Integrating Culturally Tailored Interventions to Increase Cervical Cancer Screening: A Quality Improvement Initiative in a Primary Care Clinic

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Integrating Culturally Tailored Interventions to Increase Cervical Cancer Screening:

A Quality Improvement Initiative in a Primary Care Clinic

Marife C. Solomon

University of San Francisco

Committee Chair: Dr. Jo Loomis

Committee Member: Dr. Dena Cuyjet
Abstract

Background: Asian, Native Hawaiian, and other Pacific Islander women consistently have the lowest rate of cervical cancer screening, making them at risk for undetected cervical cancer disease.

Problem: The low cervical cancer screening uptake can be attributed to a knowledge deficit about cervical cancer and its screening and the importance of early detection. Being an immigrant and with limited English proficiency can hinder women of Asian, Native Hawaiian, and other Pacific Islander from getting screened for cervical cancer.

Methods: A quality improvement project was implemented at a primary care clinic in Waipahu, Hawaii, using 5-step process interventions.

Interventions: A linguistically and culturally tailored educational material that discussed cervical cancer and its screening was integrated into 5-step process interventions. Bilingual videos and reading materials such as pamphlets & posters were heavily utilized. The multilingual staff and providers were assigned a specific task.

Results: A increase rate of 272.73 % in the number of women who completed Pap smear within two months of interventions, and the rate of participation for pap smear was 78.8%. The increase in knowledge and perception before & after pap smear was statistically significant at $p = < 0.001$, with one-sided and two-sided $p$.

Conclusions: Culturally tailored healthcare interventions using multimedia and multilingual providers' participation increases knowledge and participation of minority women in cervical cancer screening.

Keywords: culturally tailored interventions, cervical cancer, cervical cancer screening, minority ethnic group, culturally tailored education
Problem

Cervical cancer (CC) is a preventable disease through human papillomavirus (HPV) vaccination and curable disease if detected early through screening that can identify precancerous lesions of the disease (Speer & Bodi, 2021). The incidence has significantly decreased due to the utilization of vaccination and screening tests; however, racial disparities in cervical cancer screening (CCS), incidence, and mortality remained (McDaniel et al., 2021).

The Asian, Native Hawaiian, and other Pacific Islander women (ANHPI) were under-screened consistently compared to other racial groups, and these women remain at risk of undetected CC. Among the ANHPI subgroup, Filipino and other Pacific Islanders in HI have the lowest CCS rate compared to other races in the 2015, 2016, and 2018 HI CCS report, 79.4% and 66.4 %, respectively (Hawaii Health Data Warehouse, 2021). The low CCS uptake rate of ANHPI was attributed to several reasons, (a) health illiteracy or knowledge deficit about CC and the importance of early detection, (b) the misconception about CC and CCS, and (c) the lack of knowledge of the availability of screening tests (So et al., 2017, McDaniel, et al., 2021, Hall et al., 2018). Communication barriers or limited English proficiency play a significant role in the low CCS uptake for Asians (So et al., 2017). While pap smears can be quickly completed in a clinic office and are primarily offered in a primary care and obstetrician-gynecologist clinic setting, ANPHI women utilize these screening services to a lesser degree when compared to other racial and ethnic groups.

The Alquero Family Clinic (AFC) was chosen to implement a quality improvement (QI) initiative project to increase their CCS performance. AFC is a privately-owned primary care clinic serving the community for more than three decades in Waipahu, Hawaii. The clinic has fallen behind with the CCS performance measurement for the last few years. The administrator agreed
that something must be done; a QI initiative was proposed and approved to proceed (see Appendix A for the letter of support). The clinic provides a walk-in primary healthcare service for Waipahu residents and neighboring towns. Most populations in Waipahu are Asians (67%), 14.2% are Native Hawaiian and Other Pacific Islander, and 13.9% belong to two or more races (US Census Bureau, 2021). More than half of Waipahu's population speaks a language other than English at home, 41% were foreign-born, and 85% graduated high school (US Census Bureau, 2021). It is open six days a week, with half-days on Wednesday and Saturday. Key stakeholders are the providers that consist of one Family Medicine physician, one Internal Medicine physician, two Nurse Practitioners, and one USF DNP student. Non-clinical staffing includes two medical assistants (MA), clinic administrator, and a receptionist.

The AFC was chosen as a perfect site to implement a QI initiative targeting women of ANHPI because of its location, the characteristics of the populations they serve, and the need to improve their performance measurement for CCS. The project aligns with its mission to deliver high-quality preventative healthcare services for the community. Integrating culturally and linguistically tailored strategies appropriate to ANPHI is an approach that can improve knowledge of CC and increase the rate of CCS uptake.

**Project Aim**

The project's purpose was to develop, implement, and evaluate culturally tailored healthcare interventions for women aged 21 to 65 as a quality improvement initiative for a walk-in primary clinic in Waipahu. The main goal is to increase the CCS uptake among Asian, Native Hawaiian, and Other Pacific Islander women by 25% within three months of implementation. Additional objectives include changing perception and improving knowledge on CC disease and CC screening by increasing participation in Pap smears. The project also aimed to reduce the
incidence rate of CC, morbidity, and mortality contributed by low screening disparities among ANHPIs.

Available Knowledge

PICOT Question

In women of a minority group (P), does the utilization of culturally tailored healthcare interventions (I) compared to generalized healthcare interventions (C) increase cervical cancer screening uptake in a primary clinic (O) within three months of implementation (T)?

Search Methodology

Comprehensive literature research using databases searched engines included the Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, Scopus, and Joanna Briggs Institute EBP Database. The initial search yielded 134 articles, 71 in CINAHL, 43 in PubMed, 6 in Scopus, and 13 in Joanna Briggs. The search keywords include "culturally tailored interventions," "cervical cancer," "cervical cancer screening," "minority ethnic group," & "culturally tailored education." The years covered in the search were between 2015 to 2021. Nine articles were evaluated for strengths and quality using the John Hopkins Nursing Evidence-Based Practice appraisal tool (Newhouse et al., 2007). Appendix B has the summary of articles in tables.

Integrated Review of Literature

Increasing Cervical Cancer Screening Uptake

A randomized control studies by Altinel & Akin (2020), Thompson et al. (2017), Moen et al. (2020), and a prospective study by Shokar et al. (2021) all examined the effect of multiple interventions that were tailored to women of minority group about cervical cancer and its screening. Interventions included in the studies were educational sessions (either group or individual) and the utilization of multimedia such as PowerPoint presentations, video clips, flip
charts, flyers, brochures, and reminder materials that were culturally tailored to their participants (Altinel & Akin, 2020; Thompson et al., 2017; Moen et al., 2020; Shokar et al., 2021). Bilingual culturally tailored flipchart, patient navigation with tracking to facilitate screening, and an on-site diagnostic and treatment colposcopy were used by Shokar et al. (2021). A dedicated, multilingual community or lay healthcare worker also facilitates educational sessions for the minority group of women during interventions (Altinel & Akin, 2020; Thompson et al., 2017; Shokar et al., 2021, Wong et al., 2019). All these studies resulted in a significantly higher rate of CCS participation in the experimental group that received the culturally tailored interventions compared to the control groups (refer to Appendix B evaluation table for specific data).

