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Improving Cervical Cancer Screening Adherence Among a Minority Group of Haitian Women Living in South Florida: An Education and Quality Improvement Program

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Improving Cervical Cancer Screening Adherence Among a Minority Group of Haitian Women Living in South Florida: An Education and Quality Improvement Program

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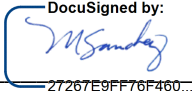
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By

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Abstract

Despite current advancement in the field, cervical cancer still a public health concern around the world. Due to vaccination initiatives and screening tests that lead to early detection, considerable decline has been noticed in cervical cancer cases. Unfortunately, the report from minority groups is different and minority groups such as Haitian women in South Florida are not exempt. Despite reported improvements, cervical cancer is not a disease of the past; it is a disease of the poor as every two minutes a woman life is lost to cervical cancer; and most of these women live in underdeveloped countries (Knaul et al., 2019). Although preventable with regular screening and vaccination, majority of cervical cancer cases reported are in advanced stage especially in low-income countries (Knaul et al., 2019). Some of the factors explaining the link between low socioeconomic status and cervical cancer are mostly due to lack of awareness and community intervention to educate and encourage screening. Cervical cancer is preventable when detected early, which is not the case in low-income countries. Cervical cancer is a tracer disease of inequity and the inability to access health care (Knaul et al., 2019). This quality improvement project's purpose was to assess knowledge level of women minority group of Haitian descent and demonstrate the impact education on improving notions and adherence to screen. It is the ultimate goal of the present work to improve awareness among minority groups to ultimately decrease case rate of cervical cancer. For underserved Haitian women, how can promoting cervical cancer screening and education reduce cervical cancer rate and increase adherence to screen and to follow-up after an abnormal HPV (Human Papilloma Virus)

screening result. Akinlotan (2017) reported that majority of women do not have enough information about what cervical cancer screening is for. A starting point to the solution is to educate the people and get governmental financial aids to open more community centers. As health providers, we need to have a plan because a clear vision gives substance to the action needed to transform health behaviors. Healthcare provider's recommendations influence patient's compliance with adopting health recommendations or adopting health behaviors (Adegboyega et al, 2022).

Keywords: cervical cancer screening, HPV screening, social determinants of health, minority group, women of Haitian descent, cervical cancer screening guidelines, and adherence to screen.

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Introduction

There is a growing need to better understand the risk of cervical cancer and methods to improve screening adherence in certain minority groups, particularly, Haitian women living in South Florida. Cervical cancer remains one of the most common cancers in women worldwide; however, it is preventable and treatable if diagnosed early. For over a decade, it has been in the top three most common cancers occurring in women with 53 years of age being the average age of death worldwide (Arbyn et al., 2018). Cervical cancer is characterized as abnormal cells (squamous cell carcinoma and adenocarcinoma are the two most common histological types of cervical cancer) grow in the lining of a women's cervix. The Papanicolaou test (Pap test or Pap smear) is a screening test used to detect abnormal cells of the cervix since pre-cancerous lesions are at risk of progression to cancer of the cervix (Fontham et al., 2020). Despite having this screening test available, cervical cancer incidence remains a challenge and a complex healthcare issue. In the healthcare arena, efforts to promote optimal patient outcomes through secondary prevention measures and to increase early cervical cancer detection rates led to the development of different screening test options such as cervical cytology testing, Pap smear, and more recently HPV self-sampling (Fontham et al., 2020).

Low- and middle-income countries have a disproportionate burden of cervical cancer mortality. About 84% of all cervical cancer and 88% of all deaths caused by cervical cancer are from low-resource countries, including Haiti (Arbyn et al., 2018). According to Momenimovahed et al. (2023), among gynecological cancers, cervical cancer is the most common cause of cancer related death in countries with low and middle Human Development Index (HDI). Due to non-compliance to regular screening tests, the prevalence of cervical cancer among Haitian women is higher. When coming from an underdeveloped country like Haiti,

several factors including lack of resources, reduced healthcare facilities and providers, culture, and educational level can impede promotion and efforts. As one of the closest neighboring countries to the U.S., over one million Haitians reside in the U. S., and those of Caribbean descent make up 14.6% of foreign-born women (Endeshaw et al, 2018). Foreign-born women are twice as likely to never have received a Pap test (18.6% vs 6.8) as compared to women born in the U. S (Endeshaw et al, 2018). A key reason to this is because of resources scarcity. In Haiti, access to screening and treatment is poor, which explains why when surveying adult Haitian women emigrate to the U. S., the rate of history of previous cervical screening is very low. Although statistic reported a steady declined of cervical cancer and death for the past two decades, ethnic minority and immigrant women remain at high risk of developing and dying from cervical cancer. This is mostly due to social determinants of health such as lack of access to care, low socioeconomic status, being uninsured, limited knowledge, and many more (Adegboyega, et al., 2021). Needless to say, that accessibility to cervical screening services is the primary challenge for most women in socially disadvantaged groups (Marshall et al, 2019). Fortunately, the cervical cancer health concern can be addressed through screenings, such as Pap test, HPV testing, or both (Marshall et al, 2019). Also, health accessibility can be improved through public health education and involvement in community health problems (Stuart & D'Lima, 2021). This project will first explore cervical cancer problem among minority Haitian Women in South Florida and their level of awareness of cervical cancer risk factors and provide appropriate and adequate education to promote adherence to screening and to treatment follow-ups.

Background

Considerable progress has made in disease prevention, yet people of minority background remain at an increased risk of developing and dying from complications of diseases (Akinlotan, et al., 2017). Social determinants of health often play a major role in these unfortunate events. Underserved women of Haitian origin are not exempt of this particular problem. A study conducted in 2018 reported that in Little Haiti, a Miami community in which 70% of the residents are Haitian and 50.4% of the residents are females, the rate of cervical cancer is 38 per 100,000, which is over four times that of the state of Florida overall (Kobetz et al., 2018). Issues such as language barriers, difficulty to access care, health insurance, cultural concerns, immigration status, parental education, financial instabilities, and lack of knowledge about disease prevention and its benefits are considered to be the reason (Marshall et al., 2019). Cervical cancer screening is essential to prevent and to reduce cervical cancer incidence. It is important to implement effective strategies to increase cervical cancer screening among underserved minority Haitian women. Teaching must be about what can potentially happen if they don't get screened for HPV or cervical cancer. Provide detailed information about the test, how it is done, and what the specimen is tested for.

Healthcare providers have also their fair share of the problem. They must provide education to every eligible patient about cervical cancer screening. Currently, three different types of cervical cancer screening tests are approved by the Food and Drug Administration (FDA): HPV test, Pap test, and a combination of both, known as co-testing (Kobetz et al., 2018). Although the HPV self-sampling test is not yet approved by the FDA, it is a fairly new method that should be encouraged. According to recent research, the test has shown to be as effective as clinician collection and can potentially increase adherence to self-screening among minority

women groups. The HPV self-sampling is a testing method that offers reliable identification of

cervical precancer and cancer (Adegboyega et al., 2022).

Scope of the Problem

A long-lasting infection with human papillomavirus (HPV) carcinogens, a sexually

transmitted virus is an important cause of invasive cervical cancer; however, not all HPV lesions

led to malignancy. Thus, it is very important to get vaccinated against HPV and have regular

screenings. The HPV virus, specifically HPV 16 & HPV 18, cause 70% of all cervical cancers

(Adegboyega et al., 2022). The HPV vaccine is recommended for all preteens aged eleven to

twelve years, and for everyone through age 26, who haven't already received the vaccine.

According to CDC, (2020), it is best to get the vaccine before any exposure to HPV as it doesn't

treat existing infection, but instead prevents new HPV infections. It is reported that ethnic group

of African descent are 11.8% less likely to complete vaccination series compared to Caucasian

descents and that mortality rate from cervical cancer among black women is significantly higher

than among white (Adegboyega et al., 2022). As mentioned before, because of social

determinants of health like transport, socio-demographic factors such as race and ethnicity,

education level, access to quality care, being uninsured, limited knowledge of the disease, and

lack of follow-up after a positive result, African women are less likely to seek medical care than

Caucasian women (Adegboyega et al., 2022). So, when diagnosed with cervical cancer, among

others, there is a high chance of diagnosed when the disease is at an advanced stage. According

to Knaul et al. (2019), close to 90% of deaths from cervical cancer happened in low-income

countries (Knaul et al., 2019). In the poorest countries, cervical cancer is the leading cause of

death in women (Knaul et al., 2019). In Latin America, cervical cancer is the fourth most

common type, whereas in Nicaragua, the country with the lowest gross domestic product per

capita in Central and South America, cervical cancer is still the leading cause of cancer-related deaths in women (Knaul et al., 2019).

According to new guidelines implemented by American Cancer Society, HPV testing is the preferred screening option for women between 25-65 years of age because of its high sensitivity and specificity (Adegboyega et al., 2022). While a Pap test looks for abnormal cervical cells in the cervix, HPV screening checks for high-risk types of HPV that are more likely to cause precancers in the cervix. Many studies completed on the HPV self-sampling test, found that people are more prone to choose it over the Pap test (Adegboyega et al, 2022). The result is reliable and can be done in the comfort of one's home. A study conducted in 2018 reported that offering a cost-effective HPV self-screening collection may increase compliance among high-risk women of low income (Kobetz et al., 2018). According to Momenimovahed et al. (2023), cervical cancer is preventable, access to screening services and increasing the presence of trained and knowledgeable healthcare professionals can reduce illness, suffering, and death caused by this malignancy.

Consequences of the Problem

Cervical cancer incidence has steadily declined in the United State (Akinlotan et al., 2017). This is due to regular increases of cervical cancer screening tests (Akinlotan et al., 2017). Regular screening for HPV increases early detection of abnormal cell changes and precancers in women's cervix that can be treated to reduce the risk of developing cervical cancer. If detected early, appropriate interventions can be done to eradicate the virus (Akinlotan et al., 2017). With consistent screening interventions, precancerous and cancerous cells can be detected in the early stages when treatment outcomes are considerably higher. Women dying from cervical cancer has considerably decreased since screening rate has been improved. (Fontham et al., 2020). There are

over 150 strains of HPV and about 40 of them affect the genital area. High risk strains of HPV are 16 and 18, and they cause about 70% of all cervical cancers (Adegboyega et al., 2022).

These types of viruses do not usually display any symptoms which can be a reason why eligible women defer screening. Also, limited screening options can negatively impact screening as some patients would rather do the test at home, while others may think that in office tests are more reliable (Marshall et al., 2019). If not addressed, more women of minority groups will likely continue to spread the disease and die from cervical cancer. The gap between White women getting screened compared to African or Hispanic minority groups will widen (Adegboyega et al., 2022). Every person eligible should do regular Pap test or HPV screening. Cervical cancer is the fourth most common cancer in women; and many people have HPV and don't even know it (Knaul et al., 2019). They're unknowingly spreading it around. The test is far too important to skip. Noncompliance means that precancerous cells may go undetected util they reach an advanced stage.

<div align="center">Knowledge Gaps</div>

Noncompliance to Pap test often due to inequalities, such as lack of knowledge of risk factors, being uninsured, low income, immigration status, just to name a few (Akinlotan et al., 2017). A study reported that several participants were aware of many risk factors for cervical cancer, over 70% were aware of an increased risk from unprotected sex, but only 60% knew that several sexual partners could actually be a risk (Akinlotan, et al., 2017). Nevertheless, the participants were unaware that smoking, long-term use of birth control, and multiple births could be a factor (Akinlotan et al., 2019).

As minority group they surely can qualify for the Affordable Care Act health insurance, but they need someone to orient them. Lack of health insurance and not having a Primary Care

Provider can be major barriers to screening (Akinlotan et al., 2017). Education should emphasize socio-economic cultural factors that prevent them to seek medical care. Healthcare providers should educate, encourage, and make sure barriers such as transportation, chronic diseases, language, age, embarrassment, male physicians, beliefs, and fear about cancer are addressed during patient visit in order to improve screening compliance. Also, minority groups of eligible women with income below federal poverty level, which is $13,590 annually for a single person in the household, should receive free cervical cancer screening services (Akinlotan et al., 2017). Healthcare staff can help set up appointments, educate, and assist with getting health insurance.

<center>**Purpose and PICOT Question**</center>

This project aims to address contributing factors to the disproportionate cervical cancer rate among minority group of Haitian women living in South Florida. The project aims also to promote self-awareness and confidence in the ability to do HPV self-sampling, improve health outcomes, and educate on how cervical cancer can be prevented. The population will be underserved Haitian women (P). The intervention will be to promote HPV screening through education (I). The study will compare willingness to be screened post education (C). The outcome will be to increase adherence to test and follow-up after an abnormal HPV or Pap test result. The study will provide educational sessions to eligible groups and measure behavior changes via questionnaires (T). An appropriate PICOT question for this project is: For underserved Haitian women, how can education increase adherence to cervical cancer screening and follow-up after an abnormal result? The targeted population is Haitian women who are eligible for screening according to current guidelines but are not getting screened. Interventions such as visiting healthcare centers, visiting churches, and community centers of target areas will be done to first assess their knowledge about cervical cancer, their perceived risk, and their

intention or willingness to be screened. Such activities will be followed by education and promoting screening via Pap test and HPV self-sampling screening test and conclude by a reevaluation. For better outcomes, activities like distributing flyers and doing in-person presentations to group of potential participants may be necessary.

