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An Education Initiative to Increase Referral Acceptance Rates Among Hispanic Women

Anna Gale

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SCHOOL OF
GRADUATE STUDIES

DOCTOR OF NURSING PRACTICE (DNP) PROGRAM

Family Nurse Practitioner Track

A DNP PROJECT

**An Education Initiative to Increase Referral Acceptance
Rates Among Hispanic Women**

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DATE: August 2020



SCHOOL OF
GRADUATE STUDIES

An Educational Initiative to Increase Referral Acceptance Rates Among Hispanic Women

A Project Presented to the Faculty of the Department of Nursing
Messiah University
In partial fulfillment of the requirements
For the Degree of Doctor of Nursing Practice
Family Nurse Practitioner Track

By

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An Educational Initiative to Increase Referral Acceptance Rates Among Hispanic Women

Submitted in Partial Fulfillment of the Requirements
for the Degree of Doctor of Nursing Practice at Messiah University

By

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Abstract

Background: Hispanic women consistently experience the highest rates of cervical cancer mortality in the United States, leading to major health disparities in this vulnerable population.

Problem: Barriers to cervical cancer screening for Hispanic women include lack of access to women's healthcare and a lack of knowledge related to cervical cancer risk factors.

Consequently, many Hispanic women do not receive adequate cervical cancer screening tests.

Methods: After a thorough literature search and critique, available evidence supported the use of an educational intervention to improve access to women's healthcare by increasing referral acceptance rates for women's health services in the Hispanic population. This project utilized a convenience sample of Hispanic women presenting for primary care office visits at two free medical clinics. **Intervention:** Each consenting Hispanic woman received one-on-one education regarding individual risk factors for cervical cancer. After receiving the education, each participant was offered a referral for women's health services. Data collection included the participant response to the offered referral. **Results:** The vast majority of participants who received the educational intervention (96.9%, n=63) accepted referral for women's health services compared to the control group (0%, n=10). **Conclusion:** An educational intervention discussing individual cervical cancer risk factors is an effective method to increase referral acceptance for women's health services in the Hispanic population.

Keywords: cervical cancer risk factors, education, Hispanic women, referral and consultation

An Educational Initiative to Increase Referral Acceptance Rates Among Hispanic Women

Title of Project

The title of this doctor of nurse practice (DNP) project is, “An Educational Initiative to Increase Referral Acceptance Rates Among Hispanic Women.”

Background

Since the initiation and consistent use of the Papanicolaou (Pap) test for cervical cancer screening, the United States (U.S.) has seen a significant decrease in cervical cancer incidence and associated mortality (Nardi, Sandhu, & Selix, 2016). The United States Preventive Services Task Force (USPSTF, 2018) assigned a Grade A to the current cervical cancer screening guidelines, which include completing a Pap test every three years for women aged 21 to 29 years old, and combination testing with cervical cytology and high-risk human papillomavirus (HPV) testing every five years for women aged 30-65 years old. Early detection of HPV or pre-cancerous cervical lesions can lead to early treatment and decreased mortality (Mann, Foley, Tanner, Sun, & Rhodes, 2015). Despite the advantages of early detection through regular screening, only 81.1% of eligible women in the U.S. comply with the USPSTF cervical cancer screening guidelines, contributing to a financial burden of approximately \$1,543.9 million annually spent on cervical cancer care and treatment (National Cancer Institute, 2020a, 2020b).

Among all racial and ethnic groups in the U.S., Hispanic women experience the highest rates of cervical cancer morbidity and mortality (Mann et al., 2015). According to the American Cancer Society (2018), cervical cancer incidence rates among Hispanic women in the U.S. are 40% higher when compared to non-Hispanic white women. Additionally, the United States Department of Health and Human Services Office of Minority Health (2020) reported that cervical cancer mortality rates are 20% higher in Hispanic women compared to non-Hispanic

white women. The five-year survival rate for Hispanic women less than 50 years old diagnosed with cervical cancer is approximately 77%, compared to an 80% five-year survival rate for non-Hispanic white women (Miller et al., 2018).

Multiple barriers such as lack of knowledge, lack of health insurance, and lack of access to primary care limit timely and frequent cervical cancer screening among Hispanic women (Moshkovich et al., 2015). Evaluation of the current literature identifies several interventions such as scheduling well woman exams, invitation letters, educational pamphlets, and clinic-based outreach programs, all of which increased access to cervical cancer screening in Hispanic women (Mann et al., 2015). One-on-one cervical cancer risk factor education is an efficient and cost-effective intervention, implemented to overcome cultural barriers, increase knowledge, and improve access to cervical cancer screening resources.

Problem Statement

Lack of access to women's healthcare resources and cervical cancer screening contributes to growing health disparities in the Hispanic population. Approximately 19% of Hispanic women in the U.S. are non-compliant with the USPSTF cervical cancer screening guidelines (National Cancer Institute, 2020a). Due to time constraints and language barriers, primary care providers (PCPs) often do not have the opportunity to provide routine cervical cancer risk factor education during office appointments. To address the lack of access to women's healthcare services, theory-based, culturally sensitive, educational interventions demonstrate higher levels of success in increasing cervical cancer screening rates among Hispanic women (Mann et al., 2015).

Therefore, PCPs should consider one-on-one education as an effective strategy for increasing access to women's healthcare services in the Hispanic population. This project attempted to answer the following population, intervention, comparison, and outcome (PICO) question: In

Hispanic women ages 21 to 65 presenting for a primary care office visit, does one-on-one education regarding individual cervical cancer risk factors increase the rate of women's health referral acceptance when compared to no education?

Needs Assessment

Two free medical clinics in Lebanon, Pennsylvania -- the Lebanon Valley Volunteers in Medicine Free Medical Clinic (VIM) and the Lebanon Free Clinic (LFC) -- served as the project setting. Both clinics offered a convenient location and access to a large population of uninsured or underinsured Hispanic women in the community. Approximately 10 to 15 Hispanic women presented to VIM daily for primary care services either via scheduled appointment or via the walk-in clinic. LFC required scheduled patient appointments and served approximately one to three Hispanic women daily during clinic hours.

The Agency for Healthcare Research and Quality (AHRQ, 2018) identified a lack of access to care as a contributing factor for inadequate screening and preventive care. Neither VIM nor LFC provided women's healthcare services or Pap tests. Instead, both clinics referred patients to Lebanon Family Health Services for well woman exams and cervical cancer screening. Moreover, due to the lack of adequate time for education, as well as volunteer staff, the providers at VIM and LFC did not discuss cervical cancer risk factors during routine primary care office visits. Thus, these gaps drove the need for this project at VIM and LFC.

Prioritizing education during primary care visits, as well as encouraging collaboration between primary care and women's health specialties, served to fill the identified gaps. Interprofessional collaboration between the PCP and women's healthcare specialist presented an opportunity, while financial constraints related to the operation of a free medical clinic and reliance on volunteers to staff the clinics were perceived weaknesses of the project setting. Lack

of knowledge regarding individual cervical cancer risk factors in the Hispanic population creates a content issue, while the cultural and environmental barriers to accessing care create a context issue. The low-cost educational intervention and adequate volunteer staff at each clinic site overcame the potential weaknesses associated with the project sites. Facilitated by VIM and LFC, education and collaboration bridged the above-stated gaps in patient care. Overall, this quality improvement (QI) project met the need to increase referrals to women's healthcare services at VIM and LFC. See Appendix A for a strengths, weaknesses, opportunities, and threats (SWOT) analysis and Appendix B for a root cause analysis (RCA) fishbone diagram for this project.

Aims, Objectives, Purpose Statement

The overarching aim for this DNP project was to examine if an educational intervention reviewing individual cervical cancer risk factors, and offering a referral for women's healthcare services, increases access to cervical cancer screening in a population of Hispanic women. The specific, measurable, assignable, realistic, and time-specific (SMART) objectives for this project were:

- At least 80% of all self-identified Hispanic women ages 21 to 65 years presenting for a primary care office visit will be evaluated by the project leader for cervical cancer screening compliance with the USPSTF guidelines for cervical cancer screening within a five-month timeframe.
- During the five month intervention period, at least 75% of self-identified Hispanic women ages 21 to 65 years presenting for a primary care office visit will receive education from the project leader regarding cervical cancer risk factors outlined by the CDC (2016, 2019).

- At least 50% of self-identified Hispanic women ages 21 to 65 years who receive education will accept referral to Lebanon Family Health Services for women's health services in the five-month intervention timeframe.

The purpose of this DNP project was to implement an educational intervention during routine primary care office visits to discuss cervical cancer risk factors and provide appropriate referral to increase women's health referral acceptance rates among Hispanic women in Lebanon, PA.

Review of Literature

A thorough review and critique of the literature identified evidence in support of this project. Databases searched from June 2018 to January 2020 included CINAHL Complete, Cochrane Library, MEDLINE Complete, PsychINFO, and PubMed, yielding 4,352 articles. Google Scholar identified 150 articles, providing 3,100 articles for review after removal of duplicates. Search terms included *access to care*, *cervical cancer risk factors*, *education*, *education intervention*, *Hispanic women*, and *Latina women*. Initial screening eliminated 3,025 articles without full text availability, articles published in languages other than English, and articles published before the year 2013. Review of the remaining 75 full text articles excluded 52 studies that did not include a population of Hispanic women or a one-on-one education intervention. Twenty-three studies met inclusion criteria for literature review. A PRISMA table outlined the literature search procedure (See Appendix C).

Evidence appraisal using the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) appraisal tools identified quality ratings of A (high quality) or B (good quality) for the majority of included studies (Dang & Dearholt, 2017). The levels of evidence ranged from Level I to Level V, with the majority as Level III, non-experimental studies (Dang & Dearholt, 2017). See Appendix D for the Literature Review Table for this project.

A review of current literature revealed a lack of knowledge regarding cervical cancer risk factors, thereby reducing the likelihood that Hispanic women will seek routine women's healthcare services. This lack of knowledge contributed to lower rates of cervical cancer screening (Akinlotan et al., 2017; Zorogastua, Erwin, Thelemaque, Pulley, & Jandorf, 2016). There appeared to be a gap in knowledge specifically related to non-sexual risk factors for cervical cancer, such as smoking, long-term birth control use, and multiparity (Akinlotan et al., 2017; Fleming et al., 2018). Hispanic women were less likely to obtain cervical cancer screening if a primary care provider did not recommend screening, if they were not sexually active, and if a family member had a positive cervical cancer screening result (Rojas et al., 2017; Thompson et al., 2019; Zorogastua et al., 2016). The gaps in knowledge emphasized the need for education to increase understanding of cervical cancer risk factors and ensure all Hispanic women receive referral for regular screening.

Providing theory-based, culturally, and linguistically sensitive educational interventions significantly improved cervical cancer screening rates in the Hispanic population (Foley et al., 2015; Musa et al., 2017; Thompson et al., 2017). The most effective modes of education included in-person, community-based oral education sessions, phone calls, videos, and group discussions (Agide et al., 2018; Rees, Jones, Chen, & Macleod, 2018; Rojas et al., 2017; Thompson et al., 2017). Culturally and linguistically sensitive education included the use of Hispanic lay health personnel; bilingual community members trained to provide one-on-one education in the participant's home or community (Calderón-Mora et al., 2020; Fleming et al., 2018; Rees et al., 2018; Shokar et al., 2019). Education provided by a trusted community member or healthcare provider established rapport and fostered cultural sensitivity throughout the intervention (Mann et al., 2015; Rees et al., 2018).

The analysis of several, high-quality studies identified one-on-one educational interventions as an effective method to improve cervical cancer screening rates among Hispanic women (Foley et al., 2015; Mann et al., 2015; Naz et al., 2018; Rojas et al., 2017). After receiving education about cervical cancer risk factors, Hispanic women demonstrated increased knowledge of the perceived barriers to and benefits of regular screening (Calderón-Mora et al., 2020; Naz et al., 2018; Rees et al., 2018). Reviewing risk factors, including human papillomavirus (HPV) exposure and family history, increased the likelihood of Hispanic women seeking women's health care services and obtaining cervical cancer screening (Foley et al., 2015; Rees et al., 2018; Rojas et al., 2017). Critical appraisal of the current evidence emphasized the importance of educating Hispanic women to reduce perceived barriers and gaps in knowledge.

Current gaps in the literature included a lack of randomized controlled trials and longitudinal studies to observe effects of interventions over time (Calderón-Mora et al., 2020; Rees et al., 2018; Zorogastua et al., 2016). Due to geographic location, sample size, and sampling methods, outcomes of the available literature may not be generalizable to all Hispanic women across the U.S. (Agide et al., 2018; Akinlotan et al., 2017; Fleming et al., 2018; Moore de Peralta, Holaday, & Mikisa, 2017; Musa et al., 2017; Rees et al., 2018; Thompson et al., 2017; Zorogastua et al., 2016). Additional research specific to the Hispanic population is warranted to determine how educational interventions reduce knowledge barriers (Rees et al., 2018; Zorogastua et al., 2016). Despite these gaps, substantial evidence supported the use of an educational intervention to promote cervical cancer screening among Hispanic women.

Theoretical Model

A thorough understanding of a patient's values, beliefs, and cultural motivation is essential prior to health promotion interventions. In the health promotion model (HPM), Pender

(1996) acknowledged background factors that motivate individuals to pursue certain health behaviors, and formulated the theoretical proposition that individuals are more likely to participate in health-promoting behaviors when there is support and recommendation from significant others (See Appendix E). Families, peers, and healthcare providers are influential in helping individuals initiate and maintain health-promotion and disease prevention behaviors (Pender, 1996). Individual characteristics, experiences, perceived barriers, perceived benefits, and behavioral outcomes all affect the individual's willingness to change behavior and participate in health promotion activities (Pender, 1996).

Enacting the HPM requires acknowledgement of the individual's motivations, fears, and barriers to cervical cancer screening through a discussion of cervical cancer risk factors. The HPM guides this project as Hispanic women learn about individual risk factors for cervical cancer from the healthcare provider and use this information as motivation to pursue regular screening as a health promotion activity. The influence of the healthcare provider as a role model and support system is an essential component of the HPM. Therefore, as this project is facilitated by a patient-provider relationship, Hispanic women engage in health-promoting behaviors and receive resources to increase access to women's healthcare services.

Translation Model

The Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) model depicts a stepwise approach to evidence translation (Dang & Dearholt, 2017). The Practice question, Evidence, Translation (PET) process is a guide to implementing evidence into clinical practice (Dang & Dearholt, 2017). For this project, following the PET process included development of the PICO question, review and critique of the available evidence, and the implementation of evidence through an educational intervention. Specific steps to translation outlined in the

JHNEBP model include identifying the fit and feasibility of a QI project, specifying the components of the action plan, identifying steps for implementing practice change, evaluating outcomes, and planning for dissemination of results (Dang & Dearholt, 2017).

This project met the criteria for a QI initiative as it attempts to fill a gap in clinical practice and processes at the local level (Dang & Dearholt, 2017). Components of the action plan pertinent to this project included acquiring a space for education, gathering educational tools, and obtaining translator services. Project implementation involved an interdisciplinary team approach to identify participants and provide referrals for women's healthcare services. Evaluation of outcomes included data analysis, interpretation of results, and identification of advanced practice nursing implications. The JHNEBP model is particularly suited for this project due to the model's prescribed steps for evidence translation (Dang & Dearholt, 2017). See Appendix F for a depiction of the JHNEBP model.

Methodology

This QI project was designed to increase referral acceptance for women's healthcare services utilizing an educational intervention discussing individual cervical cancer risk factors. The aim, objectives, and purpose established at the outset of the project served as a guide to implementation and methodology. The following sections outline how the project methods contributed to the project outcomes.

Participants

Participants included a convenience sample of self-identified female, Hispanic women living in the Lebanon, Pennsylvania community. Inclusion criteria consisted of age between 21 and 65 years old, self-identification as Hispanic ethnicity, and self-identification of female gender as the participant's gender assigned at birth. Exclusion criteria included male gender

assigned at birth, non-Hispanic ethnicity, history of previous total hysterectomy, and women under age 21 or over age 65. All participants received primary care services at VIM or LFC either as an established patient or on a walk-in basis. Recruitment methods included asking each eligible woman, either before or immediately after the office appointment, if she would like to receive education regarding individual cervical cancer risk factors. The project leader approached all participants in the private examination room without the PCP present. If available, and with the patient's consent, a Spanish-speaking, volunteer medical interpreter student employed by the clinic was present during the recruitment. Family members or support personnel present with the patient were asked to step out of the examination room during the recruitment process.

Setting

Two clinics in Lebanon, Pennsylvania, VIM and LFC, served as the setting for this project. According to data from 2018, Hispanic residents comprised 44% of the population in Lebanon, PA (United States Census Bureau, 2018). Both VIM and LFC provided free primary medical care to the community and served a large population of uninsured and underinsured Hispanic patients.

Volunteer healthcare providers, including physicians, nurse practitioners, registered nurses, medical assistants, and certified healthcare interpreter students, staffed the clinics. Volunteer healthcare providers at VIM included two male, Caucasian physicians and four female, Caucasian healthcare providers, including one nurse practitioner. One volunteer registered nurse and two medical assistants were Hispanic and spoke Spanish fluently. All other healthcare providers either did not speak Spanish or had limited proficiency. Both certified healthcare interpreter students – one Hispanic and one Caucasian -- were female and spoke fluent

Spanish. Volunteer providers at LFC included several male, Caucasian physicians and several female registered nurses, all of whom spoke limited Spanish. The project leader is female and Caucasian with limited proficiency in speaking and interpreting in Spanish. Availability of volunteer physicians and registered nurses to complete primary care office visits determined clinic hours for appointments and walk-in visits at both VIM and LFC.

Although neither clinic provided women's health services, both clinics referred patients to Lebanon Family Health Services for women's health and reproductive health needs. Time constraints and utilization of the walk-in clinic resulted in limited ability to discuss women's health preventive screening and community resources during routine primary care office appointments. As part of the usual care, female patients did not receive regular education on women's health topics unless the patient presented with a specific women's health complaint or symptom.

The project leader interacted with clinic patients to invite participation, provide education, and initiate referrals. Clinic constraints included use of a paper charting system, as well as limited space and limited time for office appointments. To overcome these barriers, the project leader collaborated with the registered nurses and healthcare providers and utilized patient exam rooms before or after the provider visit to conduct education sessions. Clinic medical directors attempted to coordinate patient appointments with the project leader to increase participant availability.

Tools

Implementation tools included a researcher-developed survey to collect demographic data, education materials from the CDC, and the USPSTF cervical cancer screening guidelines (See Appendix G). The survey questions were reviewed and approved by the clinic directors at

the project sites prior to project implementation to ensure accurate and appropriate terminology. The project leader assessed each participant's language preference (English or Spanish) prior to asking survey questions. Survey questions included age of the participant, self-identified gender, and self-identified ethnicity. Additional survey items evaluated compliance with USPSTF cervical cancer screening guidelines, including number of years since last Pap test and number of years since last well woman exam (USPSTF, 2018). Survey items included questions regarding cervical cancer risk factors to guide the education, such as smoking history, more than one sexual partner in the participant's lifetime, and a history of HPV. Education and referral handouts were available in English and Spanish, depending on the participant's preference. See Appendix H for the USPSTF cervical cancer screening guidelines.

Intervention

Throughout implementation, the project leader administered the survey questionnaire and provided education for all participants. During recruitment, the project leader approached participants before or after scheduled office appointments in the private patient exam room without the PCP present. Depending on availability, a certified medical translator student or Spanish-speaking staff member may or may not have been present in the private examination room during recruitment and the educational intervention. Due to potential language barriers, the project leader developed an information script in English and Spanish with the help of a native Spanish-speaking healthcare professional and certified healthcare interpreter (Akinlotan et al., 2017). See Appendix I for the information script with Spanish translation.

The first 10 participants who presented to either clinic and met eligibility criteria constituted the control group and received usual care, while the next 65 participants meeting eligibility criteria comprised the intervention group. After confirming participation, the project

leader progressed through the survey questionnaire and used the survey responses to discuss the participant's individual cervical cancer risk factors using the CDC (2016, 2019) and USPSTF (2018) materials. Translator services provided by volunteer certified healthcare interpreter students and handouts in English and Spanish were available to ensure intervention fidelity (See Appendix J).

After the education, the participant chose to accept, or not accept, a referral to Lebanon Family Health Services. If the response was affirmative, the project leader discussed scheduling an appointment for a well woman exam and provided a handout with clinic information and available services. If the participant did not accept referral, the project leader ascertained the reason why the participant did not accept referral. Additionally, the project leader discussed the ability to obtain information from the primary care provider at VIM or LFC at a later date if the participant decided to accept referral at a future appointment. See Appendix K for a process map outlining the intervention steps.

Data Collection

During pre-intervention, from October to December 2019, the project leader met with the staff and medical directors of VIM and LFC for education and project explanation. At this time, the project leader identified potential participants through chart review, gathered education materials, and received support from stakeholders. The intervention, or data collection, phase occurred from approximately January to March 2020. Data collection strategies included chart review and survey responses as described above. The data collected included the age of the participant, self-identified ethnicity, self-identified gender, responses to survey questions, and the number of referrals made to Lebanon Family Health Services. The project leader also collected participant reasons for referral refusal. Statistical analysis and evaluation of outcomes occurred

during the post-intervention phase from May to June 2020. Finally, dissemination of project findings and writing the final manuscript occurred from July to August 2020 and beyond.

