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Evaluation of a Community-Based Cervical Cancer Education Program on Perceptions and Knowledge of Screening among Low-Income Hispanic Women

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EVALUATION OF A COMMUNITY-BASED CERVICAL CANCER EDUCATION
PROGRAM ON PERCEPTIONS AND KNOWLEDGE OF SCREENING AMONG
LOW-INCOME HISPANIC WOMEN

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Dedication

To my parents who taught me that I could achieve my personal best with hard work, responsibility, and keeping in mind the importance of family values. I would also like to dedicate this thesis to my husband and children for their support and inspiring me to pursue my goals.

EVALUATION OF A COMMUNITY-BASED CERVICAL CANCER
EDUCATION PROGRAM ON PERCEPTIONS AND KNOWLEDGE OF
SCREENING AMONG LOW-INCOME HISPANIC WOMEN

By

CLAUDIA LOZANO, B.S., CHES

THESIS

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Abstract

Cervical cancer affects Hispanic women disproportionately in comparison to their non-Hispanic white counterparts. In 2004, the incidence rate was 12.2 per 100,000 persons among Hispanic women compared to 7.5 per 100,000 among non-Hispanic white women (U.S. Cancer Statistics Working Group, 2007). Although this form of cancer is easily diagnosed through recommended screening tests, Hispanic women are often less likely to get screened (U.S. Department of Health and Human Services, 2000).

Research based on the Health Belief Model (HBM) examining attitudes and beliefs about cervical cancer and screening among Hispanic women has demonstrated that non-compliance with Pap smear screening was attributed to perceived barriers of embarrassment, being less acculturated, the belief that Pap smears are painful, and lack of knowledge about access (Byrd, Peterson, Chavez, & Heckert, 2004; Ingledue, Cottrell, & Bernard, 2004; Leyva, Byrd, & Tarwater, 2006; Thompson, Dempsey, Ross, & Anguiano, 2009). Consequently, identifying interventions to help address this issue is imperative.

The purpose of this project was to evaluate a community-based education program for Hispanic women from the Cervical Cancer Prevention Project (CCPP). The CCPP was developed through a cooperative agreement with the Centers for Disease Control and Prevention (CDC) and the American Social Health Association (ASHA). In 2006, the CCPP educational program was part of a research project among low-income Hispanic women from which secondary data analyses were performed for this study.

The changes in perceptions were evaluated based on the HBM for participant's perceived benefits and perceived barriers to Pap smear testing; perceived severity and susceptibility to cervical cancer; and knowledge acquisition about cervical cancer and screening. The study design consisted of pre-test/post-test among an intervention group and a comparison group. Main findings included changes in perceptions of barriers among participants in the intervention group. There was also an improvement in knowledge among those in the intervention group. In conclusion, participant's perceptions and knowledge regarding cervical cancer and Pap smear screening were improved while addressing culturally appropriate interventions for cervical cancer among Hispanic women.

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CHAPTER 1: Introduction

The incidence of carcinoma of the uterine cervix (cervical cancer) in the United States has steadily decreased by 3.7% per year from 1996 to 2004 (Ries, Melbert, Krapcho, Stinchcomb, Howlader, Horner et al., 2007). In spite of this, cervical cancer remains as the second leading type of cancer among women worldwide (Khan, Castle, Lorincz, Wacholder, Sherman, Scott et al., 2005). Cervical cancer incidence rates are also disproportionately higher among Hispanic women as compared to their non-Hispanic white counterparts. In 2004, the age-adjusted incidence rate was 12.2 per 100,000 persons among Hispanic females compared to 7.5 per 100,000 among non-Hispanic white females (U.S. Cancer Statistics Working Group, 2007).

This form of cancer is easily diagnosed with recommended screening tests. A Papanicolaou (Pap) cervical smear test is one of the most reliable and effective screening tests for cervical cancer, and has been consistently associated with the decreased incidence rates of cervical cancer in the past decades (U.S. Preventive Services Task Force, 2008). Regular Pap smear tests have also been shown to significantly decrease morbidity and mortality (Saslow, Runowicz, Solomon, Moscicki, Smith, Harmon et al., 2002). Hispanic females, however, are less likely than non-Hispanic white females to get screened and about 20% aged 18 and over remain non-compliant with routine screening (U.S. Department of Health and Human Services [USDHHS], 2000).

To address this issue, the Cervical Cancer Prevention Project (CCPP) was developed as part of a cooperative agreement between the Centers for Disease Control and Prevention (CDC) and the American Social Health Association (ASHA). The CCPP included a community-based educational program to improve knowledge and behaviors regarding the prevention, detection, and control of cervical cancer specifically for Hispanic and African American women. In 2006,

a research project directed by Sharon Thompson, MPH, Ph.D., CHES implemented the CCPP educational program among low-income Hispanic women at a community health clinic located in the U.S./Mexico border region of El Paso, Texas. A secondary data analysis was performed on data collected from this study to evaluate the effectiveness of the educational program on improving participants' perceptions and knowledge regarding cervical cancer and Pap smear screening. The overall aim of the present study was to evaluate perceived benefits and barriers, perceived severity and susceptibility, and knowledge acquisition among participating Hispanic women in response to the educational intervention using a pre-test/post-test study design.

1.1 EPIDEMIOLOGY OF CERVICAL CANCER

Cervical cancer is still one of the most common cancers among women worldwide, affecting approximately 470,606 women and causing about 233,372 deaths every year (Ferlay, Bray, Pisani, & Parkin, 2001). In the United States, according to the American Cancer Society (2008), an estimated 11,070 new cases of cervical cancer and about 3,870 deaths occurred last year. Nationally, the economic burden from this disease was estimated to be more than \$2 billion in the year 2002 (Brown, Lipscomb, & Snyder, 2001).

The latest national cervical cancer incidence rate was 8.1 per 100,000 (U.S. Cancer Statistics Working Group, 2007). In addition, cervical cancer incidence rates in U.S./Mexico border communities are higher than national average. In comparison, the Texas Cancer Registry (2008) indicated an age-adjusted cervical cancer incidence rate of 9.5 per 100,000 in Texas. Locally there is a higher incidence rate in the border region of El Paso County with an age-adjusted rate of 15.0 cases per 100,000 (Texas Cancer Registry, 2008). The disproportionate rates by location will continue to persist as the prevalence of Pap smear testing remains relatively low among Hispanic women (Ries et al., 2007).

1.2 CERVICAL CANCER AMONG HISPANIC WOMEN

In the year 2004 the age-adjusted cervical cancer incidence rate was 12.2 per 100,000 persons among Hispanic women compared to 7.5 per 100,000 among non-Hispanic white women (U.S. Cancer Statistics Working Group, 2007). While the U.S. cervical cancer mortality rate among Hispanic females was 3.0 per 100,000, the rate among non-Hispanic whites was 2.0 per 100,000 (National Cancer Institute, 2008). Furthermore, the 5-year survival rate from cervical cancer is also lower among Hispanic women than any other racial/ethnic group (National Cancer Institute, 2003).

Risk factors for cervical cancer include: early onset of intercourse, smoking, and having sex with multiple partners (Bosch, Manos, Munoz, Sherman, Jansen, & Peto, 1995; Giuliano, Papenfuss, Schneider, Nour, & Hatch, 1999). Although these are preventable risk factors for cervical cancer, Hispanic women remain at higher risk. In addition, differences in structural factors such as education and access to health care are consistent causes of health disparities in breast and cervical cancer among Hispanic women (Abraido-Lanza, Chao, & Gammon, 2004). The scarcity of resources for screening, diagnosis, and treatment related to low socioeconomic status is common among Hispanics, and impacts this health disparity further (Ginzberg, 1991).

1.3 PAPANICOLAOU SMEAR SCREENING AMONG HISPANIC WOMEN

The Pap smear test is one of the most reliable screening tests for cervical cancer, and is recommended to start by age 21 or within three years after the first sexual intercourse; thereafter regular testing should occur once every three years unless abnormal results manifest (U.S. Preventive Services Task Force, 2008). Regular Pap smear tests are important for early detection of cervical cancer, and have been shown to significantly decrease morbidity and mortality (Saslow, Runowicz, Solomon, Moscicki, Smith, Harmon et al., 2002); however, Hispanic

women are less likely to comply with routine Pap smear testing compared to non-Hispanic white women (Gorin & Heck, 2005).

Although cervical cancer can be easily detected by Pap smear screening, Hispanic women are disproportionately affected by this form of cancer (Ries et al., 2004). About 20% of Hispanic women aged 18 and over remain noncompliant with the recommended routine cancer screening (U.S. DHHS, 2000; Blackman, Bennett, & Miller, 1999). Data examined from the 2000 National Health Interview Survey (Gorin & Heck, 2005) showed that only 77.8% of Hispanic women reported having a Pap smear test within the past three years in comparison to 84.1% and 83.4% of African American and non-Hispanic white women, respectively.

The Hispanic population is also the fastest growing minority population, and should be addressed when dealing with health disparities according to race/ethnicity. In the state of Texas, Hispanics are the second largest racial/ethnic group accounting for 38% of the population while 47% are non-Hispanic white and 16% are African American or other (Kaiser Family Foundation, 2008). Consequently, it has been reported that sizeable minority populations may be impacted differently by barriers to cervical cancer screening (Coughlin & Uhler, 2002; Selvin & Brett, 2003).

Findings from studies that examined structural and social barriers to cervical cancer screening identified the following as the most prominent factors for non-compliance: financial constraints, absence of health insurance, inefficient communication with health care providers, lack of English proficiency, and lower education levels (Perez, Sabogal, & Sabogal, 1995). Consistent findings across multiple studies have also demonstrated that the decreased use of Pap smear screening among Hispanic women is due to lack of knowledge and cultural perceptions towards cervical cancer screening (Harmon, Castro, & Coe, 1996; McFarland, 2003; Gorin & Heck, 2005).

1.4 HUMAN PAPILLOMAVIRUS VACCINE IMPLICATIONS

Moreover, evidence indicates that cervical cancer is caused by Human Papillomavirus (HPV) (Munoz, Bosch, de San Jose, Tafur, Izarzugaza, Gili et al., 1992; Giuliano, Papenfuss, Abramhamsen, Zapien, Henze, Ortega et al., 2001; Bosch, Lorincz, Munoz, Meijer, & Shah, 2002; Bosch & de Sanjose, 2007). HPV is a common virus in the U.S. that can be transmitted through any kind of sexual activity involving genital contact. The CDC (2004) estimated that 20 million people in the U.S. have been infected with this virus, and that more than 50% of sexually active men and women are infected with HPV during their lifetime.

The HPV vaccine called Gardasil® (quadrivalent HPV recombinant vaccine) was introduced in 2006 as an alternative for prevention and control of cervical cancer. This vaccine will protect against four types of HPV which include types 6, 11, 16, and 18 but will not protect against non-vaccine HPV types, and is not intended to treat diseases not caused by HPV (Merck & Co., Inc., 2008). The impact of the vaccine on cervical cancer burden will also depend on the prevalence of other oncogenic HPV types, and dissemination of the vaccine among priority populations (Giuliano et al., 2001). Therefore, it is important to note that vaccination does not eliminate the need for cervical cancer screening because further information is needed to guide vaccine practices and determine its effectiveness.