Problem Statement

Current studies reveal that cervical cancer is one of the most preventable types of cancer. Routine screening for cervical cancer and early detection of cervical cancer can effectively prevent the cancer and death from the disease. The incidence of and mortality from cervical cancer has declined markedly in the United States. (Fontham et al., 2020). When identifying early with Human Papillomavirus test (HPV), the chance of survival is very high. Appropriate and timely HPV screening can make the onset of cervical cancer almost entirely preventable (Devotta et al., 2023). To increase the percentage of eligible women screened for HPV, different types of screenings have been developed such as cervical cytology testing, Papanicolaou test (Pap smear), HPV screening test, and more recently HPV self-sampling (Fontham et al., 2020). Still, screening numbers remain below the attainable goal, which is to reduce the Age Standardized Incidence Rate of cervical cancer to less than 4 per 100 000 women worldwide (Arbyn et al., 2018). Also, the World Health Organization's plan is to vaccinate 90% of all girls by age 15, screening 70% of women twice between age of 35-45, and treating at least 90% of all precancerous lesions detected during screening (Arbyn et al., 2018). Current guidelines for cervical cancer according to American Cancer Society, every woman with a cervix from age 25 until age 65 should be screening for cervical cancer with an HPV test alone every 5 years. If HPV test is not available, a Pap test can be obtained every 3 years (Fontham et al., 2020).

Problem Identification

Immigrants and women of low income are at a particular risk of under screening. This is mainly due to sociocultural barriers, such as transportation, language, knowledge, feeling of embarrassment, lack of time, lack of health insurance, and anticipation of pain to name a few (Akinlotan et al., 2019). Studies have found that the rate of cervical cancer in Haitian women who live in South Florida is higher (38 per 100,000) compared to other ethnic groups of women (8 per 100,000) (Devotta et al., 2023). This study will focus on educating Haitian women, 21 – 65 years old, who meet eligibility for HPV or cervical cancer screening. Also, finding out what makes them reluctant to undergo pelvic examination will be investigated and provide appropriate education. In one study, researchers reported that education and awareness of the cervical cancer prevention can initiate and influence personal decision of women to screen (Oketch et al., 2019). Many women have reported moderate discomfort when undergoing the Pap test. It's important to let them know that benefits they are getting from regular screening outweigh its undesirable effects.

Cultural barriers such as language can be an issue. Many Haitian women do not speak English and would rather have a Haitian primary care provider. Often, these providers do not take insurance. Therefore, if becomes difficult for these women to get regular health checkup or screenings. Issues such as transportation to access healthcare facilities, insurance coverage, and taking time off work must be addressed (Akinlotan et al., 2019). A majority of women reported that long distance travel may be a barrier due to high travel time away from home and chores (Oketch et al., 2019). In developed countries, women are aware of the fact that they are at risk to have cervical cancer; they also know that early HPV screening can prevent the progression of the disease (Davotta et al.,2023). Majority of women from poor countries like Haiti are unaware of

HPV or Papillomavirus screening. Some of them may not even aware of such disease

(DeGennaro et al, 2019). Education can motivate them and create a desire to initiate screening

(De Gennaro et al, 2019). Patient values and beliefs can be an issue as well. They must be

assessed and educate as necessary (Marshall et al., 2019).

Proposed Solution

Barrier assessment is an integral component throughout both engagement and integration

phases of Evidence Based Practice implementation (Melnyk & Overholt, 2015). Before

implementing any intervention, it is necessary to assess the group of interest's readiness for

change (Melnyk & Overholt, 2015). As a first intervention, efforts can be made by encouraging

healthcare providers to teach their patients about benefits of healthy behaviors such as cervical

cancer screening and encourage providers to provide high quality care when interacting with

their patients. Providers' recommendations are important tools to enlighten women about

screening guidelines, benefits, risks, and screening options for cervical cancers (Devotta et al.,

2023). For instance, the death rate of cervical cancer in African women is higher than in White

because of low screening rate among black (Adegboyega et al., 2022). The point is to encourage

minority women groups to be screened for cervical cancer in order to promote well-being and

maintain good health (Akinlotan et al., 2017). Contemporary evidence-based recommendations

advise that intensive counseling for adult patients be provided by physicians or other clinicians in

order to improve compliance (Butt & Rich, 2018). A disabled patient, for instance requires a

different approach than a non-disabled patient. For patients who are unable to get on the

assessment table because of disability or obesity, providers can refer them to a local hospital,

surgical clinic, have an accessible exam table, or offer home visits to homebound patients. Other

patients may be reluctant to get screened because of a previous traumatic experience (Oketch et

al., 2019). In addition to teaching, providers should allow extra time so patients ask every

question they would want to ask (Oketch et al., 2019). Make sure a female or someone of their

choice stays with them. If they choose to, let them know they can initiate or insert the speculum

themselves (Oketch et al., 2019). Multiple approaches can be used to motivate and educate the

Haitian minority women community, such as organizing group meetings that talk about health

issues and primary prevention and how behavioral changes can improve health outcomes.

Nonclinical community sites, such as work, churches, and community centers are important

locations for health behaviors interventions. Therefore, more programs and more community

health centers should be available to offer free to low-cost screening to minority women.

Literature Review

Despite global improvement in disease diagnosis, treatment, management, and

prevention, cervical cancer is a major health concern for women, especially in middle- and low-

income populations (Yimer, 2021). Cervical cancer is caused by the human papillomavirus,

which is highly prevalent in sexually active women (Kobetz et al., 2018). Cervical cancer is the

fourth most common cancer in women, with an estimated 530,000 new cases every year,

representing 7.9% of all female cancers (Stuart et D'Lima, 2021). In 2015, approximately 90%

of the 270,000 deaths from cervical cancer occurred in low-income countries (Yimer, 2021). The

disease is a health burden as it requires lengthy management processes, which can consume time

and resources. Also, the mortality rates for advanced stages are high. However, multiple studies

have determined that cervical cancer is preventable through frequent cervical screening and

adherence to treatment guidelines (Musa et al., 2017). The number of women screened for

cervical cancer has increased, and major steps have been taken to encourage people to

consistently engage in healthy behaviors via health promotion and health prevention education in

order to decrease death and chronic disease rate. Yimer (2021) reported that the rate of cervical cancer screening and death have been constantly declining for the past two decades but ethnic minority and immigrant women remain at high risk of developing and dying from cervical cancer. This is mostly due to social determinants of health such as lack of access to care, low socioeconomic status, being uninsured, and limited knowledge, among many more (Adegboyega, et al., 2021). Needless to say, that accessibility to cervical screening services is the primary challenge for most women in socially disadvantaged groups (Marshall et al, 2019). Fortunately, the cervical cancer health concern can be addressed through screenings, such as Pap smear, HPV testing, or both (Marshall et al, 2019). Also, health accessibility can be improved through public health education and involvement in community health problems (Stuart & D'Lima, 2021). This literature review explores cervical cancer problems among Haitian Women in South Florida, level of awareness of cervical cancer risk factors, and the efficacy of screening and public education in mitigating the risk of the disease and promoting adherence to treatment follow-ups.

Literature Search Process

The literature search involved identification of keywords associated with the PICOT question: Address contributing factors to the disproportionate cervical cancer rate among Haitian women living in south Florida, promote self-awareness, and educate on how cervical cancer can be prevented.

Databases Used

The literature review includes primary studies, reviews, public health documents, and professional organizational statements. Resources were obtained from Medline, PubMed, and CINAHL.

Search Terms

The search terms include human papillomavirus, Papanicolaou test, cervical cancer, HPV testing, self-testing, minority populations, immigrants, underserved populations, and social determinants of health.

Inclusion and Exclusion Criteria

The inclusion criteria for the articles used in this study was if the content discussed the established keywords. Also, the articles had to be written in English, within the last 5-7 years and considered a primary study, Systematic Review, randomized controlled trials, or Meta Analysis. Studies within this time limit will help to compare how HPV screening has addressed the cervical cancer challenge among underserved women from the time the intervention was developed to the present to determine the impact of socioeconomic factors on care access and outcomes. In the search for the literature review, a total of 139 articles were identified. Some were more specific than others. The ones closer to the DNP project topic were chosen. Many were rejected due to wrong population and disease types. The inclusion criteria for articles used in this study is if the content discussed the established keywords. Also, the articles had to be written in English, they had to be Primary Research Studies, Systematic Reviews, or Meta-Analysis; published in a peer-reviewed journal; and written within the last seven years. Including studies within this time frame will help to compare how HPV and Papillomavirus screenings have addressed the cervical cancer challenge among underserved Haitian women and determine the impact of socioeconomic factors on care access and outcomes.

Literature Appraisal and Literature Matrix

Characteristics of the Included Studies

Consedine, N. 2015	The purpose of this study was to look into whether particular Caribbean subgroups of African descent varied in cancer screening rates and which groups are at greatest risk. The sample consist of Caribbean subgroups of African descent. As methods, a systematic search of cross-sectional studies was done to report cancer screening among African descent Caribbean groups. Next, they assess the quality of studies that met inclusion criteria. As a result, the researchers found out that Caribbean women of African descent screen less frequently than is recommended. The report found that 46% of African Caribbean men aged 50+ had never has PSA. For breast cancer 64% of Haitians reported no Breast Self-Exam practice compared to 38% of English-speaking Caribbean women. Two large studies using the same sample (n=1420) found that Haitians are less likely to report ever having a mammogram over other Caribbean women. The proportion of never screened was greatest among Haitian women. However, for cervical cancer screenings, 67% Haitian women reported previous screening, and 44% screened in the last 3 years compared to Jamaican women who have only 6% screening rate for breast cancer. For colorectal cancer, Dominicans appeared to screen more often than any other group. Overall, both men and women of immigrant and non-immigrant African descent are under screened. There was a moderate difference in screening among specific subgroups. As strength, this study elaborated on the on-going issues of low screen rate of Caribbeans of African

	descents. The limitation was that most published studies of screening among Caribbeans are self-reported, which makes comparisons challenging. The study was a systematic review, evidence level I with a high rating. The rating is due to its large sample size, its rigorous sampling strategies, and was able to come up with a clear definitive conclusion and recommendations.
Kayonne, C. 2021	The purpose of this study was to explore whether inequities in cervical cancer outcomes are related to differential access and uptake of screening programs. Selected participants were black women of 21-70 years old in high income countries. As methods, a systematic review search of primary studies that relate to black women's experiences and perspectives of cervical cancer screening was performed. Data collection included only publications involving adult black women of 21-70 years old. As a result, 17 articles were selected; and only studies that explore experiences of Black women in the U. S. met all criteria. The study concluded that factors such as attitudes, beliefs, & behaviors, socio-cultural factors, and socio-historical and structural factors affected screening uptake. Small sample size and recruitment areas (shelters, STD clinics, Medicaid programs) limited the findings. Also, some studies had a broad age range, which may have affected experiences with cervical cancer screening among age cohorts. Another limitation was that participants in this study had the same social identities and all selected studies were done in the United States. This study was a collection of primary qualitative studies. There was a clear statement of findings, a consistent conclusion, but the

	sample size of most studies included was small. Also, the selected studies were done in one country and had the same social background. Evidence level 1 with good quality rating.
Moise, R. 2021	This study's purpose was to explore cervical cancer risks and access of unscreened Haitian women living in the U. S. The sample size consisted of 346 Haitian Women living in South Florida from age 30 – 65 who were at risk of having cervical cancer. This study used three statistical methods to measures risk prediction for Haitian women who had never undergone screening for cervical cancer. Data were taken from two large studies. Results showed that numerous factors such as lack of screening, non-citizenship status, recent immigration to the U. S., and routine access to care may influence the disproportionate burden of HPV infection and related cancer in Haitian women. This study concluded that in addition to structural violence, factors such as knowledge, adherence, access to care, racism, etc. need to be addressed as well. Strengths and Limitations: The fact that both groups have the same ethnicity (Black) was a positive aspect of the study, but the convenient sampling and sample size limited generalization of all black women. This study is a level I with a good rating. The study was done from one observational and one cross-sectional study. The rate 'good' was due to the size of the sample, which is two studies with a combination of 346 Haitian Women.
Musa, J. 2017	The purpose of this study was to understand the evidence of the effect of cervical cancer education compared to control conditions on screening rates.

	Participants were healthcare providers and women eligible for Cervical Cancer screening. As methods, PICOT framework was used to develop a search strategy. Data synthesis and reporting was guided by PRISMA. As a result, 28 articles were eligible out of 3072 research studies screened. The study found out that use of theory-based educational interventions significantly increases screening rate. The study concluded that educational interventions such as appointment reminders, teaching, and phone calls greatly improve patient adherence and participation to screening. As strengths, the literature search was comprehensive and guided by a systematic review protocol; limitations reside in the fact that not enough data on the cost of the tests and health coverage was provided. This is a systematic review of RTCs with meta-analysis. Evidence Level 1with a high-quality rating. Adequate sample size, definitive conclusion, consistent results, and recommendations.
Nishimura, H. 2021	The purpose of the study was to assess end users' values and preferences related to HPV self-sampling. The sample included adolescent girls and adult women from 14 – 80 years old. As methods, a search was done on 4 electronic databases and a standardized data extraction form was used. Inclusion and exclusion criteria were established. As a result, 72 studies from 52114 were selected. The majority of women accepted HPV self-sampling but lack of self - confidence to self-collect the self-sample was an issue. As limitations, not enough study to identify values and preferences for HPV self-sampling was selected; and it's difficult to determine which aspects of self-sampling clients

	find acceptable. The article was a systematic review study Level 1 with low quality rating. It is as such, because of the 72 studies selected, only 3 were conducted in low-income countries, which is where most new cases of cervical cancer reside. Because of that, a definitive conclusion could not be done. Not enough evidence, results are inconsistent, insufficient sample size for the study.
Yimer, N. 2021	The purpose of this research was to evaluate the pooled uptake of cervical cancer screening and identify its predictors in Sub-Saharan Africa. Sample size was a total of 36374 Sub-Saharan African women. As methods, all observational studies published in English that reported cervical cancer uptake and predictors were screened. For studies to meet inclusion criteria, they have to be observational and RCT conducted in Sub-Saharan Africa from 01/2000 to 12/2019. The Newcastle-Ottawa Scale was used to assess method quality. A PRISMA flow diagram was used to illustrate the article screening and selection process. Results revealed that lack of formal education and inadequate awareness about how serious cervical cancer can be, was negatively associated with screening rate. Conversely, knowledge about cervical cancer actually increased cancer screening by almost five times. So, addressing the use of cervical cancer screening is a must. The study concluded that screening for cervical cancer was low in Sub-Saharan Africa and knowledge was a key factor associated with screening uptake. Limitations to this study are possible risk of bias because of differences in cervical cancer screening modality and differences in how knowledge about cervical cancer

