the program office in Sunnyside, Washington, attended a random sample of home health parties ( $n = 4$ ) to ensure consistency in implementation. Table 1 outlines the content and flow of our *promotora*-led breast cancer home health party intervention.

### Baseline and follow-up questionnaire content

The baseline general cancer knowledge questionnaire asked women about healthcare access, general cancer knowledge, and demographic characteristics. The baseline breast cancer-specific questionnaire asked women about history of breast cancer screening practices and intentions to be screened in the future. The follow-up questionnaire asked women similar questions about healthcare access, general cancer knowledge, and history of breast cancer screening practices and intentions to be screened. Responses to specific questions that were asked both at baseline and at follow-up were compared to assess the impact of the intervention on general cancer knowledge, breast cancer screening practices, and intentions to be screened. At the end of the follow-up survey, participants were also asked to evaluate the breast cancer home health party they had attended.

### Data measures

**General cancer knowledge.** General cancer knowledge items assessed at both baseline and follow-up asked participants to indicate whether they agreed or disagreed with the following statements: A tumor is always cancerous. A cancer that has not spread to other parts of the body has a good chance for control or cure. There is nothing that can be done to prevent/reduce the risk of cancer. These questions were adapted from items included in the General Cancer Knowledge and Cancer Cognition modules of the National Cancer Institute's Health Information National Trends Survey (HINTS) from 2003 and 2007, respectively.<sup>40–42</sup> The HINTS

TABLE 1. OUTLINE OF *PROMOTORA*-LED BREAST CANCER HOME HEALTH PARTY INTERVENTION

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Step 1: Participants arrive at home health party sponsored by host in their neighborhood

- Sign consent form after explanation of study procedures by *promotoras*
- Complete general cancer knowledge baseline survey (all participants)
- Complete breast cancer specific baseline survey (all female participants aged 40–79)

Step 2: *Promotoras* begin interactive group educational session using slide presentations and flip charts

Purpose

- To encourage participants to learn about breast cancer and to better understand methods of prevention and screening using slide presentations, flip charts, and visual aids of breasts with cancerous growths

Content addressed in slide presentation and flip charts

- What is cancer?
- What is breast cancer?
- Who is at risk?
- How can risk of cancer be reduced?
- What types of breast cancer screening are available?
- Who is eligible to receive breast cancer screening?
- What is mammography?
- What treatments are available for breast cancer?

Step 3: Participants encouraged to ask questions and discuss issues or concerns with *promotoras* and other participants

- Promotoras* provide information on where women can receive screening, connect women to clinics providing mammography screening at low or no cost

Step 4: Participants complete follow-up survey ~ 6 months after home health party

- Study staff contact participants (all female participants, aged 40–79) 6 months after participation in home health party to schedule completion of follow-up survey via telephone
- Promotoras* visit homes of women who prefer to complete follow-up survey in person rather than via telephone

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surveys include a combination of items taken from existing surveys and new items pretested and evaluated after development by members of the HINTS advisory committee and statistical consultants.<sup>42</sup>

**Breast cancer screening practices.** Women were asked to report on a variety of breast cancer screening practices at both baseline and follow-up, including: Have you ever had a mammogram? (yes or no) and When was your last mammogram? (date of last mammogram was compared with date of interview to calculate whether a woman had received a mammogram within the last 2 years). These questions were based on items measured in the HINTS 2003 and 2005 surveys.<sup>40,42,43</sup> Such questions have also been used in other research with underserved populations.<sup>44,45</sup> In one study of African American women, the test-retest reliability of the question, Have you ever had a mammogram? was moderately high ( $r = 0.72$ ).<sup>44</sup> A meta-analysis comparing self-reported use of mammography with medical records reported a sensitivity of 83% for Hispanic women.<sup>46</sup> The accuracy of self-reported mammography has also been evaluated among women from a low-income, urban, ethnically diverse population,<sup>45</sup> and in this study, medical records confirming receipt of mammography

were found for 88% of women who reported they had received a mammogram. For 68% of these women, medical records confirmed that the mammogram was received in the same year as reported by the woman; 9% recalled their last mammogram at occurring at least 1 year before it actually occurred, and 23% recalled their last mammogram as occurring at least 1 year after it actually occurred.<sup>45</sup>

As we were also interested in whether the intervention empowered women to discuss mammography with their doctors, we developed our own question to ask before and after the intervention: Have you ever asked a doctor to give you a mammogram? (yes or no).