Cost Analysis

The direct costs to project implementation, absorbed by the project leader, included supplies such as paper for educational handouts, copier or printer access, copier or printer ink, and presentation materials. The clinical sites provided volunteer Spanish-speaking healthcare interpreter students at no additional cost. Clinic staff fluent in Spanish were also available throughout implementation to aid the project leader if a language barrier interfered with the educational intervention. Minimal indirect costs to the organization existed as education took place during regular clinic hours and in a space provided by the clinic (Moran, Burson, & Conrad, 2017). Costs for electricity, heat, and cooling were included as organizational costs to the clinic sites (See Appendix L).

This project required a time commitment from the patient and PCP. The project leader provided the education during implementation. However, the PCP is responsible for ongoing education and monitoring of screening completion. Despite the initial time commitment, providers can utilize time during follow-up appointments efficiently by reviewing cervical cancer screening test results (Mann et al., 2015). Appropriate cervical cancer screening results in earlier cancer detection and treatment. Therefore, the initial time investment will ultimately result in fewer specialist appointments and will save time as providers refer patients for appropriate screening and health promotion activities.

Timeline

Beginning with the initial project proposal submission and defense, the timeline included all steps for project completion. Following project proposal approval, application to the Messiah

University (formerly Messiah College) Institutional Review Board (IRB) occurred. IRB approval was granted in January 2020. Prior to implementation, the project leader met with stakeholders, staff, and medical directors of VIM and LFC for education and project introduction. Pre-intervention activities included touring the project sites, securing project support from VIM and LFC, and finalizing intervention details. Implementation of the intervention action plan and data collection occurred from January to March 2020 with data analysis to follow. Post-intervention activities included evaluation of outcomes and composition of the final manuscript. Dissemination of project findings in the form of journal publication and poster presentation occurred beyond August 2020. A GANTT chart outlined the project timeline (See Appendix M).

Ethics and Human Subject Protection

Messiah University (formerly Messiah College) Institutional Review Board (IRB) approval was obtained prior to initiating the DNP Project. This project was approved as a QI project. See Appendix N for the IRB approval letter. This project did not require clinical site IRB approval as there is no IRB governing VIM or LFC. The Health Insurance Portability and Accountability Act (HIPAA) guidelines for safeguarding health information protected all participants throughout project implementation and data analysis (United States Department of Health and Human Services, 2016). The project followed the Standards of Care and ethics for nursing outlined by the American Nurses Association (ANA, 2015). Data collected included the participant age; however, the participant's name, date of birth, and any other identifying information was not collected or associated with the participant's age. Each survey was numbered in chronological order by participant without other identifiable information. Electronic data storage included password protection and encryption. Only the project leader had access to required passwords. Paper documents and completed surveys were kept in a locked filing system

within a locked office at the clinic sites. Only the project leader and clinic directors had access to paper documents.

The project leader completed approximately seven hours of Hispanic cultural competency training prior to project implementation. All cultural competency training was completed using online webinars and computer-based learning modules. Training was obtained through several reputable sources, including Cigna, the Public Health Foundation, and the National Alliance for Hispanic Health. Hispanic cultural competency training topics included developing cultural agility, delivering culturally responsive care to the Hispanic community, and developing culturally-focused health interventions for Hispanic populations. Additional consultation with a Hispanic healthcare professional and certified healthcare interpreter aided in the development of a culturally appropriate information script with Spanish translation to overcome language barriers and ensure terminology was understandable by Hispanic participants.

This project posed minimal risk to study participants. However, discussing sensitive topics like gynecologic health and cervical cancer could cause discomfort or anxiety. To minimize potential harms to participants, the project leader ensured a private location, such as the patient exam room, for education sessions.

Results

Analysis and Evaluation

Statistical analysis and evaluation of data occurred after completion of data collection. Data analysis began with data cleaning, coding, and entry into IBM SPSS Statistics (Version 26.0). Prior to data analysis, data were cleaned and a codebook was created. A survey response of “never” or “unknown” was coded as “missing” data. Missing data was random and comprised only 13% of the total sample. Therefore, these responses were not included in the final analysis.

There were no outliers identified. The level of significance, or α -level, was set at .05 before beginning data analysis. Each variable's level of measurement was identified to guide the statistical analysis and determine the appropriate statistical tests.

Descriptive statistics for nominal level demographic information included the frequency distribution of self-identified gender, self-identified ethnicity, and education received. Since self-identified female gender and self-identified Hispanic ethnicity were inclusion criteria for participation, the Chi-square test for comparison of gender and ethnicity between groups was not applicable. The total sample for the control (100%, $n=10$) and the intervention (100%, $n=65$) groups self-identified as female gender and Hispanic ethnicity. All participants in the intervention group (100%, $n=65$) received cervical cancer risk factor education compared to the control group, in which no participants (0%, $n=10$) received education, consistent with usual care at the project sites.

Descriptive statistics for nominal level demographic information collected only from the intervention group included the frequency of smoking status, having more than one sexual partner in the participant's lifetime, and having a history of HPV. The majority of participants in the intervention group (66.7%, $n=50$) did not currently smoke and did not have a smoking history. In the intervention group, the majority of women (57.3%, $n=43$) reported having more than one sexual partner in their lifetime, while 2.7% ($n=2$) of participants declined to provide this information. Additionally, the majority of participants in the intervention group (46.7%, $n=35$) reported no history of HPV, while 25.3% ($n=19$) did not know if they had a history of HPV or had never been tested for HPV.

Ratio level variables include participant age, number of years since the participant's last cervical cancer screening test, and number of years since the participant's last well woman exam.

Measures of central tendency and variability for ratio level data included the mean, median, mode, range, and standard deviation. The average age of the total sample was 43.55 years old (SD=12.82) with a median of 45 years and a mode of 47 years. The minimum age of participants was 21 years old and the maximum age was 65 years old. The mean number of years since the participant's last cervical cancer screening was 3.38 years (SD=3.87) with a median of two years and a mode of one year. The number of years since the participant's last cervical cancer screening test ranged from one year to 25 years. The mean number of years since the participant's last well woman exam was 2.97 years (SD=2.82) with a median of two years and a mode of one year. The number of years since the participant's last well woman exam ranged from one year to 15 years.

The independent samples *t*-test compared the ratio level variables between the intervention and control group. Although the results of the independent samples *t*-test were not statistically significant, the skewness and kurtosis measurements violated the assumption of normality for years since participant's last cervical cancer screening test (skewness 3.44, kurtosis 15.45) and years since participant's last well woman exam (skewness 2.21, kurtosis 5.25). Therefore, the Mann-Whitney U test was used, and confirmed there was no statistically significant difference between the intervention and control group for years since last cervical cancer screening [U(n = 65) = 216.0, z = -1.11, p = .269] and years since last well woman exam [U(n = 66) = 201.5, z = -1.46, p=.145]. There was no statistically significant difference between the intervention and control group for age [*t*(73) = -.17, p = .86], years since last cervical cancer screening [*t*(63) = -.10, p = .92], and years since last well woman exam [*t*(64) = -.64, p = .52]. See Appendix O for data analysis tables and figures.

Descriptive statistics for the dependent variable included the frequency of referral acceptance. The majority of participants who received the educational intervention (96.9%, $n=63$) accepted referral for women's health services compared to the control group (0%, $n=10$). Only two participants who received the education did not accept referral for women's health services. Both participants stated the reason for referral refusal was that they were not interested in pursuing cervical cancer screening at that time. The Chi-square test was used for the analysis of the project question (Kim & Mallory, 2017). Since the data violated the assumptions of expected cell count for the Chi-square, the Fisher's exact test was interpreted and reported along with the Pearson Chi-square value with one degree of freedom. Compared to the usual care group, there is a statistically significant difference in the women's health referral acceptance rate among participants who received the educational intervention [$\chi^2(1) = 60.58, p = .000$].

Phi and Cramer's V were used to calculate effect size. According to Kim and Mallory (2017), a large effect size measures the strength of the effect of the intervention and provides information about the clinical significance of the project findings. Interpretation of the Phi statistic indicated these findings are statistically and clinically significant with a large effect size for women's health services referral acceptance ($\phi = .899$).

A power analysis was conducted using clincalc.com and G*Power software. With a two independent group study design and dichotomous endpoint, for 80% power, 1:1 enrollment ratio, and an alpha of 0.05, the required sample size for future studies was four participants per group ($n=8$). An additional 10% for potential loss of subjects to follow-up was included in the calculation. Therefore, for an α -level of .05, a p -value of .000 comparing referral acceptance between the intervention and control group, and a large effect size ($\phi=.899$), the findings from this DNP project are both statistically significant and clinically significant for the project sites.

Discussion

The findings of this project included a statistically and clinically significant difference in women's health referral acceptance rates between the control group and the intervention group. Exceeding the original expectation of 80%, approximately 90% of self-identified female, Hispanic patients ages 21 to 65 years presenting for a primary care office visit were evaluated for cervical cancer screening compliance by the project leader. Additionally, within a three month timeframe, 90% of self-identified female, Hispanic patients presenting for primary care office visits received education from the project leader regarding cervical cancer risk factors. The project leader was not able to collect baseline data or provide education to some patients due to emergency situations and the need to limit staff exposure to communicable illness. Finally, the vast majority of self-identified female, Hispanic patients who received the educational intervention (96.9%, n=63) accepted a referral for women's health services. The large amount of referral acceptance exceeds the original objective of only 50% referral acceptance for those who received education.

The statistical significance of the increase in women's health referral acceptance rates is attributed to the increase in cervical cancer risk factor awareness and the identification of community resources provided by the educational intervention. Benefits to participants included increased knowledge of individual cervical cancer risk factors and improved access to women's healthcare services. Additional project benefits extend to the Hispanic community as participants identify a trusted community resource to obtain timely and quality care.

Analysis of the project findings demonstrates achievement of the project aim: utilizing an educational intervention to increase women's health referral acceptance and increasing access to women's healthcare services among Hispanic women.

There are several limitations to this project and the generalizability of the outcomes. This project utilized a convenience sample of Hispanic women located in Lebanon, Pennsylvania. Due to the geographic restrictions, results may not be generalizable to other populations of Hispanic women or other clinic sites in the U.S. Survey questions and responses to baseline queries relied on patient self-report, potentially resulting in an inaccurate representation of the population of interest. For example, some participants reported to the project leader that they felt uncomfortable answering survey questions regarding multiple sexual partners. All attempts were made to mitigate this limitation by establishing rapport with the participant and providing a private space for survey questions and education.

The COVID-19 pandemic in 2020 created a significant limitation to this project. Several patients meeting inclusion criteria could not participate in the project due to health and safety concerns for the staff and other clinic patients. The project leader had to limit time spent at the clinics due to the limited supply of personal protective equipment (PPE), that was required for the safety of essential healthcare providers and patients. Additionally, due to social distancing and stay-at-home orders implemented during the pandemic, the project leader stopped data collection after three months instead of five months as originally stated in the project objectives. As a result of these limitations, data collection included a smaller sample size than originally expected.

The project findings provide implications for both project sites. Clinic staff at VIM and LFC expressed a desire to continue assessing each Hispanic woman's compliance with the USPSTF cervical cancer screening guidelines and providing risk factor education during routine primary care office visits. As the clinics provide education and community resources, healthcare providers encourage health promotion activities and continue to improve the quality of care

provided. To sustain the project, each healthcare provider should receive education to implement the project individually from collecting baseline data to delivering the educational intervention. Continued education improves the patient-provider relationship and ensures compliance with health promotion and prevention strategies.

The findings of this QI project support the use of a one-on-one, individualized educational intervention discussing cervical cancer risk factors as an appropriate method to increase referral acceptance rates among Hispanic women. PCPs should consider integrating cervical cancer risk factor education into routine primary care office visits to increase women's health referral acceptance among Hispanic women. Recommendations for project replication include a trial of the educational intervention at clinic sites serving a population of Hispanic women. Educating healthcare providers and staff to collect baseline data, conduct survey questionnaires, provide education, and initiate the referral process are appropriate steps to replicating this QI project in a variety of clinic sites and settings. Interprofessional collaboration with a local women's healthcare provider and identification of community resources increases quality of care and access to care for Hispanic women seeking cervical cancer screening and other primary care interventions.

Conclusion

The goal of this project was to demonstrate the importance of regular education to the advanced practice nurse (APN) role and improve quality of care at VIM and LFC. Quality care includes access to timely and cost-effective health services to strengthen the patient-provider relationship and encourage completion of health promotion activities. Hispanic women who receive education can share this information with family and social acquaintances, prompting greater community participation in cervical cancer screening. Early detection and treatment of

cervical cancer decreases mortality, thereby creating a positive impact in the Hispanic community and reducing national healthcare costs (Mann et al., 2015). Simple interventions, such as providing education and resources about a specific health promotion topic, can encourage patients to participate in primary, secondary, and tertiary prevention activities.

The increased incidence of cervical cancer in the Hispanic population is a primary health concern. This project, and supportive evidence, represented a cost-effective, feasible intervention for increasing women's health referral rates and access to women's healthcare services, thus reducing health disparities for Hispanic women. The need for an educational intervention during routine primary care office visits is evident to help Hispanic women recognize cervical cancer risk factors, obtain appropriate screening tests, and decrease cervical cancer mortality in the Hispanic population.

References

- Agency for Healthcare Research and Quality. (2018). *2018 National Healthcare Quality and Disparities Report*. Retrieved from <https://www.ahrq.gov/research/findings/nhqrdr/nhqrdr18/index.html>
- Agide, F. D., Garmaroudi, G., Roya, S., Elham, S., Mehdi, Y., Zewdie, K. B., . . . Bereket T. M. (2018). A systematic review of the effectiveness of health education interventions to increase cervical cancer screening uptake. *European Journal of Public Health, 28*, 1156-1162. doi:10.1093/eurpub/cky197
- Akinlotan, M., Bolin, J. N., Helduser, J., Ojinnaka, C., Lichorad, A., & McClellan, D. (2017). Cervical cancer screening barriers and risk factor knowledge among uninsured women. *Journal of Community Health, 42*, 770-778. doi:10.1007/s10900-017-0316-9
- Albrow, R., Blomberg, K., Kitchener, H., Brabin, L., Patnick, J., Tishelman, C., . . . Widmark, C. (2014). Interventions to improve cervical cancer screening uptake amongst young women: A systematic review. *Acta Oncologica, 53*, 445-451. doi:10.3109/0284186X.2013.869618
- Allen, J. D., Perez, J. E., Tom, L., Leyva, B., Diaz, D., & Torres, M. I. (2014). A pilot test of a church-based intervention to promote multiple cancer-screening behaviors among Latinas. *Journal of Cancer Education, 29*, 136-143. doi:10.1007/s13187-013-0560-3
- American Cancer Society. (2018). *Cancer facts & figures for Hispanics/Latinos: 2018-2020*. Atlanta, GA: American Cancer Society, Inc.
- American Nurses Association. (2015). *Code of ethics for nurses with interpretive statements*. Silver Spring, MD: American Nurses Association. Retrieved from <https://www.nursingworld.org/practice-policy/nursing-excellence/ethics/code-of-ethics-for-nurses/>

- Centers for Disease Control and Prevention. (2016). *Cervical cancer*. Retrieved from <https://stacks.cdc.gov/view/cdc/44730>
- Centers for Disease Control and Prevention. (2019). *Cancer de cuello uterino*. Retrieved from https://www.cdc.gov/spanish/cancer/cervical/pdf/cervical_facts_sp.pdf
- Calderón-Mora, J., Byrd, T., Alomari, A., Salaiz, R., Alok, D. Mallawaarachchi, I., & Shokar, N. (2020). Group versus individual culturally tailored and theory-based education to promote cervical cancer screening among the underserved Hispanics: A cluster randomized trial. *American Journal of Health Promotion*, 34(1), 15-24. doi: 10.1177/0890117119871004
- Chan, C. W. H., Yang, S., Gu, C., Wang, X., & Tao, L. (2014). Perception of cervical cancer risk and screening behavior: A literature review. *International Journal of Nursing Knowledge*, 26(1), 2-18. doi:10.1111/ 2047-3095.12028
- Dang, D., & Dearholt, S. L. (2017). *Johns Hopkins nursing evidence-based practice: Model and guidelines* (3rd ed.). Retrieved from https://www.hopkinsmedicine.org/evidence-based-practice/ijhn_2017_ebp.html
- Fleming, K., Simmons, V. N., Christy, S. M., Sutton, S. K., Romo M., Luque, J. S., . . . Meade, C. D. (2018). Educating Hispanic women about cervical cancer prevention: Feasibility of a promotora-led charla intervention in a farmworker community. *Ethnicity & Disease*, 28, 169-176. doi: 10.18865/ed.28.3.169
- Flores, B. E., & Acton, G. J. (2013). Older Hispanic women, health literacy, and cervical cancer screening. *Clinical Nursing Research*, 22, 402-415. doi:10.1177/105477381348930

Foley, O. W., Birrer, N., Rauh-Hain, J. A., Clark, R. M., DiTavi, E., & Del Carmen, M. G.

(2015). Effect of educational intervention on cervical cancer prevention and screening in Hispanic women. *Journal of Community Health, 40*, 1178-1184. doi: 10.1007/s10900-015-0045-x

Fornos, L. B., Urbansky, K. A., & Villarreal, R. (2014). Increasing cervical cancer screening for a multiethnic population of women in south Texas. *Journal of Cancer Education, 29*, 62-68. doi:10.1007/s13187-013-0544-3

Kim, M., & Mallory, C. (2017). *Statistics for evidence-based practice in nursing* (2nd ed.). Burlington, MA: Jones & Bartlett Learning.

Levano, W., Miller, J. W., Leonard, B., Bellick, L., Crane, B. E., Kennedy, S. K., . . . Tharpe, F. S. (2014). Public education and targeted outreach to underserved women through the National Breast and Cervical Cancer Early Detection Program. *Cancer, 120*(S16), 2591-2596. doi:10.1002/cncr.28819

Mann, L., Foley, K. L., Tanner, A. E., Sun, C. J., & Rhodes, S. D. (2015). Increasing cervical cancer screening among US Hispanics/Latinas: A qualitative systematic review. *Journal of Cancer Education: The Official Journal of the American Association for Cancer Education, 30*, 374-387. doi: 10.1007/s13187-014-0716-9

Martínez-Donate, A., Vera, L. M., Zhang, X., Vedro, R., Angulo, R., & Atkinson, T. (2013). Prevalence and correlates of breast and cervical cancer screening among a Midwest community sample of low-aculturated Latinas. *Journal of Health Care for the Poor and Underserved, 24*, 1717-1738. doi: 10.1353/hpu.2013.0165

- Miller, K. D., Sauer, A. G., Ortiz, A. P., Fedewa, S. A., Pinheiro, P. S., Tortolero-Luna, G., . . . Siegel, R. L. (2018). Cancer statistics for Hispanics/Latinos, 2018. *CA: A Cancer Journal for Clinicians*, *68*, 387-506. doi: 10.3322/caac.21494
- Moore de Peralta, A. M., Holaday, B., & Hadoto, I. M. (2017). Cues to cervical cancer screening among U.S. Hispanic women. *Hispanic Health Care International*, *15*(1), 5-12. doi:10.1177/1540415316682494
- Moran, K., Burson, R., & Conrad, D. (2017). *The doctor of nursing practice scholarly project: A framework for success* (2nd ed.). Burlington, MA: Jones & Bartlett Learning.
- Moshkovich, O., Lebrun-Harris, L., Makaroff, L., Chidambaran, P., Chung, M., Sripipatana, A., & Lin, S. C. (2015). Challenges and opportunities to improve cervical cancer screening rates in U.S. health centers through patient-centered medical home transformation. *Advances in Preventive Medicine*. doi: 10.1155/2015/182073
- Musa, J., Achenbach, C. J., O'Dwyer, L. C., Evans, C. T., McHugh, M., Hou, L., . . . Jordan, N. (2017). Effect of cervical cancer education and provider recommendation for screening on screening rates: A systematic review and meta-analysis. *PLoS ONE*, *12*(9). doi: 10.1371/journal.pone.0183924
- Nardi, C., Sandhu, P., & Selix, N. (2016). Cervical cancer screening among minorities in the United States. *The Journal for Nurse Practitioners*, *12*, 675-682. doi: 10.1016/j.nurpra.2016.08.036
- National Cancer Institute. (2020a). *Cervical cancer screening*. Retrieved from https://progressreport.cancer.gov/detection/cervical_cancer
- National Cancer Institute. (2020b). *Financial burden of cancer care*. Retrieved from https://progressreport.cancer.gov/after/economic_burden

Naz, M. S. G., Kariman, N., Ebadi, A., Ozgoli, G., Ghasemi, V., & Fakari, F. R. (2018).

Educational interventions for cervical cancer screening behavior of women: A systematic review. *Asian Pacific Journal of Cancer Prevention*, *19*, 875-884. doi:

10.22034/APJCP.2018.19.4.875

Pender, N. J. (1996). *Health promotion in nursing practice* (3rd ed.). New York, NY: Appleton & Lange.

Rees, I., Jones, D., Chen, H., & Macleod, U. (2018). Interventions to improve the uptake of cervical cancer screening among lower socioeconomic groups: A systematic review.

Preventive Medicine, *111*, 232-335. doi: 10.1016/j.ypmed.2017.11.019

Rojas, P., Li, T., Ravelo, G. J., Dawson, C., Sanchez, M., Sneij, A., . . . De La Rosa, M. R.

