

## **Does Entertainment-Education Work With Latinos in the United States? Identification and the Effects of a Telenovela Breast Cancer Storyline**

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*This article examines the proposition that a popular form of entertainment, the telenovela, can educate Spanish-speaking viewers in the United States if accurate health information is presented in a dramatic, narrative format. Health professionals consulted on a breast cancer storyline in a Spanish-language telenovela, *Ladrón de Corazones*, and the impact on viewers' knowledge and behavioral intentions were assessed using three methods. First, an analysis of call attempts to 1-800-4-CANCER demonstrated a significant increase in calls when a PSA featuring the number aired during the program. Second, a nationwide telephone survey indicated that viewers, especially those who identify with Spanish-language television characters, gained specific knowledge from viewing the story and that male viewers were significantly more likely to recommend that women have a mammogram. Third, these trends were confirmed and further explored using focus groups of *Ladrón* viewers. Implications for educating viewers using dramatic serials in the United States are discussed.*

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The number of Hispanic immigrants to the United States has grown considerably over the past three decades (Harket, 2001; Singh & Siahpush, 2002). Hispanics now surpass African Americans as the largest minority group in many U.S. states and are the majority ethnic group in several urban areas (U.S. Census Bureau, 2000). This demographic shift has major implications for health professionals. Hispanics have disproportionately higher incidence and mortality rates for several health problems, including cancer (Baezconde-Garbanati, Portillo, & Garbanati, 1999; Markides & Miranda, 1997; National Cancer Institute [NCI], 2002). However, reaching this ever-increasing population may represent a unique challenge. Nielsen Media Research estimates that there are approximately 10.91 million Hispanic-American television households, of which 51% are classified as Spanish dominant. Among first-generation Hispanic immigrants, 72% speak predominantly Spanish (Brodie, Steffenson, Valdez, Levin, & Suro, 2002).

Hispanics watch more television than the general U.S. population (Nielsen Media Research, 2000), and are more likely to report acting on information they learned on television, compared with their Anglo counterparts (Beck, Huang, Pollard, & Johnson, 2003). Fifty-five to 62% of Hispanics in all age groups watch an average of 2.5 telenovela episodes per week; and one third of Friday's viewers have seen all previous episodes during the week (Carrasquillo et al., 2003). While international research suggests that telenovelas can be useful vehicles to transmit a range of health-related information (La Pastina, Patel, & Schiavo, 2004; Murphy & Cody, 2003; Nariman, 1993; Sabido, 2004; Sinhgal & Rogers, 1999), little or no evidence exists for domestic populations.

The purpose of the present research is to provide direct evidence of the impact of a health-related telenovela storyline on Hispanic viewers within the United States. We evaluate the effectiveness of a breast cancer storyline incorporated into the Spanish-language telenovela, *Ladrón de Corazones*, at changing knowledge about breast cancer and the intention to get screened for breast cancer. First, however, we provide background information on both Hispanic audiences and entertainment-education (E-E).

### ***Breast Cancer & Hispanic Audiences***

While breast cancer mortality rates began to decrease in the 1990s, Hispanic mortality rates have remained constant (Weir et al., 2003). Higher mortality rates can be equated to inadequate breast cancer screening. Lack of acculturation, low English-language skills (Oetzel, 2002), low knowledge, fear, cost, and lack of symptoms (Sabogal, Otero-Sabogal, Pasick, Jenkins, & Perez-Stable, 1996) prevent Hispanics from getting screened. In order to realize the downward trend in breast cancer mortality rates for Hispanics, it is necessary to overcome these barriers and educate Hispanics about cancer and cancer screening.