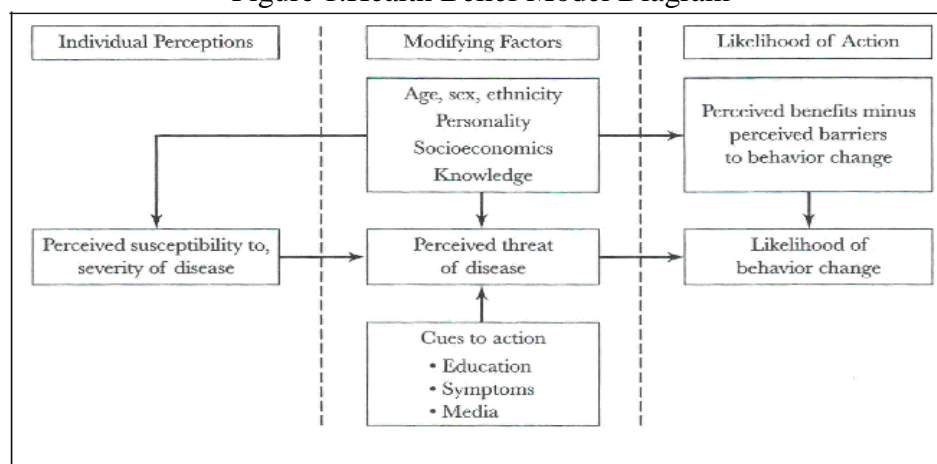
1.5 THEORETICAL FRAMEWORK

The HBM is an expectancy value theory that has been used to understand and change behaviors. It was initially developed in the 1950s by Hochbaum and furthered by Rosenstock, who were social psychologists in the U.S. Public Health Service (Rosenstock, 1960). This model originated in the attempt to explain why people failed to participate in screening programs to detect disease, particularly tuberculosis (TB) (Hochbaum, 1958; Rosenstock, 1960). The model

was later expanded to understand behavior in response to symptoms and compliance to treatment of illness (Kirscht, 1974; Becker, 1974).

Initially, Hochbaum (1958) conducted a study to explain why patients were not participating in TB x-ray screenings provided at convenient mobile clinics at no cost. This study examined the readiness to take action through beliefs of perceived susceptibility, perceived benefits, and perceived barriers that could predict screening intent. Perceived susceptibility dealt with individual's belief that it was possible to develop TB, or currently have the disease without showing any symptoms. Perceived benefits described the individual's belief that getting screened would result in early detection, and in doing so, would improve their prognosis. Perceived barriers referred to the limitations of taking the health related action that included, but was not limited to expenditures or time constraints. Details of constructs are further outlined in Figure 1. HBM Diagram, adapted from Janz, Champion, & Stretcher (2002). Findings demonstrated that action occurred 82% of the time among individuals who perceived themselves as susceptible and perceived that screening was a benefit that outweighed the costs. When neither of these perceptions was present, only 21% would take action. As a result perceptions of susceptibility, benefits, and barriers became core concepts of the HBM. (Hochbaum, 1958)

Figure 1. Health Belief Model Diagram



Source: Janz, N., Champion, V. & Stretcher, V. (2002). The Health Belief Model. In Glanz, Rimer, & Lewis (Eds.) *Health Behavior and Health Education Theory, Research, and Practice* (pp.45-66). San Francisco, CA: Wiley & Sons.

Research studies based on the HBM helped shape and extend the model. Recognized research from Rosenstock (1974), Becker (1974), and Kirscht (1974) adapted the HBM to explore a variety of long- and short-term health behaviors regarding prevention, illness, and maintenance. The HBM was then based on the understanding that a person will take a health related action when three factors occurred: 1) they regard themselves *susceptible* to the condition and that the condition could be *severe*, often termed as perceived *threat*; 2) they believe that the *benefits* of taking action will help reduce their susceptibility and severity of the condition; 3) they believe there are more *benefits* than *barriers* (costs) to the action (Rosenstock, Stretcher & Becker, 1988).

In terms of perceived barriers, there was another concept later added to the HBM by Rosenstock et al. (1988) to plan for health behaviors requiring long-term lifestyle changes. This new concept was termed *self-efficacy*. At first self-efficacy was not part of the HBM because the primary focus was on performing simple preventive actions. This concept posits that individuals must also regard themselves competent and/or possessing the skills to overcome the perceived barriers in order to take action (Janz, Champion, & Stretcher, 2002). The lack of self-efficacy has also been seen as a perceived barrier and has become more meaningful in the development of the HBM (Rosenstock et al., 1988).

The concept of cues to action was also not part of the original HBM. Hochbaum (1958) introduced the idea that internal and external factors could activate or trigger readiness to action. This concept of cues to action was subsequently integrated to describe a person's motivation to perceive an action as beneficial that occurs when some external or internal cue including a change in health status, physician's advice, or media messages that triggers action (Rosenstock, 1974). As cues may be fleeting events, they are elusive, and it is difficult to measure the

magnitude of the cue required to trigger action (Rosenstock, 1974). Research studies exploring the concept of cues to action examined postcard reminders for the improvement of influenza vaccine compliance, and found that higher rates of vaccination occurred when the HBM based postcard was used as a cue of action versus not using a reminder cue (Larson, Bergman, Heidrich, Alvin, & Schneeweiss, 1982; Rundall & Wheeler, 1979; Cummings, Jette, Brock, & Haefner, 1979).

Similar to the concept of cues to action, the HBM also observes other modifying factors. These were described by Janz, Champion, and Stretcher (2002) as any factor that could activate readiness to action and perceived threat. Basically, modifying factors create an indirect effect on behavior which influences the causal pathway of the likelihood to take action. Modifying factors are variables such as demographics including age, race, and income; socio-psychological factors such as attitudes and perceptions; and structural variables such as the health care system.

Evidence from the literature showed the ability to apply the HBM to a variety of health issues to examine the relationship between beliefs and health behaviors. The HBM was therefore, used in the evaluation to analyze cervical cancer screening. Specifically, the constructs of the HBM applied were perceived susceptibility, perceived severity, perceived barriers, and perceived benefits. Cervical cancer and screening knowledge levels were also evaluated because knowledge has been observed as a possible modifying factor related to preventive behaviors.

1.6 AIMS AND HYPOTHESES

The educational intervention was developed to assess knowledge and perceptions regarding the prevention, detection, and control of cervical cancer. The project's overall aim was to evaluate a community-based cervical cancer education program among Hispanic women. The effectiveness of the intervention was evaluated in terms of changes in perceptions based on

constructs of the HBM and for knowledge acquisition regarding cervical cancer and Pap smear screening. Accordingly, the project included the following specific aims:

1. To evaluate an educational intervention for changes in knowledge about cervical cancer and Pap smear testing among participants.
 - a. *Hypothesis:* The post-test knowledge score regarding cervical cancer and Pap smear testing will be higher than the pre-test score within participants in the intervention group.
 - b. *Hypothesis:* The post-test knowledge scores regarding cervical cancer and Pap smear testing between groups will be higher among intervention group at post-test than the comparison group.
2. To apply HBM components to evaluate the efficacy of the educational intervention on perceptions of cervical cancer and Pap smear testing.
 - a. *Hypothesis:* Perceived cervical cancer susceptibility and perceived benefits of Pap smear testing scores will increase within participants in the intervention group from pre- to post-test.
 - b. *Hypothesis:* Perceived cervical cancer severity and perceived barriers of Pap smear testing will change among participants in intervention group from pre- to post-test.
 - c. *Hypothesis:* Perceptions of cervical cancer and Pap smear testing will differ between the intervention and comparison groups at post-test.

CHAPTER 2: Literature Review

2.1 PUBLIC HEALTH APPROACHES FOR CERVICAL CANCER

Approaches to increase cervical cancer screening are needed to address health disparities regarding elevated cervical cancer rates among Hispanic women. Accordingly, the *Healthy People 2010, the Health Goals and Objectives for the Nation* (USDHHS, 2000) goals and objectives are consistent with this health need. Healthy People 2010 addressed this health priority with Goal 3: *To reduce the number of new cancer cases as well as the illness, disability, and death caused by cancer* (USDHHS, 2000, p.3-9). Specifically, under Goal 3, Objective 3-4: *Reduce the death rate from cancer of the uterine cervix with a targeted rate of 2.0 per 100,000* (USDHHS, 2000, p.3-13).

Another focus of cervical cancer health disparities among Hispanic women is recognized by the *Healthy Border 2010: An Agenda for Improving Health in the United States-Mexico Border* (U.S.-Mexico Border Health Commission [USMBHC], 2001). The *Healthy Border 2010* aims are consistent with reducing health disparities among minority groups through Goal 2: *To eliminate health disparities* (USMBHC, 2001, p.2). In addition, Principle 2: *Reduce cancer mortality in women through improved screening for breast and cervical cancers* (USMBHC, 2001, p.2), focuses on improving suboptimal cervical cancer screening rates and decreasing cervical cancer mortality rates in Hispanic women. The objectives under this principle are aimed towards reducing cervical cancer death rate by 20% on the Mexico border and by 30% on the U.S. border (USMBHC, 2001, p.2).

Furthermore, other public health approaches consist of interventions for cervical cancer prevention and control. An intervention on the U.S./Mexico border was the basis of a research study conducted among a sample population of Mexican American women (Fernandez-Esquer,

Espinoza, Torres, Ramirez, & McAlister, 2003). The purpose of the quasi-experimental study was to examine the efficacy of a five year community program titled “A Su Salud” (For Your Health) to increase participation in cervical and breast cancer screening. Two underserved, predominantly Hispanic, neighborhoods were selected for comparison. Intervention groups using census tracts were matched accordingly by ethnicity, gender, and income data.

The intervention consisted of mass media campaigns culturally tailored to this population that were facilitated by peer volunteers. The campaign included print publications, radio announcements, and television commercials. Material content was based on the Social Learning and Diffusion of Innovations behavioral change theories. Peer volunteers served as role models for community mobilization by providing personal testimonies and face to face interviews. Evaluation was based on baseline interviews and panel discussions at one and two year follow-up assessment. Findings demonstrated moderate improvement for Pap smear completion rates among the intervention versus the comparison communities when analyzed by age groups (Fernandez-Esquer et al., 2003). Hispanic women under 40 in the intervention group had higher screening rates while women over 40 years had higher rates among the comparison group than the intervention group.

It was explained that these results may have been attributed to the increased opportunities for gynecological health screenings and care as part of this age group interest in family planning (Fernandez-Esquer et al., 2003). In addition, campaign materials could have been tailored more to younger women. Overall, this intervention had limited effectiveness, but provided crucial information to help deliver appropriate cancer screening campaigns. Future considerations based on the lessons learned from this research included focusing on cultural and age factors as well as environmental barriers specific to the population. (Fernandez-Esquer et al., 2003).

Another study by Givaudan, Pick, Poortinga, Fuertes, and Gold (2005) used a systematic strategy guided by theory and research to develop an intervention for cervical cancer prevention in the state of Oaxaca in Mexico. The unique aspects of the intervention were to direct the intervention not only to women but also to their contextual framework including men and health delivery staff. This method involved a multi-dimensional process incorporating advocacy and dissemination strategies. These strategies used produced a snow-ball effect by which the first group of participants trained served as facilitators and trainers for the consecutive group of participants. More than 1,000 women and 400 men in their reproductive ages were trained through the study about the causes and risk factors of cervical cancer, prevention methods, and common misconceptions. Program content was presented through six educational modules that included print material such as booklets and flip-charts as well as role playing activities for communication and decision-making issues.

The evaluation of the intervention was based on focus groups, interviews, and measurement of public health services provided during the implementation period of six months. Outcomes of the intervention included an increase of Pap smear screening tests from 59 in the previous 24 month period to 139 per month within a six month period. In the areas of knowledge and attitudes regarding cervical cancer and screening, a pre-test and post-test assessment showed higher percentages of correct responses among those who participated (71.1%) in the intervention than those who did not (61.5%). Overall, this program had a positive impact on knowledge acquisition and utilization of preventive screening tests. In respect to study implications, it was suggested that further information is needed before expanding the program regarding change in attitudes, and that future interventions should operate at the individual and community level. (Givaudan, Pick, Poortinga, Fuertes, & Gold, 2005)

A recent systematic review conducted by the Task Force on Community Preventive Services (2008) examined client-directed interventions that increased community demand for three main types of cancer screening: breast, cervical, and colorectal. The review focused on the effectiveness, applicability, economic efficiency, and benefits and barriers of the interventions. Approximately 47 studies specifically related to cervical cancer interventions to improve adherence to screening were included in the review. Evidence of the magnitude of effects and consistent positive results across studies showed client reminders, small media, and one-on-one education methods were suitable for increasing cervical cancer screening by Pap test. It was also suggested that these methods could be implemented across populations, provided that they were culturally tailored and adapted. Conversely, very few studies have examined culturally appropriate education interventions within a group context; therefore further research is needed to identify effective educational methods to improve Pap smear screening compliance (Task Force on Community Preventive Services, 2008).