(2017). Correlates of cervical cancer screening among adult Latino women: A 5-year follow-up. *World Medical & Health Policy*, *9*, 239-254. doi:10.1002/wmh3.230

Shokar, N. K., Calderón-Mora, J., Molokwu, J., Byrd, T., Alomari, A., Mallawaarachchi, I., &

Dwivedi, A. (2019). Outcomes of a multicomponent culturally tailored cervical cancer screening intervention among underserved Hispanic women (De Casa en Casa). *Health Promotion Practice*. doi: 10.1177/1524839919893309

SQUIRE. (2017). *Revised standards for quality improvement reporting excellence: SQUIRE 2.0*.

Retrieved from <http://squire-statement.org/index.cfm?fuseaction=Page.ViewPage&pageId=471>

Thompson, B., Vilchis, H., Moran, C., Copeland, W., Holte, S., & Duggan, C. (2014). Increasing

cervical cancer screening in the United States-Mexico border region. *The Journal of Rural Health*, *30*, 666-674. doi: 10.1002/cncr.30399

- Thompson, B., Carosso, E. A., Jhingan, E., Wang, L., Holte, S. E., Byrd, T. L., . . . Duggan, C. R. (2017). Results of a randomized controlled trial to increase cervical cancer screening among rural Latinas. *Cancer, 123*, 196-205. doi:10.1002/cncr.30399
- Thompson, B., Barrington, W. E., Briant, K. J., Kupay, E., Carosso, E., Gonzalez, N. E., & Gonzalez, V. J. (2019). Educating Latinas about cervical cancer and HPV: A pilot randomized study. *Cancer Causes & Control, 30*, 375-384. doi: 10.1007/s10552-019-01150-w
- United States Census Bureau. (2018). *Quick facts: Lebanon city, Pennsylvania*. Retrieved from <https://www.census.gov/quickfacts/fact/table/lebanoncitypennsylvania/PST045219>
- United States Department of Health and Human Services. (2016). *Understanding some of HIPAA's permitted uses and disclosures*. Retrieved from <https://www.hhs.gov/hipaa/for-professionals/privacy/guidance/permitted-uses/index.html>
- United States Department of Health and Human Services Office of Minority Health. (2020). *Cancer and Hispanic Americans*. Retrieved from <https://minorityhealth.hhs.gov/omh/browse.aspx?lvl=4&lvlid=61>
- United States Preventive Services Task Force. (2018). *Cervical cancer: Screening*. Retrieved from <https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/cervical-cancer-screening2>
- Zorogastua, K., Erwin, D., Thelmaque, L., Pulley, L., & Jandorf, L. (2016). Intrinsic factors of non-adherence to breast and cervical cancer screenings among Latinas. *Journal of Racial and Ethnic Health Disparities, 3*, 658-666. doi:10.1007/s40615-015-0184-x

Appendix A

SWOT Analysis

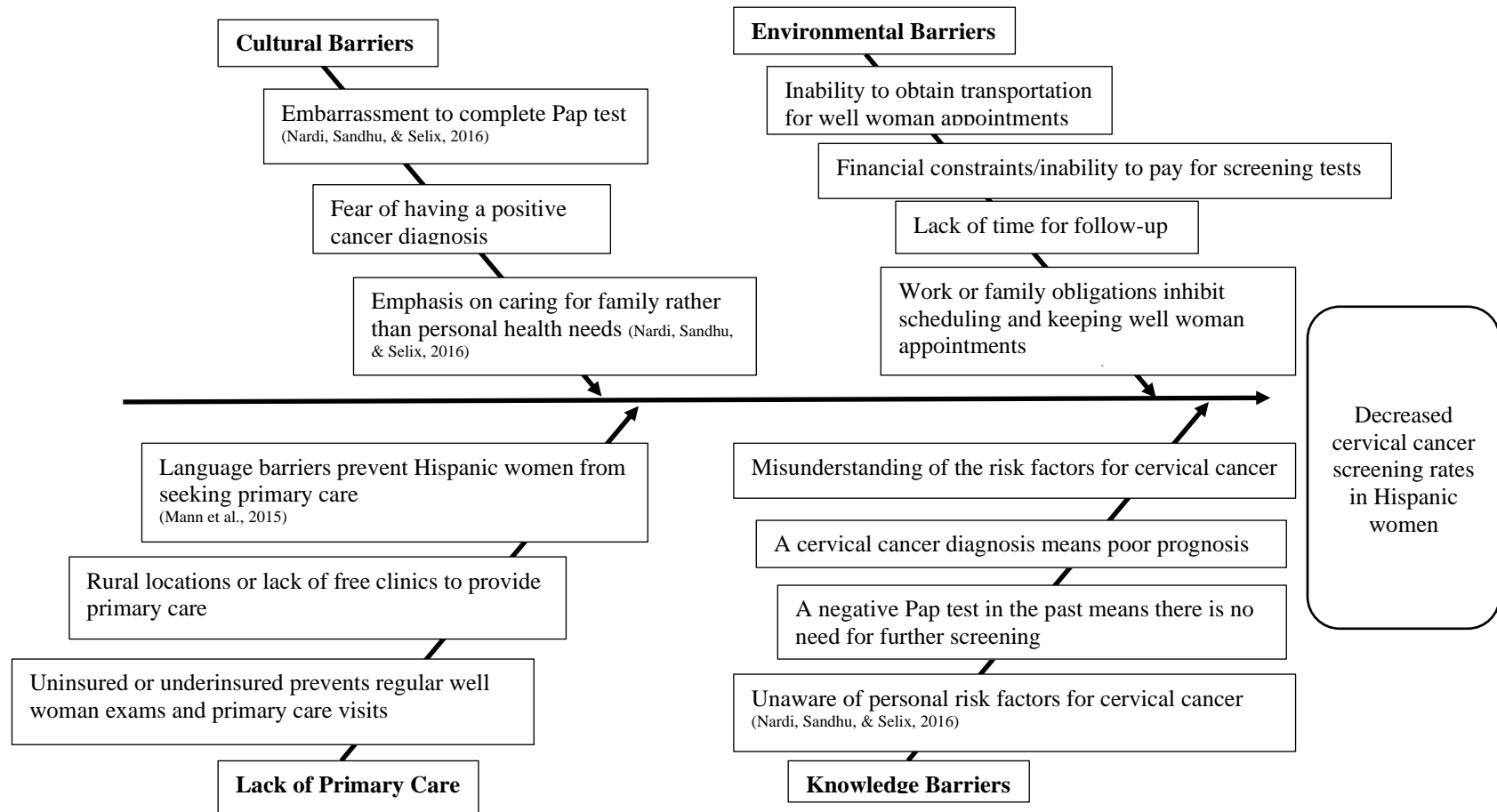
The SWOT analysis evaluates the clinical environment for strengths, weaknesses, opportunities, and threats to the success of the DNP scholarly project.

<p><u>Strengths</u></p> <ul style="list-style-type: none"> • Access to Hispanic population • Primary care providers available to make referrals to women’s health specialists • A convenient location to provide the educational intervention • Resources available include educational pamphlets in Spanish, translator lines, or in-person translators • Access to a referral team to schedule follow-up appointments for well woman exams • Case management available to help with financial questions or insurance needs • The project leader has time to provide education without interrupting primary care visits 	<p><u>Opportunities</u></p> <ul style="list-style-type: none"> • Community support for the project • The outcome of the project will help meet USPSTF goals for cervical cancer screening compliance • Large Hispanic community in central Pennsylvania that has an interest in the outcome of the project • Local women’s health centers want to improve the health of the Hispanic community and are willing to participate by accepting referrals for well woman exams • Community resources available for Hispanic women with financial constraints to help them afford screening
<p><u>Weaknesses</u></p> <ul style="list-style-type: none"> • Financial constraints related to a free health clinic • Lack of adequate staff • No access to electronic medical records to evaluate for follow-up • May not have a quiet space or room available to provide education • A busy clinic does not allow time to educate every Hispanic woman presenting for a primary care visit • Patient financial constraints or inability to pay for cervical cancer screening tests 	<p><u>Threats</u></p> <ul style="list-style-type: none"> • Hispanic women presenting to the free clinic may not have insurance to obtain follow-up at a women’s health center • Technological threats include lack of electronic medical records and lack of availability of a translator service • Local healthcare systems and primary care offices present competition • Insurers may not participate in helping Hispanic women follow-up to obtain a well woman exam or cervical cancer screening test

Appendix B

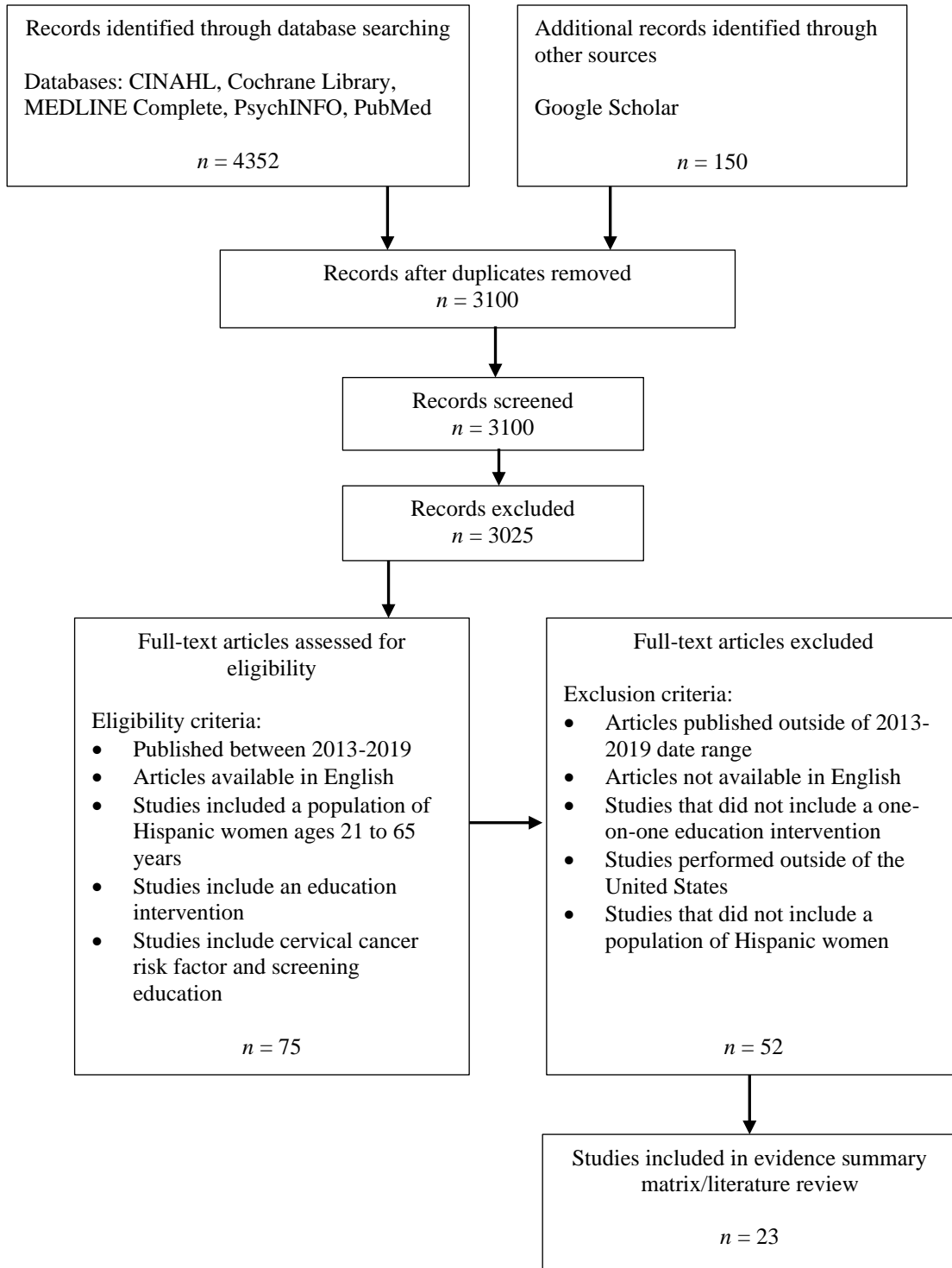
Root Cause Analysis

The root cause analysis helps the project leader identify underlying factors that pose potential barriers to successful implementation of the project. The following fishbone diagram depicts the root cause analysis for this project.



Appendix C

PRISMA Table



Appendix D

Literature Review Table

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
1	Agide <i>The European Journal of Public Health</i> (2018)	<p>Systematic review</p> <p>Combination of experimental (RCT) studies, cluster RCT studies, and/or quasi-experimental and noncontrol group study design Purpose: evaluate the effectiveness of various educational interventions on cervical cancer screening uptake</p> <p>Educational interventions separated into individual level, community level, and culturally sensitive education</p> <p>Interventions included phone calls, training, lectures, videos, group discussions, home-based education, workshops, and model-based personal</p>	<p>Sample type: RCTs, quasi-RCTs, and non-control quasi-experimental studies</p> <p>Searched 4 databases for relevant studies</p> <p>Search terms clearly defined</p> <p>Followed PRISMA guidelines and PRISMA flow diagram provided</p> <p>Sample size: 17 articles met inclusion criteria</p> <p>Inclusion criteria:</p> <ul style="list-style-type: none"> • Published between 2005 and 2017 • Studies provide health education and behavioral intervention and/or promotion for uptake of cervical cancer screening • Included women of any age group 	<p>One-to-one interactive educational programs boosted cervical cancer screening uptake in multiple racial groups (p = 0.221)</p> <p>“Intra-personal behavioral model-based interventions boosted cervical screening uptake and/or intention in the United States (p <0.001)” (Agide et al., 2018).</p> <p>Almost all educational interventions included in literature review were effective methods of increasing uptake of cervical cancer screening and intention to screening</p> <p>Minimal intervention focused on cervical cancer screening behavioral interventions increased cancer</p>	<p>Studies included multiple and diverse interventions, making it difficult to estimate the effects of each intervention strategy</p> <p>Not all studies conducted in the United States (generalizability)</p> <p>Not all studies utilized a population of Hispanic women</p> <p>Only included studies in English language</p>	II	A

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		<p>education</p> <p>Many studies included multiple education strategies, but prioritized the individual level education interventions</p>	<ul style="list-style-type: none"> • RCTs, cluster RCTs, and quasi-experimental and noncontrol group study design • English language <p>Exclusion criteria:</p> <ul style="list-style-type: none"> • Studies focused on cervical cancer survivors or treatment rehabilitation • Studies focused on nonintervention trials, drug research, and descriptive research <p>Characteristics of included studies:</p> <ul style="list-style-type: none"> • 8 RCTs • 9 quasi-experimental studies • 3 studies included Hispanic women as the study population <p>Setting:</p> <ul style="list-style-type: none"> • 58.82% of studies conducted in the United States • 17.65% of studies conducted in Iran 	<p>screening and Pap test completion</p> <p>“The review confirmed that the most common health educational intervention in cervical cancer initiatives targeting women boosted the cancer screening” (Agide et al., 2018).</p>			

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
			<ul style="list-style-type: none"> 23.53% of studies conducted in Malaysia, China, Cameroon, and Nigeria <p>Methods of quality appraisal clearly outlined using Jadad method and Downs and Black checklists</p>				
2	Akinlotan <i>Journal of Community Health</i> 2017	<p>Non-experimental study</p> <p>Correlational study</p> <p>Assessed knowledge of cervical cancer risk factors and perceived barriers to cervical cancer screening with a single survey</p> <p>Purpose: to determine the correlation between knowledge of cervical cancer risk factors and perceived barriers to cervical cancer screening in a population of uninsured, low-income, and underinsured women</p>	<p>Sample type: convenience, nonrandom sampling method</p> <p>Uninsured or underinsured women of low socio-economic status</p> <p>Inclusion criteria:</p> <ul style="list-style-type: none"> Women Uninsured Household income less than 250% of federal poverty level 21 years old or older No history of hysterectomy <p>Sample size: n= 524 participated in free cervical cancer screening</p>	<p>3.2% of responders to survey were unaware of any of the risk factors for cervical cancer</p> <ul style="list-style-type: none"> 8% of study sample correctly identified all cervical cancer risk factors <p>60.5% of survey participants identified multiple sexual partners as a risk factor for cervical cancer</p> <p>77.4% of survey responders identified the need to have regular Pap tests for early detection of cervical cancer</p> <p>Family history of cervical cancer was</p>	<p>Survey only completed by women presenting for grant-funded cervical cancer screening already (threat to external validity)</p> <p>Not all barriers considered on survey including cultural considerations, fear of pain during cervical cancer screening, and lack of a primary care provider</p> <p>Perception of barriers to cervical cancer screening is self-reported (testing)</p> <p>Study sample in 17</p>	III	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		(Akinlotan et al., 2017)	<p>Participation in cervical cancer risk factor survey n= 433</p> <p>Participants average between 30 and 49 years old</p> <p>41% Hispanic women, 25.9% Black women, 31% White women</p> <p>Setting: clinics providing grant-funded cervical cancer screening and diagnostic review in 17 counties in Texas</p>	<p>recognized by 75% of participants as a risk factor</p> <p>A significant positive correlation between education and knowledge of risk factors (r = 0.1381, p <0.01)</p> <p>Average survey score for Hispanic women was 5.5 out of 10</p> <p>Barriers to obtaining a Pap test findings:</p> <ul style="list-style-type: none"> • 61.6% identified cost as a major barrier • 53.1% identified fear of a cancer diagnosis as a barrier to screening • 18.8% identified lack of knowledge as a barrier • 37% of Hispanic women identified language as a barrier to screening <p>Results demonstrate a high knowledge of cervical cancer risk</p>	<p>counties in Texas (generalizability, selection bias)</p> <p>Limited sample of uninsured, low socioeconomic, and low education women (generalizability)</p> <p>Did not provide reliability data for survey instruments (threat to internal validity)</p> <p>Unknown if sample is from urban or rural areas of Texas (generalizability)</p> <p>No exclusion criteria defined</p>		

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
				<p>related to sexual factors, and lower knowledge about non-sexual contributing factors (smoking, long-term birth control use, multiparity)</p> <p>Gaps in risk factor knowledge can be addressed with patient education</p> <p>Additional barriers to cervical cancer screening exist besides lack of knowledge</p> <p>Knowledge scores lowest among Hispanics, and highest among Black women</p>			
3	Albrow <i>Acta Oncologica</i> 2014	<p>Systematic review of randomized control trials</p> <p>Purpose: to incorporate or summarize current evidence regarding interventions that increase cervical cancer screening uptake in a population</p>	<p>Sample type: randomized control trials</p> <p>Searched seven databases for relevant articles</p> <p>Search terms not defined, used terms from previous study</p> <p>Sample inclusion</p>	<p>Three categories of interventions included based on study inclusion criteria:</p> <ul style="list-style-type: none"> • Modified invitation letters • Reminder of overdue screening (telephone call, physician reminder) • HPV self-sampling 	<p>Limited search criteria to seven databases</p> <p>Search terms not defined</p> <p>Only four studies met inclusion criteria</p> <p>Few high-quality studies focusing on increasing cervical</p>	I	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		<p>of young women (Albrow et al., 2014)</p>	<p>criteria:</p> <ul style="list-style-type: none"> • Studies published up until the end of 2012 • Articles written in English • Studies must include a valid comparison group • Studies that included women aged 35 years old and younger <p>Considered all interventions to increase cervical cancer screening uptake</p> <p>Four studies included in the narrative synthesis</p>	<p>Telephone reminders from female medical assistant or nurse increased the proportion of women presenting for cervical cancer screening in two studies (6.3% and 21.7%)</p> <p>One study reported the effect of physician reminders on increasing cervical cancer screening in young women overdue for preventive screening</p> <p>Physician reminder demonstrated a 2.4% increase in the proportion of women presenting for cervical cancer screening (significance not reported)</p> <p>Inconclusive evidence available to determine which interventions significantly increase cervical cancer screening rates in young women</p> <p>Systematic review did</p>	<p>cancer screening rates in young women</p> <p>Included studies did not include women over the age of 35 (generalizability)</p> <p>Included studies did not specify inclusion of Hispanic women</p>		

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
				<p>not find any evaluations of nurse-lead counseling or education to increase cervical cancer screening uptake</p> <p>Additional research is required in the form of randomized control trials to determine the effectiveness of each intervention strategy</p>			
4	Allen <i>Journal of Cancer Education</i> 2014	<p>Non-experimental study</p> <p>Descriptive study</p> <p>One group pretest, intervention, posttest</p> <p>Pilot study</p> <p>Purpose: to test the feasibility and acceptance of an educational intervention that promotes adherence to breast, cervical, and colorectal cancer screening guidelines in a population of Latina women who attend church (Allen et al.,</p>	<p>Sample type: convenience sample, volunteer sampling method</p> <p>Female church members in a Baptist church</p> <p>Inclusion criteria:</p> <ul style="list-style-type: none"> • Women • Self-identified Latina or Hispanic • English or Spanish speaking • 18 years old or older <p>Exclusion criteria:</p> <ul style="list-style-type: none"> • Male gender <p>Sample Size:</p> <ul style="list-style-type: none"> • Participants in pre-intervention survey 	<p>Effective educational interventions included one-on-one telephone and in-person education sessions, small group sessions, and health fairs</p> <p>97% (n = 35) of participants who completed the intervention and the post-survey, participated in cancer screening or prevention activities of some kind</p> <p>Participation rates for cancer screening activities and discussion with a patient navigator were highest in the small-group education</p>	<p>Convenience sample from one church in one geographical location in Boston, MA (generalizability)</p> <p>Study did not consider different religious identification or religious backgrounds of participants (generalizability)</p> <p>Surveys were self-reported and based on individual perceptions (testing)</p> <p>High attrition, and many participants did not complete both pre-intervention survey and</p>	III	A