The most effective way to increase breast cancer screening amongst Latinas is through social networks (Oetzel, 2002). New immigrant Hispanics rely predominantly on Spanish-language television and interpersonal networks to learn health information (Cheong, Wilkin, & Ball-Rokeach, 2004). These two sources of information can work synergistically, with interpersonal communication being spurred on by mass media programming. Katz and Lazarsfeld (1955) coined the term "two-step" flow of communication to describe the situation when the media influences key opinion leaders who then persuade others through interpersonal channels. Similarly, E-E programs have been shown to stimulate interpersonal communication on health topics

(Boulay, Storey, & Sood, 2002; Collins, Elliot, Berry, Kanouse, & Hunter, 2003; Piotrow & de Fossard, 2004; Singhal & Rogers, 2004; Valente, Poppe, & Merritt, 1996). The E-E format offers an opportunity to encourage breast cancer screening behaviors by dramatizing how a woman overcame barriers to breast cancer screening and treatment, and learned accurate information.

### ***Entertainment-Education***

Internationally, E-E programs often are funded by nonprofit or governmental agencies such as the BBC World Service Trust (Cody, Fernandes, & Wilkin, 2004), Population Communication International (Poindexter, 2004), Population Media Center (Ryerson & Teffera, 2004), Johns Hopkins University (Abdullah, 2004; Piotrow & de Fossard, 2004; Yaser, 2004), the Soul City group in South Africa (Usdin, Singhal, Shongwe, Goldstein, & Shabalala, 2004), UNICEF (McKee, Aghi, Carnegie, & Shahzadi, 2004), among others. These agencies can exert considerable control with respect to the amount and accuracy of health-related information contained in an entertainment program.

In contrast, the vast majority of U.S. television channels operate on a for-profit basis. Since the costs of producing a high-quality entertainment program that will capture a large segment of the U.S. audience are enormous, the E-E approach in the United States, with a few notable exceptions (Alcalay, Alvarado, Balcazar, Newman, & Huerta, 1999; Lalonde, Rabinowitz, Shesky, & Washiendo, 1997), has been to encourage the inclusion of accurate health information into preexisting popular entertainment programs on television (see: Beck, 2004). The focus is on ratings and profits, however, not necessarily on educating the viewers. As a result, health storylines in U.S. television shows can range in magnitude from a brief dialogue in one episode to a major storyline that spans multiple episodes or an entire season. In addition, if a story is not sufficiently engaging, or if the content becomes too “preachy,” U.S. viewers can switch to any number of alternate entertainment options. Scholars conclude that stronger scientific evidence is needed to demonstrate the effectiveness of the E-E format as incorporated into media-saturated environments such as the United States (Greenberg, Salmon, Patel, Beck, & Cole, 2004; Salmon, 2001; Sherry, 2002; Singhal & Rogers, 2002, 2004; Yoder, Hornik, & Chirwa, 1996).

Relatively few U.S. health storylines have been studied systematically, or rigorously. Those that were evaluated were assessed by a single survey instrument administered as many as three times (pre, post, and follow up; Brodie et al., 2001), or a post-test only survey used after a program aired (Collins et al., 2002; Sharf & Freimuth, 1993; Sharf, Freimuth, Greenspon, & Plotnick, 1996). Without a behavioral outcome, such as calling an 800 number, however, the ability of portrayals to elicit actual behaviors is unknown (Singhal & Rogers, 2002; 2004).

While the main goal of the present study was to determine if the breast cancer storyline on *Ladrón de Corazones* was effective at changing breast cancer knowledge and behavior intentions, and eliciting behavior change in the form of calling an 800 number, a secondary goal was to add insight into what makes the E-E format effective. Many E-E programs rely on Bandura's (1977, 1995, 2004) social learning theory to explain why TV storylines can be successful at changing behavior. The basic premise is that viewers learn vicariously from the successes and failures of other people through a process of social modeling. Modeling is more likely to transpire

to the extent one identifies with the relevant characters. Identification occurs when one not only empathizes with a fictional character, but also perceives similarity and liking such that they feel that the fictional character might be someone with whom they could form a social relationship (Sharf & Freimuth, 1993; Sharf et al., 1996; Slater & Rouner, 2002; Sood, 2002). Thus, we expect that viewers who identify with characters in the telenovela are more likely to exhibit changes in breast cancer knowledge, behavioral intentions, and behavior (call an information line). In addition, we anticipate that identification will instigate interpersonal discussion about health storylines.