Public health efforts to reduce disparities for cervical cancer prevention and control among Hispanic females specifically tailored to underserved women also include financial assistance programs. For instance, the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) supported the development and implementation of outreach programs, which has positively impacted cancer screening rates. This program was established in 1990 by the U.S. Congress and is overseen by the CDC to assist uninsured low-income women access free or reduced breast and cervical cancer screening services (CDC, 2008). The goal of this federally funded governmental program was to increase early detection and reduce cervical cancer disparities. Since the program began, it has provided more than 4 million breast and cervical cancer screenings and diagnostic tests to approximately 100 million underserved women (CDC, 2008). In addition, from 1991 to 2002, approximately 1,329,523 women were able to

obtain a Pap smear (CDC, 2008). This program had a positive impact on screening utilization among Hispanic women. Adams, Breen and Joski (2006) examined how this program impacted cervical cancer screening rates among racial/ethnic minority groups. Based on the duration of the NBCCEDP, it was estimated that program providers increased screening services for racial/ethnic minorities from 64.4% to 66.2% within a five year interval. It was also found that African American and Hispanic women had greater odds of obtaining Pap smear tests as the availability of public insurance was increased. Therefore, it was suggested that public funded programs play an important role in Pap smear screening rates (Adams, Breen, & Joski, 2006.)

In spite of important public health efforts, racial/ethnic disparities in cervical cancer incidence rates persist (McDougall, Madeleine, Daling, & Li, 2007). The literature review highlighted the need for further research to evaluate the most effective prevention and control methods to reduce cervical cancer disparities among Hispanic women. Given that regular screening is an effective method for early detection of cervical cancer and improves treatment outcomes, interventions examining cultural perceptions towards Pap smear screening are important (U.S. Preventive Services Task Force, 2008).

Information from the literature review also suggested that future interventions should be culturally appropriate (De Alba, Ngo-Metzger, Sweningson, & Hubbell, 2005; Task Force on Community Preventive Services, 2008). Culturally sensitive interventions aimed at high risk groups have been suggested for promoting awareness and removing barriers to cancer screening (De Alba, Ngo-Metzger, Sweningson, & Hubbell, 2005). Consequently, identifying effective interventions to help address this issue is imperative; the evaluation of a cervical cancer community-based education program for Hispanic women could assist in identifying promising approaches to reduce the burden of cervical cancer among this priority population.

2.3 HEALTH BELIEF MODEL AND CANCER SCREENING

Cancer is the second leading cause of death among Hispanics in the U.S., and accounts for 20% of their total mortality (Anderson, 2002). Research based on the HBM examined cancer-related health behaviors and screening practices specifically among Hispanics. A study by Gorin and Heck (2005) examined data from the 2000 National Health Interview Survey to assess which HBM constructs had greater predictability of cancer screening among a sample of 5377 Hispanic men and women. All cancer screening tests, including mammography and Pap smear testing among women, prostate specific antigen tests among men, and colonoscopy among both men and women, were examined simultaneously. Multivariate logistic regression results showed that education levels, age, acculturation, marital status, and history of cancer had a strong influence on access to, knowledge of, and actual screening practices among the Hispanics sample. Perceived susceptibility to cancer across Hispanic subgroups was found to be relatively low in terms of individual risk and family history (Gorin & Heck, 2005).

2.4 HEALTH BELIEF MODEL AND CERVICAL CANCER SCREENING

In order to improve screening rates and decrease the morbidity and mortality rates of cervical cancer, it is important to understand the underlying factors associated with the likelihood of getting screened. Research based on the HBM to assess the beliefs, barriers, and perceptions of women at risk for cervical cancer, in particularly among the Hispanic population, has been crucial in further developing the knowledge base. Research findings could help guide culturally appropriate interventions tailored to Hispanic women.

A research study conducted by Leyva, Byrd, and Tarwater (2006) examined reliability of HBM construct scales as well as demographic characteristics of the association to Pap smear utilization. In this study, a sample of 150 women aged 18 and older residing in Ciudad Juarez, Mexico was randomly selected. In-person interviews were conducted at participants' homes by

trained community health workers using survey instruments based on the HBM. Survey instrument questions related to perceptions of susceptibility, seriousness, benefits, barriers, attitudes, and intention to get screened for cervical cancer. Participants were categorized by groups for comparison feasibility by outcome measures of “ever” and “never” having had a Pap test.

Results showed significant associations ($p < 0.05$) between “ever” having had a Pap test and being informed by their doctor, number of pregnancies, knowing someone diagnosed with cervical cancer, education, age, and health care access. Among the women in the “never” having had a Pap test group, associations were greater with attitudes about not contemplating getting screened, not perceiving barriers to access, and often delaying screening. As hypothesized, HBM constructs were predictive of behavior, because those in the “never” having had a Pap test group perceived themselves to be less susceptible to cervical cancer and their perceived barriers outweighed their perceived benefits. Perceived barriers among participants “never” having had a Pap test were time constraints, being worried about the test, and feeling uncomfortable around male health care providers.

An unexpected finding among this sample was the high rate response for “ever” having had a Pap test. Researchers explained this finding to have resulted from self-report bias or to the recent outreach intervention from a local foundation delivering cancer screenings. Overall, study findings identified important attitudes and beliefs about cervical cancer screening that need to be addressed in order to improve screening rates (Leyva, Byrd, & Tarwater, 2006).

Another study by Byrd, Peterson, Chavez, and Heckert (2004) applied the HBM to examine beliefs and attitudes regarding Pap smear testing. The study was conducted among Hispanic women aged 18-25 from U.S./Mexico border communities. Approximately 189 young women participated in the face-to-face survey, which included scale measures for acculturation

and HBM constructs. Findings on perceptions about the severity and susceptibility to cervical cancer and the benefits of getting screened were consistent with the aforementioned study.

Women who reported to be non-compliant with Pap tests had lower levels of acculturation, believed the Pap test would be painful, and did not know where to get screened. Barriers to screening behavior examined through HBM constructs, such as acculturation, knowledge, and awareness, influenced young women's screening behavior. Most importantly, this study demonstrated the need to improve cervical cancer screening because this sample reported suboptimal screening rates (Byrd, Peterson, Chavez, & Heckert, 2004).

Ingledeue, Cottrell, and Bernard (2004) conducted a cross-sectional study among 428 college women between the ages of 18 and 30. A 40-item survey was mailed to participants, which included questions that assessed HPV and cervical cancer knowledge, perceptions, and preventive behaviors. Results from survey responses showed that low rates of condom use, high risk sexual behavior, and limited use of oral contraceptives were behavioral factors that increased the risk for cervical cancer. The results obtained from examining HBM constructs demonstrated that perceived threat of HPV/cervical cancer was associated with low HPV knowledge, low perceived severity and perceived susceptibility to HPV infection. Researchers hypothesized that higher knowledge would mean higher perceived threat. However, results showed a negative correlation ($r = 0.242$, $p = .000$) between HPV knowledge and perceived threat of HPV/cervical cancer. Implications were that as women's knowledge increased, higher awareness of preventive methods was found to be associated with decreased perceived threat. Based on these results, it was suggested to improve awareness of risk factors and prevention methods for cervical cancer using health education approaches (Ingledeue, Cottrell, & Bernard, 2004).

In review, consistent findings across literature regarding cervical cancer education and screening behaviors related to HBM constructs suggested that women's perceptions are

important factors that influenced likelihood to get screened. In addition, a lack of evidence-based educational methods that are culturally appropriate highlighted the need for further research and evaluation of educational interventions for Hispanic women. Following the literature review implications, the aim of the proposed study was to evaluate the effectiveness of a community-based cervical cancer educational program among Hispanic women to improve perceptions and knowledge regarding cervical cancer and Pap smear testing. These results will inform the development and/or refinement of culturally appropriate cervical cancer health education approaches and health care screening practices.

CHAPTER 3: Methods

3.1 STUDY DESIGN

This study was an analysis of a quasi-experimental study conducted in 2006 by Dr. Sharon Thompson, funded by the National Institutes of Health Grant No. R24 MD000520-02 through the National Center on Minority Health and Health Disparities. The study was an evaluation of a cervical cancer educational curriculum on participant's knowledge acquisition and screening intentions. The study design was a pretest/posttest assessment among participants. The intervention group received the educational intervention while the comparison group did not receive any intervention. The unit of analysis consisted of two local community-based clinics.

3.2 PARTICIPANTS

The study was conducted among low-income Hispanic women 18 years and over. Participants included 131 women from two local community-based clinics located in El Paso, Texas. El Paso is part of the U.S.-Mexico border region, an area that stretches 2,000 miles from San Diego, California, to Brownsville, Texas. According to the 2000 U.S. Census Bureau, more than 12 million people live in U.S. counties and Mexican municipalities along the U. S.-Mexico Border. The estimated El Paso population from 2005-2007 was 592,627, from which 80.2% are Hispanics, 27% of people were in poverty, and 23-29.6% were uninsured (U.S. Census Bureau, 2000).

3.3 SETTING

The study was performed at two community-based health care clinics located on the Southwest US/Mexico border. Centro San Vicente (CSV) is a non-profit community health center that provides primary health care services and social services to a primarily low-income Hispanic population (CSV, 2008). La Fe Health Center is a grass-roots clinic providing health

care, social services, and education to an underserved community area to a predominantly Mexican-American population (Centro de Salud Familiar La Fe Inc., 2008). The intervention was delivered at CSV, while assessment from comparison group was performed at La Fe Health Center.

3.4 MEASURES

Participants in the intervention group were administered two in-person pretest/posttest questionnaires, while participants in the comparison group were administered the same assessment during one time point. Trained research assistants conducted survey interviews by probing for closed and open ended responses. Research assistants also abstained from answering questions regarding test information until after the survey was completed. The first instrument, adapted from Byrd et al. (2004) assessed knowledge, attitudes, and behaviors regarding cervical cancer screening. The second instrument used was the *Pre- and Post-Workshop Interview* initially developed for the community-based educational intervention by the ASHA in a cooperative agreement with the CDC to assess demographics, knowledge of cervical cancer and Pap smear testing, and history of Pap smear utilization (ASHA, 2008).

Accordingly, data were collected using the following instruments found in Appendix A: *Cervical Cancer Screening Survey* - This instrument consisted of a 44-item pre-test and 25-item post-test, which was developed by Byrd et al. (2004). Pre-test survey assessed demographics, health characteristics, sexual activity, use of birth control, and knowledge about Pap smear. Pre-test and post-test survey questions assessed the HBM constructs including perceived susceptibility, perceived severity, perceived benefits, and perceived barriers. For example, a question regarding perceived barriers included “*The Pap test is painful.*” Participants could choose from Likert-type responses ranging from 1 (strongly agree) to 5 (strongly disagree).

Pre/Post-Workshop Interview - The pre-test was a 23-item questionnaire, while the post-test had only seven items assessing knowledge acquisition. Pre-test survey included a demographic portion with eight open-ended items asking about age, education, source of income, ethnicity, birthplace, and residency. Also included was a four item portion assessing history of Pap test utilization that queried the participant about the length of time since their last Pap smear test was conducted, if they ever had a Pap smear test performed, how many times they have had a Pap test in the past 5-years, and if they had to return for follow-up testing. Four items assessed cervical cancer communication barriers in terms of ability to talk about sexual health with others such as provider, partner, friend, or nurse.

The knowledge portion contained 7-items that asked: (1) *“Tell me what a Pap Smear is”*; (2) *“If a woman has had an abnormal Pap result, why do you think she needs to return to the doctor or clinic for follow-up?”*; (3) *“When should women get their first Pap smear?”*; (4) *“How can cervical cancer be prevented?”*; (5) *“Can a woman have cervical cancer and not have any symptoms?”*; (6) *“What do you think causes cervical cancer?”*; (7) *“Can HPV be transmitted to another person through sex?”* All items were open-ended questions, and correct responses were scored with one point each while incorrect responses had no value.

