

Healthy Woman, Healthy Family: A Mini-Intervention Among Hispanic Women In Texas To Improve The Utilization Of Pap Smear Services

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Abstract

BACKGROUND INFORMATION

Overview of the health problem

Cervical cancer is the second most common cancer in women worldwide and the third leading cause of cancer death in women (Castellsague et al., 2009).

Cervical cancer is an important area of action for any cancer control program because of the burden of disease, and the potential for effective prevention via screening (World Health Organization, 2008). Cervical cancer is an important public health problem, and a priority concern for the WHO Program on cancer control (WHO, 2008). It is a complication of HPV infection, with 500 000 new cases each year worldwide, 80% of which occur in low resource countries in Africa, Latin America and South East Asia. More than half of women with cervical cancer will die, with deaths projected to rise by almost 25% over the next 10 years according to World Health Organization. In Europe and the United States of America, a woman has a 70 % chance of surviving cervical cancer whereas the chance of survival is 58% in Thailand, 42% in India and 21% in Sub Saharan Africa (Milliez, 2008).

It is the 10th most common cancer among females in the United States, with an estimated 12,800 new cases in 2000. The number of new cases of cervical cancer is higher among females from racial and ethnic groups than among white females. An estimated 4,600 United States females were expected to die from cervical cancer in 2000 (Landis et al., 1998). Cervical cancer accounts for about 1.7 percent of cancer deaths among females. Infections of the cervix with certain types of sexually transmitted human papillomavirus

increase the risk of cervical cancer and may be responsible for most cervical cancers in the United States (NIH, 1997). The National Cancer Institute estimates new cases and deaths from cervical cancer in the United States in 2009 to be 11, 270 and 4, 070 respectively (National Cancer Institute, 2006). Cancer of the cervix is highly preventable in most countries because screening tests and a vaccine to prevent HPV infections are available. When cervical cancer is found early, it is highly treatable and associated with long survival and good quality of life (CDC, 2009). All women are at risk for cervical cancer. It occurs most often in women aged 30 and older. In 2005, 11,999 women in the United States were told they had cervical cancer and 3,924 of them died from the disease. It is important to get tested for cervical cancer because 6 out of 10 cervical cancers occur in women who have never had a pap test or have not been tested in the past five years (CDC, 2009). The human papillomavirus (HPV), a common virus that can be passed from one person to another during sex is the main cause of cervical cancer and also causes many vaginal and vulvar cancers. At least half of all sexually active people will have HPV at some point in their lives (CDC, 2009).

In many regions of the world, e.g. South East Asia East Africa, Melanesia, Central America, and Southern Africa, the incidence rate of cervical cancer approaches 30 cases per 100, 000 women with high mortality rates from the disease. For the United States, the National Cancer Institute (NCI) and the American Cancer Society (ACS) estimate an overall incidence of 7.2 cases per 100, 000 women with an overall mortality rate of 2.9 cases per 100, 000 figures that are well above the Healthy People 2010 goal of 2.0 cases per 100,000

(Fowler & Sayegh, 2005).

Disparities in incidence of cervical cancer remain throughout the United States. The incidence rate of cervical cancer for Hispanic, African American, and Asian/Pacific Islander women is higher than that of the non Hispanic white women; 16.9, 12.4, 10.2 and 9.2 per 100,000 women respectively in 1996 – 2000. Although mortality from cervical cancer is rare for any group with prior screening and adequate follow up, disparities in mortality from cervical cancer remain in the US (Fowler & Sayegh, 2005).

The financial implications of cervical cancer treatment in the United States are significant. It is estimated that more than 2 billion dollars is spent on cervical cancer treatment per year in the US (CDC, 2009). In addition to facing pain, disability and fear of death, cancer patients have to deal with increased treatment related expenses, loss of employment and consequent income and changes in household responsibilities. Cancer of the cervix disproportionately affects women in the low socioeconomic level and thus the disease can have dramatic consequences for the living conditions of patients and their families including falling into poverty and being pushed deeper into poverty (Arrossi et al., 2006).