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		2013)	<p>(n = 77)</p> <ul style="list-style-type: none"> • Participants in post-intervention survey (n = 36), 47% • Lost to attrition (n = 41) <p>Setting: a predominantly Hispanic Baptist church in Boston, MA</p> <p>The majority of participants lost to attrition were less likely to speak proficient English (p <0.06)</p>	<p>intervention (72%)</p> <p>Feasibility of the study was possible utilizing educational materials that were linguistically, culturally, and religiously appropriate for the population</p> <p>Additional research in the form of randomized control trials is useful to determine effect of educational intervention on screening rates</p> <p>Utilized the Integrative Model of Behavioral Prediction, which can be adapted to multiple populations or community settings</p>	<p>post-intervention survey (mortality)</p> <p>Lacks description and reliability of the survey tool used to assess pre- and post-intervention (instrumentation)</p>		
5	Calderón-Mora <i>American Journal of Health Promotion</i> 2020	<p>Cluster randomized controlled study</p> <p>Experimental study</p> <p>Purpose: “. . . to assess whether group education delivery was as effective as individual education in promoting the uptake</p>	<p>Sample type: convenience sample, cluster randomization</p> <p>Recruitment sites randomly placed into control (individual education session) or intervention (group education session) arm</p>	<p>73.2% of participants completed cervical cancer screening after receiving either group or individual education (national screening rate among uninsured women is 63.8%)</p> <p>There is no significant difference in cervical</p>	<p>4-month follow-up survey relied on self-report of cervical cancer screening completion (testing)</p> <p>Lacks description and discussion of reliability of the survey tool used to assess pre- and post-intervention</p>	I	A

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		<p>of cervical cancer screening within a comprehensive cervical cancer screening program developed for Hispanic women in the United States” (Calderón-Mora et al., 2020)</p> <p>Addressing common barriers to cervical cancer screening through education</p> <p>Participants completed a preintervention survey, an immediate postintervention survey, and a 4-month follow-up survey</p>	<p>Recruitment sites included clinics, community centers, nonprofit organizations, local churches, food pantries, learning centers, and exercise classes</p> <p>Cluster randomization by recruitment site allocated participants into the control or intervention groups</p> <p>Sample size: n = 300 150 participants in control group 150 participants in intervention group</p> <p>Inclusion criteria:</p> <ul style="list-style-type: none"> • Female gender • Ages 21 to 65 years old • No Pap in the last 3 years • Living in El Paso or Hudspeth Counties • Uninsured or underinsured • No history of cervical cancer or hysterectomy • Income >200% of the federal poverty 	<p>cancer screening completion between the control and intervention groups</p> <ul style="list-style-type: none"> • 77.6% of the individual education group completed screening • 68.9% of the group education group completed screening <p>Scores for perceived benefits of screening (0.65, p = .005) and self-efficacy (0.60, p = .044) increased significantly from the baseline survey to the immediate postintervention survey for participants in the individual education group</p> <p>Scores for perceived barriers to screening (1.42, p = <.001) increased significantly from baseline to survey to 4-month follow-up survey in the individual education group</p> <p>“Knowledge scores</p>	<p>(instrumentation)</p> <p>Cluster-randomized design provided feasibility, but study was not blinded</p> <p>Study provided education, no-cost screening, navigation, and diagnostic services. Cannot establish the separate effect of the educational intervention on cervical cancer screening outcomes (history/testing)</p> <p>Survey data collected at the 4-month interval after postintervention survey and lacks longitudinal data (sustainability)</p> <p>All participants completed the baseline and postintervention surveys and 250 participants completed the 4-month follow-up survey (attrition)</p>		

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
			<p>level</p> <p>99.3% of participants were Hispanic women</p> <p>100% of participants completed the preintervention and immediate postintervention surveys.</p> <p>85.7% of participants completed the 4-month follow-up survey</p> <ul style="list-style-type: none"> • 137 participants from intervention group • 125 participants from control group <p>Setting: El Paso and Hudspeth Counties in Texas</p> <p>Population of both counties is primarily Hispanic</p>	<p>significantly increased both from the baseline to immediate-post survey and from the baseline to the 4-month follow-up survey in both educational arms” (Calderón-Mora et al., 2020).</p> <p>Group education is as effective as individual education in increasing the uptake of cervical cancer screening when part of a multicomponent screening intervention for Hispanic women living along the US-Mexico border</p> <p>“There was no significant difference in the uptake of screening by mode of educational delivery” (Calderón-Mora et al., 2020).</p>			
6	Chan <i>International Journal of Nursing Knowledge</i>	Systematic review with meta-synthesis Integrative review of quantitative and	Sample type: quantitative and qualitative studies Included research	Many women do not think they are at risk for cervical cancer because they have not had an abnormal Pap test	Limitations identified by authors who conducted quality appraisal of literature: • Small sample sizes	III	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
	2014	<p>qualitative research</p> <p>Purpose: to synthesize data related to women’s perception of cervical cancer risk and risk factors, and to discuss the relationship between knowledge of risk factors and the potential impact on cancer screening behavior (Chan, Yang, Gu, Wang, & Tao, 2014)</p>	<p>designs:</p> <ul style="list-style-type: none"> • Cross-sectional surveys • Face-to-face interviews • Prospective research • Case-controlled studies • Longitudinal study • Experimental studies • Secondary data analyses <p>Number of studies included in review (sample size): 42</p> <ul style="list-style-type: none"> • 1 literature review • 41 primary studies <p>Identified six databases searched</p> <p>Clearly identified search terms</p> <p>Inclusion criteria:</p> <ul style="list-style-type: none"> • Empirical studies • Qualitative or quantitative research design • Cervical cancer screening is primary health-promotion 	<p>Smokers have little knowledge of the increased risk for cervical cancer and do not participate in regular screening tests</p> <p>Up to 90% of Hispanic women age 18-25 believed that they had an increased risk for developing cervical cancer</p> <p>Factors that influence perception of cervical cancer risk: smoking, number of sexual partners, screening experience, social class, inconclusive screening results, perceived severity of cancer, perceptions of HPV and sexually transmitted infection (STI) exposure, and family history of cervical cancer</p> <p>Knowledge of HPV and increased risk of cervical cancer raised awareness in young women</p>	<ul style="list-style-type: none"> • Deficient data collection methods • No in-depth discussion of perceptions of cervical cancer risk <p>No exclusion criteria for literature search included</p> <p>No diagram depicting elimination of studies at each level of the search</p> <p>Articles limited by year range 1990 to 2012</p> <p>Studies not specific to Hispanic population; although, several studies discussed implications for Hispanic women (generalizability)</p>		

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
			behavior studied <ul style="list-style-type: none"> • Studies published in English • Publication years from 1990-2012 Identified multiple theoretical frameworks included in selected studies Identified sampling methods used in selected studies Identified populations included in selected studies: Caucasian, Asian, Taiwan, Singapore, Laos, Thailand, and China <ul style="list-style-type: none"> • 14 studies conducted in United States • 7 studies conducted in England • 20 studies conducted in other countries 	regarding the need for regular cervical cancer screening Educational interventions significantly increased knowledge regarding the benefits of regular screening Inconclusive relationship between perception of cervical cancer risk and screening participation behavior Major gaps exist in current knowledge and methodological designs Further research needed to understand the relationship between knowledge of cervical cancer risk factors and participation in regular Pap tests or other screening			
7	Fleming <i>Ethnicity & Disease</i> 2018	Quasi-experimental study design Pilot single-arm study	Sample type: convenience sample, volunteer sampling	Findings demonstrated increased knowledge and self-efficacy among participants (p <.0001)	Small sample size (sample size/generalizability)	II	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		<p>using pretest-posttest design</p> <p>No random assignment to groups, no control group, all participants received the same intervention</p> <p>One group provided baseline and postintervention measurements regarding knowledge, beliefs, self-efficacy, and cervical cancer screening intentions</p> <p>Purpose: “. . . to collect preliminary evaluation data about the feasibility of implementing a promotora-led cervical cancer educational intervention among women from a farmworker community” (Fleming et al., 2018).</p> <p>Primary outcomes: cervical cancer/HPV knowledge, screening beliefs, screening self-</p>	<p>Participants were recruited by promotoras and a community health educator at community events, health fairs, weekly food banks, and word-of-mouth</p> <p>Inclusion criteria:</p> <ul style="list-style-type: none"> • Female gender • Age 21 to 70 years old • Self-identified Hispanic/Latino • Able to speak and read in English or Spanish • Able to provide written informed consent <p>All participants self-identified as Hispanic/Latino during recruitment</p> <p>Did not include screening status as inclusion/exclusion criterion for participation</p> <p>46 participants were up to date with cervical cancer screening at</p>	<p>Study supports future community-driven intervention to educate women about cervical cancer screening practices</p> <p>Significant increase in knowledge of HPV and Pap test self-efficacy following the education session</p> <p>No significant increase in health beliefs between baseline and postintervention measures</p> <p>No significant change in participant intention to have a Pap test in the next 6 months after education session Baseline: 63% Postintervention: 62%</p> <p>31 women indicated interest in getting a Pap test after the education session</p> <p>At the three-month follow-up, of those 31</p>	<p>Single arm study design without use of a control group</p> <p>Study setting was in a farmworker community within a limited geographic region (generalizability)</p> <p>3-month follow-up data relied on self-report regarding completion or intention to complete cervical cancer screening (testing)</p> <p>Unable to directly link the completion or intention to complete screening based on educational intervention alone. Some participants were already up-to-date with screening/did not require screening (history)</p> <p>This was a pilot study. Future research with a larger sample size is indicated</p>		

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		efficacy, and Pap test intentions	<p>baseline</p> <p>Sample size: n = 60</p> <p>Total of six educational sessions conducted with an average of 10 attendees per session</p> <p>Setting: Tampa, Florida</p> <p>Community-based facilities such as youth centers, community centers, and churches</p>	<p>participants who indicated interest in getting a Pap test:</p> <ul style="list-style-type: none"> • 20 participants had received a Pap test (65%) • 4 participants had scheduled appointments (13%) • 3 participants had plans to schedule an appointment for Pap testing (9.7%) <p>Four women (13%) could not be reached for follow-up</p> <p>“... findings suggest that promotoras may play an important role in cancer prevention and chronic disease management” (Fleming et al., 2018).</p>			
8	Flores <i>Clinical Nursing Research</i> 2013	<p>Literature review of quantitative and qualitative research studies</p> <p>Integrative review</p> <p>Purpose: to discuss the</p>	<p>Sample type: quantitative and qualitative research studies</p> <p>Computerized search of four databases</p>	<p>Underutilization of healthcare preventive screening, including Pap smear, in Hispanic women is related to low health literacy</p> <p>Hispanic women with</p>	<p>Research regarding healthcare literacy, cervical cancer screening, and Hispanic women is very limited</p> <p>Limited database search to only four databases</p>	V	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		relationship between health literacy and cervical cancer screening behaviors in older Hispanic women (Flores & Acton, 2013)	<p>Authors defined search terms</p> <p>Sample inclusion criteria:</p> <ul style="list-style-type: none"> • Quantitative and qualitative research design study • Research conducted in the United States • Research studies written in English • Participants in studies age 18 and older • Cervical cancer screening study that included health literacy • Publication dates between 1990 and 2011 <p>Sample exclusion criteria:</p> <ul style="list-style-type: none"> • Studies and reports related to adolescents, pregnancy, self-collection, and HPV vaccination • Studies published outside of the United States 	<p>low health literacy were likely to have never had a Pap smear or mammogram in their lifetime</p> <p>Health literacy is a predictor of cervical cancer screening, without influence from ethnicity</p> <p>Lack of knowledge, cultural beliefs, language barriers, and low health literacy present barriers to proper cervical cancer screening behavior</p> <p>Additional research is needed focusing exclusively on Hispanic women</p>	<p>(publication bias)</p> <p>Search terms limited to “<i>cervical smear, Hispanic, health literacy, and literacy</i>” (Flores & Acton, 2013)</p> <p>Could include search terms such as <i>Hispanic women, Pap smear, cervical cancer screening, Latinas, or older Hispanic women</i></p> <p>Only one study addressed all desired components of health literacy, cervical cancer screening, and older Hispanic women (sample size)</p> <p>Excluded articles not written in English and articles written outside of the United States (sample size)</p> <p>Limited studies that are exclusive to Hispanic women, health literacy and its impact on cervical cancer screening</p>		

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
			<p>80 articles reviewed by title and abstract</p> <p>9 articles addressed health literacy and Hispanic women</p> <p>1 article addressed health literacy, cervical cancer screening, and older Hispanic women</p>		(generalizability)		
9	Foley <i>Journal of Community Health</i> 2015	<p>Quasi-experimental study</p> <p>Quantitative</p> <p>One group pretest-posttest</p> <p>Purpose: “. . . to understand the factors that affect cervical cancer prevention, screening, and care provided” through development of a cervical cancer educational program (Foley et al., 2015).</p>	<p>Sample type: convenience sampling method</p> <p>Self-identified Hispanic women, in Boston area, aged 18-99 years old</p> <p>N=295</p> <p>Setting: Hispanic community centers in Boston, MA</p> <p>Educational interventions included mailed pamphlets, radio segments, and monthly in-person education sessions</p>	<p>Educational interventions increased HPV awareness and knowledge in respondents, irrespective of age</p> <p>Education that meets cultural, education level, and language needs of the Hispanic population is effective in increasing knowledge of cervical cancer screening needs</p> <p>Culturally sensitive education decreases barriers to cervical cancer prevention services</p> <p>After education, respondents</p>	<p>Sample only included Hispanic women in the Boston area who can read/ understand English or Spanish only (selection bias)</p> <p>Participants lost to follow-up after education: n=318 pretest, n=295 posttest (maturation/mortality)</p> <p>Sample after education (n=295) was random sample of Hispanic women in the community, not necessarily the same women who completed the pretest</p> <p>Outcomes measured</p>	II	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
				<p>demonstrated more affirmative responses when asked about recent visits to a healthcare provider, Pap smear compliance, and intention to receive HPV vaccination or have their children receive HPV vaccination</p> <p>Increase in respondent's knowledge that HPV can cause cervical cancer from 61% pretest (n=296), to 75% posttest (n=191)</p> <p>Focusing educational efforts on recent immigrants increases utilization of healthcare and preventive services</p>	<p>indirectly through self-reports/survey (testing)</p> <p>Since education was distributed to the community, researchers cannot confirm that positive responses after education are due to intervention or other factors (history)</p> <p>Survey instrument after intervention included original survey questions, as well as additional questions related to education (instrumentation)</p>		
10	Fornos <i>Journal of Cancer Education</i> 2014	<p>Non-experimental study</p> <p>Descriptive study</p> <p>Qualitative study conducted first, using focus groups, to determine appropriate health promotion interventions</p>	<p>Sample type: convenience sampling method</p> <p>Women enrolled in a CareLink financial assistance program, average age 43.7</p> <p>Sample size: n = 32,807</p>	<p>Community outreach educational intervention showed 526 women responded to outreach and 139 of those respondents scheduled a Pap test appointment</p> <p>Throughout program interventions, 8,039 women received Pap</p>	<p>Study purpose not clearly stated in report</p> <p>Limited literature review</p> <p>No power analysis for study sample identified (sample size)</p> <p>Authors did not include</p>	III	C

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		<p>Interventions included:</p> <ul style="list-style-type: none"> • Small media newsletters • Mass media internet-based public service announcements • Telephone and text message client reminders • Community outreach with volunteers who delivered health promotion education and became role models <p>Purpose: to determine the effect of tailored media messages and health promotion education on the 3-year participation in cervical cancer screening among high-risk, multiethnic, and low-income populations in south Texas (Fornos, Urbansky, & Villarreal, 2013)</p>	<p>Main population was Hispanic women (71%)</p> <ul style="list-style-type: none"> • White (13%) • African American (5%) • Other (11%) <p>Participants divided into low-, average-, and high-risk for cervical cancer</p> <ul style="list-style-type: none"> • 33% of total participants low-risk • 9% of total participants average-risk • 58% of total participants high-risk (no Pap test within last 5 years) <p>Reported poverty level of participants</p> <ul style="list-style-type: none"> • 87% of total participants were below 150% of the Federal Poverty Guideline <p>Setting: South Texas, San Antonio area CareLink central enrollment office University Health Services ambulatory clinics</p>	<p>testing</p> <p>Pre-intervention cervical cancer screening rate 33%</p> <p>Post-intervention cervical cancer screening rate 42%</p> <p>Number of women in average-risk group decreased by 13% and number in high-risk group decreased by 10%</p> <p>The changes in percentages from baseline groups indicate program interventions were effective</p> <p>Use of theoretical models to create educational interventions increases awareness of cervical cancer screening risks</p> <p>Tailoring education allows for individualization of messages in media or print material</p> <p>“... an innovative,</p>	<p>study limitations, bias, or threats to internal and external validity in study report</p> <p>Study limited to area of south Texas, however there is a significant population of Hispanic women in this geographical area (generalizability)</p> <p>Statistical analysis of the data not reported</p> <p>Only the percentage of women in each risk group who obtained a Pap test was discussed</p>		

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		<p>No defined purpose statement provided</p> <p>Researchers developed and implemented an evidence-based, culturally appropriate, educational program to promote secondary prevention of cervical cancer (Fornos, Urbansky, & Villarreal, 2013)</p>	Preventive health clinics in San Antonio, Texas	theory-based intervention can increase Pap tests up to 9% among mostly Hispanic, uninsured women enrolled in a county safety net hospital financial assistance plan” (Fornos, Urbansky, & Villarreal, 2013)			
11	Levano <i>Cancer</i> 2014	<p>Program analysis/evaluation of the National Breast and Cervical Cancer Early Detection Program (NBCCEDP)</p> <p>Descriptive study</p> <p>Article summarized and analyzed specific interventions and programs implemented by selected states in the United States participating in the NBCCEDP program</p> <ul style="list-style-type: none"> NBCCEDP program developed by the CDC in 1991, and 	<p>Sample type: summaries and descriptions of individual states’ programs and interventions as part of the NBCCEDP program</p> <p>Sample size: 5 summaries of states’ interventions or applications of the NBCCEDP program</p> <p>Setting: States/programs included:</p> <ul style="list-style-type: none"> Utah Cancer Control Program Ohio Breast and Cervical Cancer Project 	<p>Identifying and removing financial barriers to cervical cancer screening is not enough to increase cervical cancer screening rates; especially for women in minority populations or underserved populations</p> <p>NBCCEDP programs intent to target educational and outreach interventions to increase cancer screening activities and raise community awareness regarding cancer screening guidelines</p>	<p>Methods and results for each individual program summarized with minimal detail</p> <p>No cost/benefit analysis discussed</p> <p>Limitations of individual program analyses not described (transparency)</p> <p>Results and recommendations discussed in minimal detail; interpretation unclear</p>	V	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		<p>implemented in individual states across the United States</p> <p>Purpose: to discuss examples of programs and interventions by NBCCEDP grantees to identify the successes and barriers to public education and outreach programs (Levano et al., 2014)</p> <p>Discusses specific descriptions of programs, implementation interventions, successes, and challenges for individual state interventions (Levano et al., 2014)</p>	<ul style="list-style-type: none"> • Georgia Breast and Cervical Cancer Program • New York State Department of Health, Cancer Services Program • New Hampshire Breast and Cervical Cancer Program 	<p>Effective recruitment methods include one-on-one education sessions, mass media campaigns, special events, and sending reminder invitations</p> <p>Programs should utilize evidence-based interventions for education and outreach</p> <p>It is challenging to adapt evidence-based interventions to target populations</p> <p>“Public education and targeted outreach strategies should be evidence-based, informed by community needs, executed in collaboration with partnerships, community based, culturally appropriate, and a combination of multiple interventions” (Levano et al., 2014)</p>			
12	Mann <i>Journal of Cancer</i>	Integrative review of qualitative studies	Searched six online databases	Use of behavioral theory-based interventions increased	Within literature search, did not include white papers or publications	III	A

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
	<i>Education: The Official Journal of the American Association for Cancer Education</i> 2015	Purpose: identify current interventions to increase cervical cancer screening in the Hispanic population in the United States; focusing on gaps in research and characteristics of effective interventions (Mann, Foley, Tanner, Sun, & Rhodes, 2015)	<p>Sample inclusion criteria:</p> <ul style="list-style-type: none"> Peer-reviewed articles with documented intervention to improve cervical cancer screening in Hispanic/Latina women Women aged 18 and older, living in the United States Interventions included were designed for, or implemented exclusively with, Hispanic/Latina women, or at least 50% of identified participants were Hispanic/Latina women <p>45 articles met inclusion criteria</p> <p>Identified 32 unique interventions</p>	<p>understanding of need for cervical cancer screening</p> <p>Interventions (n=6) demonstrated significant increases in cervical cancer screening rates with one-on-one education sessions with a provider or lay health advisor</p> <p>Educational interventions involving repeated contact, one-on-one, with a provider may be more effective than a one-time education session</p> <p>There is a need for more comprehensive educational interventions for Hispanic women that include broad sexual and reproductive health topics, rather than a focus on specific behaviors</p>	<p>in Spanish (publication bias)</p> <p>No standardized reporting of intervention components and evaluation methods across studies (transparency)</p>		
13	Martínez-Donate <i>Journal of</i>	Non-experimental study	Sample type: convenience sampling method	Women were generally knowledgeable about Pap smears on a scale	Study results relied of self-report and self-evaluation of	III	A