3.5 PROCEDURES

The study was approved by the University of Texas at El Paso Institutional Review Board (Appendix BB), and received approval from both participating clinics, CSV (Appendix CC) and La Fe Health Center (Appendix DD). On-site recruitment of eligible individuals was performed by a trained research assistant at each clinic. The intervention group consisted of a convenience sample comprised of 59 women recruited from CSV clinic. Participants were first administered informed consent form in their language of choice (Appendix E), and assured that any information obtained was to be kept confidential. Once signed informed consent was obtained,

participants completed the *Pre-Workshop Interview* and *Cervical Cancer Screening Survey* instruments.

Participants were then scheduled to attend the intervention sessions consisting of the CCPP educational modules taught by a trained research assistant during two consecutive Saturdays. For feasibility purposes, the intervention was delivered in groups of five to twelve participants in a classroom setting at CSV clinic. Immediately after the trained research assistant completed the CCPP educational program, participants completed both post-test surveys. After completing the surveys participants were thanked for their participation and compensated with a gift card to a local store.

The comparison group was a convenience sample of 72 women recruited from La Fe Health Center. The research assistant first provided information about the study, then asked if women were interested in participating. After recruitment informed consent was provided in English or Spanish using consent forms found in Appendix E. Participants in the comparison group were administered a one-time survey without the educational program. Once participants completed surveys the trained research assistant answered any questions that the participants had, the participants were thanked for their time and effort, and they were compensated with a gift card to a local store.

3.6 CERVICAL CANCER EDUCATION PROGRAM

The Cervical Cancer Prevention Project (CCPP) was developed as part of a five-year cooperative agreement between the CDC and the ASHA. The overall goal was to increase Pap smear testing, and improve the prevention, detection, and control of cervical cancer (ASHA, 2008). Formative research was used to tailor this intervention specifically for Hispanic and African American women. Wilcher, Gilbert, Siano, and Arredondo (2002) conducted focus group interviews among the priority population to obtain information about their perceptions,

opinions, and reactions to the intervention. Findings about the participant's knowledge and attitudes of, and barriers to cervical cancer prevention were used as recommendations to frame culturally appropriate messages. As a result, one of the concepts incorporated into the intervention included the importance of getting a Pap smear screening even if there are no symptoms. It was explained that this concept mirrored the lack of knowledge about symptoms associated with cervical cancer and the common belief among Hispanics that health services are only needed when symptoms are present.

This unique study further improved program activities through an increased knowledge base for the planning and implementation of this model public health intervention.

Consequently, the community-based educational program consisted of six workshop modules.

Each module covered topics about cervical cancer and screening issues outlined in Table 1.CCPP

Module Overview.

Table 1. Cervical Cancer Prevention Project Module Overview

Session Number	Topics	Description
1	Our Bodies and Our Cervical Health	Introductory module provides basic information about female reproductive anatomy and cervical cancer
2	Pelvic Exams and Pap Smears	Describes in detail the procedures of a pelvic exam and Pap smear test
3	Pap Smear Results and Follow-up Care	Provides information to prepare for a Pap smear test, communication with providers, and importance of follow-up care when necessary.
4	Sexually Transmitted Disease Prevention	Presents community reflections on STDs and distinguishes between different levels of STD transmission risk
5	Communication Issues	Explores communication issues as they relate to cervical health
6	Provider Panel and Next Steps	Provides an opportunity for interaction between participants and health care providers to express questions and concerns

The modules consisted of workshop activities, group discussions, and informational presentations, and were designed to be very interactive and stimulate questions and discussion. Educational materials used in each module were brochures, videos, flipcharts, and games. For example, an English and Spanish version educational brochure titled *The Pap Smear, Cervical Cancer, HPV and What All Women Should Know*, provided information on characteristics of women at risk for cervical cancer and explained the clinical procedures of a Pap smear and follow up care (see Appendix G).

Other activities covered issues regarding cultural barriers and how to overcome them. Discussion topics revolved around individual experiences of obtaining a Pap smear, how to prepare for one, and communicating with health care providers. In summary, each CCPP module took approximately 2 hours structured in to a classroom format and lead by a trained facilitator. A manual for one of the program modules is found in Appendix H.

3.7 APPROACHES TO ANALYSES

All data analyses were performed using *SPSS 15.0* for Windows. The independent variables included group (intervention vs. comparison) and time (pre vs. post), the latter for those receiving the intervention. The dependent variables used were knowledge of cervical cancer, Pap smear testing, and HBM indicators and constructs including perceived susceptibility, perceived severity, perceived benefits, and perceived barriers.

Descriptive statistics including means, standard deviations, and frequencies were performed to provide participant characteristics. Cronbach's alpha coefficients were used to assess internal consistency reliability of the HBM construct scales. For measures with acceptable levels of reliability ($\alpha > .50$), a total scale score will be used. Items from measures without acceptable reliability were individually analyzed as indicators of diverse constructs.

The unusual design of the study, specifically the presence of pre-test and post-test observations for the intervention group, and the presence of post-tests only for the comparison group dictated a mixed inferential statistics strategy. Paired t-test analyses assessed whether there were significant changes in knowledge and HBM constructs among participants in the intervention group, whereas one-way between-subjects analyses of variance (ANOVA) assessed whether the intervention group differed from the comparison group on the same variables. In addition, ANOVA was used to assess differences between groups across participant's characteristics with those found to be significantly different were further examined using an analyses of covariance (ANCOVA) to control for differences.

CHAPTER 4: Results

4.1 PARTICIPANT CHARACTERISTICS

There were a total of 131 female participants in the study from which 59 were part of the intervention group, and 72 were from the comparison group. The average age was 45 years with a range of 18-84. The majority of participants reported to be of Hispanic ethnicity, and only 2% considered themselves non-Hispanic white. Most participant's household annual income levels were below \$30,000. In regards to health insurance, 63% of participants reported not having any type and the rest of participants had some type of public or private insurance.

More than 50% of participants spoke Spanish and 2% spoke only English. Other participants reported speaking Spanish better than English (14%), while 9% spoke English better than Spanish. Regarding education attained, 38% of participants grade level completed ranged from not having any education to eighth grade, 34% were in the 9th-12th grade range, and 28 % completed more than high school. Further detailed results are provided in Table 2. Frequency Distribution of Participant's Characteristics. To account for differences between groups regarding the distribution of age, education, income, language, and Pap smear history, a one-way ANOVA demonstrated that only education attainment and ability to talk with a partner were significantly different ($p < .05$).

Table 2. Frequency Distribution of Participant's Characteristics

Characteristic	n (%)	Mean	SD
Age		45	14.68
<i>Race or Ethnicity</i>			
Hispanic	121 (98)		
White / Other	3 (2)		
<i>Annual Household Income</i>			

$\leq \$10,000$	53 (54)
$\$10,000 \leq \$20,000$	28 (29)
$\$20,000 \leq \$30,000$	11 (11)
$> \$30,000$	7 (7)

Medical Health Insurance

Not having any type	64 (63)
Medicaid	14 (14)
Private Insurance	10 (10)
Other	12 (12)

Language Spoken

English only	2(2)
Spanish only	75(55)
English and Spanish equally	25(19)
Spanish better than English	18(14)
English better than Spanish	12(9)

Educational Attainment

0-8 years	46 (38)
9-12 years	31 (34)
More than high school	34 (28)

4.2 INTERNAL CONSISTENCY RELIABILITY

Internal consistency reliability of the HBM construct scales resulted in reliable total scale measures for perceived benefits ($\alpha=.70$) and perceived barriers ($\alpha=.70$). Total scale measures without acceptable reliability included perceived susceptibility ($\alpha=.34$) and perceived severity ($\alpha=.13$). As noted above, items from these latter two construct scales were individually analyzed as single item indicators of diverse constructs.

4.3 PRIMARY FINDINGS OF THE HBM CONSTRUCTS

Within-group analyses. Paired t-test analyses examined changes in perceptions among the intervention group from pre-test to post-test. Findings demonstrated significant effects ($t(55) = -$

2.89, $p=.000$) on participant's perceptions that getting a Pap smear screening was difficult. Overall, total scale scores were lower at pre-test ($M=15.93$, $SD=4.88$), which indicated they agreed with perceived barriers to Pap smear screening. In contrast, higher post-test responses ($M=18.56$, $SD=4.20$) disagreeing with perceived barriers indicated improvement towards facilitating perceptions regarding Pap smear screening. Participant's perceived susceptibility for individual item measures had significant changes, $t(46) = 2.54$, $p=.014$), as participants initially agreed that being sexually active puts a woman at greater risk of cervical cancer ($M_{pre}=2.11$, $SD=.84$), while more participants strongly agreed with this statement after the intervention ($M_{post}=1.72$, $SD=.85$). Items for perceived benefits were not found to have a significant effect in differences from pre-test to post-test.

Between-group analyses. To assess for differences on specific HBM-based items between groups at post-test a one-way ANOVA was performed. Those receiving the intervention perceived themselves more susceptible to cervical cancer than the comparison group. Specifically, the intervention group strongly agreed with young women being at risk for cervical cancer ($M=1.78$, $SD=.77$) than the comparison group that just agreed ($M=2.06$, $SD=.42$), $F(1, 125) = 6.70$, $p=.011$. Conversely, an opposite effect in terms of how the constructs modify behavior based on the HBM because the intervention group perceived that cervical cancer is easily cured. The intervention group strongly agreed ($M=1.95$, $SD=.92$) to this perception as opposed to the comparison group ($M=2.47$, $SD=.57$), $F(1, 111) = 12.92$, $p=.000$).

Differences regarding perceived benefits of Pap smear screening were similar across groups, however they were significant. This included both the intervention ($M=1.36$, $SD=.74$) and comparison group ($M=1.71$, $SD=.46$) agreeing with perceptions regarding the importance of

having a Pap test to know about their health, $F(1, 125) = 10.47, p = .000$)¹. Also intervention (M=1.66, SD=.91) and comparison groups (M=1.89, SD=.31) agreed to the perceived benefit that Pap smear screening assists in early detection for cervical cancer to be easily cured, $F(1, 122) = 4.02, p = .047$.

Several items for perceived barriers between-groups were significantly different. Participants in the intervention average responses (M=3.24, SD=.90) disagreed with perceived barriers about the Pap smear not making them worried. The comparison group did agree that the Pap smear made them worry (M=2.59, SD=.73), $F(1, 122) = 20.55, p = .000$. The intervention group disagreed to the Pap smear being painful (M=3.05, SD=.77), where as the comparison group (M=2.72, SD=.57) perceived Pap smears as being painful, $F(1, 124) = 7.62, p = .007$. Also the comparison group agreed with the perceived barrier that only women who have had babies need the Pap smear (M=2.94, SD=.54), as opposed to those receiving the intervention at post-test (M=3.41, SD=.73), $F(1, 126) = 17.40, p = .000$. Specific results of HBM-based items are provided in Table 3. Participant Responses for HBM-Based Items.

4.4 EFFECTS OF PROGRAM ON KNOWLEDGE ACQUISITION

Within-group analyses. A paired t-test analysis was performed to assess knowledge acquired from pre-test to post-test time measures among the intervention group. The effect for pre-test vs. post-test assessment was significant, $t(58) = -2.19, p = .033$. These results indicated that pre-test scores were lower ($M_{pre} = .64, SD = .21$) than post-test scores ($M_{post} = .71, SD = .24$), suggesting there was an improvement in knowledge among intervention group regarding cervical cancer and Pap smear screening.

¹ Based on the ANCOVA when controlling for significant differences between groups in education and ability to talk with partner about sexual health this result became non-significant ($p > .05$).

Between-group analyses. To further evaluate the effect of the intervention, a one-way ANOVA evaluated differences in knowledge of cervical cancer and Pap smear screening at post-test between intervention and comparison groups. The results showed that mean post-test scores were significantly greater among the intervention group ($M = .71$, $SD = .24$) than the comparison group ($M = .61$, $SD = .17$), $F(1, 129) = 8.51$, $p = .00$.