**Increasing Knowledge and Changing Perceptions**

An RCT pilot study by Wong et al. (2019) and Kwok & Lim (2016) quasi-experimental study evaluated the effect of a community-led culturally sensitive and linguistically appropriate educational program on Asian women. Participants became more aware of the CCS Pap test (100% vs. 77%) post and pre-intervention (Kwok & Lim, 2016), while a statistically significant improvement in perceived benefits ($p = 0.001$) and perceived barriers ($p = 0.02$) of CCS among South Asian women in the study by Wong et al. (2019). Additionally, delivery of educational materials shows no influence on the perceptions & knowledge, as shown in a cluster RCT study by Calderón-Mora et al. (2020), individual education versus group education (77.6% vs. 68.9%, $p=0.24$). However, the individual education group increased perceived benefits (0.65, $p=.005$) and self-efficacy (0.60, $p=.044$). In contrast, the perceived seriousness scores increased significantly in both groups (0.26, $p <.001$ for individual education and 0.31, $p <.001$ for group education)
Summary of the Evidence

Culturally tailored education interventions increased CCS participation, serving as effective population-specific health promotion and prevention strategies by increasing knowledge on CC and CCS and changing beliefs and perceptions. Strengths of culturally tailored interventions include culturally respectful and patient-centered care, expanded family and community support, increased knowledge of the disease, and efficient use of technology (Joo & Liu, 2021). The healthcare workers of the same racial and ethnic background, use of culturally designed educational materials, flexible language mode of communication, and efficient educational approaches were the structures needed for an effective culturally tailored healthcare intervention.

Rationale

This project uses Andersen's Behavioral Model (ABM) as the conceptual framework to identify, explain, and understand factors related to the utilization of healthcare services about preventative measures (Appendix C). ABM is one of the most widely acknowledged theoretical frameworks in healthcare; it was conceptualized and developed in 1968 by Ronald M. Andersen, a medical sociologist, and researcher (Lederle et al., 2021). Babitsch et al. (2012) described ABM as utilizing healthcare services determined by predisposing, enabling, and need factors. Some of the predisposing factors identified in the project were belonging to a minority group, women, age, education, and health beliefs. The enabling factors are personal, family support, access to health insurance, community services, and poverty. The need factors represent both perceived and actual need for health care services. Andersen theorized that an individual who believes health services are an effective treatment and prevention from acquiring illness is more likely to seek care. Later, Andersen recreated the framework by adding four constructs as the mainframe from which access to healthcare is determined by contextual characteristics, individual characteristics, health
behaviors, and outcomes. The ABM framework aligned with the project statement helped identify the targeted population's contextual and unique features, which guided the development of interventions.

**Ethical and Policy Considerations**

Two primary ethical considerations brought during the planning of this project were to minimize the possibility of patient harm and potential staff burden. All patient was treated equally, and their accompanying cultural beliefs were respected. Women were given autonomy with their decision to participate in the Pap smear, and utmost privacy measures were addressed throughout the process. Clear guidance and the role of all stakeholders were discussed and collaborated to avoid misunderstanding. The American Nurses Association (ANA) Code of Ethics and Jesuit values guided the project's mission. The ANA Code of Ethics (ANA, 2015) provisions 1 and 3 are reflected throughout the program process. The NP practices compassion and respect each minority women's inherent dignity, worth, and unique attributes as stipulated in provision 1. The project provided an opportunity to promote health literacy and improve the community's well-being consistent with provision 3. Align to Jesuits' value of education as service and justice (Jesuit Organization, 2021), this program serviced minority women with concern for the marginalized population. It broadens the understanding of cultural differences and increases civic engagement among ANPHIs. Finally, the USF DNP department determined that this project met the guidelines for an evidence-based change in practice project outlined in the Statement of Determination (Appendix D) and was approved as non-research. No conflicts of interest or identifiable issues were noted for this project.
Implementation/Intervention

The intervention is a 5-step process involving bilingual multimedia, multilingual staff, and providers in educating, identifying, and scheduling until the patient has an actual Pap smear. Appendix E listed the step-by-step process. The educational materials were culturally and linguistically created specifically targeting ANHPI women to increase their knowledge of cervical health. It also raises awareness of the importance of the early detection of precancerous lesions and increasing Pap smear participation. The intervention served as a QI for AFC that delivers high-quality preventative healthcare services for the community, expanding knowledge on CC and the availability of CCS as a tool for prevention influence change in community beliefs and behaviors, yielding tremendous success (San Miguel-Majors et al., 2020). It was chosen by the DNP student (author) based on the strong evidence-based findings from the literature review that culturally and linguistically tailored strategies are proven to improve knowledge of CC; it also increases the rate of CCS uptake (see Appendix A for evidence table summary).

Multimedia. A 30-minute-long series of short video clips featuring educational information about CC and Pap smear information both in Tagalog and English. The video was played continuously in the waiting room. A large poster (Appendix F) and a small poster announcement (Appendix G) were displayed at the entrance door, waiting for the area, restroom, intake, and provider's room. A pamphlet (Appendices H & I) was distributed to women aged 21 to 65.

Multilingual Staff and Providers. Stakeholders involved in the implementation used English and Tagalog as the primary language of communication. Additional dialect used were Ilokano, Kapampangan, Bisayan, and Micronesian.
Note Reminder. The teal color notes (Appendix J) remind the provider to verify the need for a Pap smear and to give a quick education during an encounter.

Gap Analysis

Women of the minority group who belong to the ANHPI ethnicity have the lowest CCS rate compared to women of white color and other minority groups (McDaniel et al., 2021; Hall et al., 2018; Thompson et al., 2014). The CCS uptake differences between racial/ethnic groups were significantly associated or influenced by several factors such as low educational status and having no health insurance (McDaniel et al., 2021; Hall et al., 2018; Lee et al., 2019); no usual regular access to a provider, immigrant women with less than ten years of US residency (Hall et al., 2018). Limited English or language difficulties, religious and individual health beliefs, and insufficient knowledge about cancer and screening (So et al., 2017). Appendix K illustrates the gap analysis for this project.

GANTT Chart

The project's timeline consists of five phases, outlined in the Gantt chart (see Appendix L). The first phase primarily focuses on research and assessment of the needs of minority women. The second phase includes initiation & planning, wherein the project leader chooses the setting, identifies the stakeholders, plans on a budget, and lays out the project's type and goals. The project leader completed the third phase's SWOT and outcome analysis. Designing of the interventions took place in the fourth phase. In the last stage, project implementation and evaluation were concluded.

SWOT Analysis

The SWOT analysis was used to identify issues that were strategically addressed. The project's strengths included an effective evidence-based healthcare intervention design and
utilizing current recommended guidelines for CCS. Stakeholders in the clinic and leadership supported the project and willingly accepted the change of practice. Notably, the project was led and designed by a DNP USF student. Some of the weaknesses identified were the limited knowledge and information about the disease and the availability of preventative services among ANHPI women. The significant patient volume overwhelmed the medical staff and providers. The development of a linguistically and culturally designed intervention served as an opportunity to increase health literacy. The project threats included the amount of time needed to complete the program and the change of practice in the clinic. A complete summary of the analysis can be seen in Appendix M.

**Work Breakdown Structure**

The work breakdown structure (WBS) provided an organized visual of the different levels of project activities. The main tree was the tree's trunk representing the project title—the tree branches out, defining project tasks. The tree structural view illustrated the organizational chart for this project (see Appendix N for specifics).

**Budget and Cost-Benefit Analysis**

The total expenses for this project were calculated to be about $400, much lesser than anticipated expenses. Most of the budget was allotted to the production of materials. Appendix O shows an accounting of the expenditures, both monetary and non-monetary. The project's cost/benefit analysis showed that using the screening tool as part of preventative health can identify CC early when it is much less expensive and cost-effective than treating full-blown CC. CEA analysis can be found in Appendix P.
Responsibility/Communication Matrix

Appendix Q listed the stakeholders' responsibilities and means of communication. The communication evolves between the project leader, the providers, the clinic staff, and the patient. During the implementation phase, face-to-face communication was primarily used in daily operations.

Outcome Measures

The outcome measures were chosen to reflect that the interventions caused a positive change in practice and health improvement. Bulleted below are the outcome measures.

- Increase of 25% in the number of women who completed Pap smear within two months of interventions compared to the numbers of women who had Pap smear from the previous two months without interventions.
- Pap smear participation rate of 50% among women that needed cervical cancer screening during interventions.
- Increased knowledge and perception about CC and pap smear by 50% among women who received Pap smear during implementation.