	was assessed. Also, only articles in English were selected in this study. Researchers were able to come up with a fairly definitive result. The study had a good sample size, but the choice was limited to certain regions and the fact that only articles in English were included in the study prevent them from getting a broader understanding of perceived barriers. Therefore, it's a study level 1 evidence with good quality rating.
Kobetz, 2018	The purpose of this study was to examine the effectiveness of HPV self-sampling delivered via in-person versus by US mail for medically underserved women in South Florida. The sample consisted of women of minority groups aged 30-65 in South Florida who had not completed a Pap smear screening in the past 3 years. Methods were a randomized trial of mailed HPV self-sampling tests versus HPV self-sampling delivered in person. As a result, 600 women were enrolled; and they concluded that mailed self-sampling is an effective strategy to increase cervical cancer screening among underserved immigrant and ethnic minority women. As limitations, a variation in intervention outcomes between communities was noted. Also, implemented interventions were within the Miami area, which prevents results from being generalized. The study is a Level II of evidence with good quality rating.
Wearn, 2022	The purpose of this study was to point out pertinent causal factors of participation to cervical cancer screening for ethnic minority groups of women. The sample consisted of women of ethnic minority groups from countries with well-established screening programs. As methods, 24 articles

	were selected. Data were collected via Framework synthesis. Results showed that participation in screening was controlled by multiple factors, such as good relationships between patient and provider boost the screening process, and so does peer support. However other factors such as cultural disparities and negative previous healthcare experiences may negatively affect participation. This study concluded that healthcare practitioners and policy makers have a major role in reducing structural barriers to screening. It also emphasized that more needs to be done to address the ones living in disadvantaged areas. Strengths of this study reside in the fact that it is the first to identify the range of determinants that influence screening and establish interrelationships between factors. Limitations reside in the fact that some of the causes may be more relevant to some groups than others and very few studies of populations from underserved areas were selected (n=2). Also, some factors such as living and working conditions weren't addressed. More qualitative work needs to be done to explore screening participation. Level of evidence is II with a good quality rating.
Adegboyega, 2021	The purpose of this study was to examine factors associated with having had at least one HPV test and willingness to use HPV self-sampling among African American and Sub-Saharan African immigrants' women. Participants were 91 African American and Sub-Saharan immigrant women. As methods, sample recruitment was done from a community settings survey in a cross-sectional design. As a result, the majority of participants reported having had a least one Pap test and one HPV test, and 67% were willing to self-sample at home.

	Results also demonstrated that being uninsured was associated with willingness to use self-sampling at home. The study concluded that self-sampling may be a promising strategy to reach older, less educated, uninsured, and underinsured black women. The study's major strength is the inclusion of two sub-groups of black women. Its limitations reside in the fact that only convenience sampling and small sample size were used, which limits generalization to all black women. The study is a cross-sectional design and is considered Level III evidence.

Synthesis of the Literature

Cervical Cancer Prevalence and Mortality Rates

Cervical cancer is a prevalent type of cancer for women between 35 and 64 years old (Stuart et D'Lima, 2021). According to the World Health Organization, approximately 530,000 women with cervical cancer are detected yearly worldwide (Adegboyega et al., 2022). The prevalence rate is high for people in the low and middle social classes, accounting for 80 percent of new cases. The high prevalence rate among women is attributed to low screening rates and non-compliance to treatment guidelines after a positive diagnosis. Besides the high prevalence rate, cervical cancer is terminal, leading to approximately 275 000 deaths annually (Nishimura et al., 2021). Therefore, cervical cancer demands proactive measures to improve early diagnoses and treatment adherence to improve patients' quality of life and the chances of recovery. Cervical cancer is a concern for the United States' universal health vision. According to the American Cancer Society (2023), approximately 13,960 women are identified to have cervical cancer, while 4,310 die annually. Although the development of Pap tests has significantly

lowered the risk of cervical cancer, the disease remains among the top mortality causes for

American women. Florida is among the states with the highest disease burden in the United

States. The Florida Department of Health (2022) notes that cervical cancer causes the death of

nearly 300 women in Florida annually. The disease burden is heavier for minority populations in

Florida. For instance, the prevalence rate among Haitian women in South Florida is 38 for

100,000 women (Kobetz et al., 2018). The prevalence rate among Haitian women shows a

considerable disease risk, as the prevalence rate across Florida is 8 for every 100,000 women

(Kobetz et al., 2018). Therefore, women from minority populations in Florida are over four times

more prone to cervical cancer, extending healthcare inequality.

Social Determinants of Health determining Cervical Cancer Testing and Treatment among Haitian Women in South Florida

Healthcare access and Immigration

The disparities between cervical cancer risks and outcomes between Haitians and the

general population in South Florida are influenced by sociocultural and economic factors (Moise

et al., 2021). First, Haitian women have limited access to healthcare services, limiting disease

screening and testing. Healthcare inaccessibility for Haitian women is influenced by multiple

factors, including illegal immigration status. Therefore, seeking medical care from formal

healthcare facilities would result in deportation and other legal consequences (Moise et al.,

2021). Kobetz et al. (2018) explain that Haitian women in South Florida are unsupportive of

interventions such as mailed self-sampling HPV tests due to their immigration statuses. As a

result, Haitian women prefer alternative healthcare practices to conceal their undocumented stay

in the U. S. However, traditional healthcare options for testing and treating cervical cancer are

less effective than modern interventions such as Pap and HPV testing. Healthcare access

challenges mean immigrant Haitian women do not adhere to the HPV diagnosis guidelines.

United States healthcare organizations recommend that women get screened for cervical cancer

every three years (Adegboyega et al., 2021). However, Moise et al. (2021) surveyed one

thousand Haitian women and determined that about a third had never had a Pap test, while only

39 percent had adhered to the health recommendation of testing after three years. Thus, health

inaccessibility due to immigration status exposes Haitian women to the unimaginable risk of

cervical cancer. Therefore, the federal and state governments should address the documentation

challenge to promote healthcare access.

Financial Challenges and Healthcare Insurance

Second, most Haitian women have limited access to healthcare due to financial

challenges and lack of health insurance coverage. As a minority population, Haitians suffer

multiple levels of discrimination leading to higher levels of unemployment and lower access to

social benefits. The income bracket for most Haitians has not changed, and according to a study

by Kobetz et al., (2018) nearly half of the population earns below $20,000 annually.

Consequently, financial constraints limit healthcare access and the likelihood of adhering to

treatment guidelines. The financial situation is worsened by the determination that most Haitians

in Florida are uninsured. Kobetz et al. (2018) surveyed 600 Haitian women in South Florida and

determined that 66.8 percent were uninsured. That lack of health insurance can be seen as a

direct result of discrimination against minority populations in the health system. Hence, most

women in the population are unqualified for governmental healthcare insurance, despite the dire

need for healthcare financing. Therefore, the government and non-governmental agencies should

establish ways to address the healthcare financing challenge among Haitians to improve care

access.

Illiteracy and Language Barriers

Third, the low screening and treatment rates for cervical cancer among Haitian women are caused by illiteracy and language barriers. Kobetz et al. (2018) evaluated HPV test acceptability in Little Haiti and determined that about 58% of Haitians lack educational qualifications equivalent to high school diplomas in the U. S. Lack of formal education determines the residents' understanding of cervical cancer and the urgency to get tested and treated in formal healthcare organizations. Educated Haitians appreciate modern screening methods, although their adoption processes are influenced by a culture that promotes traditional care practices (Moise et al., 2021). Similarly, the screening and treatment services among Haitian women are influenced by language barriers. Many of Haitian women speak Kreyol and many healthcare professionals are unfamiliar with the Kreyol language (Moise et al., 2021). Consequently, women's willingness to seek modern healthcare regarding cervical cancer is low. Identified barriers to cervical cancer screening among Haitian women living in Miami include language barriers, lack of access to the formal healthcare system, limited knowledge about cancer and the importance of early detection of disease (Kobetz et al., 2018).

Cultural Barriers

Lastly, Haitian women avoid cervical screening and treatment due to unsupportive cultures regarding healthcare. According to Moise et al. (2021), the Haitian culture on disease casualty is based on the Humoral ideology, which promotes herbal remedies over modern health interventions. The theory suggests home-based remedies for various illnesses and health needs. However, invasive cervical cancer is terminal and requires sophisticated diagnosis and treatment procedures (Kayonne et al., 2018). Therefore, while some standard recommendations effectively improve overall health, the interventions are effective in testing and mitigating cervical cancer.

Furthermore, the Haitian culture of modesty in healthcare provision limits healthcare accessibility. Haitian women are less willing to seek medical care if the healthcare provider is male and if they feel like their privacy and intimacy have been violated (Consedine et al., 2015). Consequently, the sociocultural barriers demand culture appropriate screening and treatment methods to improve care sensitivity to patient needs.

Interventions for Cervical Cancer Screening and Treatment Adherence Challenges

Pap Smear Screening

Pap smear screening was the earliest cervical cancer test in most nations. Kobetz et al. (2018) admit that the Pap screening technique has been instrumental in lowering cervical cancer mortality rates by enabling early detection in women between 21 and 65 years. The Pap smear test has a 70.80% chance of detecting high-grade squamous intraepithelial lesions (Adegboyega et al., 2022). Therefore, the test is done alongside the HPV DNA test to detect lesions with high cancer risk. The Pap test is recommended by many healthcare organizations as an essential healthcare routine for sexually active women. Although the American Cancer Society recommends that the Pap test be done for women above 25 years, the test is also critical for sexually active women from 21 years. Females between 21 and 29 should be tested every 3 years (Adegboyega et al., 2022). Similarly, women between 30 and 65 should be tested every three years for a human papillomavirus every five years (Adegboyega et al., 2022). Lastly, women above 65 years do not require Pap smear tests and should consult their doctors for an alternative diagnosis. However, recommendations for Pap tests are individualized and depend on a woman's health status and risk of cervical cancer.

Human Papilloma Virus (HPV) Test

The HPV test has replaced the Pap test as the recommended diagnosis for cervical cancer. The American Cancer Society endorsed the HPV test as the recommended diagnosis in 2020 since the test proved to be more efficient in detecting cancerous HPV virus in women between 25 and 65 years (Adegboyega et al., 2022). Centers for Disease Control notes that between 80 and 90 percent of sexually active individuals have at least on type of HPV in their lifetime (Consedine et al., 2015). In nearly half of the cases, the HPV has a high cancer risk. Therefore, the HPV test assures higher sensitivity than the Pap test, assuring lower future cervical cancer risks.

The HPV test is effective and acceptable by most women globally, as it enables self-sampling (Stuart et al., 2021). HPV self-sampling requires that women have a test kit, obtain samples, and deliver or mail them to a lab for tests (Adegboyega et al., 2022). The test results are later communicated to the individuals indicating their cervical cancer results and risk levels. HPV self-sampling has effectively addressed healthcare accessibility challenges for women in the middle and low social classes. Yimer et al. (2021) researched the competence of HPV self-sampling in improving cervical testing for impoverished women in Sub-Saharan, Africa and determined the intervention addressed most logistical barriers, improving screening rates. Similarly, Stuart et D'Lima (2021) affirm that the HPV self-sampling test has proven effective for British Columbian Women with limited access to frequent cervical screening.

The HPV self-sampling test is the most effective among underserved women, as it ascertains privacy and convenience (Stuart & D'Lima, 2021). Unlike other cervical screening tests provided in healthcare facilities, the HPV self-sampling involves collecting specimens conveniently and in a private environment. Therefore, the screening tool is effective for women

concerned about privacy and confidentiality. For instance, health is considered a private issue in

Haitian culture, so the HPV self-sampling improves healthcare satisfaction by prioritizing

confidentiality (Nishimura et al., 2021). The HPV self-sampling kit can be mailed across the

United States. Kobetz et al. (2018) studied the utilization of mailed HPV self-sampling tests

among ethnic minorities in South Florida and concluded that the screening tool had addressed

cultural issues such as healthcare privacy for Haitian women. As a result, the self-sampling test

improves cervical screening by concealing the identities of undocumented immigrant women.

Adegboyega et al. (2022) note that the confidentiality guaranteed by the self-sampling tests

allows unregistered immigrants to access healthcare without necessarily disclosing their

immigration statuses. Similarly, the test is vital for uninsured women since it is considerably

cheaper than clinic-based screening (Nishimura et al., 2021). Adegboyega et al. (2022) studied

the willingness of women from minority populations to use self-sampling for cervical screening

and determined that nearly 89 percent of women without health insurance were willing to try the

test compared to 61 percent of insured women. Consequently, the HPV self-sampling technique

extends health coverage for Haitian women and other minority groups in South Florida, lowering

the prevalence and mortality rates.

Factors Limiting the Use of the HPV Self-Sampling Test Among Haitian Women

Despite multiple studies determining the efficacy and precision of the HPV self-sampling

test, the application of the tool among minority women is lower than the overall population due

to multiple concerns. Adegboyega et al. (2022) notes that concerns influencing minority

women's willingness to use the test include the fear of performing the test incorrectly.

Approximately 34 percent of women using the HPV self-sampling tests are concerned about

their ability to conduct the test despite experts maintaining that the kit is easy to use and requires

minimal prior knowledge (Adegboyega et al., 2022). Also, many women are concerned about

how they can receive the self-sampling kits and send the specimen to the labs. Thus, public

education on HPV self-sampling is required to improve acceptability and satisfaction.