Table 3. Participant Responses for HBM-Based Items

HBM-BASED ITEMS	INTERVENTION MEAN/ SD	COMPARISON MEAN	F
<i>Perceived Severity</i>			
Young women are at risk for cervical cancer.	1.78/.77	2.06/.42	6.70*
Being sexually active puts a woman at greater risk for cervical	1.79/.88	2.30/.56	14.11**
I am not at risk for cervical cancer.	3.21/1.04	2.65/.62	13.71**
<i>Perceived Susceptibility</i>			
There are effective treatments for cervical cancer.	1.75/.87	1.94/.47	2.08
Having cervical cancer would make a woman's life difficult.	2.40/.90	2.12/.51	2.44
Cervical cancer is easily cured.	1.95/.92	2.46/.57	12.94**
Cervical cancer is not as serious as other types of cancer.	2.81/.95	2.87/.51	.22
<i>Perceived Benefits</i>			
It is important for a woman to have a Pap test so she will know if she is healthy.	1.36/.74	1.71/.46	10.47**
If cervical changes are found early they are easily curable.	1.66/.91	1.89/.31	4.02*
The Pap test can find cervical changes before they become cancer.	1.67/1.50	1.95/.41	2.10
Total scale score = $\alpha > .50$			
<i>Perceived Barriers</i>			
Most young unmarried women that I know go to have Pap smears	1.98/.96	2.26/.54	3.78
Getting a Pap test would only make me worry	3.24/.90	2.59/.73	20.55**
I don't know where I could go if I wanted a Pap test.	3.12/.87	3.04/.36	.51
My partner (boyfriend/husband) would not want me to have a Pap	3.20/.96	2.98/.53	2.27
It is too expensive to have a Pap test	2.93/.88	2.85/.47	.38
Only women who have had babies need a Pap test.	3.41/.73	2.94/.54	17.40**
If a woman has not had sex, a Pap test will take away her virginity.	3.37/.79	2.91.60	11.94**
The Pap test is painful	3.05/.77	2.72/.57	7.62**
If a young unmarried woman goes for a Pap smear, everyone will assume she is having sex.	3.21/.90	2.57/.66	20.42**
It is too embarrassing to have a Pap test.	2.74/.90	2.35/.70	7.73**
Total scale score = $\alpha > .50$			

* = $p \leq .05$, ** = $p < .01$

CHAPTER 5: Discussion

The overall aim of the present study was to evaluate the effectiveness of the CCPP community-based education program on participants' perceptions and knowledge acquisition regarding cervical cancer and Pap smear screening. This is important because the review of the literature highlighted the need to identify culturally appropriate interventions for Hispanic women who are disproportionately affected by this form of cancer. To address this issue, a study in 2006 was conducted among low-income Hispanic women by implementing the CCPP education program. Data collected from this study were used for secondary data analyses using pre-test and post-test assessment among an intervention group and one-time assessment among a comparison group.

First, data analyses were performed to assess whether there were significant changes in knowledge about cervical cancer and Pap smear screening. It was anticipated that these analyses would be significant, such that the intervention group would report increased knowledge about cervical cancer and Pap smear screening from pre-test to post-test assessment. Primary findings demonstrated that the intervention group had significant improvements in knowledge acquisition. This indicated that the CCPP educational program helped women in the intervention group learn about factors associated with cervical cancer and prepared them to seek Pap smear screening services. Raising awareness further assists in developing socio-psychological factors that influence cervical cancer health related behaviors such as screening, sexual activity, and condom use (Bosch et al., 1995; Harmon, Castro, & Coe, 1996; Giuliano, Papenfuss, Schneider, Nour, & Hatch, 1999; McFarland, 2003; Gorin & Heck, 2005).

Moreover, it was hypothesized that post-test knowledge scores would be higher among the intervention group than the comparison group. Based on evidence from the data analysis,

this hypothesis was supported because participants in the intervention group had a higher average knowledge score. Unfortunately, effects cannot be solely ascribed to the intervention in the absence of baseline measures for the comparison group from which the improved knowledge score from pre-test to post-test could be compared. If there was a pre-test measure and the difference in time measures among comparison group versus intervention was still higher, a stronger implication could be made. There is no evidence demonstrating otherwise or that the comparison group did not also have an improved knowledge score. Implications about the effectiveness of the intervention could still be inferred because significant effects on knowledge acquisition were relevant to the short time interval from pre-test and post-test. This further attributes results to the intervention and not to other factors that could have influenced the increase in knowledge.

In general, responses on HBM-based items indicated that participants in the intervention acknowledged perceived barriers to Pap smear screening were not as difficult to overcome, perceived a greater susceptibility to cervical cancer in terms of high risk sexual activity, and perceived that cervical cancer was serious for specific items. Effectiveness of the intervention was more evident in reducing perceived barriers to Pap smear screening among the intervention group with a greater change than anticipated.

In addition to the reliability of the scale measure of perceived barriers, significant changes regarding Pap smear screening were demonstrated from pre-test to post-test. This is specifically important because consistent findings across other studies based on constructs of the HBM have demonstrated that perceptions about Pap smears may pose barriers to comply with recommended screenings (Byrd et al, 2004; Leyva et al., 2006; Ingledue, Cottrell, & Bernard, 2004). Therefore, the effects of this intervention could further impact the likelihood of obtaining a Pap smear screening since the ability to reduce perceived barriers resulted. Perceived barriers

among Hispanic women related to cultural aspects that were reduced by the intervention included: embarrassment, the belief that a Pap test will take away their virginity, and partner influence.

Perceived susceptibility was also influenced by the intervention. Participants understood that being sexually active is a risk factor for cervical cancer. As a result, it can also be implied that the educational program module sessions about cervical health and sexually transmitted diseases appropriately addressed this information. The HBM results indicate that a person should regard the disease or illness as serious (perceived severity) and perceived they were susceptible to the disease/illness in order for a health behavior to take place.

With respect to findings from post-test assessment between the groups, it can be implied that perceptions regarding cervical cancer and Pap smear screening did differ within intervention group. In some cases, perceptions of the intervention group based on the HBM faced the direction towards the likelihood of the health behavior desired in this case obtaining a Pap smear screening. For instance, regarding perceived barriers among the intervention group, results showed participants disagreed with Pap smear screening being painful, that it would make them worry, and did not consider Pap smear screening only for women who have had kids. This means that information about Pap smear screening helped participants understand that these are not barriers. Therefore, based on the HBM, these perceptions will tend to facilitate the likelihood that an individual would perform the desired health behavior, in this case cervical cancer screening. Perhaps, in general, women feel that these are barriers to getting screened and since knowledge acquisition increased, it helped them learn that these are common misconceptions, but that they can overcome these barriers.

Another implication that may have to do with knowledge acquisition was that participants in the intervention group perceived that cervical cancer is easily cured. Based on the HBM, the desired

effect should have been that they would have had a greater perceived severity, but perhaps because of educational activities emphasizing the effectiveness of a Pap smear screening and raising awareness about cervical cancer caused them to perceive cervical cancer as less serious. This does not necessarily indicate that the intervention was not effective, but that according to the HBM different approaches are needed to obtain the desired effect. Conversely, the reliability of the perceived severity scale had low consistency which could be another factor not accurately measuring this effect.

In conclusion, the hypotheses were generally supported as the evaluation of the community-based educational program met anticipated results for perceptions and knowledge acquisition regarding cervical cancer and Pap smear testing. As to applying the educational program for future planning and implementation, further research is need and limitations should be considered.

5.1 LIMITATIONS

Threats to internal validity that should be considered include the reliability of the HBM instrument, self-report, convenience sampling, and lack of random group assignment. The HBM scales for perceived severity and perceived susceptibility across other studies have not been found to be reliable (Byrd et al, 2004; Leyva et al., 2006; Thompson et al., 2009). This causes a limited accuracy for measuring HBM-based items needed to assess women's perspectives regarding their susceptibility to cervical cancer and seriousness of the disease. These consistent findings also highlight the need to address instrumentation.

Another limitation of the study occurred because of self-reported data collection. Specifically, because of the sensitive topic of sexuality, the participants could have been reluctant to disclose personal information. This issue was dealt with by assuring participants

about their confidentiality, creating a comfortable environment by establishing a good rapport, and attending to participants concerns or needs.

The quasi-experimental design was also a limitation due to the convenience sample that was recruited from two community-based clinics. There was neither random selection nor random assignment which affected the equal distribution of participants and representativeness. To account for selection bias and lack of random assignment, demographic characteristics were reported and recruitment strategies were aimed specifically for Hispanic women demonstrating an equal sample distribution. The units of analyses also assisted in identifying a representative sample and common groups.

Regarding threats to external validity, it is important to highlight that this was a culturally tailored and community-based intervention for Hispanic women. The results of the intervention for improving specific aspects of perceptions and knowledge among intervention group may not be generalized as the sample may not be representative of the Hispanic population. This is because there are other factors such as social networks and environmental structures that differ among Hispanics in other geographical regions of the U.S. Therefore, when planning and implementing an intervention in any other community, further assessment should be conducted.

5.2 FUTURE DIRECTIONS

From the evaluation of this educational program several opportunities for improvement were identified. In terms of study design, randomized sampling techniques should be applied in order to generalize findings to the priority population. A more rigorous study design would also include a pre-test and post-test measures among both groups (comparison and intervention) and a cross-over effect to accurately attribute effects to the intervention group. Also, the educational intervention addressed other topic areas not assessed through the instrument used, such as the provider panel discussion, group activities, and women's opinions about the program. A

qualitative study could be employed to evaluate the other attributes of the educational intervention.

The instrumentation also needs to be refined in terms of how to properly term the questions. For instance, the question asking what causes cervical cancer included responses more related to risk factors. Perhaps participants were unsure of what the item was asking. Adding a question about factors that increase their risk for cervical cancer would be useful. In addition, responses to questions about risk factors could have been confused with general concepts used to address cervical cancer and breast cancer issues in combination for educational and public awareness campaigns. To combine common forms of cancer among women as part of awareness campaigns is probably for feasibility purposes but the audience may interpret messages incorrectly for which risk factors and screening guidelines are not well understood. Cervical cancer, however, is more related to sexually transmitted infections, and breast cancer is more of a genetically predisposed disease. Although breast cancer was not addressed in this educational intervention, participant's responses were attributed more to breast cancer rather than to cervical cancer. This was observed with participants responses attributing breast cancer screening recommendations, causes, and risk factors to those of cervical cancer such that is hereditary rather than sexually transmitted. Responses for risk factors of cervical cancer also included that women over 40 were at higher risk as in breast cancer. Perhaps disengaging these diseases would help audiences understand that cervical cancer is serious and sexually transmitted which could also help improve their knowledge and perceptions of this type of cancer.

In respect to the development of the HPV vaccine and time when program was developed updates to the intervention should also be considered. This could also be the opportunity to integrate other concepts and theories. Theory-based research would also guide future interventions specifically tailored for Hispanic women's perceptions and beliefs regarding Pap

smear screening. The use of other recognized theories could also be useful to evaluate this program such as the Theory of Reasoned Action and the Social Cognitive Theory because there are other underlying factors influencing a behavior that the HBM does not incorporate. Other theories may also be part of existing scales measuring cervical cancer screening behaviors that perhaps are more reliable. In that case, for future studies it would be recommended that the consistency reliability of the scales be improved.

Public health approaches to disseminate the use of interventions could also be theory-based. For example, the Diffusion of Innovations Theory could be used to disseminate lessons learned and limitations from the study to be able to facilitate the use of this intervention. Learning the process by which populations adapt or accept a new concept would assist in understanding how Hispanic women respond to new Pap smear screening recommendations and why they are non-compliant. Integrating these and other recommendations could be based on expert panel reviews and pilot-testing which would also be a good opportunity to improve internal consistency reliability of the HBM-based measures.