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
	<p><i>Healthcare for the Poor and Underserved</i> 2013</p>	<p>Descriptive study</p> <p>Cross-sectional study</p> <p>Participants completed a self-administered questionnaire</p> <p>Purpose: to discover the determining factors and prevalence of obtaining a Pap test and mammogram within a 12-month timeframe in a population of Hispanic women living in the Midwest (Martínez-Donate et al., 2013)</p>	<p>N = 278 Latinas located in Dane County, Wisconsin</p> <p>Lay health advisors recruited social contacts for educational sessions</p> <p>Inclusion criteria:</p> <ul style="list-style-type: none"> • 18 years old or older • Fluent in Spanish • Not pregnant in the last 12 months • Have not participated in educational activities for cervical or breast cancer screening in the past <p>300 participants needed for significant statistical power (>80%), with effect size for moderate-small (≥ 0.3) intervention effect</p> <p>353 women completed the baseline questionnaire, and 278 completed the final version after the educational intervention</p>	<p>from 0-7 (mean= 5.16, SD= 1.48)</p> <p>66.1% of women reported fear of the Pap smear procedure as a barrier to screening</p> <p>76.4% of women reported the cost of cervical cancer screening as a barrier</p> <p>81.7% of women feared that the Pap smear would find something abnormal</p> <p>56.7% of women reported lack of English fluency as a barrier to cervical cancer screening</p> <p>Only 57% of Latinas in the sample had a Pap smear within the past 12 months</p> <p>Among the participants, 83.4% of women were compliant with current cervical cancer screening guidelines. This is consistent with</p>	<p>knowledge</p> <p>Convenience sample from one area of the United States (generalizability)</p> <p>Potential for overreporting of screening due to self-reports (testing)</p> <p>The validity of some measures, including interpersonal, structural, and cultural barriers, is not established</p> <p>The majority of participants lived in urban or mixed-urban areas (generalizability)</p> <p>Cross-sectional study cannot determine direction or causality of associations</p>		

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
			<p>Mean age of participants 34.58 years</p>	<p>the national average</p> <p>Latina women require close follow up and treatment in addition to cervical cancer screening</p> <p>Lack of a regular healthcare provider and limited access to insurance among this population can jeopardize the ability for Latina women to obtain appropriate cervical cancer screening</p> <p>Recent Pap smear receipt among Latinas was related to having knowledge of the Pap test and cervical cancer screening recommendations; and having a regular healthcare provider</p> <p>“Overall, our study suggests the need for health promotion interventions increasing awareness of cervical and cancer screening recommendations</p>			

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
				among Latinas along with a reduction of structural barriers” (Martínez-Donate, 2013)			
14	Moore de Peralta <i>Hispanic Health Care International</i> 2017	Non-experimental study Descriptive study Cross-sectional survey Purpose: to identify the internal and external cues that prompt cervical cancer screening activities in a Hispanic population (Moore de Peralta, Holaday, & Hadoto, 2017) Utilized Health Belief Model to develop Cues to Action, and examined their impact on cancer screening behaviors	Sample type: convenience, non-probabilistic sampling method 220 participants returned fully completed survey questionnaires Inclusion criteria: <ul style="list-style-type: none"> Self-identified women of Hispanic/Latino origin Age 18 to 65 (based on U.S. Preventive Services Task Force guidelines) Must reside in or near seven cities in South Carolina (chosen by convenience) Setting not defined, only stating participants resided in or near one of seven selected cities in South Carolina	18% of participants reported either never having a Pap test performed (5%) or having one Pap smear test performed in their life (13%) Participants reported limited knowledge about Pap smear testing, cervical cancer, and HPV Study measured internal cues and external cues to cancer screening behaviors Most important internal cue to cervical cancer screening reported by participants (96%) was the perception that having a Pap test was important to their health 9.1% of participants had little knowledge of the	Sample was of women from cities in South Carolina, and cities were not identified (generalizability) Unknown if participants were from rural or urban populations (generalizability) No discussion of specific questions or topics addressed on participant survey (potential lack of treatment fidelity) Study design was cross-sectional, with data collected at only one point in time Results relied on self-reports and participants’ perceptions (bias, testing)	III	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
				<p>diagnosis of cervical cancer, and 23% of participants did not know how to interpret a negative Pap test result</p> <p>56% of participants reported that an important external cue was being told by their doctor to receive a cervical cancer screening test</p> <p>33% of participants reported being told by a nurse to be screened for cervical cancer</p> <p>Regular medical care and having a relative with cancer were significant covariates</p> <p>External cues that demonstrated significant effect:</p> <ul style="list-style-type: none"> • Education from mother about Pap test (p = .014) • Listening to information about the Pap test on Spanish radio/television (p = 	<p>Participants recruited at community-based locations (community centers, ESL schools, churches) and sample may not represent women who are not active in the community (generalizability)</p>		

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
				.008) “In this study, personal communication with family members, friends, and physicians was very effective in prompting women to obtain a Pap smear” (Moore de Peralta, Holaday, & Hadoto, 2017)			
15	Musa <i>PLoS ONE</i> 2017	Systematic Review of RCTs and quasi-experimental studies Purpose: to compare the current evidence regarding cervical cancer screening rates among groups of high-risk individuals participating in an educational intervention or in a control group (Musa et al., 2017) Two study topics: effect of cervical cancer education on screening rates and effect of provider	Searched four online databases Sample inclusion criteria: <ul style="list-style-type: none"> • Studies reporting education, provider recommendation, and cervical cancer screening in eligible women with risk for cervical cancer • All types of women eligible for cervical cancer screening, including women with no prior screening, and those overdue for screening • Any educational 	Of the seven studies included to focus on the effect of education, researchers found evidence of increased cervical cancer screening rates in women who received educational intervention compared to the control groups The effect of the educational interventions on cervical cancer screening was two and a half times higher when compared to the control (OR = 2.46; 95% CI: 1.88, 3.21) (Musa et al., 2017)	Threats to external validity/generalizability <ul style="list-style-type: none"> • Not all studies included Hispanic women • Not all studies conducted in the United States Literature search did not include secondary outcome data including cervical cancer screening costs, health insurance coverage, and access to healthcare for lower socioeconomic populations	II	A

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		<p>recommendation on screening rates</p>	<p>intervention that increased participants' knowledge about cervical cancer</p> <ul style="list-style-type: none"> • Interventions initiated by healthcare providers to encourage cervical cancer screening or increase compliance with screening guidelines <p>28 studies met inclusion criteria</p> <ul style="list-style-type: none"> • 7 studies addressed effect of education on screening rates • 21 studies addressed effect of provider screening recommendation <p>Total of 241,219 participants across included studies</p> <p>Study settings included 15 countries (Australia, Belgium, Canada, Finland, France, Germany, Italy, Japan, Kenya, Malaysia,</p>	<p>The use of theory-based, culturally sensitive, educational interventions in populations with low cervical cancer screening compliance, significantly improves cervical cancer screening rates</p> <p>One effective theory-based educational intervention reviewed was guided by the social cognitive framework</p> <p>Consistent, positive effect of theory-based, culturally and linguistically sensitive, and community-participatory education on cervical cancer screening rates</p> <p>Educational interventions increased awareness, knowledge of cervical cancer, and the importance of screening</p> <p>Identification of barriers</p>			

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
			Mexico, Sweden, Taiwan, Thailand, and United States)	and help to navigate scheduling cancer screening appointments also increase the likelihood of women obtaining a Pap test (Musa et al., 2017)			
16	Naz <i>Asian Pacific Journal of Cancer Prevention</i> 2018	Systematic Review of RCTs and quasi-experimental studies Purpose: to examine the effect of various educational interventions on women's cervical cancer screening behaviors (Naz et al., 2018)	Sample type: RCTs and quasi-experimental studies Searched six databases Search terms clearly defined Study inclusion criteria: <ul style="list-style-type: none"> Any study of cervical cancer educational intervention Studies included women without a cervical cancer diagnosis Educational interventions based on different health models 37 articles included in review with 15,658 female participants included	A variety of health education models are effective in influencing cervical cancer screening behaviors of women Health Belief Model-based education increased knowledge, increased awareness of perceived susceptibility to cervical cancer, and helped women identify barriers to cervical cancer screening Use of client reminders, one-on-one education, and reduction of structural barriers improved cervical cancer screening uptake Educational interventions based on health behavior change	No exclusion criteria defined by authors Results are reasonably consistent, with fairly definitive conclusions and recommendations	II	A

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
				<p>theories can increase cervical cancer screening prevalence in women around the world</p> <p>Theory-based interventions increased knowledge of cervical cancer, promoted awareness, and increased cervical cancer screening rates</p> <p>School-based and community-based educational interventions demonstrated increased cervical cancer screening rates</p> <p>Professional education programs have a positive effect on pap test behaviors in women</p> <p>Based on the patient situation, providers can choose from multiple educational interventions to increase cervical cancer screening rates</p>			

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
17	Rees <i>Preventive Medicine</i> 2018	Systematic Review of RCTs and quasi-experimental studies Purpose: to examine current evidence related to effective interventions that increase cervical cancer screening rates in lower socioeconomic populations (Rees, Jones, Chen, & Macleod, 2018)	Searched four online databases Sample inclusion criteria: <ul style="list-style-type: none"> Articles must be RCTs or quasi-RCTs Must include women eligible to participate in cervical cancer screening Interventions targeted women of lower socioeconomic status based on income, race, ethnicity, and geographical area 16 studies added to original review Total: 29 studies for final analysis Study settings included two high-income countries (United States and France) and three upper-middle-income countries (Mexico, Samoa, and Thailand)	Face-to-face education provided to Mexican women, including cervical cancer risk factors, screening recommendations, and descriptions of cervical cancer screening procedures, showed significant increase in cervical cancer screening uptake Educational programs provided by lay health advisors are more successful if culturally specific and sensitive Educational interventions focused on theoretical models of behavior change to empower women, increase knowledge, and address barriers to cervical cancer screening Method of communication is important, as media campaign (sending letters, radio advertisement) alone	Did not include observational or longitudinal studies to assess effects of intervention over time (selection bias) Did not include search terms in methods for searching literature Threats to external validity/generalizability <ul style="list-style-type: none"> Not all studies conducted in the United States Different populations and interventions in each included study Some interventions difficult to categorize due to study design/method The nature of some included interventions could pose threats to blinding of participants and researchers, which is important in a RCT	II	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
				<p>was not as effective at increasing cervical cancer screening as in-person or telephone education</p> <p>Media campaigns with additional in-person follow-up demonstrate significant increase in cervical cancer screening uptake, compared to media campaigns alone</p>			
18	Rojas <i>World Medical & Health Policy</i> 2017	<p>Non-experimental study</p> <p>Correlational study</p> <p>Longitudinal study examined baseline data from previous study, and correlated with data collected after 5 years</p> <p>Current study is a secondary analysis of the longitudinal study</p> <p>Baseline data collection from November 2004 to August 2006. Five-</p>	<p>Sample type: nonclinical convenience, snowball sampling</p> <p>Sample size: initial study participants n = 316 Five-year follow-up participants n = 285</p> <p>Sample comprised of drug using and non-drug using mother and daughter pairs</p> <p>Sample inclusion criteria for baseline:</p> <ul style="list-style-type: none"> • Mother and daughter pairs willing to participate together 	<p>Participants seen at a primary care office had higher rates of cervical cancer screening (63.6% of mothers and 67.0% of daughters)</p> <p>Participants who received HIV prevention and safe sex education from a healthcare practitioner within the last 12 months demonstrated higher rates of cervical cancer screening (50.7% of mothers and 56.3% of daughters) Compared to baseline study in which 47.8% of</p>	<p>No power analysis reported (sample size)</p> <p>Did not account for attrition between initial study and 5-year follow-up (attrition)</p> <p>Baseline study utilized an Addiction Survey Index (ASI) questionnaire, but did not provide validity or reliability data on this instrument (instrumentation)</p> <p>Sample was from a specific geographical region in Miami-Dade</p>	III	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		<p>year follow-up data collection from January 2013 to April 2014</p> <p>Purpose: to discuss factors that influence cervical cancer screening in the Latina population, and examine the correlation between these factors over time (Rojas et al., 2017)</p> <p>Utilized the Health Belief Model as theoretical framework for the study</p>	<ul style="list-style-type: none"> • 18 years of age or older • Self-identified as Latina • Gave consent for an interview lasting 2 to 3 hours in length • Living in Miami-Dade County, Florida <p>Sample inclusion criteria for follow-up:</p> <ul style="list-style-type: none"> • Participation in baseline interview • Willing to provide researchers with two telephone numbers for contact during participation <p>Setting: Miami-Dade County, Florida</p> <p>Interviews conducted in participants' homes or in places of the participant's choice</p> <p>Interview question identified the primary source of healthcare for participants as community health centers, primary care</p>	<p>mothers and 69.3% of daughters received cervical cancer screening after a provider discussed HIV and safe sex education</p> <p>In univariate analysis, the following variables were significant for higher likelihood of having cervical cancer screening:</p> <ul style="list-style-type: none"> • Sexually active • Having health insurance • Regular visits with healthcare provider • Receiving HIV prevention and safe sex education within the last 12 months <p>Multivariate, correlational analysis demonstrated significance for higher rates of cervical cancer in the following variables:</p> <ul style="list-style-type: none"> • Sexually active (95% CI = 1.20-3.52) • Seen by healthcare 	<p>County, Florida and may not be representative of all Latina women in the United States (generalizability)</p> <p>Data collected with self-report measures creating potential for social desirability bias (testing)</p>		

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
			<p>offices, emergency rooms, or hospitals</p>	<p>provider in last 12 months (95% CI = 5.67-18.78)</p> <ul style="list-style-type: none"> HIV and safe sex education within the past 12 months (95% CI = 1.19-3.66) <p>Since being sexually active is a determinant of performing cervical cancer screening, education or interventions should focus on women who are no longer sexually active</p> <p>Women who discussed HIV prevention and safe sex practices had higher rates of cervical cancer screening. Providers should communicate more often about screening</p> <p>“... healthcare provider counseling and appropriate access to health services can increase cervical cancer screening among this diverse group of Latinas” (Rojas et al.,</p>			

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
				2017) Both mothers and daughters were more likely to participate in cervical cancer screening if their doctors discussed the screening with them			
19	Shokar <i>Health Promotion Practice</i> 2019	Quasi-experimental study Utilized a control and an intervention group A pragmatic prospective study utilizing a delayed intervention design Nonrandomized pragmatic study design Purpose: “. . . to determine whether a multiple component, multilevel, culturally tailored, novel, theory-based intervention significantly increases the uptake of cervical cancer screening among uninsured	Sample type: convenience sample Participants recruited from 37 approved community sites such as food pantries, learning centers, nonprofit organizations, community centers, local churches Control group recruited first Intervention group recruitment began a few months after control group recruitment Sample size: n = 599 299 participants in control group 300 participants in intervention group	Statistically significant differences between intervention and control groups The intervention group was 14 times more likely to complete cervical cancer screening compared with the control group Significant predictors of cervical cancer screening completion were older age, excellent or very good health, birth in Mexico, Spanish or bilingual language preference, and having a regular doctor In uninsured populations, younger women and those with	Utilized a nonrandom sampling method (sampling) Recruitment of the intervention group months after recruitment of the control group could influence results due to new availability of community resources or screening programs Outcome of cervical cancer screening completion determined by self-report (testing) Study conducted in a specific geographic region of Texas with Hispanic women of primarily Mexican origin (generalizability)	II	A

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		<p>Hispanic women” (Shokar et al., 2019).</p> <p>Intervention components included outreach, education, no-cost Pap and HPV screening; on-site diagnostic and treatment colposcopy; and patient navigation to facilitate screening, diagnosis, and treatment</p> <p>Control group received baseline survey and 4-month follow-up survey</p> <p>Intervention group received baseline survey, education, all intervention components, immediate postintervention survey, and 4-month follow-up</p>	<p>Power analysis performed</p> <p>77% of participants completed the 4-month follow-up survey 203 from control 257 from intervention</p> <p>Study population predominantly Hispanic (98%)</p> <p>Inclusion criteria:</p> <ul style="list-style-type: none"> • Age 21 to 65 years old • Self-reported Texas address • Uninsured or underinsured • Due for cervical cancer screening <p>Exclusion criteria:</p> <ul style="list-style-type: none"> • History of cervical cancer or hysterectomy <p>Setting: El Paso County and Hudspeth County, Texas</p> <p>Population of both</p>	<p>lower perceived health status should be the target for cervical cancer educational interventions</p> <p>“... a community-based multicomponent cervical cancer screening intervention resulted in an absolute increase in cervical cancer screening completion of 66.8% among underserved Hispanic women due for screening” (Shokar et al., 2019).</p> <p>Cervical cancer screening completion in the intervention group was 73.2%, compared to 6.4% who completed cervical cancer screening in the control group (p <.001)</p>	<p>43 participants in the intervention group were lost to follow-up 96 participants in the control group were lost to follow-up (attrition)</p>		

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
			counties primarily Hispanic (82.2%)				
20	Thompson <i>The Journal of Rural Health</i> 2014	<p>Non-experimental study</p> <p>Descriptive study</p> <p>Performed pre-intervention survey, provided educational intervention, and then administered a post-intervention survey to test knowledge after the intervention</p> <p>Utilized a community health worker, one-on-one educational intervention</p> <p>All participants received the intervention</p> <p>Purpose: to examine the effects of a community health worker-led intervention on cervical cancer screening rates in a population of Hispanic women who were non-</p>	<p>Sample type: convenience sample, volunteer sampling method</p> <p>Medical record review identified Hispanic women out of compliance with cervical cancer screening guidelines</p> <p>Inclusion criteria:</p> <ul style="list-style-type: none"> Hispanic women Living in New Mexico border counties Age 29-80 years old Not had a Pap test within the last three years Must be able to complete a questionnaire that is verbally administered <p>Sample size: n = 162</p> <p>Sample characteristics of Pap test compliance:</p>	<p>Reported barriers to cervical cancer screening included:</p> <ul style="list-style-type: none"> Keep putting it off Screening is too expensive Lack of insurance Pap test is too embarrassing Being afraid of the screening results Pap tests are too painful or unpleasant <p>After the intervention, 124 participants (76.5%) obtained a Pap test</p> <p>After the educational intervention, 10% more participants agreed that postmenopausal women needed to have a Pap test (p = .05)</p> <p>The intervention increased awareness that early cervical cancer detection could lead to a cure (43.1% more</p>	<p>Did not report a power analysis (sample size)</p> <p>No survey validity or reliability reported (instrumentation)</p> <p>Study conducted in rural area of New Mexico, and may not be representative of all Hispanic women in the United States (generalizability)</p>	III	A

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		<p>compliant with current cervical cancer screening guidelines (Thompson et al., 2014)</p>	<ul style="list-style-type: none"> • 97.5% of participants reported having had a Pap test in the past • 1.9% had never had a Pap test • 0.6% did not know if they ever had a Pap test <p>Sample data regarding time since last Pap test</p> <ul style="list-style-type: none"> • 59.8% had a Pap test greater than 3 but less than 5 years ago • 27.2% had a Pap test greater than 5 but less than 10 years ago • 8.0% had a Pap test greater than 10 years ago • 1.9% had never had a Pap test • 0.6% were unsure if they ever had a Pap test • 1.9% had a Pap test but could not remember when it was performed <p>Setting: southern New Mexico health clinics</p>	<p>participants agreed with this statement post-intervention)</p> <p>Women who were aware that a Pap test can detect abnormalities before it develops into cancer were more likely to obtain Pap tests post-intervention</p> <p>After the intervention, more women (97.5%) agreed that they would receive the HPV vaccine if they were instructed to by their doctor or nurse ($p < .0001$, change between pre- and post-intervention)</p> <p>A culturally appropriate intervention lead by community health workers is effective to increase cervical cancer screening rates in noncompliant Hispanic women</p> <p>The intervention successfully provided education about cervical cancer and the</p>			