**Intentions to be screened.** Finally, women were asked at both baseline and follow-up to answer the question: Are you considering having a mammogram within the next few months? (yes or no). This item was also adapted from the HINTS 2003 survey<sup>40,42</sup> and, similar to the questions on breast cancer screening practices, has been used in other research with underserved populations. The test-retest reliability of this measure reported in one study of African American women was low ( $r = 0.13$ ).<sup>44</sup> To our knowledge, however, the reliability of this measure has not been reported specifically for Hispanic women.

#### Data analysis

Descriptive statistics were used to profile the sample with respect to demographic characteristics at baseline and with respect to general cancer beliefs, breast cancer screening practices, and intentions to be screened at both baseline and follow-up (6 months postintervention). McNemar's test for marginal homogeneity was used to assess significant differences ( $\alpha = 0.05$ ) before and after the intervention with respect to the proportion of participants agreeing with certain general cancer beliefs and with respect to the proportion of participants engaging in and intending to engage in breast cancer screening.

## Results

### Baseline demographic characteristics

A total of 70 women between the ages of 40 and 79 with complete information on mammography who participated in the breast cancer home health parties completed both baseline and 6-month follow-up questionnaires. Table 2 shows the demographic characteristics of the sample at baseline. The mean age of the sample was 50.0 years (range 40–78). Nearly one half of the sample (46%) had below a fifth grade education, and only 16% reported a ninth grade education or higher. More than half of the sample (54%) reported having Washington State Basic Health Care Plan as their primary health insurance, which is a state-sponsored program providing low-cost healthcare coverage to those who are not eligible for Medicare; 12% of women reported having private insurance, 12% had some form of public insurance, and 22% were uninsured. Nearly all women (99%) reported having a clinic where they were regularly seen for their healthcare, and 81% reported having a physician whom they would regularly see for care. Only 2 women (3%) reported having a personal history of breast cancer. Nearly half of the sample reported they had attended at least one home health party in the past before their attendance at the breast cancer home health party.

TABLE 2. BASELINE DEMOGRAPHIC CHARACTERISTICS OF BREAST CANCER HOME HEALTH PARTY PARTICIPANTS (AGED 40–79)

Characteristic	Total (n = 70) n (%) <sup>a</sup>
Age, in years, mean (SD)	50 (10.0)
Language of interview	
Spanish	67 (95.7)
Education	
4th grade or less	32 (45.7)
5th–8th grade	27 (38.6)
9th grade or higher	11 (15.7)
Health insurance status	
Private	8 (11.8)
Basic Health Care Plan	37 (54.4)
Medicare/Medicaid/coupons	8 (11.8)
No insurance	15 (22.0)
Have a clinic where you are usually seen	69 (98.6)
Have a doctor you regularly see	57 (81.4)
Personal history of breast cancer	2 (2.9)
Prior attendance at a home health party (any topic)	32 (45.7)

<sup>a</sup>Percentages based on nonmissing values. SD, standard deviation.

#### Changes in general knowledge/beliefs about cancer (from baseline to follow-up)

No significant change was observed from baseline to follow-up with respect to the belief that a tumor is always cancerous (Table 3). At baseline, 9 women (14%) agreed with this statement. At follow-up, only 7 women (11%) agreed with this statement, but this change was not statistically significant. Similarly, no significant change was observed from baseline to follow-up with respect to the belief that a cancer that has not spread to other areas of the body has a good chance for control or cure (87% at baseline vs. 93% at follow-up). However, there was a significant decrease from baseline to follow-up in the proportion of women believing that there is nothing that can be done to reduce the risk of cancer: At baseline, 41% of women agreed with this statement, whereas at follow-up only 15% agreed with this statement.

#### Changes in breast cancer screening practices and intentions (from baseline to follow-up)

There was a significant increase from baseline to follow-up in the proportion of women who reported they had ever had a mammogram (Table 4). At baseline, 83% reported ever having a mammogram, whereas 6 months after the intervention, 91%

reported ever having a mammogram. Among women who had never had a mammogram at baseline ( $n = 12$ ), 50% ( $n = 6$ ) reported ever having a mammogram by the follow-up survey, and this increase was also statistically significant.

There was a nonsignificant increase from baseline to follow-up in the proportion of women in the overall sample who reported having a mammogram within the last 2 years; 71% of women reported having a mammogram within the last 2 years at the time of the baseline interview compared with 77% of women at follow-up. However, when the sample was restricted to women who were nonadherent to regular mammography at baseline ( $n = 19$ ) (nonadherent in this case included those who had either never had a mammogram or had not had a mammogram within the last 2 years), 37% ( $n = 7$ ) of these women reported at follow-up that they had had a mammogram since baseline; this increase was statistically significant.