The present project is based on a unique collaboration between the writers of a telenovela, *Ladrón de Corazones*, and health experts. The remainder of this article is devoted to an evaluation of this collaborative effort.

## Methods

### *Materials: PSA and Ladrón de Corazones*

A partnership between the Spanish-language television network, Telemundo, and Hollywood, Health & Society, a project of the University of Southern California (USC) Annenberg Norman Lear Center, led to the incorporation of three accurate health messages into a breast cancer storyline in the telenovela. Experts from the NCI consulted with the telenovela writers on breast cancer information and messages, and provided the Cancer Information Service (CIS) number for use in a public service announcement (PSA).

Writers agreed to include three messages in the storyline: (1) you should get a second opinion before determining what cancer treatment you should get; (2) radiation therapy is recommended following a lumpectomy; and (3) a woman diagnosed with breast cancer early in pregnancy should get a mastectomy. The “second opinion” message was a theme for the PSA, which featured the main actress in the breast cancer storyline urging the audience to call 1-800-4-CANCER for more information.

For several weeks during the fall of 2003, a secondary storyline on *Ladrón de Corazones* featured a character, Nenena, who is diagnosed with breast cancer. Initially, her doctor incorrectly informs her that she must have a hysterectomy. Since she wants to have children she ignores the doctor’s advice. Soon she and her partner, Mateo, are expecting a baby. Realizing that the lump in her breast is getting larger, Nenena starts to worry that she has sentenced her child to a life without a mother. Their priest and family console them and support Nenena and Mateo’s decision to leave Mexico and go to Chicago to consult another doctor for a second opinion. The doctor in Chicago tells Nenena that the recommended treatment to help save her without harming the baby is to perform a mastectomy and remove her breast. Nenena has the operation and lives to give birth to her baby.

Three tools were used to evaluate the storyline: call attempts to the 1-800-4-CANCER number, a nationwide telephone survey of telenovela viewers, and focus group discussions.

### *Telephone Information Line (1-800-4-CANCER)*

Analysis of call attempts made to toll-free numbers that appeared in health storylines have been adopted in domestic evaluations of health-related storylines (Beck, 2004;

Kennedy, O'Leary, Beck, Pollard, & Simpson, 2004; Singhal & Rogers, 2004). In this study the number of call attempts to the NCI's information line (1-800-4-CANCER) were tracked and used for analysis. The CIS was equipped with more Spanish-speaking staff to handle the predicted increase in call volume on the dates of October 14, 16, and 17 (October 13, a Monday, was a national holiday so phone lines did not operate). The PSA aired on Monday, Tuesday, Thursday, and Friday, October 13–14, 16–17, respectively. The telenovela was preempted by a soccer game on Wednesday, October 15. During hours that the call center was closed, call attempts were monitored and tracked. After-hour callers received a prerecorded message instructing them (in Spanish or English) that the information line was closed and to please call back tomorrow.

### ***Telephone Survey***

Telemundo conducted a national telephone survey at baseline with a representative sample of 2,000 telenovela viewers across the major U.S. Hispanic network markets (i.e., the 16 largest). Of those surveyed, 321 were *Ladrón* viewers. In order to increase the probability of reaching *Ladrón* viewers at follow-up, participants were drawn from an internal Telemundo database of its U.S. viewers. The follow-up had a total of 500 participants; 293 were regular *Ladrón* viewers (indicated they watch almost every episode) and 207 were non-*Ladrón* viewers.<sup>1</sup>

Knowledge questions were used to measure the three key messages: get a second opinion before making a decision about treatment; radiation therapy is recommended after a lumpectomy; and a mastectomy is typical for a woman diagnosed with breast cancer early in pregnancy. Behavioral intent for women<sup>2</sup> was measured by asking if the respondent intended to get a mammogram in the next 6 months; for men it was measured by asking the respondent if he would encourage a woman to get a mammogram in the next 6 months. Asking about behavioral intention is important, since behavioral intent is a strong predictor of volitional behavior (Hale, Householder, & Greene, 2002). Questions were asked to determine whether viewers identify with telenovela characters, talk to others about the storylines, and whether they ever have called a clinic, health care place, or hotline number for information after hearing about a health topic on a telenovela.