Overall, it was estimated that there were 130,777 women who would have been alive during 2000 had they not died from cervical cancer during that or the previous year. Over 75% of these women died before the age of 60, with greater than 25% dying prior to the age of 40, and it was estimated that 37,594 (29%) of these women would have had labor force earnings in 2000. The total productivity loss in 2000 owing to cervical cancer mortality was estimated at 1.3 billion dollars. Women develop and die of cervical cancer at a relatively young age compared to other cancers, with an average of 25.9 years of life lost per cervical cancer death compared to 19.0 years for breast cancer and 17.4 years for ovarian cancer (Insigna, 2006).

Healthy People 2010 objectives include reducing the death rate from cancer of the uterine cervix with a target of 2.0 deaths per 100, 000 females as well as to increase the population of women who receive a Pap test. It also includes increasing the number of physicians who counsel patients about pap tests (Healthy People, 2010).

The Pap test relies on microscopic examination of the epithelial cells collected from the cervix. It is the most effective and widely used means of screening for

precancerous and malignant lesions of the cervix. The American Cancer Society (ACS) the American College of Obstetricians and Gynecologists (ACOG) and the US Preventive Task Force (USPSTF) currently recommend beginning screening within three years of the onset of sexual intercourse or at age 21 whichever comes first.(Fowler et al., 2005).

THE FOCUS ON BEHAVIOR AND TARGET POPULATION

Amongst all malignant cancers, cervical cancer is the one which can be most effectively controlled by screening. Detection of cytological abnormalities by microscopic examinations of Pap smears, and subsequent treatment of women with high grade cervical intraepithelial neoplasia (CIN), avoids the development of cancer. In 1986, the high effectiveness of cervical cancer screening using Pap smears was established. Further evidence has been generated from more recent studies confirming the conclusion that well organized cytological screening every three to five years in the age range 35 – 64 years reduces the incidence of cervical cancer by 80% or more among screened women (Arbyn et al., 2009). The high prevalence of human papillomavirus (HPV) among adolescent and young adult women and the causal association between certain types of HPV and cervical cancer make regular gynecological screening and Pap smear testing essential health practices for young women. Although the rate of invasive cervical cancer has steadily decreased over the past few decades, it has increased in women younger than 50 (Burak & Meyer 1997). All sexually active women are at increased risk for cervical cancer, however, women who have a history of multiple sex partners, who began having sexual intercourse at an early age, who are smokers, or whose socio economic status is low are at higher risk for the disease (Burak & Meyer 1997). Many adolescent women in the United States become sexually active in the mid to late teenage years. The average age for first sexual experience is between 16 and 17 years. Becoming sexually active at a young age lengthens a woman's time of risk for HPV and other sexually transmitted diseases (STDs). In addition to intercourse at a young age, many adolescent and young women engage in sex with multiple partners. It was reported that approximately 10% of single non cohabitating adolescent and young adult women have two or more partners in a 3 month period (Burak & Meyer 1997).

The elimination of disparities in the burden of cancer is one

of the overarching themes of the American Cancer Society (ACS) 2015 challenge goals. A series of reports published by ACS in the late 1980s documented large disparities in cancer burden by race and ethnicity. Socio economic factors such as poverty, inadequate education and lack of health insurance appeared to be far more important than biological differences. Hispanics/ Latinos have the highest incidence of cervical cancer (Ward et al., 2004). According to the National Institutes of Health and the CDC, Hispanics are a priority group for cervical carcinoma screening, sexually transmitted disease prevention and health information provision (Vanslyke et al., 2008). Latino women tend to view illness as an improper balance between the internal and external forces. Decision making usually involves seeking the counsel of family preferably the eldest adult male. Latino women usually prefer like- gender providers (Fowler et al., 2005).

INFLUENCES AND CONTRIBUTING FACTORS

Despite abundant healthcare resources in the United States, women in the minority, socio economically disadvantaged, and rural populations have not equally benefited from Pap smear screening. (Garner, 2003). HPV has been implicated in the development of virtually all cervical cancers, and HPV DNA is detected in about 100 % of invasive squamous cervical cancers. HPVs are classified into high, intermediate and low risk types based on their associations with invasive cancer. Types 16 and 18 are considered high risk types and are associated with aggressive forms of cervical cancer. HPV infection is the most common sexually transmitted disease, with reported prevalence rates of 19 – 46%.