Analysis, Data Collection, CQI Method

A quantitative analysis of the receipt of a Pap smear was measured by counting how many had an actual Pap smear. The data was extracted from the eClinicalWorks statistics report using CPT code for Pap smear & Pelvic exam. Descriptive analysis of the increase in knowledge and perception was compared before and after the Pap smear using a numerical rating scale (Appendix R). IBM SPSS software was used to analyze the data collected.
Results

The project interventions were initially planned to run for three months; however, due to unforeseen events in the clinic setting and with the project leader, the implementation phase took place for only two months. Despite that, it resulted in a significant increase rate of 272.73 % in the number of women who completed Pap smear within two months of interventions compared to the numbers of women who had Pap smear from the previous two months without interventions (see Appendix S for data calculations). There were total of 11 women who had Pap smear two months before the start of interventions. The total number of women identified that needed Pap smear during interventions was fifty-two; 78.8% ($n=41$) participated with the CCS while 21.2% ($n=11$) did not (Appendix T). Minority subgroups who completed pap smears were Filipino ($n=36$), other Pacific Islander ($n=3$), one Chinese, and one Native Hawaiian (Appendix U). Two women had menstruation at the time of the Pap smear; thereby appointment was rescheduled. Four were identified within the last two weeks of July and have not scheduled their Pap smear yet. Thirty-three feedback forms were collected, and eight women did not receive a feedback form. Reasoning includes one FNP provider who did not adhere to the flow of the process and feedback form ran out for a week when the project leader was off for a week. All surveyed women with pap smears ($n=33$) recommend getting a CCS to their family and friends (Appendix V). There was an increase in knowledge and perception of CC & CCS before & after Pap smear, having 15.9% with the highest rate of understanding before pap smear to 47.7% after pap smear (Appendix W). The paired T-test was used to measure the difference and evaluate the measurement’s validity. The rate of understanding before and after was statistically significant at $p = < 0.001$, with one-sided and two-sided $p$ (Appendix X). Furthermore, an analysis of the demographic characteristics of the populations can be found in Appendix Y.
Most of the cytology and HPV reports were negative; however, one woman tested positive for atypical squamous cells of undetermined significance (ASCUS), and one woman tested positive for low-grade intraepithelial lesion (LSIL) with a positive HPV. Both were referred to Obgyn for colposcopy. Additionally, two women tested positive for chlamydia, and two tested positive for candidiasis; all were given treatment.

**Conclusions**

The overall response of the interventions to the target populations was overwhelmingly positive. The significant increase in CCS uptake (272.73 %) shows that the QI project was effective. Some of the behavior observed during interventions includes spontaneous or same-day appointment during regular clinic visit influenced by the announcement they read in the restroom and entrance door and the video clips they watched while waiting. Women inquire about pap smears at the front desk before seeing the provider. Dissemination of linguistically & culturally healthcare information and availability of healthcare services using multimedia increases knowledge and participation in healthcare services. The teal-color note was vital in reminding providers to identify the need for CCS and a recommendation to have a pap smear, wherein most of the women responded positively.

**Benefits of Project to Clinic**

A decrease in the CCS care gap equates to increase reimbursements from insurance as well as receiving incentives. It helped promote the availability of women's reproductive health cancer screening tests in the primary care setting, making it accessible to them.

**Limitations**

The population's participation skewed to the left, where most of them were Filipinos. Thereby, it cannot conclude that the positive result reflects other minorities' responses to the
interventions. The interventions may well be evaluated in a clinic with equal representations of an ethnic group or increased the length of implementations. Expanding the program unto specific ethnic community group can also potentially reach other ethnic groups, not just Filipino. Since the initial plan was to run the project in 3 months rather than two, the results may have been different. The clinic is a walk-in with high-volume patients, it burdened MA to adhere to the procedures consistently. The 5-step process interventions were not strictly followed. The project leader reminded the MA to attach the note reminder with the demographic sheets during intake. Providers were given pamphlets to distribute while educating at the time of each patient's encounter. Additional limitations include Pap smear was only performed by female NP, limiting the availability of schedule.

**Implications for Practice**

Preventative healthcare screening that targets a specific population requires adaptation of demographic and cultural characteristics. Using culturally made educational materials can expand knowledge and enhance participation in preventative screening tools such as Pap smears for women. It can influence women's beliefs and behaviors about a disease. Educational programs provide patients with knowledge of risks, prevention, and screening, resulting in improved scheduling and screening (Andulin et al., 2019).

**Disclosure**

No funding was received for this project from other entity. The DNP student became a part-time employee in the clinic at the time of implementation, acting as an independent provider under supervision.


Appendices

Appendix A:

Letter of Support from the Agency

DonsApps

DNP Project proposal for Alquero Family Clinic

2 messages

Marife Solomon <mcsolomon@dons.usfca.edu>
To: eaa.md.inc@gmail.com

Hi Dr. Alquero,

I am finally on the finalization of my project proposal on how we can improve the clinic's cervical cancer screening performance. I am looking forward to getting it implemented as soon as possible.

I can email you separately the detail of the plan.

This is the Project Title: "Integrating Culturally Tailored Interventions to Increase Cervical Cancer Screening: A Quality Improvement Initiative in a Primary Care Clinic"

I am excited to lead this project and hope to get a positive response from our patients.

Thank you, so much and I would really appreciate it if you can reply with your confirmation of your approval for my DNP project to be held at your clinic.

Sincerely Yours,
Marife Solomon
DNP-FNP student
USF

Arlene Alquero <eaa.md.inc@gmail.com>
To: Marife Solomon <mcsolomon@dons.usfca.edu>

Hey Marife,

I am excited and approving for you to do this project in my clinic. Looking forward to the outcome of your project.

[Quoted text hidden]

--
Edward A. Alquero, M.D., Inc.
94-141 Pupupuhi Street
Waipahu, HI 96797
Phone: 808-676-2271
Fax: 808-679-1894
Appendix B