### ***Focus Group Discussion***<sup>3</sup>

Focus group discussions were designed to further probe *Ladrón* viewers' reactions to the storyline and likelihood of changing knowledge and behavior based upon the breast cancer storyline. The focus group protocol had questions on the following topics: Did this storyline generate interpersonal discussion about breast cancer?

<sup>1</sup>Analysis showed that the *Ladrón* sample characteristics were equivalent on all factors except sex (58% female viewers at baseline; 66% at follow-up). When sex has a significant impact on the findings, we report for males and females separately. Otherwise, all results are based upon the entire sample.

<sup>2</sup>The show illustrated that even younger women can get breast cancer and that it is important to be screened.

<sup>3</sup>The authors thank Raul de Mora Jimenez, Lisa Robinson, Lilia Espinoza, and Peter Busse for their help in tracking episodes, and translating, recruiting, and conducting the focus group.

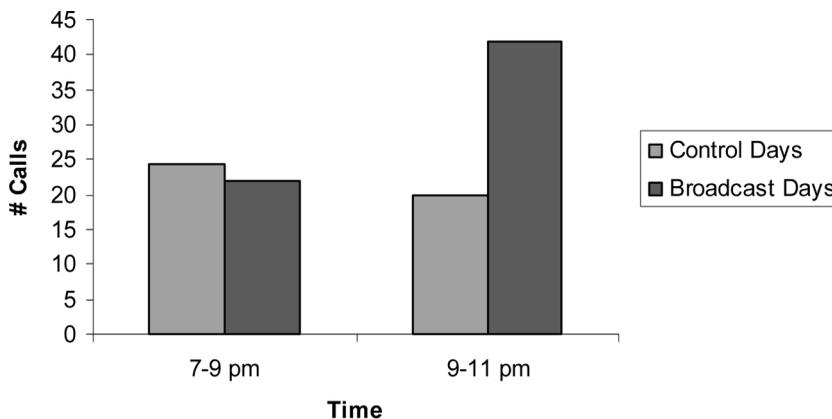
Did they identify with the characters involved? What barriers might they face while trying to perform breast cancer detection or treatment? A 30-minute composite clip of the breast cancer storyline was shown to prompt storyline recall. A summarized report of the focus group discussions was created.

Two focus groups of female viewers (moderated by a female) and one focus group of male viewers (moderated by a male) were conducted in Spanish. A variety of methods were used to find and recruit *Ladrón* viewers to participate, including calls to a list of *Ladrón* viewers in the Los Angeles area generated by Telemundo, and calls to a list of Spanish-language television viewers who previously had been contacted by the Metamorphosis Project,<sup>4</sup> and snowballing. Recruits were sent postcard reminders about the focus groups.

## Results

### *CIS Information Line (1-800-4-CANCER)*

As Figure 1 illustrates, the number of call attempts to the 1-800-4-CANCER information line significantly increased after 9 p.m. on the nights that the PSA aired during the telenovela. The number of calls to the Spanish-language information line was recorded on weekdays over a 2-week period from October 9 to 22, 2003. The PSA aired after 9 p.m. on October 14 and 16. We coded the data into calls before and after 9 p.m. and whether they occurred on a broadcast day or on one of the other seven nonbroadcast days (Monday October 13 was a holiday). There was no difference in calls on the broadcast and nonbroadcast days before 9 p.m. (24.4 vs. 22,  $p = \text{NS}$ ). After 9 p.m., however, there were significantly more calls on the broadcast days than on the nonbroadcast days (42 vs. 19.9,  $p < .05$ ).