There was a statistically significant increase from baseline to follow-up in the proportion of women who reported having ever asked a doctor about a mammogram (37% vs. 67%). Similarly, among women who did not have a mammogram between baseline and follow-up ( $n = 41$ ), there was a significant increase in the proportion who reported they were considering having a mammogram within the next few months (61% vs. 81%).

#### Participant evaluation of breast cancer home health parties

Overall, participants evaluated the intervention positively, and the majority (>95%) reported that the home health party provided information that was easy to understand. The majority also reported they had learned something new about breast cancer from the presentation, and nearly all rated the presentation as good or excellent (results not shown).

#### Discussion

The use of *promotoras* to educate Hispanic populations about health issues is becoming an increasingly common method of intervention delivery. Our results can be compared with some of the previous research that has involved the use of *promotoras* within the Hispanic population. In their program entitled *Companeros en la Salud*, Lopez and Castro<sup>23</sup> delivered a church-based, culturally tailored cancer prevention intervention to Hispanic women in Arizona and used *promotoras*, who recruited participants from their communities, taught cancer prevention classes, and facilitated cancer screening activities. The overall intervention effect was nonsignificant with respect to improving mammography screening. However, compared with participation in a control

TABLE 3. COMPARISON OF BASELINE AND FOLLOW-UP: GENERAL BELIEFS ABOUT CANCER ( $N = 70$ )

Belief	Baseline n (%) <sup>a</sup>	Follow-up n (%)	p value <sup>b</sup>
A tumor is always cancerous	9 (13.6)	7 (10.6)	0.480
A cancer that has not spread to other areas of the body has a good chance for control or cure	61 (87.1)	65 (92.9)	0.206
There is nothing that can be done to reduce the risk of cancer	28 (40.6)	10 (14.5)	0.001

<sup>a</sup>Percentages based on nonmissing values.

<sup>b</sup>McNemar's test for marginal homogeneity (significance level  $\alpha = 0.05$ ).

TABLE 4. COMPARISON OF BASELINE AND FOLLOW-UP: BREAST CANCER SCREENING PRACTICES (N=70)

	All women			Nonadherent women <sup>a</sup>		
	Baseline n (%) <sup>b</sup>	Follow-up n (%) <sup>b</sup>	p value <sup>c</sup>	Baseline n (%) <sup>b</sup>	Follow-up n (%) <sup>b</sup>	p value <sup>c</sup>
Ever had a mammogram	58 (82.9)	64 (91.4)	0.014	0	6 (50.0)	0.014
Had a mammogram within last 2 years	46 (70.8)	50 (76.9)	0.206	0	7 (36.8)	0.008
Ever asked doctor about a mammogram	21 (36.8)	38 (66.7)	<0.001	NA	NA	NA
Considering having a mammogram within next few months <sup>d</sup>	25 (61.0)	33 (80.5)	0.046	NA	NA	NA

<sup>a</sup>At baseline:  $n = 12$  women had never had a mammogram (were nonadherent) and  $n = 19$  women had not had a mammogram within the last 2 years (were nonadherent).

<sup>b</sup>Percentages based on nonmissing values.

<sup>c</sup>McNemar's test for marginal homogeneity (significance level  $\alpha = 0.05$ ).

<sup>d</sup>Restricted to women who did not have a mammogram between baseline and follow-up ( $n = 41$ ).

NA, not applicable.

group involving a noncancer mental health program, participation in the cancer intervention component was positively associated with cancer prevention knowledge postintervention.<sup>24</sup> This finding is consistent with our finding of a significant increase in the belief that risk of cancer can be reduced. In contrast to our intervention, however, which was delivered in the home setting in the presence of friends and family members, this program was delivered through classes held at church sites.

Similarly, Hall et al.<sup>28</sup> conducted a posttest only control-group intervention involving the delivery of a breast cancer group educational session for Hispanic women in the parish hall of a church in an Arkansas community. Participants in the intervention arm performed better on a breast cancer knowledge test administered postintervention than did women in a control group who had received a nutrition education program. A pretest of breast cancer knowledge was not administered to either group, so changes in knowledge from pretest to posttest could not be evaluated.<sup>28</sup>

In addition to improvements in awareness of the potential for cancer risk reduction, our study demonstrated a significant increase between baseline and follow-up in the proportion of women who reported ever having a mammogram. As outlined, the interventions of Lopez and Castro<sup>24</sup> and Hall et al.,<sup>28</sup> which were delivered in a classroom setting, demonstrated improvements with respect to cancer knowledge but not with respect to behavior change (e.g., screening practices). It is conceivable that the presence of family members and friends in our intervention provided additional motivation for participants to change behaviors beyond what might be expected from an intervention delivered in a classroom setting.