The major risk factor for HPV infection is sexual behavior including early age at onset of sexual activity, multiple sexual partners, failure to use barrier methods of contraception, and co infection with other sexually transmitted diseases particularly HIV. (Garner, 2003). Environmental factors, particularly tobacco use, may also be important for persistence and progression of cervical dysplasia. The role of inherited susceptibility to cervical cancer is uncertain (Garner, 2003). Non English speaking immigrant women face language, cultural barriers to Pap smear screening, including modesty, fatalism and prohibitions against pelvic examination by male practitioners. Cultural factors also contribute to mistrust of medical care providers. Minority women of low socioeconomic status tend to have co morbid diseases that contribute to poorer treatment outcomes for cervical cancer.

Opportunities to reduce cancer disparities exist in prevention, early detection, treatment and palliative care (Ward et al., 2004).

PREVIOUS INTERVENTIONS

There are few interventions available in the literature that increases the utilization of cervical cancer screening services. Recent studies however suggest that many at risk women do not have regular pap tests. Given the pivotal role of regular cervical cancer screening in reducing mortality from cervical cancer, it is essential that programs aimed at increasing screening rates continue. (Hancock et al., 2001) Many of the interventions listed below do not exactly focus on cervical screening alone. Some focus on both cervical and breast cancer screening. One of the interventions used a multifaceted approach. A few of these interventions were theory based. Successful cancer control programs for Hispanic women have used Spanish language media; role models appearing in mass media with social reinforcement by community volunteers, small media such as videos delivered in group settings or kiosks, multi method approaches and lay health workers or promotoras. The lay health worker or promotora model, which was first developed in Latin America, is a peer health education model whereby respected community members educate peers in a culturally appropriate manner (Fernandez et al., 2009). Although evidence suggests that lay health workers can improve some health behaviors, the effectiveness of this model for increasing cancer screening is yet to be fully explored (Fernandez et al.,2009).

A review of some interventions used to increase utilization of Pap smear testing is listed below.

PREVIOUS INTERVENTIONS AIMED AT INCREASING CERVICAL CANCER SCREENING

Healthy Woman, Healthy Family: A Mini-Intervention Among Hispanic Women In Texas To Improve The Utilization Of Pap Smear Services

Table 1

Study and location	Selection and design	Theory	Components of intervention	Measures	Outcomes
Hawcock et al., 2000 Women aged 18–70 in Australian rural towns named the CASP project	Matched RCT Random selection Length: 2 years	Community action intervention framework	Education and support for increased opportunities screening by local health authorities Information sessions, cancer awareness seminar, outreach	Pre mobilization, mobilization post mobilization timeline	Pap tests where the last procedure was more than 2 years increased in both intervention and control towns after mobilization with intervention towns showing consistently higher rates
Taylor et al., 2000 Chinese American women aged 35–64 The Chinese Women Health Project	Matched RCT Random selection	Not specified	Low intensity intervention including mailing Chinese audio visual and print materials to women High intensity intervention involved home visits by bi and tri lingual outreach workers to educate women and encourage screening and follow up	Baseline and post baseline questionnaire	Increased screening rates in both intervention groups but the outreach worker was more effective
Taylor et al., 2002 Cambodian American women above 18 In Seattle Refugee community	Matched RCT Random selection	Not specified	Neighborhood based intervention Introductory mailing, home visit with video and tailored counseling, group meetings and follow up Outreach worker intervention	Self reported pap smear testing in previous year, medical records verification	Increased pap testing in intervention and control group Improvement in screening rates in both groups
Maria Fernandez et al., 2009 Low income Hispanic female workers aged 50 and above "Cultivando La Salud"	Recruited through the DHS sampling Quota scheme 6 months	Community based participatory research Intervention mapping	Educational intervention Educational materials were used using Lay Health Workers Outreach	Baseline interviews Evaluation of medical records and follow up visits	Scores on pap test self efficacy, perceived pros subjective norms and processes of change were significantly higher in the intervention groups
Rang et al., 2007 Underserved Korean women aged 18 and older	Quasi experimental	Health Belief Model Social Cognitive Theory	Educational sessions for 2 hours covering topics including cervical cancer, pap testing and cervical cancer in intervention group Goal setting, Role play with videos Lay Health Workers Outreach	Self reported screening behavior 6 months post education. Verification of actual screening was done	Increase in screening rates 6 months post intervention
Mock et al., 2007 Vietnamese American women in the reproductive age group	RCT	Not specified	Goal setting, Role play with videos Lay Health Workers Outreach Media Based Education Campaign	Pre and post education questionnaire	Women who had read at least one article in the newspaper were twice more likely to obtain a pap test.