Lack of family support is also a barrier to using HPV self-sampling among minority

women. The role of husbands in influencing the HPV intervention cannot be understated, as most

minority societies have strict power structures and high value for families (Adegboyega et al.,

2022). For instance, male partner involvement in health decision-making is customary among

Haitians. Hence, women with male partners supporting their sexual health are more likely to

accept and use the HPV self-sampling test than those with unsupportive partners. Kobetz et al.

(2018) explain that many Haitian women depend economically on their male partners. Therefore,

women are reluctant to uphold medical procedures that might impact their sexual relationships.

Thus, most Haitian women lack of autonomy to make health decisions regardless of their

potential benefits to individual and family well-being.

Community-Based HPV Self-Sampling

The concerns raised by women in minority populations regarding using the HPV self-

sampling intervention can be addressed by pairing the tool with community-based healthcare

programs. Community health workers are crucial in providing knowledge on using HPV self-

sampling tests. Musa et al. (2017) affirm that community health workers would be instrumental

in addressing challenges such as access to HPV self-sampling kits and educating women on

effective strategies to collect and send specimens. Furthermore, community health workers can

help women understand their HPV results. Healthcare workers can help women with negative

HPV results determine effective cervical cancer prevention methods. On the other hand, health

professionals can help women with positive HPV results initiate and maintain their treatment

processes. Musa et al, explain that community health workers can counsel and direct screen-positive women to ensure quality care and positive patient outcomes. Timely treatment can lower the risk of disease deterioration and mortality rates.

In addition, the education programs should also focus on male partners since they play a vital role in decision-making. Therefore, community health workers should engage male partners in Haitian community to improve their understanding of cervical cancer and available prevention measures. The interactions should focus on the benefits of HPV self-sampling tests in lowering the risk of cervical cancer. Family support is crucial in improving cervical screening frequency and adherence to treatment interventions (Stuart et D'Lima, 2021). The support would improve women's health regarding cervical cancer and other diseases influenced by cultural norms and beliefs.

Definition of Terms

Social Determinants of Health: Kovner (2011) defines determinants of health as factors that determine a person's living conditions. Socioeconomic conditions, such as incomes, education, physical and geographical environment, race, discrimination, abuse, social connection, access to care, and transportation are all factors that predict the health of a given person (Kovner et al., 2011).

HPV Self-sampling: A Human Papilloma Virus testing kit use to collect vaginal sample using a vaginal swab or brush to detect cervical precancer and cancer. HPV self-sampling requires the individual to obtain a kit, collect their own samples, and send their specimens to a laboratory (Adegboyega et al., 2022).

Summary

Overall, promoting cervical screening using the HPV vaccination, Pap test, and HPV self-sampling test and public education on cervical treatment can reduce the rising risk of cervical cancer and improve adherence to treatments among women of minority groups. Although cervical cancer is preventable, women in minority groups are more exposed to the disease risk due to care access challenges. Minority women, such as Haitians, have limited access to healthcare due to their immigration statuses, low incomes, lack of health insurance, and obstructive cultures. Therefore, the prevalence and mortality rates among underserved women are high despite the development of Pap smear and HPV screening interventions. The HPV self-sampling test is the most effective for underserved women, as it addresses logistical, cost, and privacy concerns. The tests are easy to use and can be conducted conveniently and mailed to healthcare facilities for testing. Studies have determined that some women do not get screened regularly whether by using Pap smear, HPV test, or both due to limited knowledge, pain, and lack of family support. As a consequence, the intervention should be paired with community-based healthcare programs. Community health providers can educate minority communities on cervical cancer. Also, health professionals can stress the importance of cervical screening. These measures can influence acceptability, leading to consistency in cervical screening and treatment.

Primary Project Goal

Worldwide, cervical cancer is a severe health problem for women, especially in developing nations where access to screening and treatment is poor. About 84% of all cervical cancer and 88% of all deaths caused by cervical cancer are from low-resource countries, including Haiti (Arbyn et al., 2018). Due to non-compliance to regular screening tests, the prevalence of cervical cancer among Haitian women is higher. When coming from

underdeveloped countries like Haiti, several factors including lack of resources, reduced

healthcare facilities and providers, culture, and educational level can impede promotion and

efforts. As one of the closest countries to the U.S., over one million Haitians reside in the U. S.,

and the Caribbean make up 14.6% of foreign-born women (Endeshaw et al, 2018). Foreign-born

women are twice as likely to never have received a Pap test (18.6% vs 6.8) as compared to

women born in the U. S (Endeshaw et al, 2018). A key reason to this is because of resources

scarcity. In Haiti, access to screening and treatment is poor, which explains why when young

adult Haitian women emigrate to the U. S., and the rate of history of previous cervical screening

is very low. This work intends to establish the project's scope, conduct an organizational

assessment (SWOT) at a primary care clinic (Immersion site), identify stakeholders/committees,

resources that are accessible, policies, and procedures, and create a conceptual or theoretical

foundation to support the project. By identifying and then removing obstacles to screening in the

primary care clinic, this project seeks to foster Haitian women to seek screening for cervical

cancer.

Goals and Outcomes- SMART Objectives

Collaborative goal setting has been shown to modify behaviors by directing intention and

building self-efficacy (Resnick et al., 2022). The Acronym 'SMART' (Specific, Measurable,

Attainable, Realistic, and Time) was used for this quality improvement study to help identify

goals and activities for the accomplishment of this project (See table 1).

Table 1

Goals and Outcomes- SMART Objectives

Specific: The objective of this porject is to improve cervical cancer screening adherence among minority group of women of Haitian descent.	**Is the Task Measurable?** Surveys provided to participants after FIU IRB approval, and collected data were interpreted using Qualtrics.	**Is the Project Attainable?** The project is possible due to the number of established female patients of Haitian women descent.
Are There Enough Resources to Realize the Project? The immersion site (primary care clinic) has sufficient equiments and eligible female patients to provide teaching to promote screening adherence.	**Is There Sufficient Time to Complete the Study?** The implementation started between September and October 2023	

The following SMART goals were chosen for the quality-improvement endeavor:

- After three months of launching the quality improvement initiative, educate underrepresented groups of Haitian women about cervical cancer screening tests such as Pap smear, Pap test and HPV, and HPV self-sampling testing.

- During the six months of launching the intervention, double the percentage of persons who satisfy the cervical cancer screening criteria from 15% to 30%. This objective seeks to enhance eligible Haitian women screening levels by raising the proportion of people who already fulfill the criteria.

- Within three (3) months of launching the project, use social media, such as mobile app, text messages, and phone calls to increase awareness about cervical cancer prevention and to spread knowledge to influence health behaviors related to cervical cancer risk. Doing so can not only track patients, but also their social ties.

Conceptual Underpinning and Theoretical Framework

When applying a conceptual framework, it helps to better understand factors that affect patient outcomes. This knowledge is crucial for developing effective interventions customized to meet specific patients, families, and communities' needs. Also, theoretical frameworks provide a way to evaluate the effectiveness of actions, which is crucial for improving health outcomes and growing the healthcare workforce. The Health Belief Model (HBM) theory will serve as the foundation for this project. The HBM has become a popular framework in nursing studies focused on patient compliance and preventive healthcare practices (Polit and Beck, 2017). This theory was formulated by a group of U. S. Public Health Service social psychologists who wanted to explain why so few people were participating in programs to prevent and detect diseases (Butt & Rich, 2018). The main tenet of this theory is the concept that people are ready to act if they think:

- They are susceptible to a condition

- They believe the condition can be detrimental to their health

- They are confident that taking an action would reduce their susceptibility

- The cost of the benefit outweighs the risk

- They are exposed to factors that necessitate an action, such as screening tests to detect early diseases before it is too late.

- They have confidence that they are capable of successfully completing the action

  (Butt & Rich, 2018).

This model is suitable to the project because health motivation is its central focus. However, in some circumstances, people may need support from healthcare practitioners to fulfill some requirements. Additionally, health motivation is the focus point of the HBM. Therefore, it fits well with issues that address health concerns such as cancer screening and vaccination. It is a good framework for short-and long-term plans and an adequate strategy to address noncompliance (see table 2).

Table 2

Conceptual Underpinning and Theoretical Framework
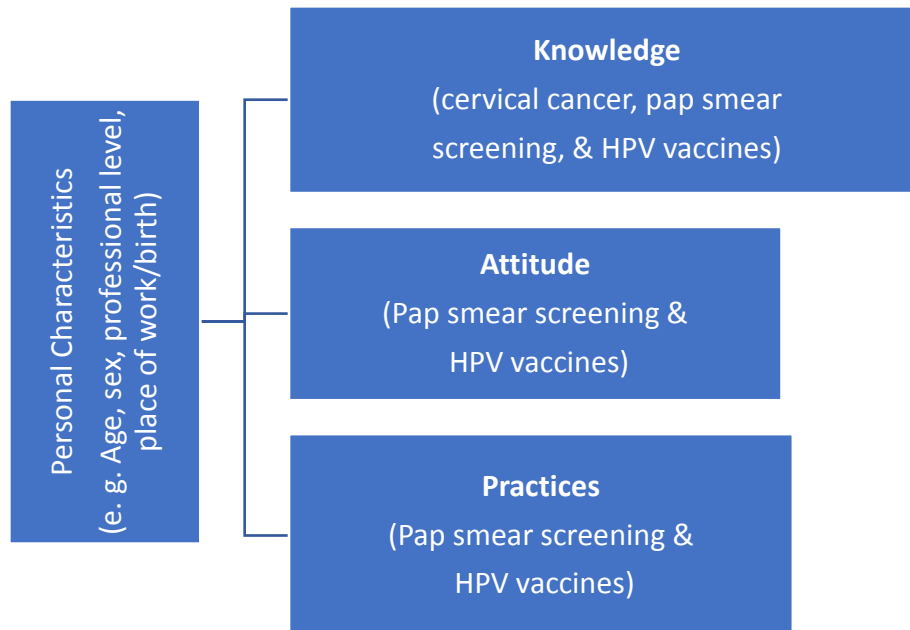
Theory Overview

The Health Belief Model refers to activities that people engage in to ensure that they continue to take care of their physical, mental, and social well-being (Butt & Rich, 2018). Education is a must with this thesis. Doing so will promote adherence to regular cervical cancer screening (perceived susceptibility) and help them understand that persistent HPV infection can led to cervical cancer (perceived severity), helping them understand that regular cervical screening will reduce cervical cancer risk (perceived benefits). During educational sessions, access to quality care and health insurance will be addressed (perceived barrier). Also, pamphlets about cervical cancer screening, HPV screening, HPV self-sampling, and cervical cancer risks will be distributed (cues to action). Previous research reported that knowledge may positively influence attitudes and thus affect individuals' intentions to screen (Endeshaw et al., 2018).

Theory Evaluation

Health behavior is not only about initiating change, but also maintaining the change. It is central to disease prevention and management (Butt & Rich, 2018). Choices that one makes in life and adopted behaviors are all determinants of health and well-being. Individuals with chronic diseases often have difficulty controlling their health, which typically results in poor outcomes and greater consumption of healthcare services (Butt & Rich, 2018). Therefore, by implementing the behavior change theory of Beker's HBM, it becomes easier to educate and encourage patients to participate in programs that prevent and detect diseases, which will eventually result in an improvement in their quality of life and a reduction in the expenditures associated with their medical care. This theory focuses on raising consciousness related to health promoting behaviors, promoting self-efficacy, enhancing the benefits of change, and managing barriers to change (Butt and Rich, 2018).

This project will focus on reducing obstacles to change and promote informed decision making instead of forcing individuals to change. Doing so, gives patients more control over how they manage their health. The hypothesis also recognizes the need to adapt nursing treatments to fit the specific requirements of individual patients since this is recognized as an essential aspect of patient care.

Theory/Clinical Fit

In general, theoretical frameworks are critical components of evidence-based practice as well as nursing care. They serve as a foundation for comprehending the connections between nursing interventions, patient outcomes, and the healthcare system. The Health Belief Model, one of the first theories of health behavior, has much relevance to this project, which focuses on promoting adherence to cervical cancer screening among Haitian women. According to the model, health promotion entails activities directed toward developing resources that maintain or enhance a person's wellbeing (Polit and Beck, 2017). By implementing this principle, the goal is to help underserved Haitian women understand the benefits and importance of regular cervical cancer screening. Also, the plan is to provide them educational information so they can take an active role in managing their health, which will eventually improve their quality of life and reduce healthcare expenses. According to the HBM hypothesis, when it comes to disease prevention and management, behavior change requires multiple steps and adaptations. For instance, while some Haitian women may not feel ready to regularly be screened for cervical cancer, other groups of the same ethnicity may have already started with cancer screening. Therefore, during the project, stage of change will be analyzed as well because it is a key element of this model.

Methodology

Intervention Design

The study's purpose is to assess reasons why Haitian women of minority group are not getting screened for cervical cancer on a regular basis. The project will focus on women of Haitian descent's belief, attitude, knowledge, and adherence toward cervical cancer screening. An exploratory approach study will used by adopting a quantitative approach design. The purpose of quality improvement project is to improve practices and processes within a specific patient group (Polit and Beck, 2017).

Data Collection and Protection of Human Subjects

Recruitment took place at the immersion site, a primary care clinic in South Florida. Target participants are any established female patient of Haitian descent routinely seen at this clinic, between the age of 21 and 65. The clinic staff placed out phone calls to these eligible participants reminding them of their upcoming appointment for Pap test. After the front desk staff had scheduled their appointment, they let the patients (potential participants) know about the project that includes a short survey and educational materials which that they may be asked to participate. On the appointment day a consent letter and a survey were provided to each patient to fill out while in the waiting room.