**Figure 1.** Number of calls to 1-800-4-CANCER information line increased significantly on days when the PSA was aired during the telenovela after 9 p.m.

<sup>4</sup>The Metamorphosis Project is part of an ongoing research enquiry of the Community and Technology program, at the Annenberg School for Communication, University of Southern California.

**Table 1.** Sample demographics

	Baseline	Follow-up
Sample Size	<i>N</i> = 2000	<i>N</i> = 500
Survey language (%)		
Spanish	81	87
English	19	13
Languages spoken (%)		
Spanish only	53	42
Mostly Spanish/Some English	26	36
Both Spanish and English	21	22
Country of origin		
%Mexican	52	46
%females	62	61
Median age	40	40
%watch <i>Ladrón</i>	16	59

### Telephone Survey

Both baseline and follow-up samples were predominantly of Mexican origin (52% at baseline and 46% at follow-up) and female (about 60% at both baseline and follow-up; see Table 1 for sample demographics).

Exposure to the breast cancer storyline, the PSA, and news programs about breast cancer was measured to determine if *Ladrón* viewers were exposed to the key messages at higher rates than the comparison group (non-*Ladrón* viewers). It is nearly impossible to ensure that there is a pure comparison group for this type of study because people can be exposed to a storyline through television commercials, nonregular viewership, and interpersonal discussion. We predict that the storyline has the greatest influence on regular viewers. Exposure to the storyline by people in the nonviewer group could increase knowledge, behavioral intent, and behavior change by this comparison group and decrease the likelihood that we would find significant differences. Since we found a significant effect for the viewership, we did not further evaluate the exposure variable. Table 2 illustrates that regular *Ladrón* viewers were significantly more likely to have seen the breast cancer storyline ( $\chi^2(1) = 218.99, p = .000$ ) and the PSA with the 800-4-CANCER number ( $\chi^2(1) = 46.01, p = .000$ ). There was only a marginally significant difference between viewers and nonviewers in terms of self-reported exposure to news stories about breast cancer ( $\chi^2(1) = 3.41, p = .065$ ).

**Table 2.** Exposure to the storyline, PSA, and news stories about breast cancer

Exposure	<i>Ladrón</i> viewers ( <i>N</i> = 293), %	Non- <i>Ladrón</i> viewers ( <i>N</i> = 207), %
Storyline**	95	33
1-800-4-CANCER PSA**	88	63
News story about breast cancer	72	64

\*\*Differences significant at  $p < .001$  level.

**Table 3.** *Ladrón* viewers change in knowledge

Knowledge item	Baseline <i>N</i> = 321, %	Follow-up <i>N</i> = 293, %
Radiation therapy is the recommended treatment following a lumpectomy**	35	46
Males**	24	43
Females	43	47
A mastectomy is the recommended treatment for breast cancer in early pregnancy***	8	21
Males	7	13
Females***	8	25

\*\*Differences significant at  $p < .01$  level.

\*\*\*Differences significant at  $p < .001$  level.

The main goal of the survey was to determine if the storyline was effective at increasing knowledge about the three main messages—get a second opinion; radiation therapy is recommended following a lumpectomy; and a mastectomy is the typical treatment when a woman is diagnosed with breast cancer early in pregnancy—and increasing behavioral intent (for women getting a mammogram in the next 6 months; for men encouraging women to get a mammogram).