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
			<ul style="list-style-type: none"> Border communities Rural area of Doña Ana county in New Mexico 	<p>importance of cervical cancer screening</p> <p>Community health workers and one-on-one educational interventions are effective to increase cervical cancer screening in the population of Hispanic women living on the United States-Mexico border (Thompson et al., 2014)</p> <p>Recommend future RCT studies</p>			
21	Thompson <i>Cancer</i> 2017	<p>Original Research RCT</p> <p>“... a parallel, 3-arm, randomized control trial” (Thompson et al., 2017)</p> <p>Purpose: to determine the effects of a low-intensity educational intervention (video), versus a high-intensity educational intervention (video</p>	<p>Sample type: convenience sampling method</p> <p>Inclusion criteria:</p> <ul style="list-style-type: none"> Latina women Age 21 to 64 Non-adherent to Pap test screening guidelines or >3 years since last cervical cancer screening Not having a hysterectomy Being seen at one of 	<p>52% of women receiving the high-intensity intervention (video & one-on-one education session) obtained Pap smears within seven months of randomization, compared to 38.7% of women in the low-intensity group (video only) and 34.0% of women in the usual care group</p> <p>No significant</p>	<p>No power analysis reported (sample size)</p> <p>Sample was from a population of rural Latinas in Washington state (generalizability)</p> <p>Women may have received Pap test outside of Yakima Valley healthcare clinics and were not recorded in medical chart for review (history)</p>	I	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		<p>plus one-on-one education), compared to a control group on the increase of cervical cancer screening rates in Latina women living in rural communities (Thompson et al., 2017)</p>	<p>the participating health clinics in the last five years</p> <p>N= 443</p> <ul style="list-style-type: none"> • Control group (usual care) n=147 • Low-intensity intervention (video) n=150 • High-intensity intervention (video & in-home, one-on-one education) n=146 <p>Study setting: Washington state, United States</p> <p>A rural, agricultural region where 67% of the population are of Latino/Hispanic origin</p> <p>Participants identified through medical records at Yakima Valley Farm Workers Clinic (a federally qualified health center)</p>	<p>differences in cervical cancer screening rates between low-intensity intervention group and usual care group</p> <p>A culturally sensitive one-on-one educational intervention was effective in encouraging Latina women in a rural, underserved setting, to receive Pap test screening for cervical cancer</p> <p>Educational information given during the study did increase cervical cancer awareness and knowledge, but increases in knowledge were not necessarily linked to participating in cervical cancer screening</p> <p>33% of participants reported lack of insurance as the reason for being out of adherence with Pap test guidelines</p>	<p>No discussion of validity or reliability of survey instrument (testing)</p>		

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
22	Thompson <i>Cancer Causes & Control</i> 2019	<p>Pilot randomized controlled trial</p> <p>Experimental study</p> <p>Purpose: “. . . to assess effects of three different educational intervention arms on knowledge of and intention to receive Pap testing and HPV co-testing” (Thompson et al., 2019).</p> <p>Participants randomly assigned to one of four groups:</p> <ul style="list-style-type: none"> • Control group • Intervention group using <i>fotonovela</i> • Intervention group using <i>radionovela</i> • Intervention group using digital story <p><i>Fotonovela, radionovela, and digital story groups received education about cervical cancer,</i></p>	<p>Sample type: convenience sample, volunteer sampling, snowball sampling</p> <p>Participants recruited from the community; grocery stores, retail establishments, food banks, health fairs</p> <p>Eligible women interested in participating also referred friends and relatives to the study</p> <p>Sample size: n = 160</p> <p>Inclusion criteria:</p> <ul style="list-style-type: none"> • Female gender • Between the ages of 21 and 64 years old • Able to complete questionnaires in English or Spanish <p>Exclusion criteria:</p> <ul style="list-style-type: none"> • Pregnancy • History of hysterectomy <p>All 160 participants completed the baseline</p>	<p>All three intervention arms of the study increased knowledge of cervical cancer, screening, and HPV as evidenced by increased scores on the follow-up survey when compared to baseline</p> <p>Knowledge of cervical cancer risk was high at baseline</p> <p>“After intervention, knowledge of cervical cancer risk, cervical cancer screening, and HPV risk improved significantly in all three active intervention arms compared to the control arm” (Thompson et al., 2019).</p> <p>Level of intention to complete Pap testing was high in all three interventions and the control group</p> <p>All three educational interventions had a positive effect on cervical cancer</p>	<p>Small sample size due to nature of pilot study and lack of funding (sampling)</p> <p>Participants showed a high intention for completing cervical cancer screening at baseline, perhaps due to community resources already in place. Participants may have already been in compliance with cervical cancer screening guidelines (history)</p> <p>Participants were of very low socioeconomic status and results may not be generalizable to Hispanic women of a higher socioeconomic status in the United States (generalizability)</p> <p>Future studies with larger sample sizes are warranted to document actual behavioral change as opposed to intended behavior</p>	I	A

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		<p>HPV, and screening</p> <p>Control group received information on flu vaccine</p> <p>Assessed knowledge of cervical cancer and intent to complete cervical cancer screening</p> <p>Participants completed a baseline questionnaire and follow-up survey after receiving the intervention</p>	<p>questionnaire</p> <p>Participants were randomly assigned to one intervention or the control group</p> <p>Distribution of intervention groups: <i>Fotonovela</i>: n = 36 <i>Radionovela</i>: n = 40 Digital story: n = 42 Control: n = 42</p> <p>All 160 participants completed the follow-up survey immediately following the intervention for 100% retention</p> <p>Setting: Lower Yakima Valley, Washington</p> <p>Lower Yakima Valley has a predominantly minority population of Latinos (69%) with high poverty rate and limited access to medical care</p>	<p>knowledge</p> <p>Small media interventions with educational materials and cultural relevance are an effective and appropriate tool for changing knowledge and intention to screen for cervical cancer among Hispanic women</p>	<p>change</p>		

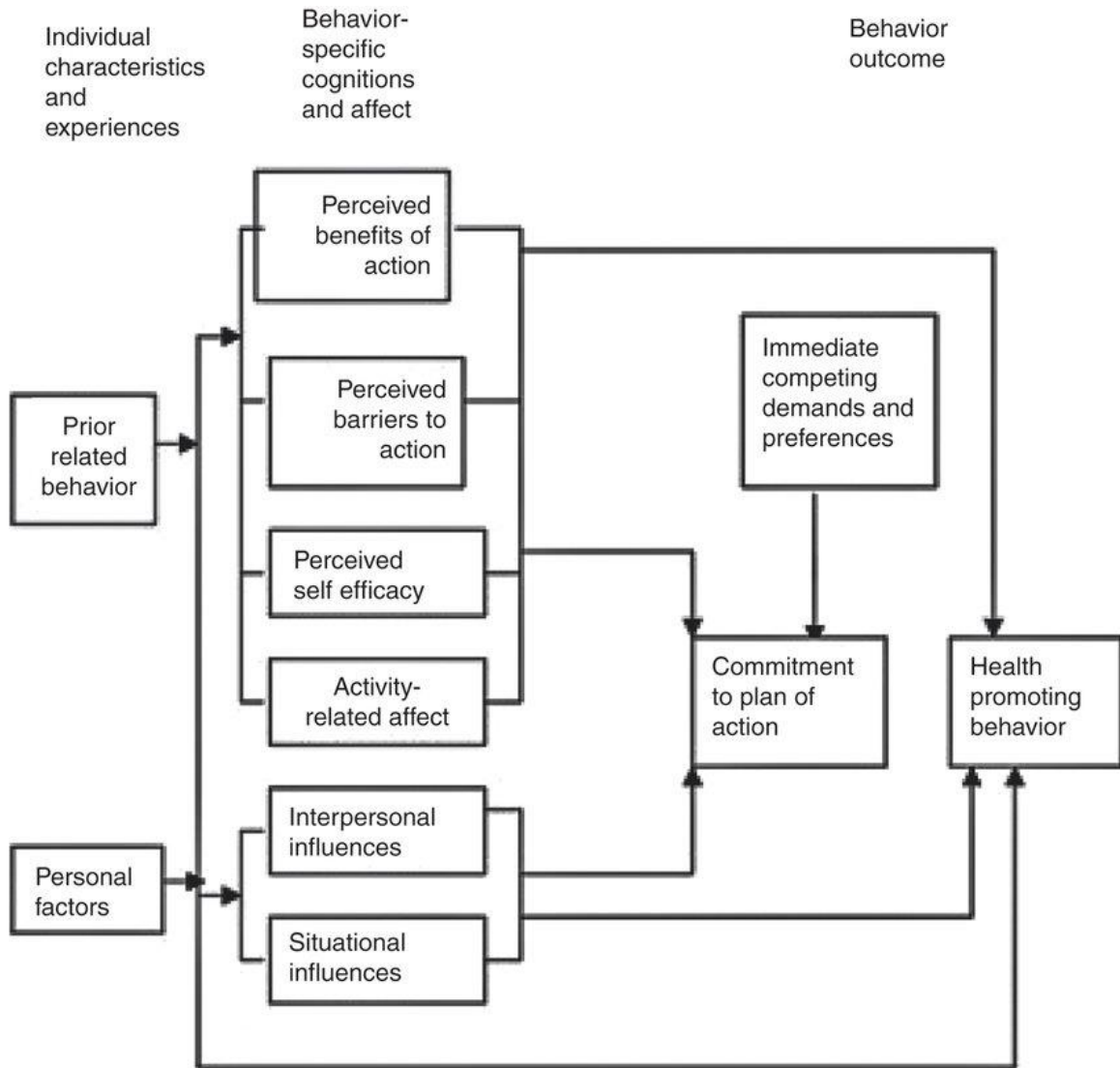
Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
23	Zorogastua <i>Journal of Racial and Ethnic Health Disparities</i> 2016	<p>Non-experimental study</p> <p>Mixed methods research design with quantitative and qualitative data</p> <p>Participants received an educational intervention, had follow-up in 2 months to see if cancer screening was performed. Those participants non-adherent in 2 months had additional follow-up 6 months later (8-month timeline) and those still non-compliant had interviews to discuss barriers to cancer screening</p> <p>Purpose: to identify cultural intrinsic factors related to non-adherence to cancer screening in Latina women</p>	<p>Sample type: convenience sample, volunteer sampling method</p> <p>Intervention provided to Hispanic men and women</p> <p>Inclusion criteria for cervical cancer screening participants were 18 years old or older</p> <p>Sample size:</p> <ul style="list-style-type: none"> Participants who attended original educational program n = 1179 Participants who completed the 8-month follow-up n = 664 Participants non-adherent at 8-month follow-up n = 207 Participants non-adherent to Pap test at 8-month follow-up n = 147 Participants who chose to answer the interview questions regarding reasons for non-adherence at 	<p>Categories identified as intrinsic barriers to cancer screening adherence after qualitative analysis:</p> <ul style="list-style-type: none"> Systems, organization, and logistics Lack of time Chose to be unscreened Having contrary beliefs or confusion <p>Personal logistics including being out of the country, lack of transportation, and forgetting to make appointments were most prevalent reasons for non-adherence to screening</p> <p>Systems barriers included providers not performing, discussing, or recommending cancer screening tests</p> <p>Many participants thought that they did not need a Pap exam due to not being sexually active, demonstrating</p>	<p>Three geographical locations of Arkansas, New York City, and Buffalo, NY may not be representative of all Hispanic women in the United States (generalizability)</p> <p>No mention of data saturation, but researchers did create a code system to categorize responses. Included intercoder reliability with 80% consistency</p> <p>Authors did not discuss or include the interview (open-ended) questions that they asked participants at the 8-month follow-up (testing)</p> <p>Responses were self-reported (testing)</p> <p>Only included women who were non-adherent with cancer screening guidelines (selection bias, generalizability)</p>	III	A

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
			<p>8-month follow-up n = 87 (42%)</p> <p>Setting: Arkansas, New York City, and Buffalo, NY</p>	<p>conflicting beliefs and lack of knowledge regarding cervical cancer screening</p> <p>The intrinsic barriers identified in this study require further, longitudinal, research</p>			

Appendix E

Theoretical Model

The theoretical model to guide this project is Pender’s health promotion model (HPM) depicted below.

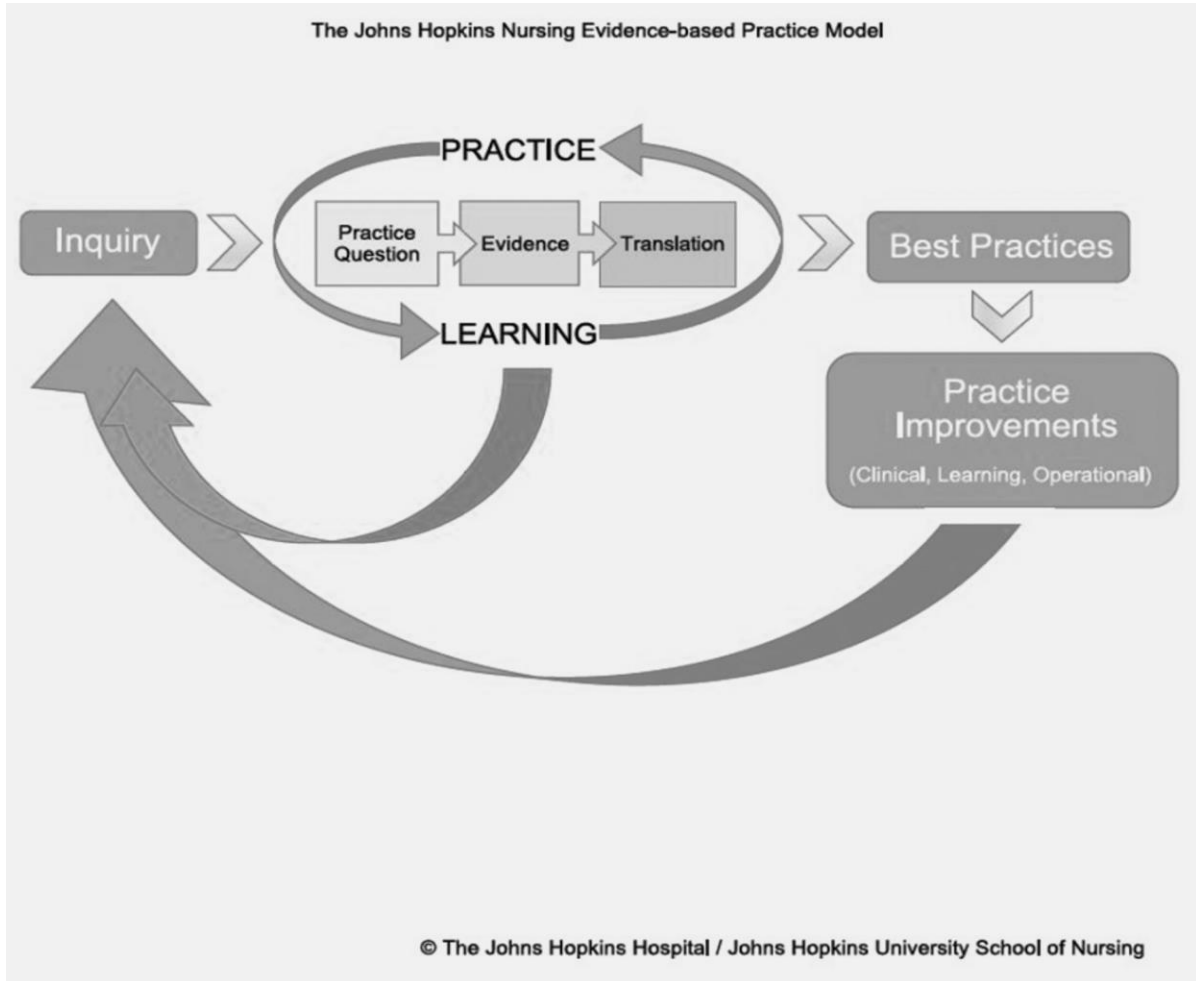


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Appendix F

Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) Model

The following figure depicts the major components of the JHNEBP model and emphasizes the movement between clinical inquiry, translation to practice, and evaluation of outcomes to achieve evidence-based practice.



From *Johns Hopkins Nursing Evidence-Based Practice Third Edition: Model and Guidelines* (p.36), by D. Dang and S. Dearholt, 2017, Indianapolis, IN: Sigma Theta Tau International.

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Appendix G

Survey Questionnaire

Development of the following survey questions occurred after referencing the USPSTF cervical cancer screening guidelines (USPSTF, 2018). The purpose of the survey is to gather participant demographic information and to assess compliance with the USPSTF screening guidelines. This information guides the educational intervention and determines the need for referral for a well woman exam and/or cervical cancer screening. The final survey question is the outcome measurement for this project.

Question	Response
What is your age?	Participant age in years
What is your gender?	Participant self-reported gender
What is your ethnicity?	Participant self-identified ethnicity
How many years ago was your last cervical cancer screening test?	Number in years
How many years ago was your last well woman exam?	Number in years
Are you a current or former smoker?	Yes/No response
Have you had more than one (1) sexual partner?	Yes/No response
Do you have a history of human papillomavirus (HPV)?	Yes/No response
Would you accept a referral to Lebanon Family Health Services or make an appointment with your primary care provider for cervical cancer screening or a well woman exam?	Yes/No response

Appendix H

United States Preventive Services Task Force (USPSTF) Cervical Cancer Screening Guidelines

Cervical Cancer: Screening
Release Date: August 2018

Recommendation Summary

Population	Recommendation	Grade (What's This?)
Women aged 21 to 65 years	The USPSTF recommends screening for cervical cancer every 3 years with cervical cytology alone in women aged 21 to 29 years. For women aged 30 to 65 years, the USPSTF recommends screening every 3 years with cervical cytology alone, every 5 years with high-risk human papillomavirus (hrHPV) testing alone, or every 5 years with hrHPV testing in combination with cytology (cotesting). See the Clinical Considerations section for the relative benefits and harms of alternative screening strategies for women 21 years or older.	A
Women older than 65 years	The USPSTF recommends against screening for cervical cancer in women older than 65 years who have had adequate prior screening and are not otherwise at high risk for cervical cancer. See the Clinical Considerations section for discussion of adequate prior screening and risk factors that support screening after age 65 years.	D
Women younger than 21 years	The USPSTF recommends against screening for cervical cancer in women younger than 21 years.	D
Women who have had a hysterectomy	The USPSTF recommends against screening for cervical cancer in women who have had a hysterectomy with removal of the cervix and do not have a history of a high-grade precancerous lesion (ie, cervical intraepithelial neoplasia [CIN] grade 2 or 3) or cervical cancer.	D

The first 3 recommendations apply to individuals who have a cervix, regardless of their sexual history or HPV vaccination status. These recommendations do not apply to individuals who have been diagnosed with a high-grade precancerous cervical lesion or cervical cancer. These recommendations also do not apply to individuals with in utero exposure to diethylstilbestrol or those who have a compromised immune system (eg, women living with HIV).

To read the recommendation statement in *JAMA*, select [here](#).

To read the evidence summary in *JAMA*, select [here](#).

To read the modeling study in *JAMA*, select [here](#).

Read Full Recommendation Statement
PDF Version (PDF Help)

[View archived versions of this recommendation](#)

From “Cervical Cancer: Screening,” by United States Preventive Services Task Force, 2018.

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Appendix I

Information Script

The following information script was utilized during all educational interventions for both English and Spanish speaking patients. The first line is the English phrase, followed by the Spanish translation.

Hello, my name is Anna and I am a nurse practitioner student.

- Hola, mi nombre es Anna y soy una estudiante enfermera practicante.

I am talking to women who come to the clinic about risk factors for cervical cancer.

- Estoy hablando con mujeres sobre su factores de riesgos para el cáncer cervical.

Would you like to discuss cervical cancer screening tests and your risk factors for cervical cancer?

- ¿Le gustaría hablar sobre las pruebas de detección y sus factores de riesgo para el cáncer cervical?

May I ask you a few questions?

- ¿Puedo hacerle algunas preguntas?

How old are you?

- ¿Cuántos años tienes?

What is your gender?

- ¿Cuál es su género?

Are you Hispanic?

- ¿Eres hispana o latina?

How many years ago was your last Papanicolaou test?

- ¿Hace cuántos años fue tu última prueba de Papanicolaou?

How many years ago was your last well woman exam or general gynecologic exam?

- ¿Hace cuántos años fue su último examen ginecológico de rutina?

Have you ever smoked?

- ¿Alguna vez has fumado?

Have you had more than one sexual partner?

- ¿Has tenido más de una pareja sexual?

Have you ever had an abnormal Papanicolaou test or human papillomavirus?

- ¿Alguna vez ha tenido una prueba de Papanicolaou anormal o un virus del papiloma humano?

You have few risk factors and low risk for getting cervical cancer.

- Tiene pocos factores de riesgo y bajo riesgo de contraer cáncer cervical.

You have several risk factors for cervical cancer.

- Tiene varios factores de riesgo para el cáncer cervical.

The current recommendation is to have the Papanicolaou test once every three years.

- La recomendación actual es hacerse la prueba de Papanicolaou una vez cada tres años

The current recommendation is to have a routine gynecologic exam once every year.

- La recomendación actual es hacerse un examen ginecológico de rutina una vez al año.

You are due for your next Papanicolaou test in [x number] of years.

- Debes hacer tu próxima prueba de Papanicolaou en [x número] de años.

You are due for your Papanicolaou test this year.

- Debes presentarte a tu prueba de Papanicolaou este año.

Lebanon Family Health Services provides gynecologic exams for women with no insurance.

- Lebanon Family Health Services ofrece exámenes ginecológicos para mujeres sin seguro.

Would you accept a referral to Lebanon Family Health Services for a well woman exam with cervical cancer screening if appropriate?

- ¿Aceptaría un referido a Lebanon Family Health Services para un examen de rutina con detección del cáncer cervical, si corresponde?

Here is a referral paper with information about Lebanon Family Health Services.

- Aquí hay un referido con información sobre Lebanon Family Health Services.

You can call and make an appointment for a gynecological exam.

- Puede llamar y hacer una cita para un examen ginecológico.

Do you have any questions?

- ¿Tiene usted alguna pregunta?

Thank you for your time.

- Gracias por tu tiempo.