Participants was provided an educational letter explaining what the study is about and what is expected from them. They individually asked to complete a 5-minute pre-survey. The questionnaire consisted of multiple choice and rank-order questions using open- and closed-ended questions. Multiple choice questions help gauge participants attitude and opinion toward cervical cancer screening. After the pre-survey completion they watched a 10–15-minute educational session about benefits of regular cervical cancer screening, guidelines, follow-up

adherence. Immediately after the educational session, a post-survey was completed to reassess participants' intention as regards to adherence to regular cervical cancer screening using the same questionnaire. Then encounter lasted a total of about 20 minutes. Only 21 – 65 years old minority group of Haitian women were accepted for the project.

The project was approved by the Florida International University's Internal Board Review. The study's purpose is to improve screening rate among minority group of Haitian women living in South Florida. Educational power point presentation was used to increase awareness. Participants were informed that participation is voluntary and there is no penalty for declining to participate. Survey tests were anonymous. No patient identifiers were used for data processing.

Participants and Setting

Participants, the potential number of participants, and general demographics

The study will take place at the immersion site, a primary care clinic in Oakland Park, South Florida. Target participants are any established female patient of Haitian descent routinely seen at this clinic, between the age of 21 and 65. This setting facilitates data collection; participants are already established patient at the clinic. Participants will be individually approached, and a detailed explanation will be given on how the recruitment will proceed.

The project's sample will be local Haitian women who are qualified to get cervical cancer screening and preventive services at the leading clinic. On the basis of the patient records kept at the clinic, it is anticipated that roughly hundred Haitian women are eligible for these treatments. The possible number of women who participate in this study will be determined by the total number of eligible patients who visit the clinic for treatment within the time frame of the experiment. It is expected, using statistics from the past, that roughly sixty percent of women are

eligible for the clinic's services to be screened on an annual basis. Consequently, the prospective sample size for this study is approximately 100 – 120 women who are recruited for participation in the project.

<h1 align="center">Results</h1>

This project aimed to improve Cervical Cancer Screening Adherence Among a Minority Group of Haitian Women Living in South Florida and to address contributing factors to the disproportionate cervical cancer rate among them. The project's purpose was also to promote self-awareness and confidence in the ability to do HPV self-sampling and educate on how cervical cancer can be prevented. At a result, participants will experience a better health outcome. All participants meeting the specified eligibility criteria were enrolled on a first-come basis. The participant's data remained coded during analyses to maintain privacy and confidentiality. One hundred to one hundred and twenty (n= 100-120) participants were expected to participate in the study. Only one hundred (n=100) completed the pre-survey and eighty (n=80) completed the post-test. Both pre- and post-test consisted of the same type and number of questions. The sample size was smaller than expected, which created an unevenly distribution of data.

Statistical Analysis

All data analyses were conducted per a comprehensive statistical analysis plan. Descriptive statistics were used to describe the participants' demographics and distributions, reporting means and standard deviations or medians as appropriate for continuous variables and numbers and percentages for categorical variables. Responses from the participants were coded and summarized via numerical variables. Inferential statistics using a priori alfa level of 0.05. (Normally distributed data) and Wilcox Sign test for skewed data were used to compare the

responses across different cohort namely, non-education (NO EDU/pre-tested group) and

educated cohort (EDU/post-tested group). Pearson's Chi-square test/Fisher exact test to

determine whether two categorical or nominal variables are likely to be related or not. The study

data was analyzed using SPSS 23.0 statistics software (IBM, Chicago IL) to calculate descriptive

and inferential statistics.

Statistical Terms, Assumptions and Testing

- Data are independent.

- Continuous and Categorical Variables are included in the data set

- Continuous variables were screened for normality via Shapiro-Wilk test.

- Both parametric and nonparametric tests were applied as appropriate, for normally
  distributed and skewed data, respectively.

- A priori an alfa level of 0.05 was considered significant.

- NO EDU = Group before receiving the educational intervention (pre-test).

- EDU = Group that received the educational intervention (post-test).

- N = number of observations / participants

- Descriptive statistics are summary statistic that quantitatively describes or summarizes
  features from a collection of information, while inferential statistics is the process of using
  and analyzing those statistics.

Descriptive statistics

Data are MEAN ± SD for continuous variables and expressed as percentage of the total N. The

age of the participants is summarized in Table 1.

Demographics

Table 1.

Participants' Age Distribution Between the Pre-Survey and the Post-Survey

Age distribution of the participants			
Group	Age	N = participants	% Of participants
NO EDU/Pre-tested	21-30	18	17.8%
	31-40	28	27.7%
	41-50	31	30.7%
	51-65	24	23.8%
EDU/Post-tested	21-30	10	12.3%
	31-40	27	33.3%
	41-50	25	30.9%
	51-65	19	23.5%

Note. The survey question read as follows: "How old are you?"

Pre-educational Intervention Sample

Table 1 explains the participants' demographic data. It illustrates the age distribution between the two groups (NO EDU/pre-test and EDU/post-test). Of the 101 participants who completed the pre-test (NO EDU), 18 (17.8%) participants were between the age of 21-30, 28 (27.7%) were between 31–40-year-old, 31 (30.7%) were between 41–50-year-old, and 24 (23.8%) were between 51–65-year-old.

Post-educational Intervention Sample

Of the 81 participants who completed the post-test (EDU group), 10 (12.3%) were between 21–30-year-old, 27 (33.3%) were between 31–40-year-old, 25 (30.9%) were between 41–50-year-old, and 19 (23.5%) were between 51–65-year-old.

Pre-test and post-test Intervention Results on Knowledge

Table 2, 3, and 4 below illustrate outcomes when the participants (n=101) pretested (NO EDU group) on their familiarity and knowledge with cervical cancer. Of the 101 participants, 22 (21.8%) of them reported being very familiar with cervical cancer, 50 (49.5%) reported being somewhat familiar with cervical cancer, and 20 (19.8%) reported not very familiar with the subject. When the participants (EDU group) post-tested on their knowledge of cervical cancer 73 (90.1%) reported being very knowledgeable of cervical cancer screening. Thus, the EDU (post-tested) group was more knowledgeable and more familiar with the topic of cervical cancer than NON-EDU P <0.001. The EDU group reported a better understanding of screening methods than NO EDU P <0.001. The educational intervention positively changed notions and general knowledge of cervical cancer of the participants. EDU/post-tested group demonstrates a better understanding and knowledge in cervical cancer screening (see table 2 and table 3).

Table 2

Summary of the general responses of the participants

N=participants (pre-test = 101) & (post-test = 81)			
Knowledge Questions	NO EDU/Pre-test	EDU/Post-test	%Of change
Are you familiar with cervical cancer?	Yes = 69 (68.3%) No = 32 (31.7%)	Yes=81 (100%)	↑12%
Have you ever discussed cervical screening with your health care provider?	Definitely yes: 69 (68.3%) Definitely no: 32 (31.7%)	Definitely yes 80 (98.8%) Definitely no: 1 (1.2%)	↑30.5%
Have you ever had a screening test for cervical cancer?	Yes: 69(68.3%) No: 19 (27.7%) Maybe = 12 (4%)	Yes: 78 (96.3%) No: 2 (2.5%) Maybe = 1 (1.2%)	↑ 28%
How would you rate your knowledge about the causes and risks factors of cervical cancer?	Very knowledgeable 22 (21.8%) Somewhat knowledgeable 50 (49.5%) Not very knowledgeable 20 (19.8%) Neutral 9 (8.9%)	Very knowledgeable 73 (90.1%) Somewhat knowledgeable 8 (9.9%)	↑ 68.3%

Table 3.

Awareness and Cervical cancer knowledge between the educated (post-test/EDU) and non-educated group (pre-test/NO EDU).

N=participants (pre-test = 101) & (post-test = 81)			
Knowledge Questions	NO EDU/Pre-test	EDU/Post-test	%Of change
Are you aware that HPV vaccine can prevent cancer?	Definitely yes = 17 (17.8%) Definitely no = 18 (16.8%) Probably yes = 31 (30.7%) Probably no =12 (11.9%) Might or might not = 23 (22.8%)	Definitely yes=27 (33.3%) Probably yes = 41 (50.6%) Might or might not = 13 (16.0%)	↑10%
If you have had a Pap test before, how often do you have one?	- Every three years 5 (5.0%) - Not regularly 32 (31.7%) - Occasionally (not as frequent as recommended) 37 (36.6%) - Regularly (as recommended by my provider) 27 (26.7%)	- Every three years 6 (7.4%) - Occasionally (not as frequent as recommended) 17 (21.0%) - Regularly (as recommended by my provider) 58 (71.6%)	↑44.9%

Results of the Participants' Knowledge Level of HPV Vaccination and Their Willingness to

Use the HPV Self-Sampling Kit

After addressing barriers and misconceptions about HPV vaccinations with the

participants, they promised to be more compliant to HPV vaccinations and screening. As

illustrated in table 3 above, only 17 (16.8%) of the 101 participants (NO EDU/pre-test group)

reported that they believe HPV vaccines can prevent cervical cancer. However, post educational

intervention, 27(33.3%) answered yes to the same question. As for HPV self-sampling testing,

table 4 below conveys that once educated on cervical cancer screening, 48 (59.3%) of the

participants (EDU/post-test) were more open to use the HPV self-sampling kit compared to 8

(7.9%) of the (NO EDU group/pre-test). Thus, the participants are less hesitant to get screened

for cervical cancer using the self-sampling method once educated (see table 4).

Table 4.

Evaluating Participants' Knowledge Level of HPV Vaccination Benefits and their Willingness to Use the HPV Self-Sampling Kit.

N=participants (pre-test = 101) & (post-test = 81)			
Awareness and Knowledge Questions	NO EDU/Pre-test	EDU/Post-test	%Of change
Are you aware of self-sampling for cervical cancer screening?	Definitely yes = 8 (7.9%) Definitely no = 32 (31.7%) Probably yes = 24 (23.8%) Probably no =25 (24.8%) Might or might not = 12 (11.9%)	Definitely yes=48 (59.3%) Probably yes = 32 (39.5%) Might or might not = 1 (1.2%)	↑51.4%
If you receive education from it (self-sampling), is it something you might be open to?	- Definitely 51 (50.5%) - Probably 41 (40.6%) - Probably not 8 (7.9%) - Not at all 1 (1.0%)	Definitely yes=80 (98.8%) Probably yes = 1 (1.2%)	↑48.3%

Note. The survey item read as follows: "Evaluating pre-survey & post-survey results of the participants' knowledge level of HPV vaccination benefits and their willingness to use the HPV self-sampling kit."

Statistics

Figure 5.

Measures survey duration (sec)
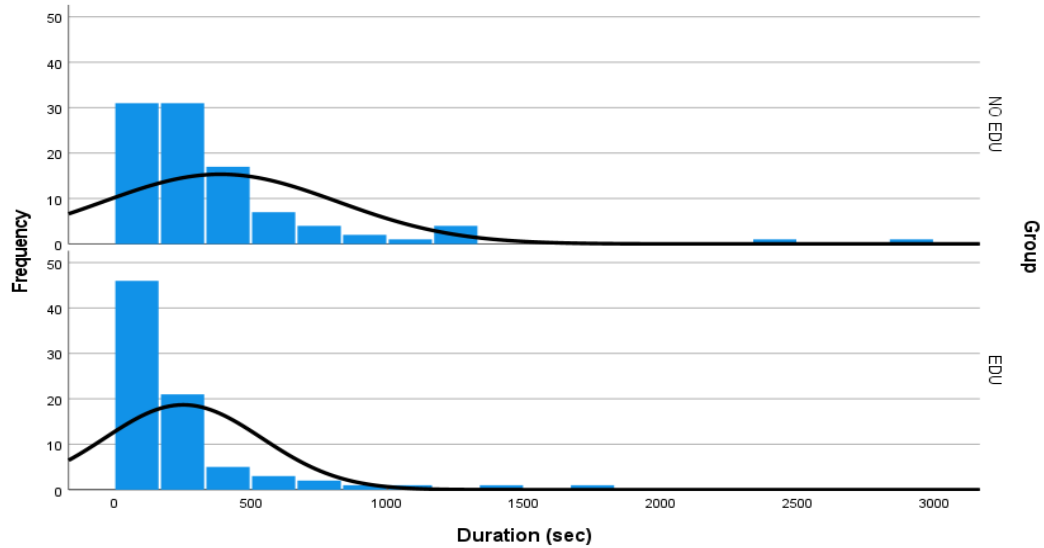
Table 5.

Measures survey duration (sec)

Pre-test/No EDU group	Post-test/EDU					
		Mean	Std. error of deviation	Std. deviation	Minimum	Maximum
Pre-test/No EDU group	N = 101 Valid= 99 Missing= 2	388.67	43.115	428.991	79	2956
Post-test/EDU	N = 81 Valid= 81 Missing= 0	252.84	32.022	288.200	71	1732

Table 5 above illustrates the survey duration in seconds. It relates the difference in time between the two random samples. The variables were independent. Although the survey contained the same number of questions, not all of the participants completed both surveys. The table contains the mean score for both surveys, standard error of deviation, standard deviation, and the minimum and maximum time taken in second to complete the survey. As observed in the survey, the pre-survey mean score is considerably higher (388.67) than the post-survey (252.84). Thus, the participants took longer to complete the survey before educational intervention, implying that the intervention was effective (see table 5).

Inferential Statistics

Inferential Statistics were performed via Cross Tabulations (Chi-square for categorical variables) which states in all tests of significance if $P<0.05$, there is a statistically significant relationship between the two variables. The Chi-square test was used to determine if educational intervention makes a significant difference between the two groups (No EDU group/pre-test & EDU group/post-test). Overall, the results suggest that the educational intervention significantly and positively change notions and general knowledge of cervical cancer of the participants.