HEALTHY WOMAN, HEALTHY FAMILY PROGRAM

Choice of theory

The Health Belief Model contains several primary concepts that predict why people will take action to prevent, to screen for, or to control illness conditions: these include

Susceptibility, seriousness, benefits and barriers to a behavior, cues to action and most recently self efficacy. If individuals regard themselves as susceptible to a condition, believe that the condition would have potentially serious consequences, believe that a course of action available to them would be beneficial in reducing either their susceptibility to a severity of the condition, and believe the anticipated benefits of taking action outweigh the barriers to action, they are likely to take action that they believe will reduce their risks (Glanz et al., 2008).

Target population

The Healthy Woman, Healthy Family program will target Hispanic women in the reproductive age group using many aspects of the Health Belief Model but with emphasis on using the males (husbands of Hispanic women) and churches as cues to action. Hispanic women have a lower rate of participation in cervical cancer screening programs than women in other ethnic groups. According to a Behavioral Risk Factor Surveillance Survey (BRFSS) done in El Paso, TX, 16.6% of Hispanic women over age 18 reported never

having had a Pap smear (Byrd et al., 2004). Cervical cancer has been commonly studied in older women, and little attention has been given to the screening practices or the educational needs of younger women with regard to this disease (Byrd et al., 2004).

Male-female relationships stem from traditional gender roles. Machismo and patriarchal authority characterize the male role; the roles of a traditional woman are housewife and mother. Women are expected to defer to the authority of their husbands (Galanti 2003).

In the traditional household, the man is the head of the family and makes all major decisions. There is a strong sense of Paternalism what most Westerners call "Male Dominance", but the female role is equivalent and she is the maternal powerhouse in her home. In the Hispanic world, religion has traditionally played a significant role in daily activity. More than 90% of the Spanish-speaking world is Roman Catholic (Galanti 2003).

Intervention objectives

The objectives of the Healthy Woman, Healthy Family Program are; (1) to increase the utilization of existing Pap smear services among young Hispanic women, (2) to emphasize the roles of the church and Hispanic men in Pap testing in their wives and Hispanic women, (3) to improve on the access of Hispanic women to Family and Well woman clinics, (4) to increase the self efficacy of young Hispanic women to get a Pap test.

Previous interventions have looked at using lay health workers or promotoras but this intervention would hopefully show the importance of Hispanic males and churches in the utilization of Pap smear services by Hispanic women.

In meeting these set objectives, this intervention should hopefully decrease the incidence of cervical cancer.

Operationalization of constructs

The Healthy Woman, Healthy Family Program will emphasize on increasing self efficacy and cues to action but all the constructs of the Health Belief Model will be applied.

The following table shows in detail the constructs and how they are operationalized as in the Healthy Woman, Healthy Family Program.

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Table 2

Health Belief Model constructs applied to the Healthy Woman, Healthy Family Program