Appendix J

Education and Referral Handouts

CERVICAL CANCER



There are five main types of cancer that affect a woman's reproductive organs: cervical, ovarian, uterine, vaginal, and vulvar. As a group, they are referred to as gynecologic (GY-neh-kuh-LAH-jik) cancer. (A sixth type of gynecologic cancer is the very rare fallopian tube cancer.)

This fact sheet about cervical cancer is part of the Centers for Disease Control and Prevention's (CDC) *Inside Knowledge: Get the Facts About Gynecologic Cancer* campaign. The campaign helps women get the facts about gynecologic cancer, providing important "inside knowledge" about their bodies and health.



What is cervical cancer?

Cancer is a disease in which cells in the body grow out of control. Cancer is always named for the part of the body where it starts, even if it spreads to other body parts later.

When cancer starts in the cervix, it is called cervical cancer. The cervix is the lower, narrow end of the uterus. The cervix connects the vagina (the birth canal) to the upper part of the uterus. The uterus (or womb) is where a baby grows when a woman is pregnant.

Cervical cancer is the easiest gynecologic cancer to prevent with regular screening tests and follow-up. It also is highly curable when found and treated early.

Who gets cervical cancer?

All women are at risk for cervical cancer. It occurs most often in women over age 30. Each year, approximately 12,000 women in the United States get cervical cancer.

The human papillomavirus (HPV) is the main cause of cervical cancer. HPV is a common virus that is passed from one person to another during sex. Most sexually active people will have HPV at some point in their lives, but few women will get cervical cancer.

Are there tests that can prevent cervical cancer or find it early?

There are two tests that can either help prevent cervical cancer or find it early:

- The Pap test (or Pap smear) looks for precancers, cell changes, on the cervix that can be treated, so that cervical cancer is prevented. The Pap test also can find cervical cancer early, when treatment is most effective. The Pap test is recommended for women aged 21-65 years old.
- The HPV test looks for HPV—the virus that can cause precancerous cell changes and cervical cancer.



Fallopian Tube

Ovary

Uterus

Cervix

Vagina

Vulva

www.cdc.gov/cancer/knowledge

800-CDC-INFO

Inside Knowledge is an Initiative that supports the Gynecologic Cancer Education and Awareness Act of 2005, or Johanna's Law, which was unanimously passed by the U.S. House and Senate in December of 2006, and signed into law in January 2007.

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When should I get tested for cervical cancer?
What raises a woman's chance of getting cervical cancer?
women who are vaccinated against HPV need to have regular Pap tests to screen for cervical cancer. To learn more about the HPV vaccine visit www.cdc.gov/hpv/index.

When should I get tested for cervical cancer?

The Pap test is one of the most reliable and effective cancer screening tests available. You should start getting regular Pap tests at age 21. If your Pap test results are normal, your doctor may say that you will not need another Pap test for three years.

The HPV test can be used to screen for cervical cancer along with the Pap test in women aged 30 years and older. It also is used to provide more information when women aged 21 years and older have unclear Pap test results.

If you are age 30 or older, you may choose to have an HPV test along with the Pap test. If the results are normal, your chance of getting cervical cancer in the next few years is very low. Your doctor may then say that you can wait up to five years for your next screening.

For women aged 21-65, it is important to continue getting a Pap test as directed by your doctor—even if you think you are too old to have a child or are not having sex anymore. However, your doctor may tell you that you do not need to have a Pap test if either of these is true for you:

- You are older than 65 and have had normal Pap test results for several years.
- You have had your cervix removed as part of a total hysterectomy for non-cancerous conditions, like fibroids.

What raises a woman's chance of getting cervical cancer?

Almost all cervical cancers are caused by HPV. You are more likely to get HPV if you started having sex at an early age, or if you or your partner have had sex with several others. However, any woman who has ever had sex is at risk for HPV.

There are many types of HPV. Usually HPV will go away on its own, but if it does not, it may cause cervical cancer over time.

In addition to having HPV, these things also can increase your risk of cervical cancer:

- Smoking.
- Having HIV (the virus that causes AIDS) or another condition that makes it hard for your body to fight off health problems.
- Using birth control pills for a long time (five or more years).
- Having given birth to three or more children.

How can I prevent cervical cancer?

- See your doctor regularly for a Pap test that can find cervical precancers.
- Follow up with your doctor, if your Pap test results are not normal.
- Get the HPV vaccine. It protects against the types of HPV that most often cause cervical, vaginal, and vulvar cancers. It is recommended for preteens (both boys and girls) aged 11 to 12 years, but can be given as early as age 9 and until age 26. The vaccine is given in a series of either two or three shots, depending on age. It is important to note that even

What should I do if my doctor says I have cervical cancer?


If your doctor says that you have cervical cancer, ask to be referred to a gynecologic oncologist—a doctor who has been trained to treat cancers like this. This doctor will work with you to create a treatment plan.

Where can I find free or low-cost Pap tests?

If you have a low income or do not have insurance, you may be able to get a free or low-cost Pap test through the National Breast and Cervical Cancer Early Detection Program. To learn more, call 800-CDC-INFO or visit www.cdc.gov/cancer/nbccedp.

Where can I find more information about cervical and other gynecologic cancers?


Centers for Disease Control and Prevention: 800-CDC-INFO or www.cdc.gov/cancer/gynecologic
 National Cancer Institute: 800-4-CANCER or www.cancer.gov



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

www.cdc.gov/cancer/knowledge
800-CDC-INFO

CDC Publication #99-9123, Revised December 2016



Get the Facts About Gynecologic Cancer

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CÁNCER DE CUELLO UTERINO



Existen cinco tipos principales de cáncer que afectan los órganos reproductores de la mujer: los cánceres de cuello uterino, ovario, útero, vagina y vulva. En conjunto se les conoce como cáncer ginecológico. (Un sexto tipo de cáncer ginecológico poco frecuente es el cáncer de las trompas de Falopio).

Esta hoja informativa sobre el cáncer de cuello uterino es parte de la campaña *Conozca su cuerpo: Y el cáncer ginecológico* de los Centros para el Control y la Prevención de Enfermedades (CDC por sus siglas en Inglés). La campaña ayuda a que las mujeres aprendan sobre el cáncer ginecológico y brinda importante información acerca de sus cuerpos y salud.



¿Qué es el cáncer de cuello uterino?

El cáncer es una enfermedad que provoca el crecimiento descontrolado de las células. El tipo de cáncer siempre se identifica según la parte del cuerpo en donde se origina, incluso si después se extiende a otras partes del cuerpo.

Cuando el cáncer se origina en el cuello uterino, se denomina como cáncer de cuello uterino. El cuello uterino es la parte más baja y estrecha del útero. El cuello uterino conecta la parte superior del útero con la vagina (vía del parto). El útero (o matriz) es el lugar donde se desarrolla el bebé cuando una mujer está embarazada.

El cáncer de cuello uterino es el cáncer ginecológico más fácil de prevenir con pruebas regulares de detección y seguimiento. Además, es altamente curable cuando se detecta y se trata en etapas tempranas.



cdc.gov/spanish/cancer/knowledge 800-CDC-INFO

¿Quién puede contraer cáncer de cuello uterino?

Todas las mujeres corren riesgo de contraer cáncer de cuello uterino. Esta enfermedad afecta con mayor frecuencia a mujeres mayores de 30 años y en Estados Unidos, se estima que 12,000 mujeres lo contraen cada año. La causa principal es el virus del papiloma humano (VPH). El VPH es un virus común que puede transmitirse de una persona a otra durante las relaciones sexuales. Aunque la mayoría de las personas sexualmente activas estarán infectadas por el VPH en algún momento de su vida, pocas mujeres contraerán cáncer de cuello uterino.

¿Cuáles son los síntomas?

En etapas tempranas, el cáncer de cuello uterino no suele presentar signos ni síntomas. Cuando ya está avanzado puede producir sangrado o secreción vaginal anormal, como por ejemplo, sangrado después de tener relaciones sexuales.

¿Existen pruebas que podrían prevenir o detectar el cáncer de cuello uterino en sus etapas tempranas?

Existen dos pruebas que pueden ayudar a prevenirlo o detectarlo en etapas tempranas:

- Dependiendo de su edad, su médico podría recomendarle que se haga la prueba de Papanicolaou, VPH o ambas pruebas juntas.
 - La prueba de Papanicolaou (o citología vaginal) busca precánceres, cambios celulares en el cuello uterino que pueden ser tratados para prevenir este tipo de cáncer. La prueba de Papanicolaou también puede detectar el cáncer de cuello uterino en etapas tempranas cuando el tratamiento es más eficaz.
- La prueba de Papanicolaou solo detecta el cáncer de cuello uterino. No detecta ningún otro tipo de cáncer ginecológico.
- La prueba de VPH busca el virus del papiloma humano, el virus que puede causar cambios celulares y cáncer de cuello uterino.

¿Cuándo debo hacerme la prueba de detección del cáncer de cuello uterino?

La prueba de Papanicolaou es una de las pruebas de detección más confiables y efectivas disponibles. Ésta prueba es recomendada para todas las mujeres entre 21 y 29 años. Si sus resultados son normales, es posible que su médico le diga que no necesita hacerse otra prueba de Papanicolaou durante los próximos tres años.

Si tiene 30 años o más, usted puede elegir hacerse una prueba de Papanicolaou, de VPH o ambas pruebas juntas. Si los resultados son normales, su probabilidad de contraer cáncer de cuello uterino en los próximos años es mínima. Si es así, su médico puede decirle que puede esperar hasta cinco años para su próxima prueba de detección. La prueba de VPH también se usa para proporcionar información adicional cuando las mujeres de 21 años o más obtienen resultados de Papanicolaou poco claros.

Es importante que las mujeres de 21-65 años continúen haciéndose la prueba de Papanicolaou y/o de VPH según las indicaciones del médico, aún cuando piensen que ya no están en edad para tener hijos o no sean sexualmente activas.

Sin embargo, su médico podría decirle que ya no necesita hacerse las pruebas de Papanicolaou o de VPH si alguno de estos factores es cierto para usted:

- Es mayor de 65 años y sus resultados de la prueba de Papanicolaou o VPH han sido normales durante varios años.
- Le han extirpado el cuello uterino como parte de una histerectomía total debido a problemas no cancerosos, como fibromas.

Si tiene cualquiera de estos síntomas, consulte a su médico. Podrían ser ocasionados por alguna otra causa, pero pero es mejor averiguar.

¿Qué aumenta la probabilidad de que una mujer contraiga cáncer de cuello uterino?

El cáncer de cuello uterino casi siempre es causado por el VPH. Usted tiene mayor probabilidad de contraer el VPH si comenzó a tener relaciones sexuales a una edad temprana o si usted o su pareja han tenido relaciones sexuales con varias personas. Sin embargo, toda mujer que ha tenido relaciones sexuales alguna vez corre el riesgo de contraer el VPH. Existen muchos tipos de VPH. Por lo general, el VPH desaparece por sí solo pero si permanece puede causar cáncer de cuello uterino. Además del VPH, los siguientes factores pueden aumentar el riesgo de contraer cáncer de cuello uterino:

- Fumar.
- Tener el VIH (el virus que causa el SIDA) u otra condición médica que haga difícil que su cuerpo combata problemas de salud.
- Usar píldoras anticonceptivas por un largo tiempo (cinco años o más).
- Haber dado a luz a tres o más niños.

¿Cómo puedo prevenir el cáncer de cuello uterino?

- Visite a su médico con regularidad para una prueba de Papanicolaou y/o de VPH.
- Si los resultados son anormales, hable con su médico.
- Póngase la vacuna contra el VPH. Esta vacuna protege contra los tipos de VPH que causan el cáncer de cuello uterino, vagina y vulva. Se recomienda para preadolescentes (niños y niñas) de 11 a 12 años pero puede aplicarse desde los 9 y hasta los 26 años. La vacuna es administrada en dosis de dos o tres inyecciones, dependiendo de la edad. Es importante que las mujeres se hagan la prueba de Papanicolaou frecuentemente para detectar el cáncer de cuello uterino aunque se hayan puesto

la vacuna contra el VPH. Para más información sobre esta vacuna visite: www.cdc.gov/spanish/cancer/hpv/index.htm.

- No fume.
- Use condones durante las relaciones sexuales.*
- Limite el número de sus parejas sexuales.

* La infección por el VPH puede afectar los órganos genitales tanto de varones como de mujeres que están protegidos o cubiertos por un condón de látex, así como las áreas descubiertas. Aunque se desconoce el efecto de los condones para prevenir la infección por el VPH, su uso se ha relacionado con una tasa más baja de cáncer de cuello uterino.

¿Qué debo hacer si el médico me dice que tengo cáncer de cuello uterino?

Si su médico le dice que tiene cáncer de cuello uterino, pídale que le remita a un ginecólogo oncólogo, un médico especializado en el tratamiento de cáncer ginecológico. Este médico trabajará con usted para crear un plan de tratamiento.


¿Dónde puedo encontrar pruebas de detección para el cáncer de cuello uterino gratuitas o de bajo costo?

Si tiene bajos ingresos o no tiene seguro médico, podría obtener una prueba de detección de cáncer de cuello uterino gratuita o de bajo costo a través del Programa Nacional de Detección Temprana del Cáncer de Mama y de Cuello Uterino. Para más información, llame al 1-800-CDC-INFO o visite www.cdc.gov/spanish/cancer/dcpc/about/nbccedp.htm.

¿Dónde puedo encontrar más información sobre el cáncer de cuello uterino y otros cánceres ginecológicos?

Centros para el Control y la Prevención de Enfermedades:
1-800-CDC-INFO (1-800-232-4636)
Oprima 2 para español, o visite www.cdc.gov/spanish/cancer/gynecologic.

Instituto Nacional del Cáncer:
1-800-4-CANCER (1-800-422-6237)
Oprima 2 para español, o visite www.cancer.gov/espanol.



Departamento de Salud y Servicios Humanos de los EE.UU.
Centros para el Control y la Prevención de Enfermedades (CDC)

cdc.gov/spanish/cancer/knowledge
800-CDC-INFO



Conozca Su Cuerpo
Y el cáncer ginecológico

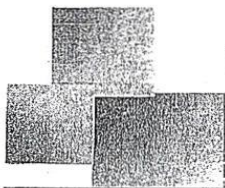
Publicación de los CDC No 99-9123, revisada en enero de 2019

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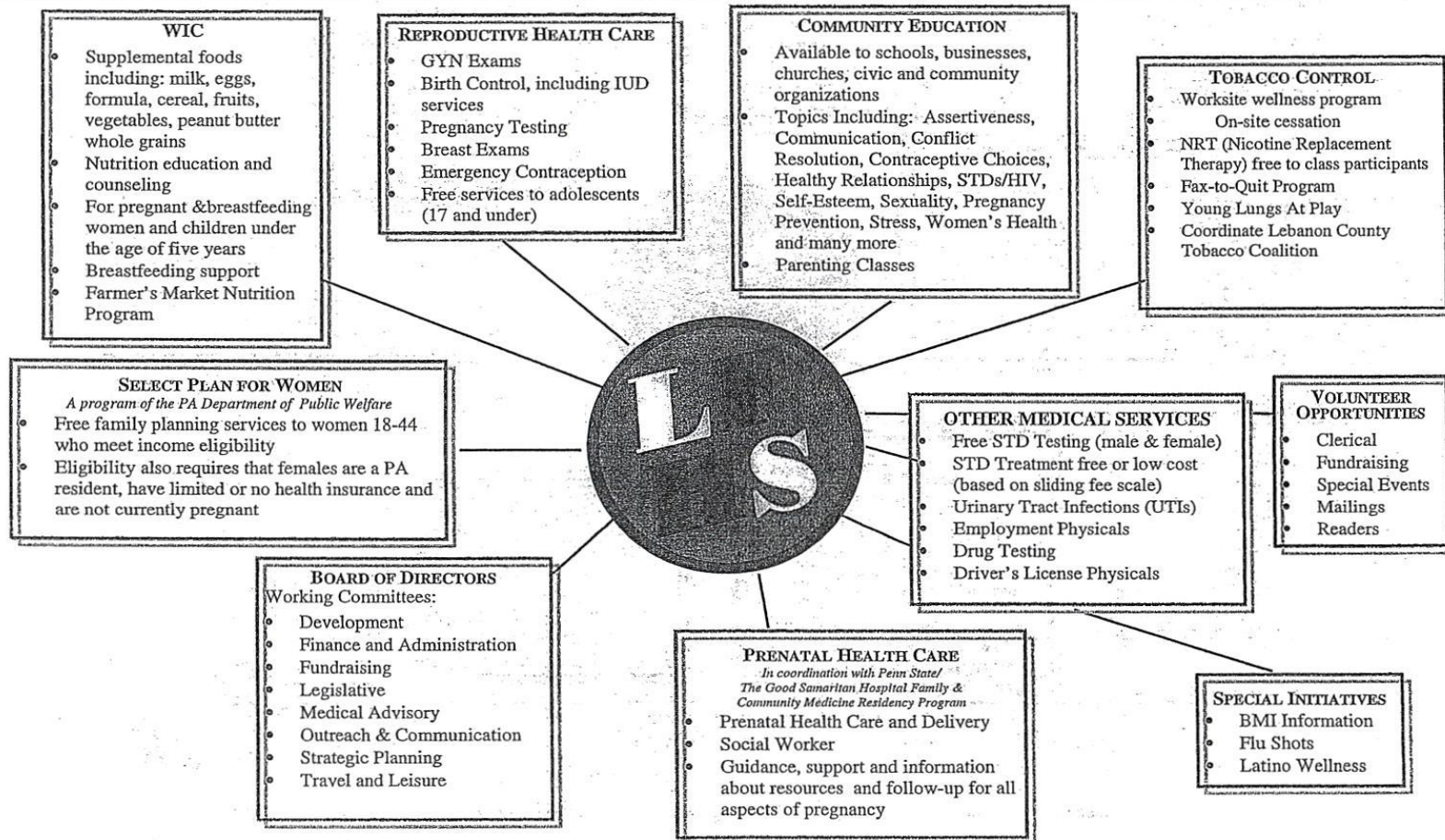


LEBANON FAMILY HEALTH SERVICES 615 Cumberland Street Lebanon, PA 17042 (717) 273 - 6741

www.lebanonfamilyhealth.org

Search for us on Facebook!

The primary mission of Lebanon Family Health Services is to provide education, nutrition and reproductive health services to the uninsured and underinsured families of Lebanon County with emphasis on women, infants and children.