A chi-square test was used to determine if knowledge changed significantly from baseline to follow-up for *Ladrón* viewers (see Table 3). Among viewers ( $N = 321$  at baseline and  $N = 293$  at follow-up), there was a significant increase in correct knowledge regarding breast cancer. The knowledge that radiation therapy follows a lumpectomy significantly increased,  $\chi^2(1) = 7.97$ ,  $p = .005$ . This knowledge change was significant for male viewers only,  $\chi^2(1) = 10.45$ ,  $p = .001$ , as more female viewers had this knowledge at baseline (43% compared with 24% of males). The knowledge that a mastectomy is the typical treatment when a woman is diagnosed with breast cancer early in pregnancy also significantly increased,  $\chi^2(1) = 22.52$ ,  $p = .000$ . This change was significant for females,  $\chi^2(1) = 19.84$ ,  $p = .000$ , but not for male viewers. There was not a significant change in the number of people indicating that after being diagnosed a woman should get a second opinion ( $\chi^2(1) = .83$ ,  $p = .36$ ). This is most likely due to a ceiling effect whereby a high percentage of people in the pretest (97%) who indicated that this was an appropriate action.

The behavioral intention question asked females ( $N = 185$  at baseline;  $N = 194$  at follow-up) if they intended to have a mammogram in the next 6 months. The increase from baseline (82%) to follow-up (85%) was not significant ( $\chi^2(1) = .573$ ,  $p = .449$ ), again perhaps due to a ceiling effect. The behavioral intention among men ( $N = 136$  at baseline;  $N = 99$  at follow-up) to encourage someone in their life to have a mammogram in the next 6 months, however, did increase significantly from 79% at baseline to 92% at follow-up ( $\chi^2(1) = 7.57$ ,  $p = .006$ ).

As expected, among the comparison group of non-*Ladrón* viewers ( $N = 1,679$  at baseline and  $N = 207$  at follow-up), knowledge items did not change significantly. Females in the nonviewer comparison group ( $N = 1,051$  at baseline;  $N = 112$  at follow-up) did not significantly change in their intent to get a mammogram in the next 6 months, nor did men ( $N = 682$  at baseline;  $N = 95$  at follow-up) significantly increase in their intent to encourage mammograms.

The secondary goal of the survey was to explore what factors makes the E-E format more or less effective. Identification, as indicated by the respondent saying that they sometimes or oftentimes relate to the experiences of Spanish-language telenovela characters, made a difference in whether regular *Ladrón* viewers learned information about breast cancer. Those who indicated that they identify with Spanish-language telenovela characters were significantly more likely to know at post-test that a lumpectomy is followed by radiation (48% as compared with 35% at pretest),  $\chi^2(1) = 8.21, p = .004$ . Those who indicate that they never identify with telenovela characters were less likely to learn this information from the program (only 40% correct knowledge at post-test),  $\chi^2(1) = 0.33, p = .563$ . Regular *Ladrón* viewers who indicate that they identify with characters were also more likely to learn what happens when a pregnant woman is diagnosed with breast cancer. Twenty-two percent of regular *Ladrón* viewers who identify with characters knew the correct information at posttest as compared with 8% at pretest,  $\chi^2(1) = 19.45, p = .000$ . Those who indicated they do not identify with telenovela characters had a moderate increase in correct knowledge about breast cancer treatment for pregnant women—8% pretest participants and 18% posttest participants had correct knowledge,  $\chi^2(1) = 3.07, p = .080$ . Identification did not have a significant impact on mammogram intention.

In general, identification has an impact on interpersonal behavior. For the entire sample, those who said that they identify with Spanish-language telenovela characters were more likely to indicate that they have told others about health topics they saw (64%), compared with those who do not identify with the characters (44%),  $\chi^2(1) = 94.54, p = .000$ . A logistic regression analysis was performed in which respondent sex, regular telenovela viewing, and identification with telenovela characters were entered as independent variables, and talking to others about a health topic seen in a telenovela was the dependent variable. The regression model indicated that identification, regular telenovela viewing, and sex all account for a significant portion of the variance in whether people talk to others about a health topic after viewing a health storyline (see Table 4).

Finally, people who identify with Spanish-language telenovela characters were more likely to indicate that they have called a clinic, health care place, or hotline number for information after hearing about a health topic in a telenovela (21%) as compared with those who do not identify with characters (12%),  $\chi^2(1) = 28.99, p = .000$ .