Construct	Definition	Application	Specific strategies/techniques	Example Measurement
Perceived susceptibility	'Belief about the chances of experiencing a condition/disease'	Define population at risk, risk levels, personalize risk based on person's characteristics or behavior, make perceived susceptibility more consistent with individual's actual risk	Education in Spanish about women and their bodies, risk factors of cervical cancer, the influence of HPV, STDs, genetics, sexual intercourse, screening protocols. Information about pap smear and how easy it is to carry out. Bulletins would be in Spanish.	I don't believe I can ever have cervical cancer. Only older women get cervical cancer. I don't know anyone personally with cervical cancer so I don't think it exists.
Perceived severity	'Belief about how serious a condition and its sequelae are'	Specify consequences of risks and conditions	Information on deaths from cervical cancer, treatment options available, how prevention of cervical cancer is easier than treatment, quality of life issues for women who have the disease, the impact of cervical cancer on the entire family, financial implications, disruption of family set up, life span reduction.	Women can die of cervical cancer. Age is no barrier to getting cervical cancer.
Perceived benefits	'Belief in efficacy of the advised action to reduce risk or seriousness of impact'	Define action to take, how, where, when, clarify the positive effects to be expected	Information on advantages of pap smear, easy to prevent cancer than to treat it.	Cervical cancer may be detected early with a pap test.
Perceived barriers	'Belief about the tangible and psychological costs of the advised action'	Identify and reduce perceived barriers through reassurance, correction of misinformation, incentives, assistance	Bilingual promotions in clinics, group discussions with husbands of women at risk about the benefits of pap smear, female promotoras and medical workers training to be able to do gynecological exams, focused group discussions with community leaders including female leaders, identification of catholic priests and female role models to talk about the importance of pap testing in churches and to correct misconceptions about pain and other barriers to pap tests.	My husband does not approve of my doing a pap test. Pap tests are not free of charge. Pap tests are painful just like any other medical investigation. All the promotoras doing the pap test are males.
Cues to action	'Strategies to activate readiness'	Provide how-to-information, promote awareness, use appropriate reminder systems	Mass media campaigns, provision of information at church programs in church bulletins and announcements at women's fellowships every year at Christmas, Thanksgiving and at other designated times, husbands' reminders at places of work, Reminders at well woman and antenatal and post natal clinics. Posters on metro buses, bus stops, train stations. Recommendations by physician.	Discussed in the body of this paper.
Self-efficacy	'Confidence in one's ability to take action'	Provide training and guidance in performing recommended action, use progressive goal setting, give verbal reinforcement, demonstrate desired behaviors, reduce anxiety	Information on the importance of follow up of pap testing despite barriers and follow up criteria for repeat visits to the clinic for those with abnormal results at their first or second pap test.	I will be willing to complete the follow up of my pap tests irrespective of the results.

THE DESIGN, RECRUITMENT, LENGTH AND SETTING OF THE INTERVENTION

As mentioned previously in this paper, more than 90 % of Hispanics are Catholics and the typical Hispanic family is very stable with the male playing a very predominant role. The Archdiocese of Galveston- Houston has been raised to the status of Metropolitan Archdiocese; it is the biggest in Texas. It is composed of 10 counties in the South eastern area of Texas. They include (1) Harris County and the City of Houston, (2) Galveston County and Galveston, the Mother Seat of the Church in Texas, (3) Austin, (4) Brazoria, (5) Fort Bend (6) Grimes, (7) Montgomery, (8) San Jacinto, (9) Walker, (10) Waller counties. These translate to 149 parishes with a total Catholic population of over 1 500 000 (Catholic Archdiocese of Galveston-Houston, 2007). They also have a Hispanic ministry that will be closely worked with as well during this intervention.

To ensure the success and efficacy of this intervention, the study design will be a matched randomized control trial. Out of the one hundred and forty nine parishes in the ten counties, five intervention counties will be selected and matched with the remaining five counties. Letter will be sent to the archbishop and the Hispanic ministry explaining the Healthy woman, Healthy Family program. The letter will give details about the program and hopefully, the letters will be sent to the different parishes participating in this

intervention. The individual participants will be picked as volunteer participants or clusters. The clustering will be done if the volunteer participation does not show reasonable success. It will also explain the need for married Hispanic men to participate. The control and intervention groups will have 200 participants for each respective group. The Healthy woman, Healthy Family is a six month program but follow up will be occurring after six months, the twelve and twenty four months to determine how successful and stable the intervention is.

DESCRIPTION OF THE INTERVENTION

The Healthy woman, Healthy Family program is a community based couples and church oriented intervention. The objectives of this program can be looked at in more detail.

These objectives will be focusing on increasing the use of existing Pap smear services. It will incorporate the use of educational materials to increase knowledge and try to correct misconceptions about cervical cancer screening. Many of these educational based programs will be done in the church and available clinics. Very importantly, it will incorporate the help of Hispanic men whose wives also attend the same church. There will be couples information sessions and here, information about disruption of family life in the event of developing cancer of the cervix will be emphasized. Husbands will also be told about their roles in the cervical cancer screening of their wives. The Hispanic ministry that caters to the ever growing Hispanic community will also help in the dissemination of information during these sessions. Since Hispanics attend catholic churches, during the announcements at the end of the mass, announcements will be made about the importance of screening for the women in their churches who are Hispanic. It is also good to know that these churches also have Spanish masses so emphases will be made there as well about pap testing and how easy it is. Female volunteer health workers will be identified and they will serve as contact people at the clinics located in the catholic churches. In addition, the importance of the parish priest cannot be over emphasized. Talks will be given by the priests in the different churches as well as the female health workers or promotoras who have been identified initially. Successful cancer control programs for Hispanic women have used social reinforcement by community volunteers and 'small media' (Fernandez et al., 2009)