A third church-based intervention in Colorado worth noting involved *promotoras* who delivered educational sessions about breast cancer screening at group meetings to Hispanic women after Mass. The biennial mammogram screening rate, as measured from claims from the insurance plans participants were enrolled in, improved only slightly from baseline to follow-up, which occurred 2 years after the intervention (59%–61%), and it is not clear from the publication if this increase was statistically significant. This can be compared to the screening rates among women who were assigned to receive printed materials as part of a comparison

group, which remained the same from baseline to follow-up (58% vs. 58%).<sup>29</sup>

In contrast, Navarro et al.<sup>25</sup> demonstrated a significant increase in mammography screening with their intervention program entitled *Por La Vida*, which involved the use of *consejeras*, or lay community health workers. *Consejeras* delivered a 12-week cancer screening intervention program, offering educational sessions to women they identified from their own social networks. This study demonstrated a significantly greater increase in the use of mammography screening (within the last year) among women participating in cancer screening sessions compared with those participating in community living skills sessions, which served as the control group. This intervention model has some important similarities to our home health party model in that *consejeras* recruited women from their own social networks to participate in the intervention sessions, providing a built-in structure of social support that may have facilitated subsequent behavior change.

Similar findings were demonstrated by Larkey in the study *Las Mujeres Saludables*.<sup>23</sup> Community health advisors or *promotoras* in the greater Phoenix area led group educational sessions in a classroom setting on the topic of cancer screening among 366 women in their communities to encourage social support and the exchange of information in the group. Of women who had never received a mammogram or were out of compliance with regular mammography at baseline, 30.6% were screened by the end of the program.<sup>23</sup> As in our study, the encouragement of social support and exchange of information among participants in the intervention groups may have facilitated the intervention's success.

Results from our study also revealed significant increases postintervention in the proportion of women intending to have a mammogram within the next few months and in the proportion of women reporting they had discussed mammography with their physicians. These outcomes have not been commonly evaluated in other group education-based breast cancer intervention literature involving Hispanic women; thus, comparison to existing studies is difficult. The latter finding is important, given that physicians can be important facilitators of the use of breast cancer screening. Hispanic women perceive communication with physicians as a key factor in the quality of their healthcare,<sup>18,47</sup> and physician recommendations are important determinants of healthcare decisions.<sup>48</sup>

### Study limitations

There are some important limitations to our study. The study did not include a control group of women in the community who did not attend the breast cancer home health parties. Therefore, the observed improvements in knowledge and screening behaviors cannot be entirely attributed to the intervention. It is possible that factors or influences in the community other than the home health party might help explain the increase in mammography screening rates and the positive change in belief that risk of cancer can be reduced. Additionally, mammography use was self-reported by women and, therefore, may be subject to overreporting, given potential pressure to report socially desirable behavior. In fact, the baseline rates of ever having a mammogram and having a mammogram within the last 2 years reported by women participating in our home health party intervention were markedly greater than the rates reported among Hispanic women in the NHIS (82.9% vs. 63.3% and 70.8% vs. 58.1%, respectively).<sup>8</sup>

Further, it is difficult to determine which aspects of the intervention were most effective. The intervention was evaluated as a package of information and education. As outlined previously, some of our findings were consistent with those from other interventions that involved the use of *promotoras* to promote breast cancer screening. However, we cannot be certain if our intervention was effective because of the use of *promotoras* from the community, because of the delivery of the intervention in the home setting, or because the home health parties took place among family members, friends, and neighbors who may have reinforced messages with one another after the party had taken place. Social support from other participants and from family members is likely to have facilitated the improvements observed post-intervention, although we cannot effectively disentangle the independent effects of these different aspects of the intervention.

### Conclusions

Over the course of our study, modest improvements were observed with respect to belief in cancer risk reduction, breast cancer screening practices, and intentions to be screened among age-eligible Hispanic women participating in breast cancer home health parties in the Lower Yakima Valley. Our findings suggest that participation in home-based group educational interventions delivered by *promotoras* may be associated with improvements in breast cancer screening practices within this group. Given the limitations of our study as we have outlined, additional work is needed to empirically test the use of the home health party model of intervention in a variety of Hispanic populations and to tease apart the independent contributions of intervention components to any observed improvements in knowledge and behaviors.

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### Disclosure Statement

The authors have no financial conflicts of interest to declare.

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