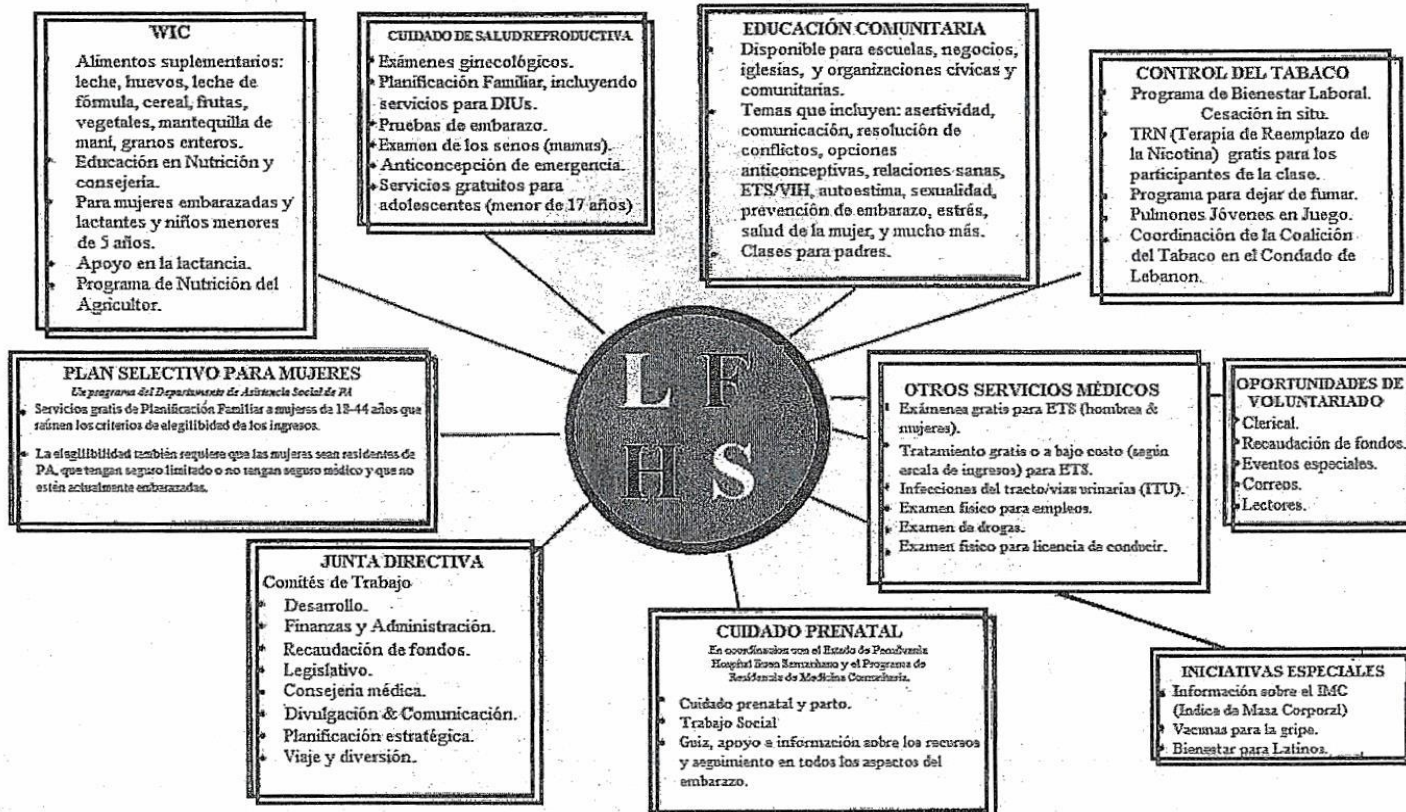
Funding for above services provided by Title X, PA Department of Health, PA Department of Public Welfare US Department of Agriculture, Family Health Council of Central Pennsylvania, Lebanon County Area Agency on Aging, American Lung Association Southcentral Tobacco Control Program

SERVICIOS DE SALUD FAMILIAR DE LEBANON 615 de la Calle Cumberland, Lebanon, PA 17042 (717) 273 - 6741

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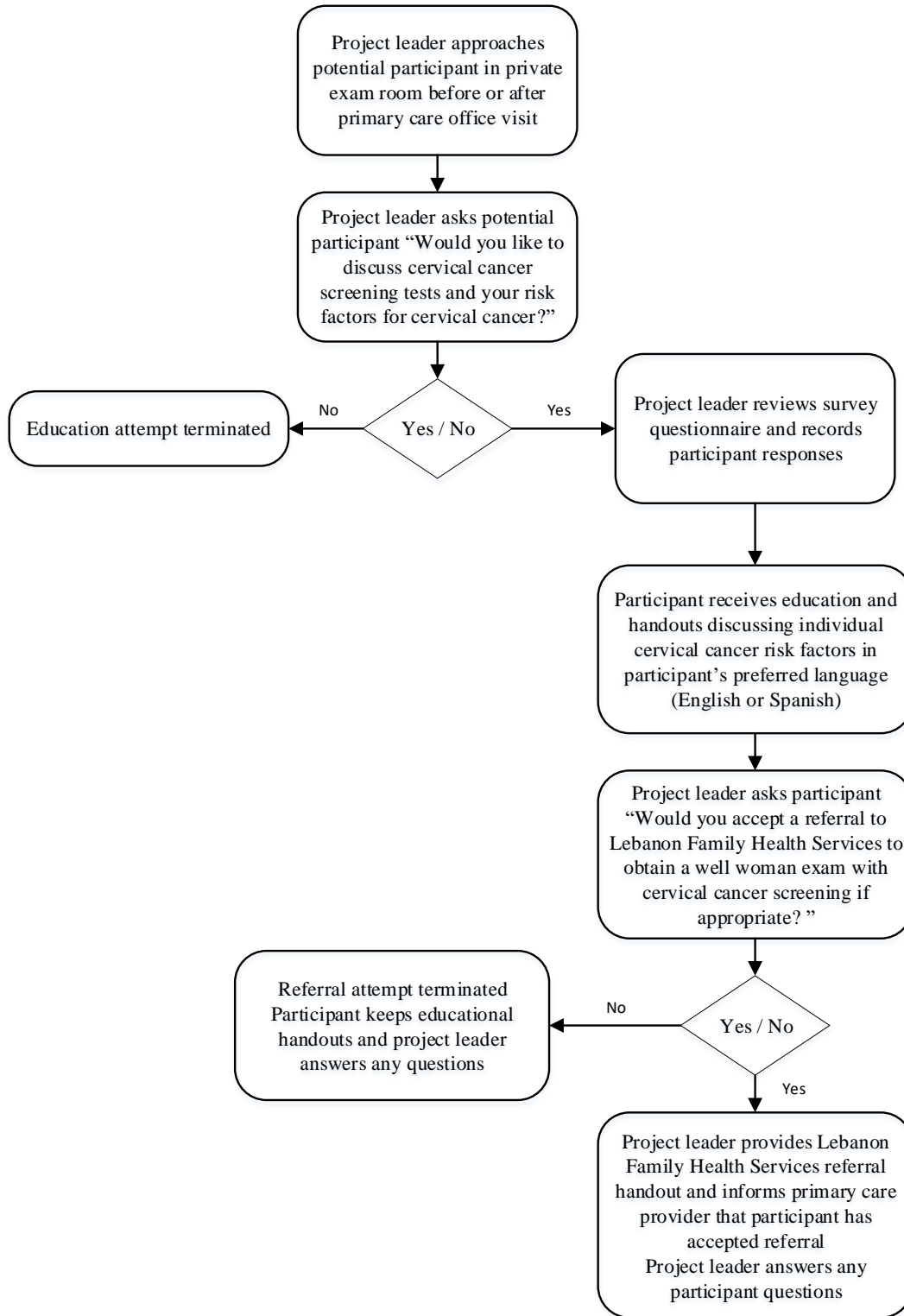
La misión primaria de Servicios de Salud para la Familia de Lebanon es proveer educación, nutrición y servicios de salud reproductiva a las familias sin seguro o con seguro insuficiente del Condado de Lebanon con énfasis en mujeres, bebés y niños.



La financiación de los servicios de arriba están proporcionados por Title X, el Departamento de Salud de PA, el Departamento de Asistencia Social de EUA, el Departamento de Agricultura, el Consejo de Salud de la Familia del Centro de Pensilvania, Agencia del Envejecimiento del Condado de Lebanon, Asociación Americana del Pulmón, Programa Surcentral sobre el Control del Tabaco. 2/14

Appendix K

Process Map



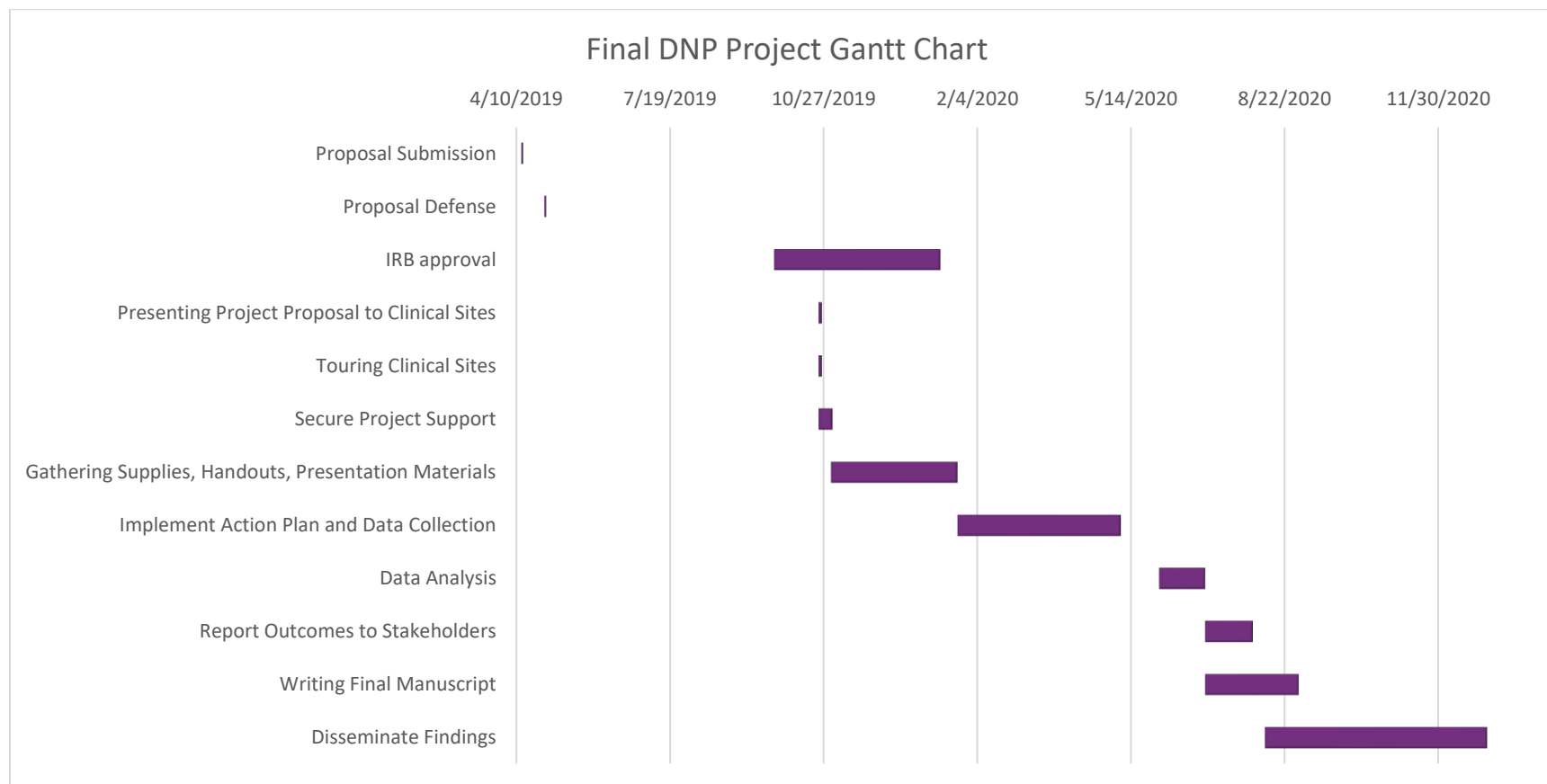
Appendix L

Budget Table

Project Expenses (over 5 months)		
Salaries/Wages	Monthly	Total
• Administrative Support	\$1,770.00 (actual cost \$0.00 for salaried employee)	\$8,850.00 (actual cost \$0.00)
• Project Mentor Practitioner	\$7,500.00 (actual cost \$0.00 for salaried provider)	\$37,500.00 (actual cost \$0.00)
• Project Leader to Perform Education	\$0.00 (donated by DNP student)	\$0.00
Total Salary Costs	\$9,270.00 (actual cost \$0.00)	\$46,350.00 (actual cost \$0.00)
Startup Costs	Monthly	Total
• Paper for Education Handouts	\$20.00	\$100.00
• Copier/Printer Ink	\$18.00	\$90.00
• Presentation Board	\$0.00 (one-time expense)	\$10.00
• Pens/Pencils	\$0.00 (one-time expense)	\$15.00
Total Startup Costs	\$38.00	\$215.00
Capital Costs	Monthly	Total
• Computer Access	\$0.00 (donated by DNP student)	\$0.00
• Translator Services	\$0.00 (donated by office staff and student translators)	\$0.00
Total Capital Costs	\$0.00	\$0.00
Operational Costs	Monthly	Total
• Electricity	\$500.00 (actual cost \$0.00, provided by clinic)	\$1,500.00 (actual cost \$0.00)
• Heat/Cooling Costs	\$0.00 (included in electricity estimate)	\$0.00
• Internet Access	\$150.00 (actual cost \$0.00, provided by clinic)	\$450.00 (actual cost \$0.00)
• Office Space	\$0.00 (project conducted at clinic site)	\$0.00
Total Operational Costs	\$650.00 (actual cost \$0.00)	\$1,950.00 (actual cost \$0.00)
Total Project Expenses	\$9,958.00 (actual cost \$38.00)	\$48,515.00 (actual cost \$215.00)

Appendix M

GANTT Chart



	Proposal Submission	Proposal Defense	IRB Approval	Presenting Project Proposal to Clinical Sites	Touring Clinical Sites	Secure Project Support	Gathering Supplies, Handouts, Presentation Materials	Implement Action Plan and Data Collection	Data Analysis	Report Outcomes to Stakeholders	Writing Final Manuscript	Disseminate Findings
Start Date	4/14/2019	4/29/2019	9/25/2019	10/24/2019	10/24/2019	10/24/2019	11/1/2019	1/22/2020	6/1/2020	7/1/2020	7/1/2020	8/9/2020
Days to Complete	1	1	108	2	2	9	82	106	30	31	61	145

Appendix N
IRB Approval Letter

1/12/2020

Mail - Gale, Anna - Outlook

Quality Improvement Verified - IRB ID: 2019-012

IRB Administrator <noreply@axiommentor.com>

Fri 1/10/2020 11:42 AM

To: Gale, Anna <az1169@messiah.edu>

CAUTION: This email originated outside of Messiah College*Messiah College IRB**QI Protocol Notification*

To: Anna Gale
From: Michael Shin, IRB Chair
Subject: Protocol #2019-012
Date: 01/10/2020

The protocol **2019-012. Risk Factor Education and Increasing Cervical Cancer Screening Rates in Hispanic Women** has been verified by the Messiah College Institutional Review Board as a **Quality Improvement Project**, and accordingly does not meet the definition of "research" at to 45CFR46.102(d). Your protocol is thus exempt from IRB review.

Please note that changes to your protocol may affect its exempt status. Please contact me directly to discuss any changes you may contemplate.

Thanks,

Michael Shin,
IRB Chair
mshin@messiah.edu

Appendix O

Statistical Analysis Tables and Figures

Table 1: Participant Demographic Information

	Control Group (n=10)	Intervention Group (n=65)
Baseline demographics		
Age	Mean: 44.20 years (SD=10.49)	Mean: 43.45 years (SD=13.21)
21-29 years old	10% (n=1)	20% (n=13)
30-65 years old	90% (n=9)	80% (n=52)
Self-identified female gender	100% (n=10)	100% (n=65)
Self-identified Hispanic ethnicity	100% (n=10)	100% (n=65)
Years since last cervical cancer screening	Mean: 3.50 years (SD=2.64)	Mean: 3.36 years (SD=4.08)
Compliant with USPSTF cervical cancer screening guidelines		
21-29 years old (every 3 years)	100% (n=1)	23.1% (n=3)
30-65 years old (every 5 years)	88.9% (n=8)	80.8% (n=42)
Years since last well woman exam	Mean: 3.50 years (SD=2.64)	Mean: 2.88 years (SD=2.87)
Education received	0% (n=10)	100% (n=65)
Intervention group demographics		
Current or former smoker		20.0% (n=15)
More than one lifetime sexual partner		57.3% (n=43)
History of HPV		14.7% (n=11)

Figure 1: Participant Age Histogram

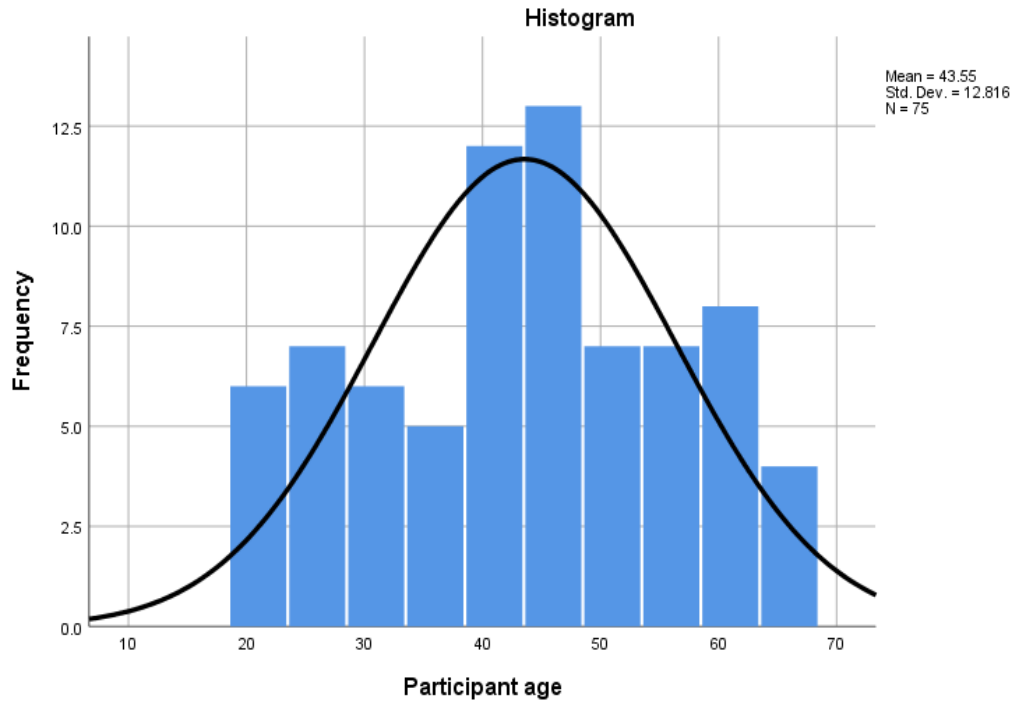


Figure 2: Number of Years Since Participant's Last Cervical Cancer Screening Histogram

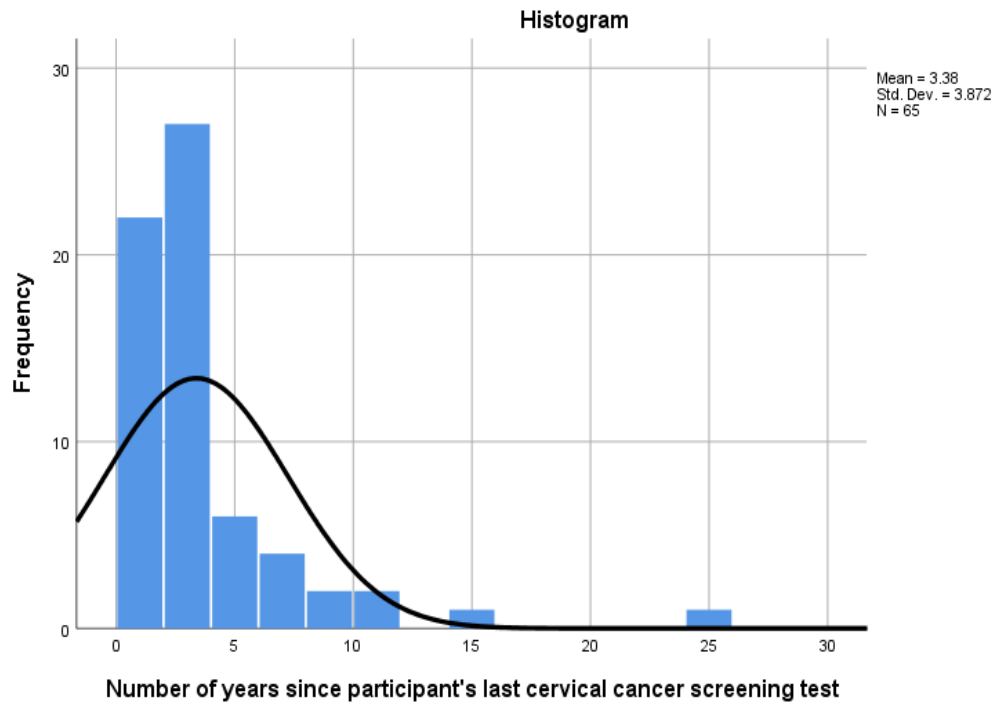


Figure 3: Number of Years since Participant’s Last Well Woman Exam Histogram

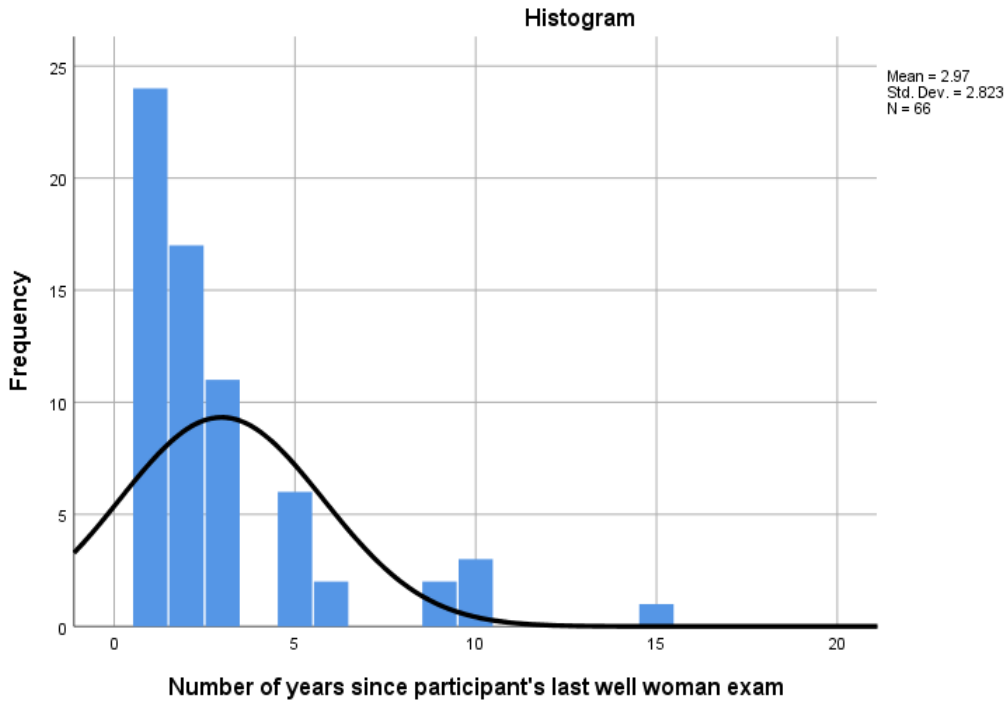


Table 2: Referral Acceptance by Group

	Control group (n=10)	Intervention group (n=65)
Referral acceptance		
Yes	0.0% (n=0)	96.9% (n=63)
No	100% (n=10)	3.1% (n=2)