Evidence Evaluation Table

<table>
<thead>
<tr>
<th>Author / Year Title</th>
<th>Study Design &amp; Population</th>
<th>Sample Size</th>
<th>Interventions</th>
<th>Results</th>
<th>Quality of Evidence</th>
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</table>
| Altinel & Akin (2020) | Randomized controlled experimental study using a pretest-posttest design. 40-55 years old women who never had a Pap smear test and had at least one of the most frequent risk factors of CC registered at Konya, a Family Health Center in Turkey. | Total n=134 random selection  
n=67 control group  
n=67 experimental group | Experimental group -14-week intervention, three sections:  
1. Group education: 40-minute presentation on CC and its early diagnosis, an in-group interaction was provided using the question-answer method. Then, participants received a magnet reading “Hold on to life with a five-year Pap smear test” and a mug with “Stop cervical cancer with an early diagnosis! Give yourself a chance!” written on it. They also received a brochure summarizing the education.  
2. Home visits - two times within a four-week interval, 40 minutes an average, education & counseling on CC.  
3. Reminder calls - two times in 2 weeks after each home visit, reminding the women to participate in CC screening.  
Control Group - routine practice, guidance by health personnel & calling them to participate in screening through a group training session. After group training, brochures, magnets, and trophies were given. | The Pap smear participation rate was significantly higher in the experimental group (93.7%) than that in the control group (12.3%), at p= <0.05.  
CCS participation rates in the experimental group invited to screening by calling (RR: 2.16, 95% CI: 1.70, 2.74), receiving brochures (RR: 1.11, 95% CI: 0.88, 1.41), and receiving education through home visits (RR: 2.33, 95% CI: 1.04, 5.23) were significantly higher than the screening participation rate in the control group. | Level I-B |
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| Calderón-Mora et al., (2020) | Group versus individual culturally tailored and theory-based education to promote cervical cancer screening among the underserved Hispanics: a cluster randomized trial. | A Cluster randomized controlled study. Hispanic women aged 21 to 65 years, uninsured, due for a Pap test, no prior history of cervical cancer or hysterectomy. | Total N=300  
$n=150$ in the group education (intervention)  
$n=150$ in the individual education (control)  
$n=257$ completed the 4-month follow-up  
$n=137$ in group education  
$n= 125$ in the individual education group | De Casa En Casa program:  
- Outreach  
- Educational session  
- Navigation services  
- No-cost cervical cancer testing | A bilingual, trained promotora delivered the educational session with a flipchart, message cards with barriers to screening, body diagrams, an action plan worksheet, resource sheet, and informational handouts.  
The control and intervention group educational sessions were identical.  
-all received an education session  
-mean duration of the individual session was 75 minutes, 90 minutes for the group session  
-group size varied from 3 to 6 participants  
-the only difference in group education was that the promotora asked participants to discuss barriers to screen as a group and encouraged interactive dialogue. | After a 4-month of intervention, the overall screening rate at follow-up was 73.2%, there was no significant difference between the individual education versus group education (77.6 % vs. 68.9%, p=0.24) | Level I - B |
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<tr>
<td>Joo et al., (2021)</td>
<td>Culturally tailored interventions for ethnic minorities: A scoping review.</td>
<td>N=58 final selection Targeted ethnic minorities included African Americans; Hispanic or Latinx peoples, including immigrants; and Asians. Participants in the studies were diagnosed with chronic illnesses, high-risk patients, cancer survivors, nurses or healthcare practitioners, and caregivers.</td>
<td>Key ideas were summarized into subthemes that were then grouped into two main themes: strengths and weaknesses of culturally tailored interventions.</td>
<td>It identifies the strengths and weaknesses of culturally tailored interventions for ethnic minorities' care in the United States. Four weaknesses were identified: (1) unclear guidelines (2) insufficient attention and retention rates. (3) failure to measure processes (4) poor cultural competency training. Five strengths identified: (1) culturally respectful and patient-centered care. (2) healthy lifestyle promotion. (3) increased family and community support. (4) technology used for efficient and timely care (5) increased knowledge of the disease.</td>
<td>Level V-B</td>
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<td>Kwok et al., (2016)</td>
<td>A quasi-experimental study with both pre- and post-test design. Chinese-Australian women aged 18 years or older with no personal history of breast and cervical cancer can speak Cantonese and read and write Chinese.</td>
<td>N = 288 Chinese women.</td>
<td>Educational session titled “Happy and healthy life in Sydney” presented in Cantonese by the lead author, delivered as a 35- to 40-min long PowerPoint presentation in venues provided by Chinese organizations. A take-home information kit: (a) booklet using simple language and pictures to summarize the contents of the educational session; (b) a calendar containing reminders about the dates of mammography and Pap smear testing, (c) a contact details for appointment booking, (d) a fridge magnet, and (e) a coffee mug with the program logo. All materials were presented in Chinese. The participants were encouraged to spread the message to family members, relatives, and peers. All printed program materials and the bag for the information kit with a pink color theme because pink indicates femininity and harmony in Chinese culture. Images of Chinese women and culturally relevant graphics were used in all materials to convey a feeling of enjoyment and happy and healthy life.</td>
<td>Participants have become more aware of the breast (97.2 vs. 69.4 %) and CC screening Pap test (100 vs. 77 %). A significant number of women responded correctly on the correct age at which mammogram (82.6 vs. 41.7 %) and Pap smear testing (86 vs. 23.6 %) should be undertaken. More participants expressed an intention of attending cancer screening within the next 6 months (76.4 vs. 47.9 % for Pap smear tests and 35.4 vs. 23.6 % for mammograms).</td>
<td>Level II-B</td>
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<tr>
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| Møen et al. (2020)  | Cluster-randomized clinical trial  
General Practitioner and Immigrant women living in Bergen Norway | Total =73 General Practices in 20 clusters  
$n=39$ in the intervention group, $n=34$ in the control area  
Total =10,360 women  
$n=5227$ (50.4%; mean [SD] age, 44.0 [12.0] years) assigned to intervention group  
$n=5133$ (49.6%; mean [SD] age, 44.5 [11.6] years) in the control group | Educational session for General practitioners at lunch describing the importance of CCS among immigrants and advising about how to invite them to participate.  
Mouse pad as a reminder.  
A poster was placed in waiting rooms. | The proportion of immigrant women screened increased by 2.6% in the intervention group and 0.6% in the control group.  
Women in the intervention group were more likely to have participated in CCS (OR, 1.24 [95% CI, 1.11-1.38]).  
In subgroup analyses, the intervention increased participation among women who were not previously screened at baseline (OR, 1.35 [95% CI, 1.16-1.56]). | Level I-B |
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<th>Author / Year Title</th>
<th>Study Design &amp; Population</th>
<th>Sample Size</th>
<th>Interventions</th>
<th>Results</th>
<th>Quality of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pratt et al., (2020)</td>
<td>A pilot feasibility study. Somali American Muslim women born outside the US. Local imams represent different mosques in the community.</td>
<td>$n = 30$ women $n = 11$ Imams American Muslim women average age $47.3 \pm 11$ years old</td>
<td>3-h-long religiously tailored workshop. 1. Video content to be presented, three videos, running between 5 and 7 min long each. 2. Discussions on religion being a barrier to CCS. 3. Time to gather over food and tea. 4. Breaks for prayer.</td>
<td>Participants agreed that cancer screening could detect cancer before they would notice symptoms themselves (before the workshop: 63% vs. after workshop: 80%; $p = .06$), while more disagreed that having a cancer screening could be bad for them or cause them harm (before: 70% vs. after 87%; $p = .18$). After the workshop, both women and imam participants indicated that it would not be immodest for women to undergo breast or CCS. It did not go against their faith to support women undergoing cancer screening.</td>
<td>Level III-B</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Author / Year Title</th>
<th>Study Design &amp; Population</th>
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<th>Results</th>
<th>Quality of Evidence</th>
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<tbody>
<tr>
<td>Shokar et al., (2021)</td>
<td>Prospective community-based intervention utilizing a quasi-experimental design.</td>
<td>Total n=599 Intervenational group (n=300), Per protocol analysis (n = 257) Control Group (n=299) Per protocol analysis (n = 203)</td>
<td>De Casa En Casa program (multicomponent intervention):  - The control group was recruited first by promotoras when consecutive eligible women were offered the opportunity to participate in the evaluation through the completion of a baseline and 4-month follow-up survey.  - The control group received no intervention components during the four months.  - The intervention group recruitment began a few months after the control group had been recruited. Interventions include: a. Educations- delivered through a flipchart, covering cervical cancer risk factors, screening description, and importance and included testimonials, message cards, body diagrams, a local resource handout, and informational brochures.</td>
<td>In the per-protocol analysis (n = 420), the intervention group screening completion was 73.2% compared with 6.4% in the control group (p &lt; .001), while a 62.7% and 4.4% (p &lt; .001) in the intention-to-treat analysis for the intervention group and the control group, respectively. The intervention group was 14 times more likely to be screened than the control group, with a relative risk of 14.41 [95% CI =8.41-24.71, p &lt; .001].</td>
<td>Level I-B</td>
</tr>
</tbody>
</table>
b. *Navigators* - offers one-on-one education and phone-based services, including participant tracking, appointment scheduling, reminder calls, explanation of the screening process, addressing individual barriers to screening, and transportation if needed. Facilitates seeking health care coverage, a primary care physician, and coordinated transition to treatment for diagnosed cancers.