**Table 4.** Logistic regression adjusted odds ratios for interpersonal behavior in response to health storylines on telenovelas ( $N = 2,483$ )

	Tell someone about story/topic
Female	1.3*
Regular telenovela viewer	1.6**
Identify with telenovela characters	2.1**
-2 Log likelihood	3252.86
Nagelkerke's $R^2$	.07**

\*Differences significant at  $p < .01$  level.

\*\*Differences significant at  $p < .001$  level.

### ***Focus Group Discussion***

A total of 6 men and 10 women participated in focus group discussions. Interestingly, while all participants were *Ladrón* viewers, more men indicated that they recalled the storyline than women. The women remembered parts of the storyline, but they did not consider it a major storyline. The women generally felt that the storyline was very realistic; however, while the men felt that the portrayal of breast cancer was realistic, they did not think that a woman would get pregnant while knowing that she had cancer.

The women seemed to be quite knowledgeable about breast cancer, mammograms, and breast self-exams. The women explained that they had received instruction from their doctor or clinics about how to perform self-exams, but many of them trust the doctor doing the test more than performing it themselves. The women also mentioned the importance of getting tested frequently. There was, however, some misinformation in this group about the causes of cancer. While one woman mentioned that certain foods reduce your chances of getting cancer, another woman said she knew someone who got breast cancer from being hit hard in the chest with a ball, and others mentioned the material in one's bra and deodorant as potential causes.

Overall, for female viewers the storyline reinforced existing beliefs and correct knowledge about cancer. Male viewers, on the other hand, indicated that they learned new information by watching the storyline. One man mentioned discovering that women could live after having a breast removed and another mentioned that the telenovela helped him realize that breast exams could increase the chance that a woman with breast cancer might live. Troublingly, the general consensus among both male and female participants was that cancer leads almost inevitably to death or is a death sentence.

Neither male nor female participants recalled the message about getting a second opinion. A couple of the men recalled seeing the PSA with the 800 number that aired with the show, while none of the women recalled the PSA. The women were not opposed to calling 800 numbers, but they said that often the numbers are not left on the screen long enough for them to write them down. 1-800-4-CANCER, however, seemed easy enough for them to remember. The men reported some problems with information lines: one man discussed his experience with one that put him on hold for a long time, and once connected to a real person was given only other phone numbers to call. Another man mentioned that he was discouraged by the fact that most information lines are only in English.

## **Discussion**

### ***Behavior: Calling a Telephone Information Line***

As with past studies (e.g., Beck, 2004; Kennedy et al., 2004), providing an 800 information number in conjunction with a storyline showed promising results. There was a significant increase in calls made when the PSA aired after a dramatic plot point in the storyline (saying "goodbye" to family before leaving for Chicago; declaring mutual love each other before second doctor visit), but not when the PSA aired before the show, suggesting that the storyline had some impact on motivating viewers to call the 800 number for more information. *Ladrón de Corazones* achieved relatively low audience ratings compared with rival shows (Nielsen ratings, 2003). As a

result we are extremely pleased to find significant increases in calls to the hotline and feel this is a positive indication of the potential for telenovelas with larger audiences.

In addition, survey results indicate that those who identify with telenovela characters are more likely to call hotlines after seeing a health topic in a show. These findings suggest that PSAs featuring telenovela characters airing during a related storyline may be more effective than PSAs that are not aired in conjunction with an E-E storyline.

It is important to note that the CIS information service was not available 24 hours a day, and operators were not able to handle the influx of calls during evening hours when the show aired on the West Coast. When providing telephone numbers in PSAs, efforts need to be made to ensure proper staffing of the information lines during the hours that the show airs in all time zones. (Recall that receiving a recording was an example provided by a male focus group participant for why he no longer attempts to call 800 numbers.) Focus group discussions indicated that the increase in calls could be even more significant if more time were allowed to get materials to write the number down. This suggests a method in which viewers are forewarned to get writing materials for important information coming up in the program, or airing the number for longer periods of time, or both.