Chi-Square Test Demographic Result Using Bar Graph

Figure 1 below illustrates the Pearson Chi-Square Test demographic findings of different age group of the participants who completed the pre-test and post-test surveys. Table 1.1 below relates the p-value, the distribution of freedom, and the asymptotic significance score of appropriate responses in the pre- and post-test intervention. As indicated in the figure, the P. value was 1.347[a], the Chi Square parameter's distribution of freedom (df) is 3, and the asymptotic significance (2-sided), which test the statistical difference of the two group is 0.718.
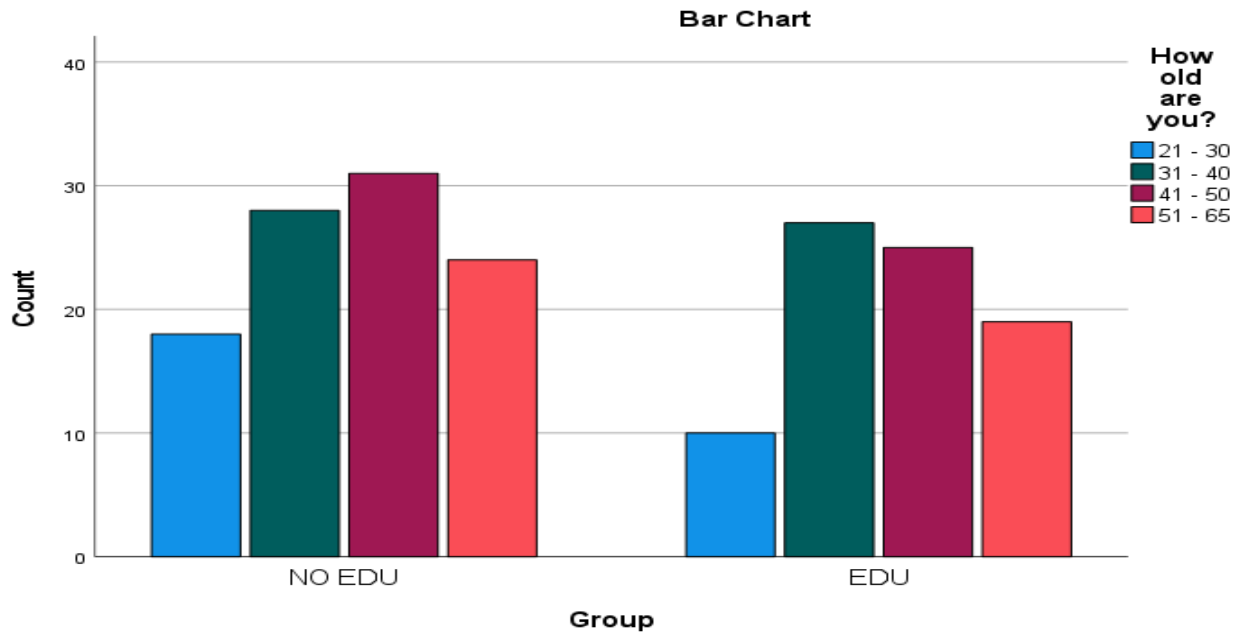
Thus, the results indicate that the age group distribution was not different between the two

groups (pre- & post-tested participants) (see table 1.1 and figure 1).

Table 1.1

	Pearson Chi-Square Test		
	Value	Distribution of Freedom (df)	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.347[a]	3	.718

Figure 1.

Age group distribution was not different between the groups P = .718

Pearson Chi-Square Test on Familiarity with Cervical Cancer Result Interpretation

The following bar graph in figure 2 illustrates test results of the participants knowledge of cervical cancer screening. Table 2.1 below relates the p-value, the distribution of freedom, and the asymptotic significance score of appropriate responses in the pre- and post-test intervention. The Pearson Chi-square test was once again used to demonstrate pre- and post-intervention survey results. The result indicates a Chi-square value is 31.138^a, a distribution of freedom of 2, and an asymptotic significance (2-sided) of $< .001$. It also stipulates a likelihood ratio value of 43.120, and a number of cases of 182. As expected, promoting cervical cancer screening adherence via education increase knowledge and willingness to regular screening, and consequently improve health outcomes. Overall, the results revealed a considerable change in familiarity with the subject post intervention (see table 2.1 and figure 2).

Table 2.1

	Chi-Square Tests		
	Value	Distribution of Freedom	Asymptotic Significance (2-sided)
Pearson Chi-Square Test	31.138^a	2	< 0.001
Likelihood Ratio	43.120	2	< 0.001
N of Valid Cases	182		
a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.78			

Figure 2.

The EDU/post-tested group was more familiar with the topic of cervical cancer than non-EDU/pre-tested group. P < 0.001.
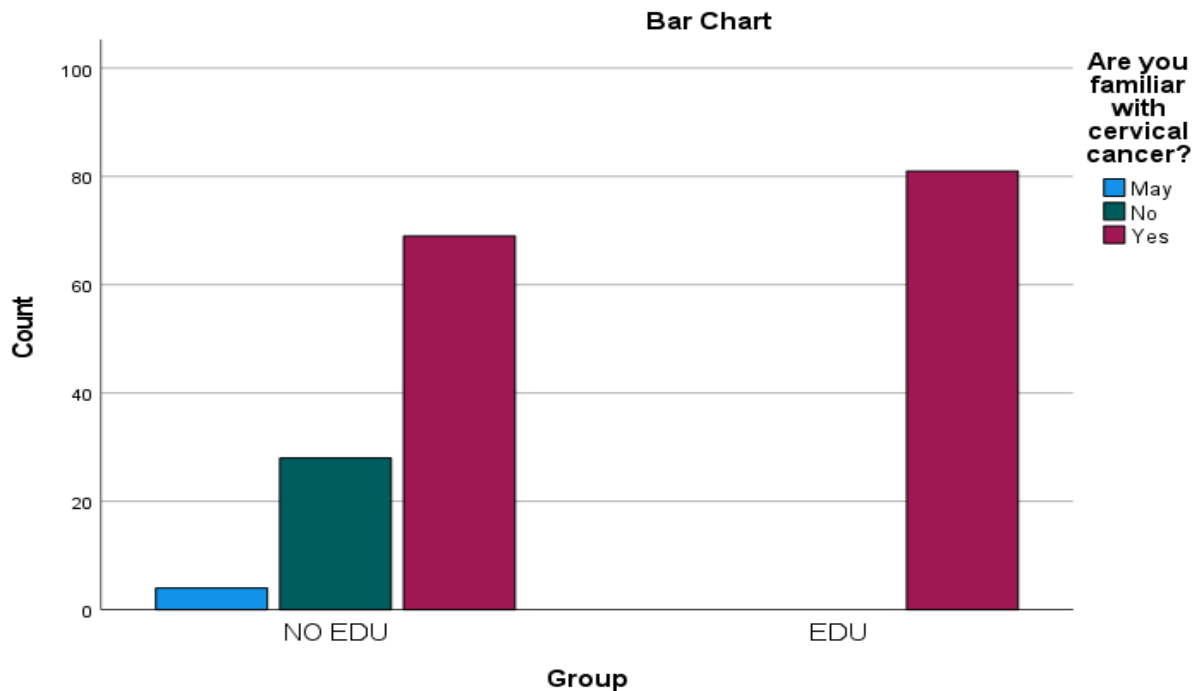

Chi-Square Test Results Interpretation on Pap Smear Knowledge Using Bar Graph

Figure 3 illustrates Chi-square test result on Pap smear knowledge assessment using a bar graph. Table 3.1 relates the value (109.599[a]), the distribution of freedom (12), and the asymptotic significance (< 0.001) score of appropriate responses in the pre- and post-test intervention. The test was performed to measure how much the participants know about a Pap Smear comparing pre-test and post-test survey. There was an increase of 73.8% of knowledge post educational intervention compared to 18.8% pre-intervention. Results indicate that the educated group was more assertive on what a Pap test is than the none educated group (see table 3.1 and figure 3).
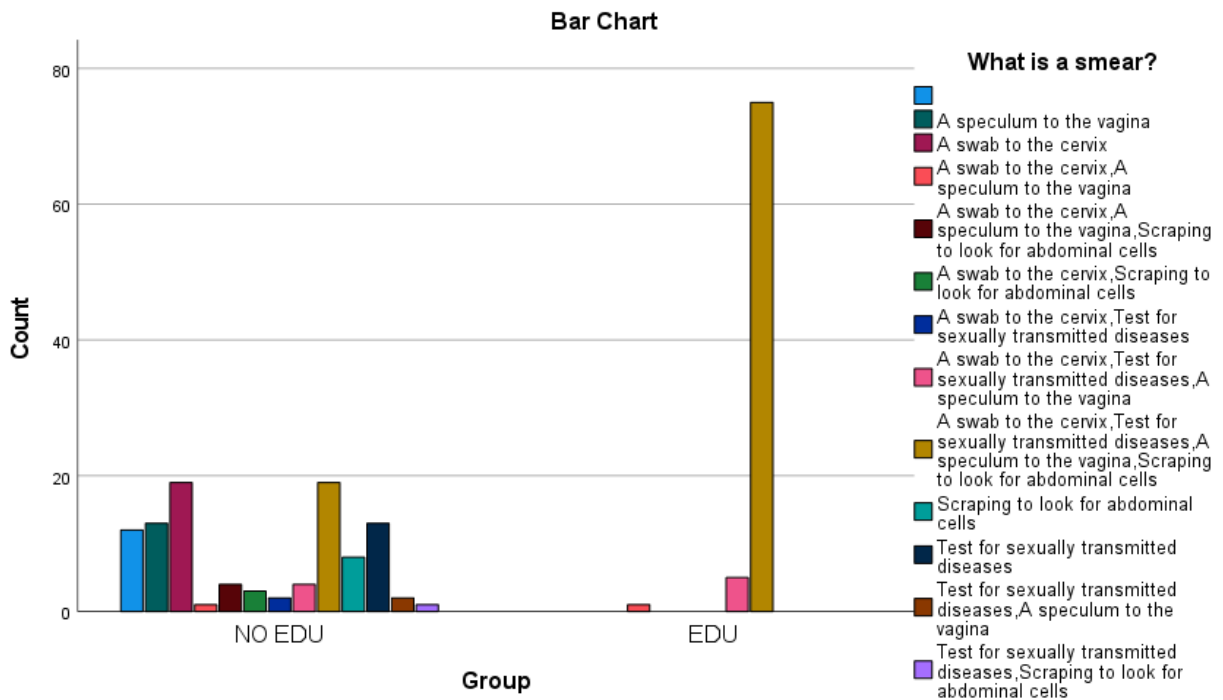
Table 3.1

	Chi-Square Tests		
	Value	Distribution of Freedom	Asymptotic Significance (2-sided)
Pearson Chi-Square Test	109.599ᵃ	12	< 0.001
Likelihood Ratio	140.338	12	< 0.001
N of Valid Cases	182		
a. 16 cells (61.5%) have expected count less than 5. The minimum expected count is .45			

Figure 3.

The EDU group was more assertive on what a smear is than NO EDU P <0.001.

Pearson Chi-Square Test on 'Discussing Cervical Cancer Screening with a Healthcare Provider' Results interpretation Using a Bar Graph

Figure 4 demonstrates a result statistically significant, knowing that p-value is often used to prove credibility for a report. Table 4.1 relates the p-value, the distribution of freedom, and the asymptotic significance score of appropriate responses in the pre- and post-test intervention. As illustrated in table $p = < 0.001$, which means that there is a significant improvement in 'discussing cervical cancer screening with a provider'. The table and the graph below summarize the result interpretation (see table 4.1 and figure 4).

Table 4.1

	Chi-Square Tests		
	Value	Distribution of Freedom	Asymptotic Significance (2-sided)
Pearson Chi-Square Test	28.762[a]	2	< 0.001
Likelihood Ratio	39.354	2	< 0.001
N of Valid Cases	182		
a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 2.23			

Figure 4.