c. *On-site, no-cost screening* (Pap and human papillomavirus testing) and diagnostic testing (colposcopy) at a designated screening clinic.
<table>
<thead>
<tr>
<th>Author / Year Title</th>
<th>Study Design &amp; Population</th>
<th>Sample Size</th>
<th>Interventions</th>
<th>Results</th>
<th>Quality of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thompson et al., (2017)</td>
<td>Randomized trial control study</td>
<td>Total N=443, n=147</td>
<td>Control arm (usual care): The study staff did not receive any intervention materials but had access to information about CC and the importance of Pap testing via public health education and from their health care providers at YVFWC. Low-intensity intervention (video) arm: mailed a culturally appropriate Spanish-language video about CC &amp; CCS. High-intensity arm received: a. a promotora-led educational session in their home includes watching the video with the promotora, committing to have a Pap test, and making an appointment for a Pap test. b. a local resource sheet listing means for overcoming barriers to care such as financial aid, transportation, and childcare. c. a reminder refrigerator magnet. d. an appointment card.</td>
<td>Significantly more women underwent Pap test within 7 months in the high-intensity arm (n= 78 [53.4%]) versus the usual-care arm (n = 50 [34%]; p &lt; .001) or the low-intensity arm (n =58 [38.7%]; p &lt; .01). Not statistically significant differences in CCS uptake between the control and low-intensity arms (p=.40). Specific cost per participant was $82 for the promotora arm versus $15 for the video arm. However, cost effectiveness analysis indicates that high-intensity arm women were more likely to be screened within a shorter period (81 days) than women in the video (95 days) or usual-care arm (139 days). The video arm was not effective in comparison with the usual-care arm (P &gt; .05); thus, it was not cost-effective. Incremental cost-effectiveness ratio per additional woman screened for the promotora arm versus the usual-care arm was $4.24.</td>
<td>Level I-B</td>
</tr>
<tr>
<td>Author / Year Title</td>
<td>Study Design &amp; Population</td>
<td>Sample Size</td>
<td>Interventions</td>
<td>Results</td>
<td>Quality of Evidence</td>
</tr>
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<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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South Asian women  
Women of a South Asian origin (Pakistani, Indian, or Nepali), lives in Hongkong, aged 25 or above, with previous sexual activity, no Previous CCS in the past five years, no previous cancer diagnosis, and intervention on CCS in the past year. | Total n=42  
Intervention Group (n=21)  
Waitlist control Group (n=21) | Intervention Group –  
- Community Healthcare worker interventions for three months include:  
1. Multimedia educations within two weeks of enrollment, include a 30-min multimedia educational program presented using a structured PowerPoint slide with a video clip aiming to augment knowledge of cervical cancer and its prevention. An information booklet containing information on cervical cancer was provided to each participant to recap what they had learned during the health talks.  
2. Monthly telephone follow up and navigation assistance for three months.  
Waitlist Control Group  
- No intervention is given until after data collection post-intervention. | In comparing the primary and secondary outcomes between the control and intervention group, the intervention arm reported a significant improvement in perceived benefits (p = 0.001) and a reduction in perceived barriers (p = 0.02).  
No statistically significant difference was observed in either uptake of cervical cancer screening (p = 0.739) or screening intention (p = 0.999). | Level I-B |
Appendix C

Anderson Behavioral Model

[Diagram showing the relationship between Environment, Population Characteristics, Health Behavior, and Outcomes.]

- **Environment**
  - Healthcare System
  - External Environment

- **Population Characteristics**
  - Predisposing Characteristics:
    - minority group
    - women
    - health beliefs
    - age
    - education
  - Enabling Resources:
    - personal
    - family
    - insurance
    - poverty
    - community
  - Needs:
    - perceived beliefs
    - self-rated health

- **Health Behavior**
  - Use of Health Services
    - PAP smear

- **Outcomes**
  - Perceived Health Status
  - Evaluated Health Status
  - Satisfaction
Appendix D

Statement of Non-Research Determination

Statement of Non-Research Determination (SOD) Form

General Information

<table>
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<th>First Name:</th>
<th>MARIFE</th>
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<td>Semester/Year:</td>
<td>SPRING 2022</td>
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<tr>
<td>Course Name &amp; Number:</td>
<td>NP Qualifying Project: Prospectus Development N749B</td>
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</tbody>
</table>

| Chairperson Name: | Dr. Jo Loomis | Advisor Name: | Dr. Jo Loomis / Dr. Karen Van Leuven |
| Second Reader Name | Dr. Dena Cuyjet |                 |                                             |

Project Description

1. **Title of Project:** “Integrating Culturally Tailored Interventions to Increase Cervical Cancer Screening: A Quality Improvement Initiative in a Primary Care Clinic”

2. **Brief Description of Project**

   **Purpose:**
   The project aims to develop, implement, and evaluate culturally tailored healthcare interventions in screening for cervical cancer among women of the minority group in an underserved area in Hawaii. It is a quality improvement project that aims to increase cervical cancer screening uptake and to increase knowledge about the disease and cervical cancer screening among Asian, Native Hawaiian, and other Pacific Islanders (ANHPIs) aged 21 to 65 within three months of implementation at Alquero Family Clinic in Waipahu, Hawaii.

   **Problem Statement:**
   Women of minority groups belonging to Asian, Native Hawaiian, and other Pacific Islander consistently have the lowest rate of cervical cancer screening compared to other races making them at risk for undetected cervical cancer disease. The low cervical cancer screening uptake rate of ANHPIs can be attributed to health illiteracy or knowledge deficit about cervical cancer and the importance of early detection, the misconception about the disease, and the lack of knowledge of the availability of screening tests. Communication barriers or limited English proficiency also play a significant role in the low cervical cancer screening rate among ANHPIs.
References:


3. AIM Statement:

To develop, implement, and evaluate a culturally tailored healthcare intervention to be utilized for Asian, Native Hawaiian, and other Pacific Islanders women aged 21 to 65 as a quality improvement initiative project in a primary care clinic.

Goals: To increase cervical cancer uptake of the identified target population by 25% within three months of implementation. A target of at least 50% of women identified who needed cervical cancer screening during interventions completed Pap smear. A target of at least 50% who had a Pap smear increases knowledge and perception about cervical cancer and pap smear.

4. Brief Description of Intervention (150 words):

The project is a quality improvement that is a culturally and linguistically 5-step process until the patient has an actual Pap smear that catered to Asian, Native Hawaiian, and other Pacific Islander women 21 to 65 years old. The most crucial aspect of this project will be educating these women using multilingual educational materials such as short video clips, posters, and flyers discussing cervical cancer and screening and multilingual providers’ one-on-one education with patient encounters. A teal color note will be used as a reminder for the provider to verify if the patient is qualified and due for a Pap smear. A dedicated staff will follow up with those identified patients to make an appointment for a Pap smear within four weeks from the last visit. The NP student and the board-certified NP, both females, will educate and perform the Pap smear. A follow-up will be performed once cytology and HPV test results. Any abnormal findings will be referred to Obgyn for colposcopy. Overall, this will be a collaborative effort of all the stakeholders.
4a. How will this intervention be implemented?

A quality improvement project using culturally tailored interventions to increase cervical cancer screening uptake among women aged 21 to 65 identified as Asian, Native Hawaiian, and other Pacific Islanders in a well-established primary care clinic in Waipahu, Hawaii, will be proposed to the clinicians operating the clinic. The Alquero Family Clinic is a well-established primary walk-in clinic located in Waipahu, HI. The clinic is operated by two physicians specializing in family medicine and internal medicine, a family nurse practitioner, two medical assistants, a biller/administrator, and a receptionist. The family-owned clinic agreed to be the site for this project as part of its quality improvement initiatives to increase its cervical cancer screening performance gap. The project will be a collaborative effort of all the staff in the clinic. The focus of the interventions will be the women aged 21 to 65 identified as ANHPI and the providers. It is giving massive effort in educating these populations using multilingual educational materials and multilingual providers one-on-one education during a patient encounter. A copy of the project proposal will be provided to the providers via email & the proposed project will be presented via discussion at a round table during lunchtime for all the clinic staff. It will be scheduled before the implementation and a briefing a few days again prior to the target start date.

5. Outcome measurements: How will you know that a change is an improvement?

A target percentage will be set to determine the outcome of the project. The receipt of Pap smear screening rate will be the dependent outcome variable.

- An increase of at least 25% in the number of women who completed Pap smear within three months of interventions compared to the number of women who had Pap smear from the previous three months without interventions will be considered a positive change and cause health improvement.

- A target of at least 50% of women identified who needed cervical cancer screening during interventions completed Pap smear. It will count the number of women who completed Pap smear divided by the number of women identified who needed Pap smear during interventions.