5.3 CONCLUSIONS

Disparities in cervical cancer incidence rates persist particularly across racial/ethnic minority groups (McDougall, Madeleine, Daling, & Li, 2007). Among Hispanic women the age-adjusted incidence rate was 12.2 per 100,000 persons compared to 7.5 per 100,000 among non-Hispanic white females (U.S. Cancer Statistics Working Group, 2007). Although this form of cervical cancer is easily detected through the recommended screening, Hispanic women are less likely than non-Hispanic white women to get screened (USDHHS, 2000). Evidence from the literature review suggested the need to identify culturally appropriate interventions in response to the consistent findings about socio-psychological factors such as attitudes and perceptions (Harmon, Castro, & Coe, 1996; McFarland, 2003; Gorin & Heck, 2005).).

The community-based educational program was specifically aimed to address the aforementioned issues. An evaluation of this intervention assisted in assessing the effectiveness of perceptions and knowledge regarding cervical cancer and Pap smear screening. Primary findings demonstrated positive effects that may empower women to comply with recommended routine screening. Specific results also suggested that the educational program provided the means to appropriately address cultural beliefs and perceptions. Limitations were discussed and can inform future research and implementation of the educational program. In conclusion, the intervention should be considered for the planning, implementation, and further evaluation to tailor interventions to address the cultural and educational needs of Hispanic women in other communities affected with disproportionately high rates of cervical cancer.

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Appendix A

Workshop Dates: _____	Code: _____
Interviewer Name: _____	Date of Interview: _____

Pre - Workshop Survey

Hello. My name is _____ and I work with Dr. Thompson from the UTEP Department of Health Promotion. This whole survey is confidential. Before we begin let me just say that I will be glad to answer any questions that come up during this interview after the survey, but I really want to hear what you already know or what you have heard before I give you any new information.

QUESTION	INTERVIEWER NOTES
1. Tell me what a Pap smear is.	Mandatory Probe: What is the difference between a Pelvic Exam and a Pap smear?
READ: A Pap Smear is a test to check to see if you have cells on your cervix that are cancerous or that could become cancerous.	
2. Thinking back, how many times have	Optional: Since 1997

you had a Pap smear in the past five years?	
3. When was the last time you had a Pap smear?	Optional: Have you had one since last Easter/Spring/April?
4. Have you EVER had an abnormal Pap smear?	If NO SKIP to number 6 If YES ask: What did they tell you was wrong?
5. Did you go back to the doctor or clinic for more exams?	
6. If a woman has had an abnormal Pap result, do you think she needs to return to the doctor or clinic for follow-up?	
7. When should women get their first Pap smear?	
8. How can cervical cancer be prevented?	
9. Can a woman have cervical cancer and not have any symptoms?	
10. What do you think causes cervical cancer?	If the woman does NOT mention HPV, SKIP to number 12
11. Can HPV be transmitted to a person through sex?	
READ: We are interested in hearing how easy or hard it is for you to talk with others about your sexual health.	
12. Do you talk with your partner about sexual health?	If YES: How does that go? If NO: What makes that hard?
13. Do you talk with your friends or family members about Pap smears?	If YES: How does that go? If NO: What makes that hard?
14. Do you talk with your doctor about Pap smears?	If YES: How does that go? If NO: What makes that hard?
15. Do you talk with your nurse about Pap smears?	If YES: How does that go? If NO: What makes that hard?
READ: Now we'd like to ask some questions to give us more information about the women who are coming to the workshops. REMEMBER, all of your answers are confidential.	
16. How old are you?	

17. How many years of school have you completed?	
READ: People receive money from all different places. Some people get money through their own pay check, their partner's pay check, work-first, food stamps or relatives.	
18. Please tell me what is the source of your family income?	Ask how much they get from each source and write down whether it's monthly or yearly.
19. Counting you, how many adults and children are supported by this income?	
20. What is your ethnicity?	
21. Where were you born? (if born in the US skip to question 23)	
22. How long have you lived in the US?	
23. In what city do you live?	

Workshop Dates: _____

Code: _____

Name: _____

Date of Interview: _____

Post-Workshop Interview

1. Tell me what a Pap Smear is.

Mandatory Probe: What is the difference between a Pap smear and a pelvic exam?

READ: *A Pap smear is a test to check if you have cells on your cervix that are cancerous or that could become cancerous.*

2. If a woman has had an abnormal Pap result, why do you think she needs to return to the doctor or clinic for follow-up?

3. When should women get their first Pap smear?

4. How can cervical cancer be prevented?

5. Can a woman have cervical cancer and not have any symptoms?
If no, what are some of the symptoms?

6. What do you think causes cervical cancer? If the woman does not mention HPV don't ask #7.

7. Can HPV be transmitted to another person through sex?
If no, how do people get HPV?

Interviewer Initials _____

ID# _____

Cervical Cancer Screening Survey

Thank you for agreeing to complete this interview. This is not a test--in most cases there is no right or wrong answer. All of your answers are completely confidential, and you can choose not to answer any of the questions you feel uncomfortable answering. We will not put your name on this survey.

1) How old are you? _____

2) What do you consider your ethnicity to be?

Mexican/Mexican-American..... 1
Other Hispanic..... 2
Non-Hispanic White .. 3
Black/African American..... 4
Asian/Pacific Islander 5
American Indian..... 6
Other (specify _____) 7
Refused99

3) In general, what language(s) do you read or speak?

Only Spanish 1
Spanish better than English 2
Both Equally..... 3
English better than Spanish..... 4
Only English 5
Refused99

4) What was the language(s) you used as a child?

Only Spanish 1
Spanish more than English..... 2
Both Equally..... 3
English more than Spanish..... 4
Only English 5
Refused99

5) What language (s) do you usually speak at home?

Only Spanish 1
Spanish more than English..... 2
Both Equally..... 3
English more than Spanish..... 4
Only English 5
Refused99

6) In which language (s) do you usually think?

Only Spanish 1
Spanish more than English..... 2
Both Equally..... 3
English more than Spanish..... 4
Only English 5
Refused99

7) What language(s) do you usually speak with your friends?

Only Spanish 1
Spanish more than English..... 2
Both Equally..... 3
English more than Spanish..... 4
Only English 5
Refused99

The next questions have to do with your past health care. Some of the questions in this survey ask about cervical cancer screening or Pap smears. This is a test that a doctor or nurse practitioner does. During this test, a speculum (metal or plastic instrument) is placed in the woman's vagina, and a swab is rubbed over the uterine cervix to remove a few cells. These cells are then sent to a laboratory for analysis.

8) Have you ever been pregnant?

Yes 1
No 2 (If NO, go to question 12)
Refused99

9) Have you received prenatal care from a medical provider (doctor or nurse)?

Yes 1
No 2 (If NO, go to question 11)
Refused99

10) During this care were you given a Pap smear (a test for cervical cancer)?

Yes 1
No 2
Unsure..... 3
Refused99

11) Are you currently pregnant?

Yes 1
No 2
Unsure..... 3
Refused99

12) Have you ever had a Pap test?

Yes 1
No 2

Unsure..... 3
Refused99

13) If you have had a Pap test, how long ago was the last one?

Within the last year.... 1
Two years ago 2
Three years ago 3
More than three years 4
I have never had one.. 5(If NEVER, go to question 15)
I don't remember 6
Refused99

14) If you have had a Pap test, where did you get the last one?

Medical clinic..... 1
Planned Parenthood ... 2
Private doctor 3
Other (.....) 4
Refused99

15) Has anyone in your family had cervical cancer?

Yes 1 (If yes, who was that?.....)
No 2
Unsure..... 3
Refused99

The next questions are about sexual activity and birth control. Remember that all answers are completely confidential!

16) Have you ever had sexual intercourse?

Yes 1
No 2 (If NO, go to question 22)
Refused99

17) Are you currently sexually active (had sex in the last year)?

Yes 1
No 2 (If NO, go to question 22)
Refused99

18) Are you using any form of birth control?

Yes 1
No 2 (If NO, go to question 22)
Refused99

19) Please tell me for each of these forms of birth control any you are using now and where you got it. If you got a method in both Mexico and the US, tell me and I will mark them both.

			Country where you got it	
a) Birth control pills	Y	N	US	Mexico
b) IUD	Y	N	US	Mexico
c) Diaphragm	Y	N	US	Mexico
d) Cervical cap	Y	N	US	Mexico
e) Rhythm	Y	N	(If RHYTHM and /or	
f) Withdrawal	Y	N	WITHDRAWAL, go to Q22)	
g) Norplant	Y	N	US	Mexico
h) Depoprevara (shot)	Y	N	US	Mexico
i) Condoms	Y	N	US	Mexico
j) Sterilization/tubal (self)	Y	N	US	Mexico
k) Vasectomy (partner)	Y	N	US	Mexico

20) When you got your birth control, did you also get care from a health care provider (doctor/nurse)?

Yes 1
 No 2 (If NO, go to question 22)
 Refused99

21) Did you get a Pap smear at that time?

Yes 1
 No 2
 Unsure..... 3
 Refused99

The next questions are opinion questions. There are no right or wrong answers. Please tell me whether you Agree, Somewhat Agree, Disagree, or Strongly Disagree with each statement.

22) Cervical cancer only happens to women over 50.

I Strongly Agree 1
 I Agree 2
 I Disagree 3
 I Strongly Disagree.... 4
 Refused99

23) Being sexually active (having sex) puts a woman at greater risk of cervical cancer.

I Strongly Agree 1
 I Agree 2
 I Disagree 3
 I Strongly Disagree.... 4
 Refused99

24) Young women are at risk for cervical cancer.

I Strongly Agree 1
I Agree 2
I Disagree 3
I Strongly Disagree.... 4
Refused99

25) I am not at risk for cervical cancer.

I Strongly Agree 1
I Agree 2
I Disagree 3
I Strongly Disagree.... 4
Refused99

26) Cervical cancer is easily cured.

I Strongly Agree 1
I Agree 2
I Disagree 3
I Strongly Disagree.... 4
Refused99

27) Having cervical cancer would make a 'woman's life very difficult.

I Strongly Agree..... 1
I Agree 2
I Disagree 3
I Strongly Disagree.... 4
Refused99

28) There are effective treatments for cervical cancer.

I Strongly Agree..... 1
I Agree 2
I Disagree 3
I Strongly Disagree.... 4
Refused99

29) Cervical cancer is not as serious as other types of cancer.

I Strongly Agree..... 1
I Agree 2
I Disagree 3
I Strongly Disagree.... 4
Refused99

30) The Pap test can find cervical changes before they become cancer.

I Strongly Agree 1
I Agree 2
I Disagree 3
I Strongly Disagree.... 4

Refused99

31) If cervical changes are found early they are easily curable.

I Strongly Agree 1

I Agree 2

I Disagree 3

I Strongly Disagree.... 4

Refused99

32) It is important for a woman to have a Pap test so she will know if she is healthy.

I Strongly Agree 1

I Agree 2

I Disagree 3

I Strongly Disagree.... 4

Refused99

33) Getting a Pap test would only make me worry.

I Strongly Agree 1

I Agree 2

I Disagree 3

I Strongly Disagree.... 4

Refused99

34) The Pap test is painful.

I Strongly Agree 1

I Agree 2

I Disagree 3

I Strongly Disagree.... 4

Refused99

35) It is too expensive to have a Pap test.

I Strongly Agree 1

I Agree 2

I Disagree 3

I Strongly Disagree.... 4

Refused99

36) It is too embarrassing to have a Pap test.

I Strongly Agree 1

I Agree 2

I Disagree 3

I Strongly Disagree.... 4

Refused99

37) If a woman has not had sex, a Pap test will take away her virginity.

I Strongly Agree 1

I Agree 2

I Disagree 3

I Strongly Disagree.... 4
Refused99

38) Only women who have had babies need a Pap test.

I Strongly Agree 1
I Agree 2
I Disagree 3
I Strongly Disagree.... 4
Refused99

39) I don't know where I could go if I wanted a Pap test.