The EDU/post-test was more familiar with the topic than NO EDU/post-test P <0.001.
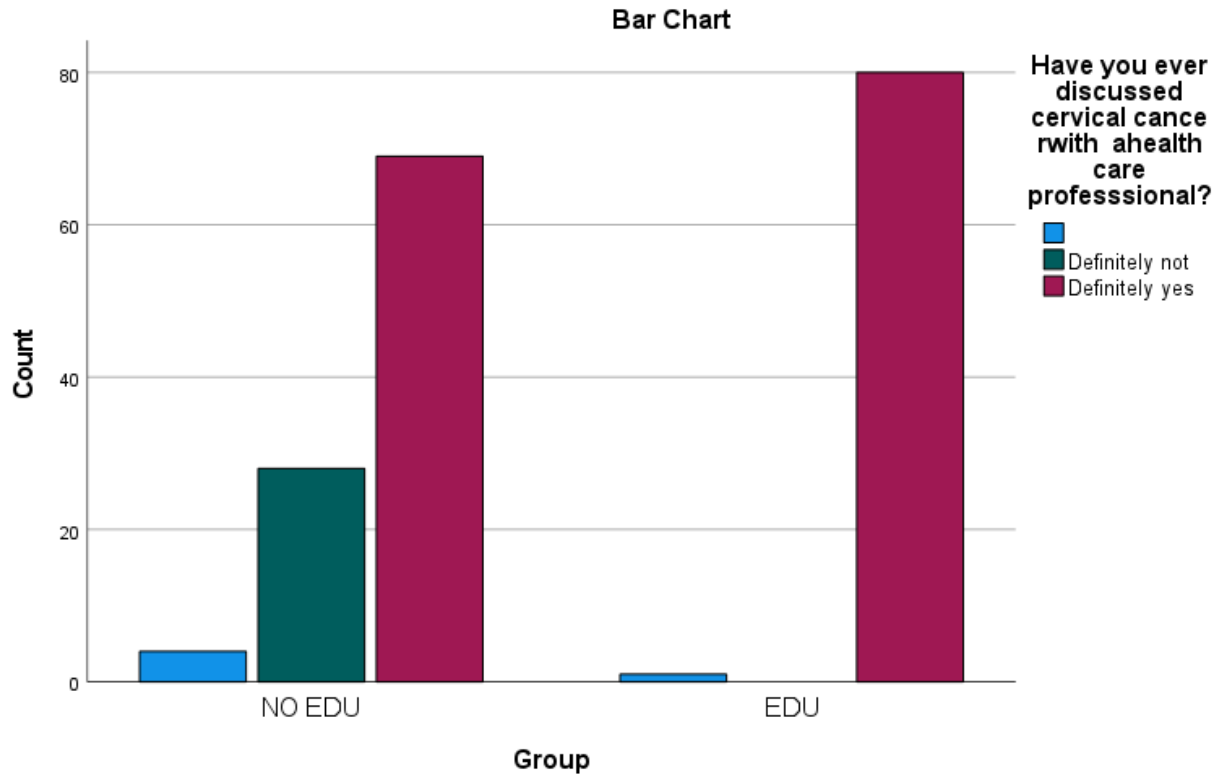
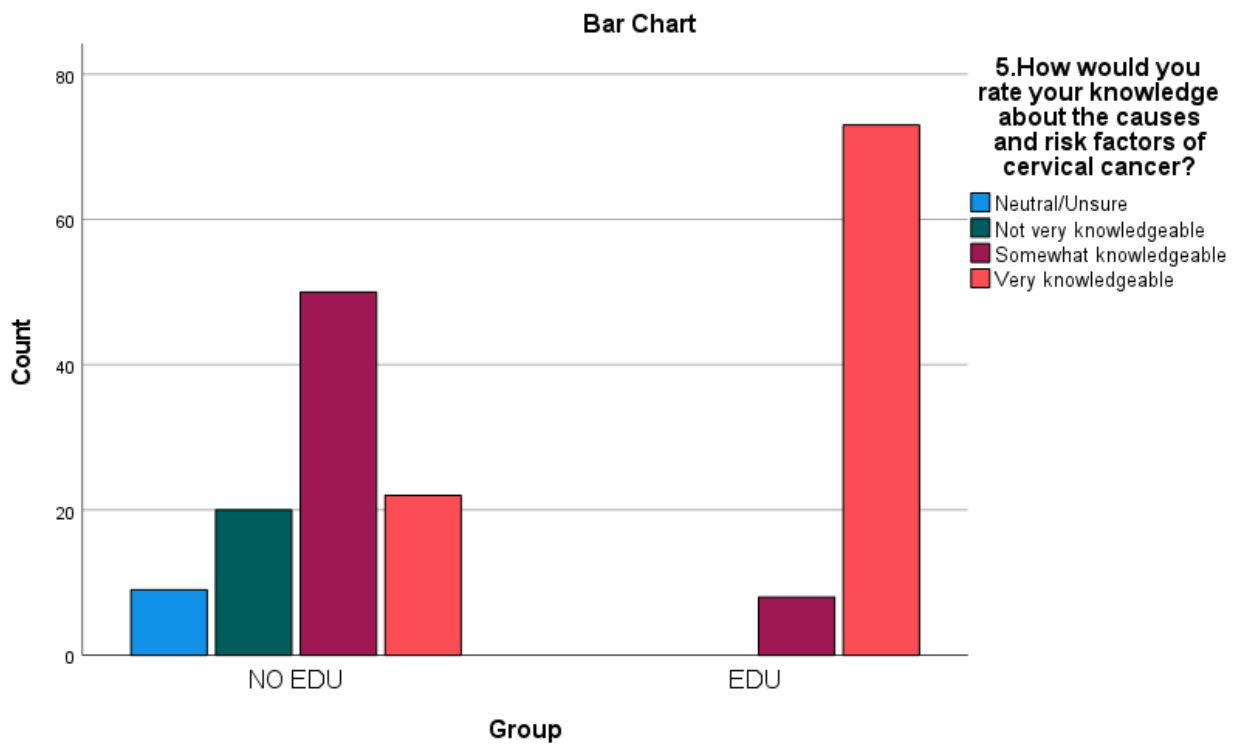**Chi-Square Test Results Interpretation of Causes and Risk Factors of Cervical Cancer**

Figure 5 illustrates Chi-square test result on causes and risk factors using a bar graph. Table 5.1 relates the p-value, the distribution of freedom, and the asymptotic significance score of appropriate responses in the pre- and post-test intervention. The test was performed to measure the participants knowledge level of risks and causes of cervical cancer comparing pre-test and post-test survey. There was a significant difference on knowledge of cervical cancer risks and causes post educational intervention compared to pre-intervention. Results reported a higher confidence of the educated group (post-test) than the none educated (pre-test) group (see table 5.1 ang figure 5).

Table 5.1

	Chi-Square Tests		
	Value	Distribution of Freedom	Asymptotic Significance (2-sided)
Pearson Chi-Square Test	85.629[a]	3	< 0.001
Likelihood Ratio	100.742	3	< 0.001
N of Valid Cases	182		
a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 4.01			

Figure 5.

The EDU/post-tested group reported higher knowledge (confidence) in cervical cancer than NO

EDU/pre-tested group P <0.001.

Chi-Square Test Result Interpretation on Whether the Participants Had Previous Cervical Cancer Screening

The following graph, figure 6 relates pre- and post-test results indicating whether the participants ever had a screening test for cervical cancer. Table 6.1 relates the p-value, the distribution of freedom, and the asymptotic significance score of appropriate responses in the pre- and post-test intervention. The Chi-square test was used to illustrate pre- and post-intervention survey results. The result indicates the Chi-square value is 24.410[a], a distribution of freedom of 3, and an asymptotic significance (2-sided) of $< .001$. It also stipulates a likelihood ratio value of 30.888, and a number of cases of 182. Majority (68.3%) of the participants reported that they previously screened for cervical cancer in the pre-survey, and the result grew higher (96.3%) post educational intervention. Overall, the EDU (post-test) participants reported higher confidence on testing for cervical cancer than the NO EDU (pre-test) participants (see table 6.1 and figure 6).

Table 6.1

	Chi-Square Tests		
	Value	Distribution of Freedom	Asymptotic Significance (2-sided)
Pearson Chi-Square Test	24.410[a]	3	< 0.001
Likelihood Ratio	30.888	3	< 0.001
N of Valid Cases	182		
a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is .89			

Figure 6.

The EDU group reported higher security (less doubts) on testing in cervical cancer than NO EDU

P <0.001.
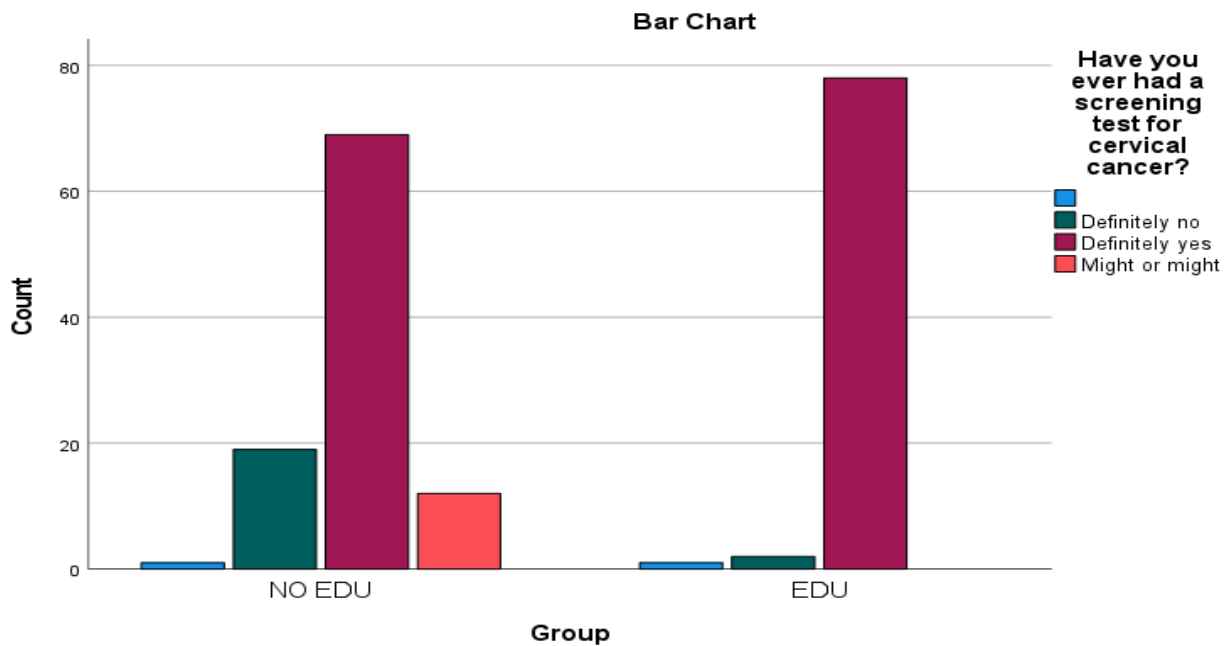
Chi-Square Test Results Interpretation for Methods Used to Screen for Cervical Cancer

Figure 7 illustrates Chi-square test result on methods used to screen for cervical cancer using a bar graph. Table 7.1 relates the p-value, the distribution of freedom, and the asymptotic significance score of appropriate responses in the pre- and post-test intervention. The test was performed to measure the participants knowledge level of methods used for cervical cancer comparing pre-test and post-test survey. The p-value was < 0.001. As stated before, not all participants completed the post-test but of the 81 who did it, 27.2% of them knew the right method used for cervical cancer screening. The EDU/post-test group reported a better understanding of different methods used for cervical cancer screening (see table 7.1 and figure 7).

Table 7.1

	Chi-Square Tests		
	Value	Distribution of Freedom	Asymptotic Significance (2-sided)
Pearson Chi-Square Test	124.202[a]	12	< 0.001
Likelihood Ratio	155.306	12	< 0.001
N of Valid Cases	182		
a. 14 cells (53.8%) have expected count less than 5. The minimum expected count is .89			

Figure 7.

The EDU group reported a better understanding of screening methods than NO EDU P <0.001.
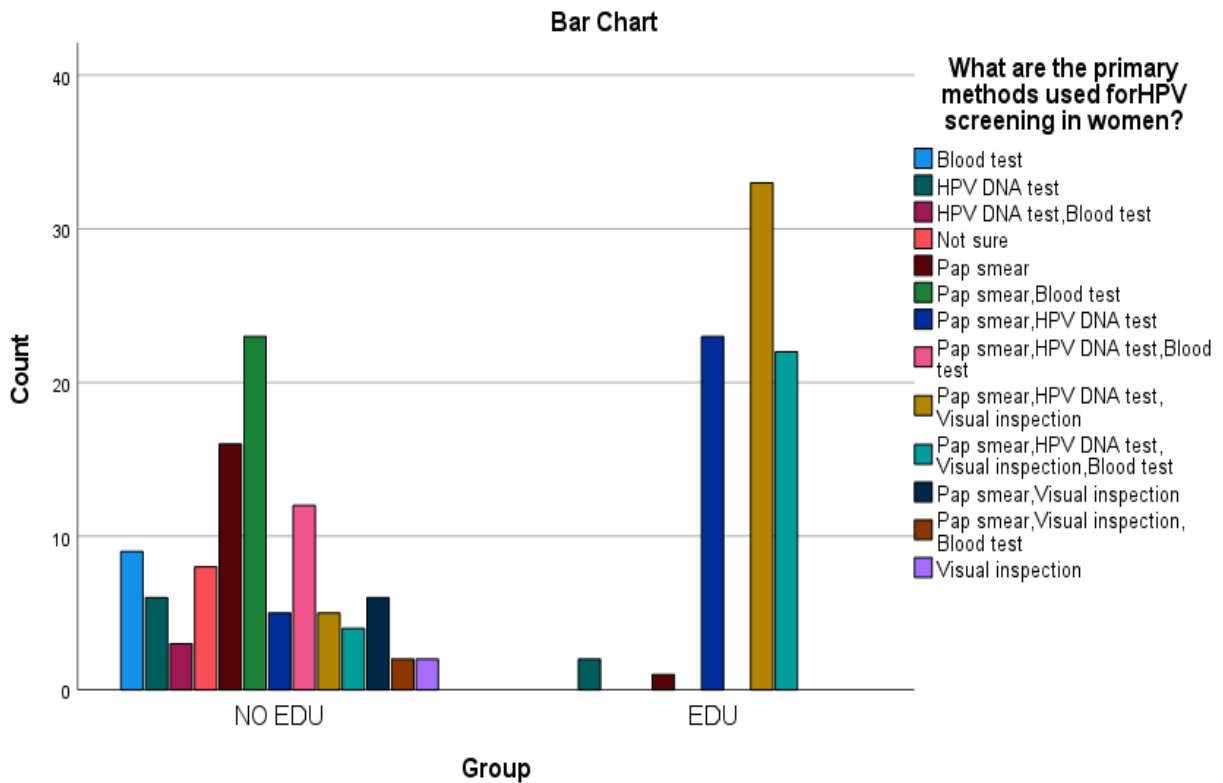
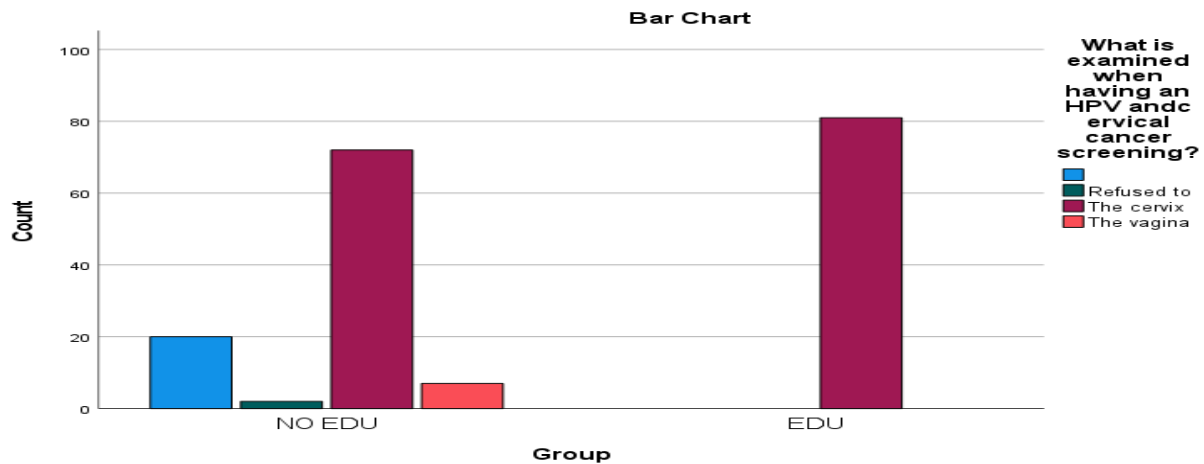**Chi-Square Test Knowledge on HPV Results Interpretation**

Figure 8 illustrates Chi-square test knowledge on HPV results interpretation using a bar

graph to determine whether there is a difference between the two interventions. Table 8.1 relates

the p-value, the distribution of freedom, and the asymptotic significance score of appropriate

responses in the pre- and post-test intervention. The results indicate that the educated group

(post-test) reported a better understanding of screening method than the none educated group

(pre-test). P <0.001 (see table 8.1 and figure 8).