- The univariate & bivariate analysis will be done to study the characteristics of independent variables, including race/ethnicity, age, and education, to receipt of a Pap smear.

- Descriptive analysis of the increase in knowledge about cervical cancer disease and cervical cancer screening will be compared before and after the Pap smear procedure using a descriptive rate number. A descriptive analysis of the perception of women about Pap smears can influence others’ perception of cervical cancer screening will be included as well.

- Additional outcomes measures include increased knowledge about cervical cancer and cervical cancer screening by tabulating the answers from the feedback questionnaire after a Pap smear. This was added to measure if interventions influence their health behavior towards pap smear and increase knowledge about cervical cancer. No personal identifiable information will be used in collecting the data.
DNP Statement of Determination
Evidence-Based Change of Practice Project Checklist

Project Title: Integrating Culturally Tailored Interventions to Increase Cervical Cancer Screening: A Quality Improvement Initiative in a Primary Care Clinic

Mark an “X” under “Yes” or “No” for each of the following statements:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>The aim of the project is to improve the process or delivery of care with established/accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The specific aim is to improve performance on a specific service or program and is a part of usual care. All participants will receive standard of care.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The project is not designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case-control). The project does not follow a protocol that overrides clinical decision-making.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does not develop paradigms or untested methods or new untested standards.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The project involves the implementation of care practices and interventions that are consensus-based or evidence-based. The project does not seek to test an intervention that is beyond current science and experience.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The project has no funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., not a personal research project that is dependent upon the voluntary participation of colleagues, students and/or patients.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: “This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board.”</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Answer Key:
- If the answer to all of these items is “Yes”, the project can be considered an evidence-based activity that does not meet the definition of research. IRB review is not required. Keep a copy of this checklist in your files.
- If the answer to any of these questions is “No”, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used: http://answers.hhs.gov/ohrp/categories/1569
DNP Statement of Determination

Evidence-Based Change of Practice Project Checklist Outcome

The SOD should be completed in NURS 7005 and NURS 791E/P or NURS 749/A/E

☐ This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Student may proceed with implementation.

☐ This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

Comments:

<table>
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<tr>
<th>Student</th>
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<td>MARIFE</td>
</tr>
<tr>
<td>Student Signature:</td>
<td>[Signature]</td>
<td>Date:</td>
<td>4/24/22</td>
</tr>
<tr>
<td>Chairperson Name:</td>
<td>Dr. Karen Van Leuven / Dr. Jo Loomis</td>
<td></td>
<td></td>
</tr>
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<td>Chairperson Signature:</td>
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<td>Date:</td>
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<tr>
<td>Second Reader Name:</td>
<td>Dr. Dena Cuyjet</td>
<td></td>
<td></td>
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<td>Second Reader Signature:</td>
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<td>Date:</td>
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DNP SOD Review Committee Member Name:

DNP SOD Review Committee Member Signature: [Signature] Date:
Appendix E

5-Step Process Interventions

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<th>TASKS</th>
<th>1st Educational Materials</th>
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<tr>
<td></td>
<td>o 30-minute short clip videos in Tagalog and English version played continuously played in the waiting room</td>
</tr>
<tr>
<td></td>
<td>o large poster displayed in the entrance door</td>
</tr>
<tr>
<td></td>
<td>o small poster displayed in the waiting area, restroom, and providers/patient rooms</td>
</tr>
<tr>
<td></td>
<td>o flyer/pamphlet in Tagalog &amp; English version distributed to women aged 21 to 65.</td>
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</table>

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<thead>
<tr>
<th>TASKS</th>
<th>2nd Multilingual Speaking Staff</th>
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<tbody>
<tr>
<td></td>
<td>o identify women aged 21 to 65 who are potential or due for Pap smear screening during intake</td>
</tr>
<tr>
<td></td>
<td>o check care gap via EMR.</td>
</tr>
<tr>
<td></td>
<td>o reminder teal color notes will be attached to a separate demographic sheet. The notes will contain two questions for the provider to ask the patient. A flyer will be given to the patient for personal use.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>TASKS</th>
<th>3rd Note Reminder</th>
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<tbody>
<tr>
<td></td>
<td>o teal color notes set as a reminder for the provider to verify if the patient is qualified and is due for a Pap smear.</td>
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<tr>
<td></td>
<td>o providers give a quick education during encounters about CC and screening.</td>
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<table>
<thead>
<tr>
<th>TASKS</th>
<th>4th Pap Smear Scheduling</th>
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<tbody>
<tr>
<td></td>
<td>o collect the teal color notes reminder</td>
</tr>
<tr>
<td></td>
<td>o designated staff to call the patient to make an appointment</td>
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<tr>
<td></td>
<td>o a phone call or text reminder a week before scheduled appointment.</td>
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</table>

<table>
<thead>
<tr>
<th>TASKS</th>
<th>5th Pap Smear Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>o female NP student and the board-certified female NP perform Pap smear</td>
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<tr>
<td></td>
<td>o quick education on CC and the screening will be given during the encounter.</td>
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<tr>
<td></td>
<td>o USF DNP student conduct a Pap smear procedure at least three to four times a week.</td>
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Appendix F

Educational Materials: Large Poster

Cervical Cancer is Preventable...
...with the RIGHT test at the RIGHT time!

Screening tests can find abnormal cells so they can be treated before they turn into cancer.

- The PAP test looks for changes in cells in the cervix that could turn into cancer if left untreated.
- The HPV (human papillomavirus) test looks for the virus that causes these cell changes.

HPV is the leading cause of cervical cancer.

HPV is a common virus, passed from one person to another during sex. Most people get it but usually goes away on its own. If HPV doesn't go away, it can cause cancer.

Have your 1st PAP test when you're 21! If your test is normal, you can wait 3 years for your next PAP test!

When you turn 30 you have a choice: If test results are normal, get a Pap test every 3 years OR get both a Pap test and an HPV test every 5 years.

HPV tests are NOT recommended for screening women under 30.

You can stop getting screened if:
- you're older than 65 and have had normal Pap test results for many years.
- your cervix was removed during surgery for a non-cancerous condition like fibroids.

Schedule your PAP smear with your DOCTOR or NURSE PRACTITIONER at Alquero Family Clinic
94-141 Pupupuhi St. Waipahu, HI 96797
Tel. 808-6762271
Text 520-9827587
Appendix G

Educational Materials: Small Poster

---

**Cervical Cancer is Preventable**

**Schedule your PAP smear with the Nurse Practitioner in this clinic today!**

Alquero Family Clinic
91-141 Pupupuhi St., Waipahu HI 96797
Call 808-6762271
Text 520-9827587
Appendix H

Educational Materials: Pamphlet Tagalog Version

MGA KABABAIHAN, MAIIWASAN NINYO ANG CERVICAL CANCER (KANSER SA KUWELYO NG MATRIS).

ANG CERVICAL CANCER AY ISA SA MGA MADALAS NA NAGGING SAKIT NG KABABAIHAN, NGUNIT HINDI TULAD NG IBANG URANG KANSER, MADALI ITONG MAIWASAN.

Lakas sa pinaasa malubhang bagay na masarap mong gawin para magigilid ang pagkakaroon ng cervical cancer (kanser sa kuwela ng matris) ay regular na magpasunod para rito.

Ang mga paggamit para sa screening ng cervical cancer ay ang HPV test at Pap smear.

- Ang PAP SMEAR ay tumutukoy sa mga nakalabang kanakalan mula sa kuwela ng matris upang humanap ng mga pagbabago ng maaaring kanser o bagong maging kanser.

- Ang HPV TEST tahan ay maging sa mga impakto ng mga uri ng virus na maaaring magdulot at kanser sa kuwela ng matris.

Ang pagkakaroon ng regular na screening test ay malakas na sangit sa pagtuklas at mga pagkabasa, bagong maging cancer ang maaaring ito, at malakas na sangit sa pagtuklas ng cervical cancer at maging, halaga ito ay maliliit at may alamang mabuting mag-screen.