I Strongly Agree 1
I Agree 2
I Disagree 3
I Strongly Disagree.... 4
Refused99

40) My partner (boyfriend/husband) would not want me to have a Pap test.

I Strongly Agree 1
I Agree 2
I Disagree 3
I Strongly Disagree.... 4
Refused99

41) If a young unmarried woman goes for a Pap smear, everyone will assume she is having sex.

I Strongly Agree 1
I Agree 2
I Disagree 3
I Strongly Disagree.... 4
Refused99

42) Most young unmarried women that I know go to have Pap smears done.

I Strongly Agree 1
I Agree 2
I Disagree 3
I Strongly Disagree.... 4
Refused99

Finally, we have a few questions about what you have heard about cervical cancer screening.

43) When should a woman have her first Pap test? (mark all that apply)

Age 18..... 1
Age 20..... 2
After her first baby 3
Any age if she has had sex..... 4
Refused99

44) What do you think might put a woman at higher risk of cervical cancer? (mark all that apply)

Having more than one sex partner..... 1
Smoking 2
A sex partner who has had other partners..... 3
Family history 4
Other..... 5
Refused99

45) What was the last grade in school you completed?

Grade 0-12 (write in number of last grade) ____
Trade or technical training after high school? 13
1-3 years college/Associate degree/Junior college 14
4 year college graduate/bachelors degree 15
Postgraduate/Masters/Doctorate/Law degree 16
No answer/refused 99

46) What type of medical insurance do you have?

Doesn't have insurance..... 1
Medicaid 2
Private insurance 3
Other 4

Thank you for completing this interview!

Appendix B

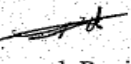


THE UNIVERSITY OF TEXAS AT EL PASO

MEMORANDUM

Office of Research and
Sponsored Projects

TO: Sharon Thompson, Ph.D., Assistant Professor
Health Promotion
Principal Investigator(s)

FROM: Karen Hoover, B.A., B.S., C.I.P. 
Institutional Coordinator for Research Review

DATE: August 29, 2005

SUBJ: RENEWAL and AMENDMENT - Protocol #1799: "The Evaluation of HPV and Cervical Cancer Community-Based Prevention Education Curriculum Among Mexican Women on the Southwest US/Mexico Border"
PROTOCOL PERIOD: August 1, 2005 through July 31, 2006

This research protocol, presented for renewal and amendment, has been reviewed and approved by The University of Texas at El Paso Institutional Review Board and is in accord with University policy. This review indicates that the project is meritorious, that your safeguards against risks to human subjects are adequate, and that the proposed consent forms are appropriate.

You have passed an IRB compliance test, in accordance with the recommendations of the Office of Human Research Protections.

You have the responsibility to protect the rights and welfare of human research subjects, including the requirements to provide each subject with an IRB-approved informed consent document, and to promptly report any injuries or unexpected risks to this office. If your research significantly changes or you involve human subjects in activities not described in the protocol, you should submit an amended research protocol to this office.

Please provide an email progress report and current informed consent form on your research activities before the expiration date listed above. A copy of the informed consent documents is attached.

El Paso, Texas
79968-0587
(915) 747-5680/5689
FAX: (915) 747-6474



Appendix C

From: Sias, Jeri J.
Sent: Wednesday, November 16, 2005 11:30 AM
To: Thompson, Sharon
Cc: 'jalonzo@csv.tachc.org'; Sias, Jeri J.; 'Melissa Aguirre'
Subject: RE: CSV protocol - Thompson - Cervical Cancer

Hello Sharon:

The CSV P&T did **approve** the Cervical Cancer Project (CSV Protocol # 05-06) with the following conditions:

- 1) **CSV orientation (~ ½ - 1 day).** Contact: 859-7545 (general number) - Human Resources or Zoraida Gallegos, Senior Admin Asst. (x213), to identify a time for orientation. The orientation should be completed by any researcher that will be in the clinic setting.
- 2) **Recruitment.** We are unable to commit staff time from the promotoras for active recruitment of patients (e.g., phone calls). They could however, potentially distribute a flyer during their patient education classes. Also flyers could be posted in a few strategic areas in the clinic with a phone number to call. These flyers should be reviewed with Melissa Aguirre, Health Education Director (859-7545, x 212) for content and for posting sites.
- 3) **Classroom space.** Please contact Melissa Aguirre, Health Education Director (859-7545, x 212) to reserve classroom space.

You may start your study/workshops upon completion of the above items. The following reports are requested for our documentation:

- Annual Progress Report – **November 15, 2006**
- Written summary (may be the same as annual report)
- Any adverse events should be reported immediately to our medical director, Dr. Jesus Alonzo, 859-7545
- If Centro San Vicente is cited in public dissemination of data (e.g., publication or poster), please let us know so that we may review/be aware of the document(s).

We wish you success in your study so that we may better serve the patients in our communities.

Sincerely, Jeri Sias

Jeri J. Sias, Pharm D
Clinical Assistant Professor
UTEP/UT-Austin Cooperative Pharmacy Program

Appendix D



Centro de Salud Familiar La Fe, Inc.

September 2, 2005

Dr. Sharon Thompson
Assistant Professor
Department of Health Promotion
1101 North Campbell Street
El Paso, Texas 79902

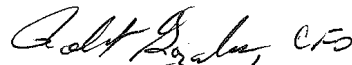
Dear Dr. Thompson:

This letter is to verify that I have given permission for you to conduct your study on cervical cancer and Centro de Salud Familiar La Fe, Inc. Your research assistant has permission to administer questionnaires to the clients in the waiting room of our clinics. We will work with her to schedule days and times that are convenient for our clients.

Please let me know if you have any questions or concerns. I can be contacted at (915) 545-7072 or lafe2@mail.htg.net.

"La Salud de la Comunidad es La Fe"

Sincerely,

For  *CSO*
Salvador Balcorta, M.S.S.W., L.M.S.W.
Chief Executive Officer

Appendix E

INFORMED CONSENT

I volunteer to participate in a *Cervical Cancer Prevention Program*. I will be asked to do the following during this project: 1) complete a two-day educational workshop, 2) complete a pre/post test knowledge questionnaire, 3) complete a Cervical Cancer Screening Survey, and 4.) complete a general evaluation of the workshop.

The people who administer and collect the information will respect your privacy and the confidentiality of your participation. The questionnaires that note your name will be kept in a locked cabinet in the office of the Project Director who will be the only one who has a key. The only other persons that will have access to this information are the Institutional Review Board (IRB) from The University of Texas at El Paso. None of the participants will be identified by name in this project, publication, and/or technical report and your participation will remain confidential.

The direct benefits that you will receive from participating in this project are increased knowledge about cervical cancer and cervical cancer prevention. We do not anticipate any risks associated with participation. Again, we want to emphasize that all your answers will remain private and confidential.

If you have any questions or any other concerns about the project, please feel free to contact Project Director Dr. Sharon Thompson at (915)-747-7221 or sthompson@utep.edu or Karen Hoover, Institutional Coordinator of Research Review at The University of Texas at El Paso, at (915) 747-7939 or khoover@utep.edu. This project was reviewed and accepted by the Institutional Review Board (IRB) of The University of Texas at El Paso (UTEP). After you have read and signed this consent, you will be accepting or giving authorization (as a legal guardian) for your participation in this project.

- I have been given a detailed description of all procedures verbally and in writing.
- I understand that participation is entirely voluntary and choosing not to participate or withdraw will in no way affect me.
- There are no apparent risks to me associated with participation in the project.
- Upon completion of the questionnaires and educational workshop, I will receive a \$40.00 gift card from Wal-Mart for participating in this project.
- The information I provide will be kept confidential.

_____/____/____
Signature of Participant Date

_____/____/____
Signature of Research Assistant Date

FORMA DE CONCENTIMIENTO

Yo me ofrezco como voluntaria para participar en el *Programa para la Prevención del Cáncer Cervical*. Mi participación incluirá lo siguiente: 1) acudir a un curso educacional de dos días, 2) llenar un cuestionario antes y después del programa sobre conocimientos básicos del tema, 3) participar en un cuestionario sobre mis creencias y conocimientos sobre la prevención del cáncer cervical, y 4.) llenar una evaluación sobre el programa.

Las personas que administran este programa respetaran su privacidad y toda información será tratada como confidencial. Los cuestionarios que soliciten su nombre serán guardados bajo llave dentro de la oficina de la directora del proyecto, quien será la única persona con llave. La mesa directiva de investigación de la Universidad de Texas en El Paso (UTEP) podrá solicitar esta información. Ninguno de los participantes será identificado por nombre dentro del proyecto, en publicaciones, u otro reporte, y su participación será confidencial.

Los beneficios que usted recibirá al participar en este proyecto serán obtener un mayor conocimiento sobre el cáncer cervical y sus formas de prevención. Nosotros no esperamos ningún daño durante su participación. Quisiéramos recalcar que toda su información será privada y totalmente confidencial.

Si tiene alguna pregunta o algún comentario acerca de este proyecto, favor de contactar a la directora Dra. Sharon Thompson, al (915)-747-7221 o sthompson@utep.edu o Karen Hoover, coordinadora de la mesa directiva de investigación, al (915)-747-7939 o khoover@utep.edu. Este proyecto fue asesorado y aceptado por la mesa directiva de investigación de la Universidad de Texas en El Paso (UTEP). Luego de haber leído y firmado este consentimiento, usted esta aceptando o dando autorización para participar en este proyecto.

- He recibido una descripción detallada sobre todos los procedimientos verbalmente y por escrito.
- Entiendo que mi participación es totalmente voluntaria y al decidir no participar no me afectara den ninguna manera.
- No hay ningún daño durante mi participación en este proyecto.
- Al cumplir los requisitos de mi participación (el curso y cuestionarios) recibiré un certificado de \$40.00 dólares de Wal-Mart como regalo por participar en el programa
- Toda información que proporcione se mantendrá confidencial.

Firma del Participante

____/____/____
Fecha

Firma del Asistente de Investigación

____/____/____
Fecha

Appendix F

INFORMED CONSENT

I volunteer to participate in a *Cervical Cancer Prevention Program*. I will be asked to do the following during this project: 1) complete a pre-test knowledge questionnaire, and 2) complete a Cervical Cancer Screening Survey.

The people who administer and collect the information will respect your privacy and the confidentiality of your participation. The questionnaires will not note your name and will be kept in a locked cabinet in the office of the Project Director who will be the only one who has a key. The only other persons that will have access to this information are the Institutional Review Board (IRB) from The University of Texas at El Paso. None of the participants will be identified by name in this project, publication, and/or technical report and your participation will remain confidential.

No direct benefits are associated with participating in this project. We do not anticipate any risks associated with participation either. Again, we want to emphasize that all your participation is completely voluntary, and your answers will remain private.

If you have any questions or any other concerns about the project, please feel free to contact Project Director Dr. Sharon Thompson at 915-747-7221 or sthompson@utep.edu or Karen Hoover, Institutional Coordinator of Research Review at The University of Texas at El Paso, at 747-7939 or khooover@utep.edu. This project was reviewed and accepted by the Institutional Review Board (IRB) of The University of Texas at El Paso (UTEP). After you have read and signed this consent, you will be accepting or giving authorization for your participation (or as a legal guardian) in this project.

- I have been given a detailed description of all procedures verbally and in writing.
- I understand that participation is entirely voluntary and choosing not to participate or withdraw at any time will in no way affect me.
- There are no apparent risks or benefits to me associated with participation in the project.
- Upon completion of the questionnaires, I will receive a \$10.00 gift card from Wal-Mart for participating in this project.
- The information I provide will be kept confidential.

Signature of Participant

____/____/____
Date

Signature of Research Assistant

____/____/____
Date

FORMA DE CONCENTIMIENTO

Yo me ofrezco como voluntaria para participar en el *Programa para la Prevención del Cáncer Cervical*. Mi participación incluirá lo siguiente: 1) llenar un cuestionario antes del programa sobre conocimientos básicos del tema, y 2) participar en un cuestionario sobre mis creencias y conocimientos sobre la prevención del cáncer cervical.