The bulletins given at the mass would have information

about Pap testing in English and Spanish languages every Sunday for six months. The barriers of time will be overcome because there will be a three monthly clinic for follow up for women matters. During the announcement sessions after mass, there would be women who would talk about the Pap smear they have had and the advantages as well as the importance. Also during fellowship for males, the issue of Pap testing for the wives of these men will be raised and discussed in detail. At the end of the whole program, women should be able to identify where they can get a Pap test and the recommendations and guidelines for the test. These programs will also include pregnant women.

TIMEFRAME AND DELIVERY

Successful cancer control programs for Hispanic women have used Spanish language media, role modeling via the media with social reinforcement by community volunteers, small media in small group settings, multimethod approaches and lay health workers or promotoras.

Healthy woman, Healthy family will basically center around the aforementioned. To reinforce the program, there will be visits made by the lay health workers to the homes of the participants. These home visits would be made on Sundays for those who would not be reached after mass on Sundays. Each participant will get at least a home visit in the entire six month period of the intervention especially to get feedback after they may have had a Pap smear or a repeat Pap test for those who may have abnormal findings at a previous Pap test. At these visits, it is expected that each woman should be able to easily talk about Pap testing. In the following six months, few participants in the intervention will be used as teaching resource in the clinics for those who are not participating in the program.

Bulletins containing testimonials from couples where wives have taken part in the whole intervention will be distributed. Any new information about Pap testing will be added as well during the time frame.

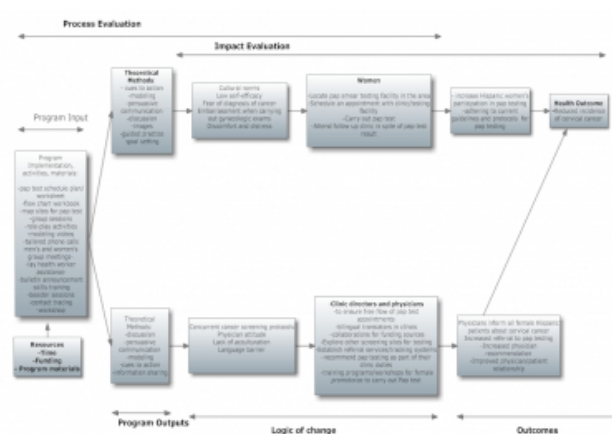
EVALUATION

The Hispanic women participating in the intervention will be given questionnaires using constructs of the Health Belief Model at inception of the intervention, six months, one year and two years from the initiation of the intervention. These questionnaires will be measuring the effectiveness of the intervention, to know the effect of husbands' and church participation. It will also measure the self efficacy of the participants in terms of those who may need a repeat Pap test

but may not be motivated to have a repeat based on recommendations and guidelines available or based on abnormal first time results of Pap tests. It would also measure what role the lay health workers have played in testing for Pap smear. In particular, the barriers will be measured to see if they still exist as well as their knowledge about cervical cancer and its impact on family life if a woman develops cervical cancer.

The data from the five intervention counties will be compared to initiation/ baseline and to the five control counties. The five control counties will have received information about other female cancers including cervical cancer.

Figure 1



CONCLUSION, STRENGTHS AND LIMITATIONS

The available literature on cervical cancer screening interventions shows that few interventions have been done in this area. A number of these interventions are either a combination of breast and cervical cancer screening or have been done in older women leaving out the fact that young women are sexually active and are also at risk for cervical cancer. Some of the interventions done previously are not evidence or theory based. None of the previous interventions have used husbands and organizations like churches. These play a great role in the lives of the people generally especially in this population. They are important cues to action in planning an intervention for this population and may make a great impact towards achieving positive results.

The Healthy Woman, Healthy Family approach emphasizes the use of theory so the chances of success of the program are high.

There are always limitations in every intervention or study.

The Healthy Woman, Healthy Family program may not capture non Catholic Hispanic women, widows, divorced or single mothers and women. It may also not change opinions of women who have beliefs about seeking health care. Many of these people are in the low socioeconomic class and may not participate because they keep more than one job and work on Sundays.

The intervention study may not be very representative of Hispanic women in Houston and Texas.

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