Ito ang mga rekomendasyon sa pamantayan sa cervical cancer screening:

- Hindi mo kalangan magpa-screen kung ang edad mo ay 21 to 65
- Magpa-PAP SMEAR kada 3 taon o Pap SMEAR with HPV test kada 5 taon
- Hindi mo kalangan magpa-screen kung ang edad mo ay 65 pataas at may tatlong negative na Pap SMEAR AMING YEARS

Mga expections sa mgaPasعمل and Pagigamit ng Pap smear at HPV test:

- Kung ang buhay matulog ng 3 buhay pa pati ang buhay ng kanya, at walang labis na kaalaman at hikaytang pag-screen.

Turnaring pumunta sa
Alejandro Family Clinic para sa konsultasyon no cervical cancer screening:
919 Pupungul St., W. Pinagkuwa, PH 68777
Tel: no. 808-6822791
Fax: 530-9827987

Kaya nagka-advised na sa mga:
Doctor or Nurse Practitioner para sa Pap smear at HPV test.
Appendix I

Educational Materials: Pamphlet English Version

CERVICAL CANCER IS PREVENTABLE AND CURABLE IF DETECTED EARLIER...

What is cervical cancer?
Cervical cancer is a disease where abnormal cells grow on the cervix.

THE BEST PROTECTION IS EARLY DETECTION

Talk to your Doctor or Nurse Practitioner about cervical cancer and its screening by PAP Smear and/or HPV test.

Follow these guidelines.

Cervical Cancer can be detected through screening:
Screening may include Pap test and/or HPV (human papillomavirus) test. In both tests, cells are taken from the cervix and sent to a lab for testing:

- **A Pap Test** looks for abnormal cells that could turn into cancer if left untreated.
- **An HPV Test** looks for infection with the types of HPV that are linked to cervical cancer.

Regular screening for cervical cancer can help find changes in the cervix that can be treated before they become cancer.

Schedule your PAP Smear at:
Alyxana Family Clinic
311-44 St. Paul's St. Wilkinsville, HI 95629
Tel. no. 808-4762221
Text 570-9827587

If you are less than 21 years old, you do not need screening.

If you are 21 to 29 years old, do PAP Smear (cytology test) every 3 years.

If you are 30 to 65 years old, do PAP Smear (cytology test) every 3 years, or Cytology with HPV test every 5 years.

If you are more than 65 years old, you do not need screening if you have 3 consecutive negative results in the last 5 years, or if your cervix was removed.
Appendix J

Educational Materials: Teal-Color Reminder Note

Q1. Ask the patient:
   “Have you ever had a Pap smear?”
   If YES, is it due?  YES ☐  NO ☐

Q2. For the provider:
   Is the patient qualified for PAP smear?
   YES ☐  NO ☐

Check here for SCHEDULING ___

Pls provide quick short education:

“PAP smear or HPV test is done as part of woman’s reproductive health screening to check for cervical cancer every 3 or 5 years.”
Appendix K
GAP Analysis

**Desired State**
ANHPI women aged 21 to 65 will get a PAP smear

**Gap**
- Women do not know availability of screening.
- Women do not know about cervical cancer.

**Current State**
ANHPI women have the lowest cervical cancer screening

**Gap due to**
- Limited English proficiency
- Foreign born/immigrant
- Educational level

**Methods used to identify gap**
- Matrix performance from health insurance.
- Available data on cervical cancer screening rate comparing other races.
Appendix L

GANTT Chart

<table>
<thead>
<tr>
<th>Phases and Tasks</th>
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<th>End Date</th>
<th># of Days</th>
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<td></td>
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<td>Research / Assessment</td>
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<td>10/15/2021</td>
<td>45</td>
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<tr>
<td>Selection of Problem</td>
<td>10/15/2021</td>
<td>10/30/2021</td>
<td>16</td>
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<tr>
<td>Formulation of the Problem</td>
<td>10/31/2021</td>
<td>11/20/2021</td>
<td>21</td>
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<tr>
<td><strong>Phase 2: Planning</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identify Setting</td>
<td>11/21/2021</td>
<td>11/27/2021</td>
<td>7</td>
</tr>
<tr>
<td>Identify Stakeholders</td>
<td>11/28/2021</td>
<td>12/4/2021</td>
<td>7</td>
</tr>
<tr>
<td>Develop Project Goal</td>
<td>12/5/2021</td>
<td>12/11/2021</td>
<td>7</td>
</tr>
<tr>
<td>Develop Project Design</td>
<td>12/12/2021</td>
<td>12/10/2021</td>
<td>7</td>
</tr>
<tr>
<td>Create Budget Plan</td>
<td>1/10/2022</td>
<td>1/22/2022</td>
<td>13</td>
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<tr>
<td><strong>Phase 3: Analysis</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWOT Analysis</td>
<td>1/24/2022</td>
<td>2/4/2022</td>
<td>12</td>
</tr>
<tr>
<td>Develop Outcome Measures</td>
<td>2/7/2022</td>
<td>2/25/2022</td>
<td>19</td>
</tr>
<tr>
<td><strong>Phase 4: Designing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop Step Process Interventions</td>
<td>2/29/2022</td>
<td>3/31/2022</td>
<td>32</td>
</tr>
<tr>
<td>Create Educational Materials</td>
<td>4/1/2022</td>
<td>4/30/2022</td>
<td>30</td>
</tr>
<tr>
<td>Initial Presentation to Clinic Stakeholders</td>
<td>5/1/2022</td>
<td>6/1/2022</td>
<td>1</td>
</tr>
<tr>
<td>Dry Run of Intervention</td>
<td>5/9/2022</td>
<td>5/14/2022</td>
<td>6</td>
</tr>
<tr>
<td><strong>Phase 5: Implementation/Evaluation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GO Live</td>
<td>6/1/2022</td>
<td>7/30/2022</td>
<td>60</td>
</tr>
<tr>
<td>Mitigate Ongoing Interventions</td>
<td>6/13/2022</td>
<td>7/30/2022</td>
<td>48</td>
</tr>
<tr>
<td>Analyze data</td>
<td>7/31/2022</td>
<td>6/1/2022</td>
<td>2</td>
</tr>
<tr>
<td>Writing of DNP Project Report</td>
<td>7/7/2022</td>
<td>8/1/2022</td>
<td>26</td>
</tr>
<tr>
<td>DNP Project Presentation</td>
<td>8/11/2022</td>
<td>8/11/2022</td>
<td>1</td>
</tr>
</tbody>
</table>
Appendix M

SWOT Analysis

**STRENGTHS**
- Evidenced-based effective interventions
- Utilizes current recommended guidelines
- Site/location of the clinic
- Walk-in clinic/easy scheduling
- Accept all kinds of insurance
- Project being led by DNP student
- Multilingual staff

**WEAKNESSES**
- Population demographics characteristics
- Knowledge deficit
- Limited English proficiency
- Cultural belief
- Low income
- High volume patients

**THREATS**
- Limited time for implementation
- Unforeseen expenses/technical issues
- Busy clinic/high patients’ volume
- Walk-in clinic
- Staffing shortage (sick calls)

**OPPORTUNITIES**
- Enhance health literacy
- Culturally tailored educational materials
- Use of multilingual educational materials
- Multilingual medical providers and staffs
- Clear role of stakeholders
- Promote respectful relationship among staff
Appendix N

Work Breakdown Structure

Culturally Tailored Healthcare Interventions for Minority Women

Identification of the Problem
- research
- assessment
- selection
- formulation

Planning
- project goal
- project type
- stakeholder
- clinic
- budget

Analysis
- conceptual framework
- SWOT
- internal
- external

Designing
- process of the interventions
- structure of the interventions

Implementation
- educational materials
- multilingual speaking staff (medical assistant)
- note reminder (multilingual providers)
- scheduling for pap smear (receptionist/medical assistant)
- pap smear procedure (np student and license np)