Las personas que administran este programa respetaran su privacidad y toda información será confidencial. Los cuestionarios no solicitaran su nombre, y serán guardados bajo llave dentro de la oficina de la directora del proyecto quien será la única persona con llave. La mesa directiva de investigación de la Universidad de Texas en El Paso (UTEP) podrá solicitar esta información. Ninguno de los participantes será identificado por nombre dentro del proyecto, en publicaciones, u otro reporte, y su participación será confidencial.

No hay ningún beneficio al participar en este proyecto. También no anticipamos ningún daño durante su participación. Quisiéramos recalcar que toda su información será privada y totalmente confidencial.

Si tiene alguna pregunta o algún comentario acerca de este proyecto, favor de contactar a la directora Dr. Sharon Thompson al (915)-747-7221 o sthompson@utep.edu o Karen Hoover, coordinadora de la mesa directiva de investigación, al (915)-747-7939 o khoover@utep.edu. Este proyecto fue asesorado y aceptado por la mesa directiva de investigación de la Universidad de Texas en El Paso (UTEP). Luego de haber leído y firmado este consentimiento, usted esta aceptando o dando autorización para participar en este proyecto.

- He recibido una descripción detallada sobre todos los procedimientos verbalmente y por escrito.
- Entiendo que mi participación es totalmente voluntaria y al decidir no participar no me afectara de ninguna manera.
- No hay ningún daño durante mi participación en este proyecto.
- Al terminar el cuestionario recibiré un certificado por \$10.00 dólares de Wal-Mart como regalo por participar en el programa.
- Toda información que proporcione es totalmente confidencial.

Firma del Participante

____/____/____
Fecha

Firma del Asistente de Investigación

____/____/____
Fecha

Appendix G

Ask your provider what's new about cervical cancer tests, treatments and prevention.

For more information about Pap smears, HPV and cervical cancer prevention, you can:

call toll-free 877-HPV-5868
2 p.m. to 7 p.m. (EST) Monday-Friday
to talk to a Health Communications Specialist
for information or counseling


visit ASHA's Web sites at
www.ashastd.org
www.iwannaknow.org (for teens)

asha
American Social Health Association
P.O. Box 13827, Research Triangle Park, NC 27709

The American Social Health Association (ASHA) publishes facts and other materials to provide a valuable resource for accurate medical information and emotional support for those affected by STDs. ASHA is a non-profit organization. ASHA operates the CDC national hotline for AIDS, STDs and immunizations, the National HIV and Cervical Cancer Prevention Resource Center and hotline, the Human Resources Center and hotline, and funds programs and research for improved treatment and public awareness.

The Pap Smear, Cervical Cancer, and HPV

What All Women Need to Know.




Who is at Risk for Cervical Cancer and Who Needs to Get Pap Smears?

All women who are, or who have ever been sexually active, may be at risk for cervical cancer.

Women who may be most at risk are women who...

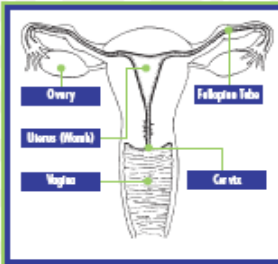
- do not have regular Pap smears.
- have ever had a sexually transmitted disease.
- have ever had more than one sex partner or whose sex partner has ever had other partners.

Regular Pap smears are the most common way to find cell changes that may lead to cervical cancer. All women who are sexually active should have a Pap smear once a year. Women who are not sexually active should start having Pap smears when they turn 18.



What is a Pap Smear?

The Pap smear can help your doctor find changes in the cells on your cervix that might lead to cancer.



Cervical cancer can be prevented. Cells go through many changes before they turn into cancer. The Pap smear finds these changes early, while they can still be treated and cured. A lot of women feel embarrassed or scared by the Pap smear. Some are afraid they may find out they have cancer. Remember, cancer is rare. Your Pap will be looking for cells that might turn into cancer if they are not treated.

Pregúntele a su médico sobre las pruebas y los tratamientos más nuevos que existen.

Para más información sobre el Papanicolaou, PVH, y la prevención del cáncer cervical, por favor:

Llame gratis al 877-HPV-5868
De lunes a viernes, de 2:00 pm a 7:00 pm (hora del este) para hablar con un Especialista en Comunicación de la Salud para recibir información o consejo (en inglés)

asha
American Social Health Association
P.O. Box 13827
Research Triangle Park, NC 27709
www.ashastd.org
www.iwannaknow.org (for teens)

Funding for this brochure was provided by the Centers for Disease Control and Prevention through Cooperative Agreement#5U49CE0015013-1.

El Papanicolaou

El Papanicolaou Hoy. Mujeres Sanas Mañana.



¿Qué es el Papanicolaou?

El Papanicolaou ("Pap smear" en inglés) es un examen del cervix, que es la entrada al útero o al cuello uterino. El Papanicolaou le indica a su médico o enfermera si tiene células anormales en el cervix que pudieran llegar a convertirse en cáncer cervical. Muchas veces el cáncer cervical no produce síntomas. El Papanicolaou es la manera más común de encontrar cambios en las células del cervix antes de llegar a ser cáncer. El cáncer cervical se puede prevenir si se detecta a tiempo. Por eso es importante hacerse el Papanicolaou una vez al año, aún cuando se sienta bien.



"Voy a la clínica para hacerme el Papanicolaou todos los años porque me da tranquilidad. Me hace sentir bien el saber que estoy sana y me estoy cuidando. Si recibo un resultado anormal, sé que cualquier problema se encontrará a tiempo para que pueda ser tratado."

¿Quién necesita el Papanicolaou?

- Todas las mujeres que tienen 18 años o más o que tienen relaciones sexuales deben hacerse el Papanicolaou una vez al año.
- Es importante que esté informada sobre su salud. El Papanicolaou es una forma rápida y fácil de cuidar su salud.



Appendix H

Session 1 Overview **Our Bodies and Our Cervical Health**

Trainers:

Time:

2.5 hour workshop session

Date:

Time:

Background:

Session 1 is very important because it sets the tone for the whole workshop. Trainers should create a relaxed and safe environment. Participation should be encouraged from the beginning.

Training Objectives:

At the end of this session trainers will have:

1. Presented participants with an overview of the six-session workshop.
2. Provided accurate information about the cervix, cervical health, and cervical cancer.
3. Communicated basic information and vocabulary related to female reproductive anatomy.
4. Assigned a task that encouraged participants to gather information for the next session.

Pre-delivery Preparation:

- ☐ Count dried beans and place into plastic bags (see 'Cervical Cancer: It can be prevented' section for number of beans per bag)
- ☐ Prepare workshop notebooks and handouts.
- ☐ Call training site to confirm time, room, etc.
- ☐ Visit training site to check room location, set up, lighting, outlet location, etc.
- ☐ Confirm guest trainers (if appropriate).
- ☐ Arrange
 - ♦ Food / Childcare / Transportation / Equipment
- ☐ Check equipment (stereo system, tape recorder, etc.).
- ☐ Buy supplies.
- ☐ Prepare flipcharts for this session
 - ♦ Agenda
 - ♦ Objectives
 - ♦ Blank sheet entitled "Our Ground Rules"
 - ♦ Blank sheet entitled "Parking Lot"
- ☐ Other:

**Trainer's
Notes**

15 minutes

**Cervical Cancer:
It can be Prevented****Trainers:****Background:**

This activity creatively demonstrates cervical cancer statistics. By dropping beans into a clear container, trainers can show the discrepancies in rates between White women and African American women.

Time:

15 minutes (xx:xx - xx:xx)

Training Objectives:

At the end of this activity trainers will have:

1. Defined cancer and cervical cancer.
2. Presented cervical cancer statistics in a creative way.
3. Demonstrated the discrepancies in cervical cancer incidence and mortality rates between White women and African American women.
4. Emphasized that cervical cancer is preventable, detectable, and treatable.
5. Focused on Pap smears and STD prevention as ways to reduce the chance of getting cervical cancer.

Materials:

- Dried beans (the bigger, the better), measured in plastic bags
 - ♦ 69 beans: rate of White women cervical cancer incidence
 - ♦ 110 beans: rate of African American women cervical cancer incidence
 - ♦ 23 beans: rate of White women cervical cancer mortality
 - ♦ 57 beans: rate of African American women cervical cancer mortality
- Plastic bags (at least one big enough to hold all of the beans)
- 2 clear containers (one labeled African American women, other labeled White women)

Steps:

1. Introduce activity.



4 minutes

- ❖ We are all here today to learn about cervical cancer. Some of us may have heard of cervical cancer before. For others, this may be the first time they have heard about it.

2. Explain cancer and cervical cancer.

- ❖ Cancer occurs when cells in the body change and grow out of control.
- ❖ Cervical cancer is when cancer begins in the cervix, which is part of female anatomy. We will discuss female anatomy in the next activity.

3. Explain risk factors.

- ❖ Cancer can be caused by a combination of who we are (hereditary) and what we do (behavioral) risk factors. Risk factors are things that increase the chances of getting cervical cancer.
- ❖ Risk factors for cervical cancer are:
 - Not getting regular Pap smears.
We will talk about Pap smears in Session 2.
 - Having human papillomavirus (HPV), a common sexually transmitted disease
 - Smoking cigarettes
 - Starting to have sex at an early age
 - Having many sexual partners
 - Having a sexual partner who has many sexual partners
- ❖ To think about how risk factors relate to cervical cancer, it may be helpful to look at the example of smoking and lung cancer. People who smoke are more likely to get lung cancer. But, not all people who smoke get lung cancer, and not everyone with lung cancer has smoked.
- ❖ The risk factors for cervical cancer work in a similar way. If a woman has cervical cancer, it does not mean that she necessarily has these risk factors. However, women with these risk factors are at an increased risk of getting cervical cancer.

- ❖ Although we know what the risk factors are, most people don't think about their personal risk of getting cervical cancer.

4. Introduce idea of personal risk of getting cervical cancer.

- ❖ In order to make this workshop relevant, it is important that we all have an idea of what our risk is of getting cervical cancer.
- ❖ Cervical cancer is the fifth most frequently diagnosed cancer for African American women in the United States.¹ African American females have a much higher rate of cervical cancer than do white females.
- ❖ We could list off a bunch of numbers about risk. But numbers can be hard to understand. So, we came up with another way to show how African American women are at risk for cervical cancer.

5. Explain activity.

- ❖ We are going to demonstrate the risk of cervical cancer by dropping dried beans into a clear container.
- ❖ When thinking about risk, it is important to divide risk into getting cervical cancer, dying from cervical cancer, and preventing cervical cancer.

6. Demonstrate difference in incidence (getting cervical cancer) between White women and African American women. Give two participants pre-measured bags of beans. Have one participant pour beans in the container labeled "White women"; the other participant pour beans in the container labeled "African American women."

- ❖ The first statistic is the number of women per 1,000,000 who got cervical cancer in the US between 1973-1998.
- ❖ For White women, this many people get cervical cancer (have participant pour 69 beans- all at the same time- into clear container labeled White women)
- ❖ That is about 69 white women out of 1,000,000. Let's see how the rates of African American women compare with the rate of White



5 minutes

Curriculum Vita

Claudia Lozano graduated from the University of Texas at El Paso (UTEP) with a Bachelor of Science degree in Health Promotion, May 2007 with Cum Laude Honors. Her academic dedication was reflected through her participation in service, education, and research projects at UTEP. As an undergraduate student she worked as a teaching assistant for the Health Promotion Department. After her assistantship she assumed the role of clinical research assistant for several NIH-R03 under the direction of Dr. Martha Cruz and Dr. Chantal Vella. The experience gained as an undergraduate student reflected in her pursue of a Master's degree in Public health as the first student to be graduating from this program in May of 2009 from UTEP with Magna Cum Laude Honors. Most recently, she engaged in several projects related to the prevention of substance use and abuse as part of her internship with the Unites States-Mexico Border Health Association. She is currently employed by the association to coordinate an HIV prevention program and provide support to other border health initiatives.