### ***Changes in Knowledge***

The telenovela was successful at increasing knowledge for two of our three main messages: (1) Radiation therapy is the recommended treatment following a lumpectomy and (2) A mastectomy is the recommended treatment for breast cancer in early pregnancy. This increase in knowledge was most likely to occur in people who indicate that they identify with characters in Spanish-language television shows and varied slightly for males and females. Males were more likely to learn the information about radiation therapy, while females were more likely to learn the fact about mastectomies. Further research is needed to determine why females and males may learn messages differently from the same program. One possibility is the amount of prior knowledge. Females were more knowledgeable at baseline in general and therefore increased most in the “new” information presented to them.

### ***Changes in Behavioral Intent***

The storyline was also effective at increasing men’s intentions to encourage women to have mammograms. The storyline was not effective at increasing women’s intentions to get a mammogram. Identification with characters had no impact on mammogram intentions. The significant increase in behavioral intentions seen among men, but not women, could be explained in a number of ways: (1) new information for the men, who were lower in initial intent; (2) a ceiling effect for the women; and, finally, (3) the storyline was presented in a way that appealed more to men than to women.

First, the survey data indicated that men had a lower intention to encourage mammograms, which could have been due to a lack of knowledge. The male focus group members were more likely to identify information about breast cancer that they learned during the program, indicating that their knowledge about the efficacy of mammogram screening might have been lower before the show. There is some empirical support for the idea that E-E programs are more successful when they are introducing new information or information about a topic that the audience is

less informed about. For example, Brodie and colleagues (2001) found that an episode of *ER* was very successful at increasing knowledge about the morning after pill when it was still relatively new on the market and another episode raised awareness of the human papilloma virus (HPV), a sexually transmitted disease (STD) that had gotten little media attention previously.

A second possibility is a ceiling effect. Women had a fairly high intention to get a mammogram at pretest, and the women in the focus groups showed a great deal of knowledge and intent to perform breast self-exams. Since most doctors do not recommend mammograms unless you have a family history of breast cancer, have felt a lump using a breast self-exam, or have reached a particular age (generally around menopause), it is possible that there was a ceiling effect because the percentage of women who should be getting mammograms was reached at pretest.

Finally, while we measured identification (which was not related to changes in behavioral intent), we did not measure involvement with this particular storyline. The third explanation about why men changed in their behavioral intent and women did not, has to do with involvement. Sood (2002) posits that audience involvement in the entertainment program “serves as a mediator for promoting attitude and behavior change” (p. 153). The focus group discussions suggest that men were more involved in the telenovela. The timing of the focus groups, a couple months after the storyline aired on the telenovela, may have influenced the recall of the storyline, since retention has been shown in other studies of TV health storylines to decrease over time (Brodie et al., 2001). But why would more men remember the storyline than women in the focus groups? According to *Ladrón* writers, the telenovela was targeted to the male audience—with a lot of action and gang activity—so perhaps the men were more absorbed in the telenovela in general than the women. In addition, a few of the women in the focus groups indicated that an attractive actor who was not part of the breast cancer storyline was part of the reason that they watched *Ladrón*. Ideally, future surveys also will indicate to what extent viewers identified with each of the specific characters involved in the educational storyline, rather than just characters in general.

In conclusion, this study has illustrated that accurate health information in entertainment programming can increase knowledge and behavioral intent among Hispanic audiences in the U.S. Identification with characters leads to talking to others about health topics in shows, calling hotlines, and, in this case, an increased knowledge about breast cancer. The findings of this study lend support for an E-E strategy in the United States to improve the access to and use of accurate health information by commercial television writers, including serialized dramas such as telenovelas that are viewed by audiences at greatest risk for preventable diseases. At the same time, however, our results caution that inclusion of accurate health-related information in popular programming is not sufficient. Other factors such as level of prior knowledge, identification with the specific characters involved in the health storyline, and even the dramatic timing of the information can influence the impact on viewers. We encourage future research in this area.

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