Evaluation
- pap smear result
- referral if (+)
- screening
- effectiveness of interventions
## Appendix O

### Budget

<table>
<thead>
<tr>
<th><strong>Expenditures</strong></th>
<th><strong>Cost</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Productions of Printed Educational Materials</td>
<td>$200</td>
</tr>
<tr>
<td>Transportation/Gas</td>
<td>$100</td>
</tr>
<tr>
<td>Meal</td>
<td>$100 (+ free meal in the clinic)</td>
</tr>
<tr>
<td>SPSS software</td>
<td>$0 (subscribe for free trial)</td>
</tr>
<tr>
<td>Video productions</td>
<td>$0 (YouTube videos – free trial)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$400</strong></td>
</tr>
</tbody>
</table>

### Non-monetary Valuable Time

- **FNP hourly salary rate in HI is $67-$77 per Glassdoor (2022)**

Converting valuable time unto monetary:
- Estimated hours spent/month: 100 h x 2
- 200 hours x $67 = $13,400
- FNP hours spent 8 hours 3 to 4 times a week as part of regular work.
### Appendix P

**Cost-Effective Analysis**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average cost of care for patients younger than 65 with cervical cancer</td>
<td>$118,000.00</td>
</tr>
<tr>
<td>during the last year of life</td>
<td></td>
</tr>
<tr>
<td>Average cost of care for patients older than 65 with cervical cancer</td>
<td>$79,000.00</td>
</tr>
<tr>
<td>during the last year of life</td>
<td></td>
</tr>
<tr>
<td><strong>Pap smear cost (per costaid.com)</strong></td>
<td>Insured – free</td>
</tr>
<tr>
<td></td>
<td>No-insurance - $60 + doctors fee $100</td>
</tr>
<tr>
<td><strong>Cost of Colposcopy (per costaid.com)</strong></td>
<td>$500 to 600 with biopsy</td>
</tr>
</tbody>
</table>
## Appendix Q

### Communication Matrix

<table>
<thead>
<tr>
<th>STAKEHOLDERS</th>
<th>ACTIONS/OBJECTIVE DESIRE</th>
<th>METHODS OF DELIVERY</th>
<th>FREQUENCY</th>
</tr>
</thead>
</table>
| PROVIDERS (MD, NP) | Consultation on the designing, implementation, and evaluation of the project. Monitor and update with them any progress, feedbacks, changes on the project. | IN PERSON EMAIL PHONE | • Once to Twice a month at initial phase  
 • 3 to 4x times a week during implementation |
| MEDICAL ASSISTANTS | Follow up, assist, and communicate on the progress of the project during implementation. | IN PERSON            | • 3 to 4 times/week during implementation       |
| CLINIC ADMIN/BILLER| Coordinate on the projected date of implementation. Discuss any potential hindrance & finding solution. | IN PERSON EMAIL      | • 2x/month at initial phase  
 • 1x/week during implementation              |
| PATIENTS           | Educate, inform, & follow up during and after project implementation. Provide healthcare intervention. | IN PERSON PHONE      | • 3 to 4 times/week during implementation      |
Appendix R

Post Pap Smear Feedback

1. Will you recommend getting a Pap smear to your women friends and family?
   - YES
   - NO
   - MAYBE

2. How would you rate your understanding about cervical cancer disease and its screening before and after your Pap smear?
   (1 being the lowest and 5 being the highest) Please encircle the number.
   Before: 1 2 3 4 5
   After: 1 2 3 4 5

3. What is your educational level?
   - less than high school
   - high school
   - some college
   - bachelor’s degree
Appendix S

Cervical Cancer Screening Uptake Rate

<table>
<thead>
<tr>
<th>Dates</th>
<th># Of Pap Smear</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 1, 2022 - May 31, 2022 (Two Months Prior to Interventions)</td>
<td>*11</td>
</tr>
<tr>
<td>June 1, 2022 - July 30, 2022 (With Two Months Interventions)</td>
<td>*41</td>
</tr>
<tr>
<td>Difference</td>
<td>30</td>
</tr>
<tr>
<td>Change % Rate</td>
<td>272.7</td>
</tr>
</tbody>
</table>

*Data extracted from eClinicalWorks using CPT code G0091 & G0101

**Formula Calculations:**

\[
\text{% Change} = 100 \times \frac{(\text{With two months interventions} - \text{Two months prior to interventions})}{\text{Two months prior to interventions}}
\]

\[
= 100 \times \frac{(41 - 11)}{11}
\]

\[
= 100 \times \frac{30}{11}
\]

\[
= 100 \times 2.72
\]

\[
\% = 272.72\%
\]
Appendix T
Participation Rate

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITH PAP Smear</td>
<td>41</td>
<td>78.8%</td>
</tr>
<tr>
<td>WITHOUT Pap Smear</td>
<td>11</td>
<td>21.2%</td>
</tr>
</tbody>
</table>
Appendix U
Pap Smear Participation by Race
Appendix V

Post Pap Smear Feedback Q1

Will you recommend Pap smear?

- 33 (100% yes)
- 8 (missing data)

N= 41

N=33 (100% yes)
N= 8 (missing data)
Appendix W

Post Pap Smear Feedback Q2

Rate of Understanding Before & After Pap Smear

Histogram

Rate of Understanding Before Pap smear

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>low (2)</td>
<td>4</td>
<td>9.1%</td>
</tr>
<tr>
<td>high (3)</td>
<td>10</td>
<td>22.7%</td>
</tr>
<tr>
<td>higher (4)</td>
<td>12</td>
<td>27.3%</td>
</tr>
<tr>
<td>highest (5)</td>
<td>7</td>
<td>15.9%</td>
</tr>
<tr>
<td>No Answer (0)</td>
<td>8</td>
<td>18.2%</td>
</tr>
<tr>
<td>Missing System</td>
<td>3</td>
<td>6.8%</td>
</tr>
</tbody>
</table>

Histogram

Rate of Understanding After Pap smear

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>high (3)</td>
<td>3</td>
<td>6.6%</td>
</tr>
<tr>
<td>higher (4)</td>
<td>9</td>
<td>20.5%</td>
</tr>
<tr>
<td>highest (5)</td>
<td>21</td>
<td>47.7%</td>
</tr>
<tr>
<td>No Answer (0)</td>
<td>8</td>
<td>18.2%</td>
</tr>
<tr>
<td>Missing System</td>
<td>3</td>
<td>6.8%</td>
</tr>
</tbody>
</table>
Appendix X

Paired T-test Analysis of Change of Knowledge

### T-Test

#### Paired Samples Statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate of Understanding Before Pap smear</td>
<td>4.120</td>
<td>41</td>
<td>1.28876</td>
<td>.19815</td>
</tr>
<tr>
<td>Rate of Understanding After Pap smear</td>
<td>4.8293</td>
<td>41</td>
<td>.93374</td>
<td>.13021</td>
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</table>

#### Paired Samples Correlations

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Correlation</th>
<th>One-Sided p</th>
<th>Two-Sided p</th>
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<tbody>
<tr>
<td>Rate of Understanding Before Pap smear &amp; Rate of Understanding After Pap smear</td>
<td>41</td>
<td>.800</td>
<td>&lt;.001</td>
<td>&lt;.001</td>
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</tbody>
</table>

#### Paired Samples Test

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Significance</th>
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</thead>
<tbody>
<tr>
<td>Rate of Understanding Before Pap smear - Rate of Understanding After Pap smear</td>
<td>- .70732</td>
<td>.76243</td>
<td>.1219</td>
<td>- .95428 - .46035</td>
<td>-5.788</td>
<td>49</td>
<td>&lt;.001 &lt;.001</td>
</tr>
</tbody>
</table>
Appendix Y

Populations Characteristics

![Bar chart showing race/ethnicity distribution]

- Filipino: 78.85%
- Native Hawaiian: 5.77%
- Other Pacific Islander: 11.54%
- Chinese: 1.92%
- Caucasian: 1.92%