Table 8.1

	Chi-Square Tests		
	Value	Distribution of Freedom	Asymptotic Significance (2-sided)
Pearson Chi-Square Test	27.666^a	3	< 0.001
Likelihood Ratio	38.530	3	< 0.001
N of Valid Cases	182		
a. 4 cells (50.0%) have expected count less than 5. The minimum expected count is .89			

Figure 8.

The EDU group (pre-test) reported a better understanding of screening method than NO EDU

(post-test) P <0.001.

Chi-Square Test Knowledge on Recommended Frequency for Cervical Cancer Screening

Results Interpretation

The following graph, figure 9 relates pre- and post-test results indicating whether the

participants ever had a screening test for cervical cancer. Table 9.1 illustrates the p-value, the

distribution of freedom, and the asymptotic significance score of appropriate responses in the

pre- and post-test intervention. The Chi-square test was used to show pre- and post-intervention

survey results. The result indicates the Chi-square value is 51.117[a], a distribution of freedom of

3, and an asymptotic significance (2-sided) of < .001. It also stipulates a ratio of probability of

68.325, which tells the number of times the EDU group is more likely to know the right answer

than the NO EDU group, and a number of cases of 182. Overall, the EDU (post-test) participants

reported a better understanding of the screening frequency than the NO EDU (pre-test) group as

P remains < 0.001 (see table 9.1 and figure 9).

Table 9.1

	Chi-Square Tests		
	Value	Distribution of Freedom	Asymptotic Significance (2-sided)
Pearson Chi-Square Test	51.117[a]	3	< 0.001
Likelihood Ratio	68.325	3	< 0.001
N of Valid Cases	182		
a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 2.67			

Figure 9.

The EDU group reported a better understanding of the screening frequency than NO EDU P <0.001.
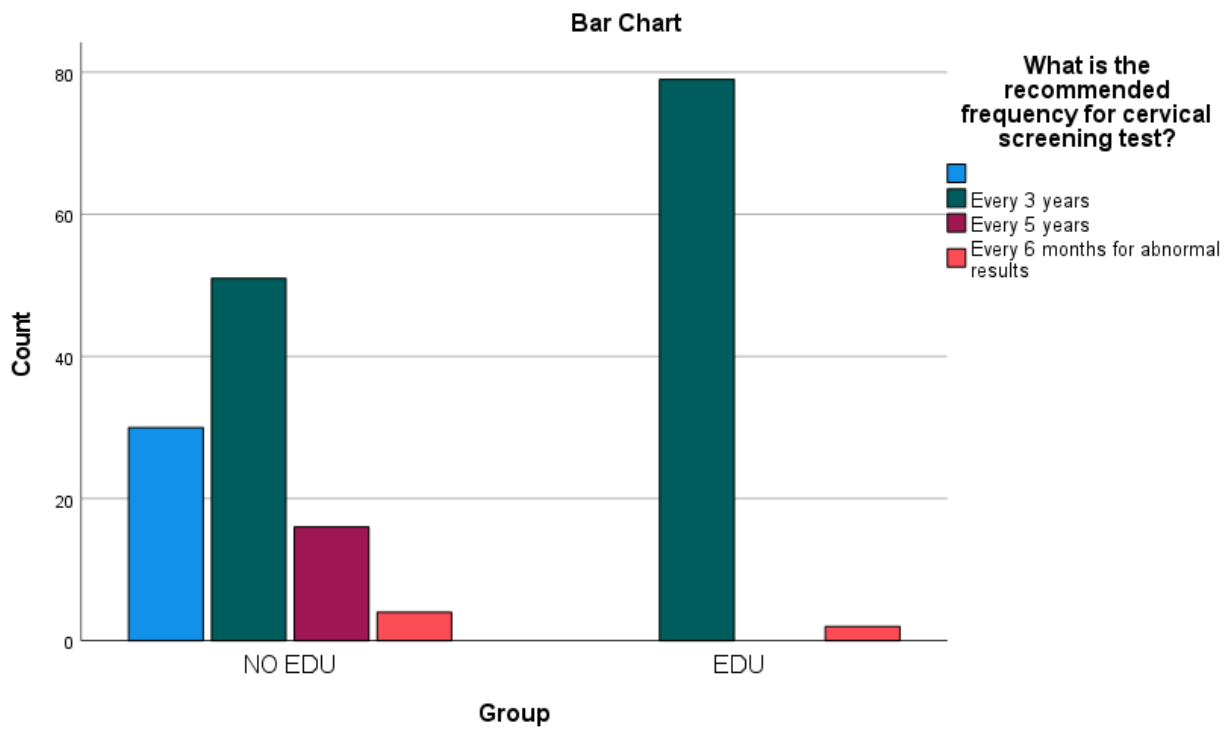
Discussion

This project's purpose was to address contributing factors to the disproportionate cervical cancer rate among minority group of Haitian women living in South Florida and gauge how promoting self-awareness via educational intervention can improve adherence to not only screen for cervical cancer but also to follow-up post an abnormal result. Another reason was to increase the participants' confidence to use the HPV self-sampling test kit. Research has shown that doing so can greatly contribute to better health outcomes and compliance to regular cervical cancer screening (Xiong et al, 2022).

Thus, results of the present study reveal that the educational interventions effectively change knowledge and perception among participants of the project. Educational strategies to help minority groups advance their health literacy in topics such as cervical cancer may lead to better understanding and increase awareness of the disease.

Limitations

Time was a major issue. Not enough time was provided to measure rate of improvement post education and implementation of the study. Also, time was impacted by the Internal Review Boards. Reviewing time took approximately three to four weeks. Initially, the project was supposed to start in July but a submission of amendment to change to a different Primary Investigator has delayed the process. Thus, the collection start date has changed from July to September 2023. The sample size, n= 100 was another limitation. More participants could be part of the study but not sufficient time to recruit and survey those potential volunteers, which makes it difficult to consider the findings as statistically significant.

Implication for Advanced Practice Nursing

Education, Education, Education. Cervical cancer is preventable, but it cannot be prevented without raising awareness. Women in minority groups are more exposed to cervical cancer risk due to care access challenges and knowledge deficits. Minority women, such as Haitians, have limited access to healthcare due to their immigration status, low incomes, lack of health insurance, and obstructive cultures. Identifying those barriers is essential in order to improve adherence to screen rate. Results have demonstrated how educational sessions approach can be an important tool to empower minority women to take control of their health. Healthcare practitioners and policy makers have a major role in reducing structural barriers to screening. As healthcare practitioners, providing culturally appropriate is essential. Doing so allows health providers to provide quality care and consequently improve patients' health outcomes. Interventions, such as education should be paired with community-based healthcare programs to promote awareness on cervical cancer. These measures can influence acceptability, leading to consistency in cervical cancer screening and treatment. The project result demonstrates an improvement in intention to screen for cervical cancer post the educational power point presentation. Results were discussed with the clinic management board, staff, and specially providers in order to encourage regular screening and follow ups. The plan is to conduct more frequent studies and address the issue by providing more frequent in-services to tackle adherence and compliance to regular cervical cancer screening. Clinicians and providers at the clinic promised to continuously provide education to every eligible woman to get the HPV vaccine, get screened for cervical cancer, and encourage parent to get their young children vaccinated against HPV. If done properly, it can greatly impact health outcomes of the clinic's active patients, considering the study results for which 17.8% of the participants were between the age of 21-30,

33.3% were between 31–40-year-old, and 30.9% were between 41–50-year-old. Per current

guidelines, adults up to age 45 can get HPV vaccine (Adegboyega et al., 2022).

Nevertheless, more studies need to be done to better measure rate of improvement and

adherence to screen for cervical cancer when patients receive appropriate education. This study

did not yield sufficient time to collect enough participants to generate considerable results and to

accurately measure improvement rate. Hence, a study to measure how frequently healthcare

practitioners educate their patient about cervical cancer risks and screening is necessary. As

observed during data analysis, when comparing patients' attitude toward getting screened before

education (n= 68.3%) and their attitude after education (98.8%), one can conclude that patients

are more compliant when received culturally appropriate recommendations or education from

their providers.

Conclusions

Overall, promoting cervical cancer screening using appropriate education may help

reduce the rising risk of cervical cancer cases cand improve adherence to treatments among

women of minority groups. The pre-survey has determined that some women do not get screened

regularly due to limited knowledge but post interventional education, willingness to screen has

improved. Surprisingly, most of the participants have at least once, screened for cervical cancer

but are not compliant to current guidelines. Community health providers can educate minority

communities on cervical cancer and stress the importance of regular cervical screening.

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Appendix A

FLORIDA INTERNATIONAL UNIVERSITY

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

FLORIDA INTERNATIONAL UNIVERSITY

Office of Research Integrity

Research Compliance, MARC 430

MEMORANDUM

To:	Dr. Carmen Framil
CC:	Rose Jeudine
From:	Kourtney Wilson, MS, IRB Coordinator *KMW*
Date:	July 10, 2023
Protocol Title:	"Cultural Consideration of Women of Haitian Descent Towards Cervical Cancer Screening: A Quality Improvement Project"

The Florida International University Office of Research Integrity has reviewed your research study for the use of human subjects and deemed it Exempt via the **Exempt Review** process.

IRB Protocol Exemption #: IRB-23-0360   **IRB Exemption Date:** 07/10/23

TOPAZ Reference #: 113349

As a requirement of IRB Exemption, you are required to:

1. 1) Submit an IRB Exempt Amendment Form for all proposed additions or changes in the procedures involving human subjects. All additions and changes must be reviewed and approved prior to implementation.
2. 2) Promptly submit an IRB Exempt Event Report Form for every serious or unusual or unanticipated adverse event, problems with the rights or welfare of the human subjects, and/or deviations from the approved protocol.
3. 3) Submit an IRB Exempt Project Completion Report Form when the study is finished or discontinued.

Special Conditions: N/A

For further information, you may visit the IRB website at http://research.fiu.edu/irb.

FLORIDA INTERNATIONAL UNIVERSITY   **Office of Research Integrity**
                                                        Research Compliance, MARC 414

MEMORANDUM

To:	Dr. Deana Goldin
CC:	Rose Jeudine
From:	Maria Melendez-Vargas, MIBA, Coordinator
Date:	July 26, 2023
Proposal Title:	"Cultural Consideration of Women of Haitian Descent Towards Cervical Cancer Screening: A Quality Improvement Project"

	Approval #	IRB-23-0360-AM01
	Reference #	113349

The Florida International University Office of Research Integrity has approved the following modification(s):

• Study Principal Investigator changed: Addition of Dr. Deana Goldin replacing Dr. Framil due to maternity leave.

• Changed the project start date.

Special Conditions:

For further information, you may visit the FIU IRB website at http://research.fiu.edu/irb.

MMV/em

Appendix B

FLORIDA INTERNATIONAL UNIVERSITY

SUPPORT LETTER FROM FACILILITY

American Care

1600 W OAKLAND PARK BLVD, OAKLAND PARK, FL 33311

June 1, 2023

From: Dr. Marie Philippe, American Care Clinic

To: Dr. Framil, Clinical Assistant professor at Florida International University

This letter is to let you know that Rose Jeudine, DNP student at Florida International University, has been granted permission to conduct her quality improvement project at this facility. The Project will be done as a requirement for her Doctoral in Nursing Practice Program.

The project titled: 'Improve Cervical Cancer Screening Adherence Among Minority Group of Haitian Women Living in South Florida as a Result of Education: A Quality Improvement Program', aims to increase awareness of cervical cancer risk factors and provide appropriate and adequate education in order to promote adherence to screening and to treatment follow-ups. A session of educational assessment will be provided to each eligible participant and a pre and post-test survey will follow. Data collected will be kept confidential.

Sincerely,

Marie J Philippe

_____

Marie Philippe, DNP, AGPNC, NP-BC

Appendix C

DEVELOPED DEMOGRAPHIC INFORMATION/QUESTIONNAIRE

A pre/post-test questionnaire was developed to assess demographic characteristics, knowledge and understanding, awareness, intention to screen, and cultural attitude of cervical cancer screening using the Pap test and human papillomavirus vaccination, including signs and symptoms, routes of transmission, and potential long-term complications. The Likert scale was used, and questions were presented using multiple choice approach and open-ended questions.

1. How old are you?

   a) 21 - 30
   b) 31 – 40
   c) 41 – 50
   d) 50 – 65

2. Are you familiar with cervical cancer?

   a) Yes
   b) No

3. What is a smear or Pap test? Select all that apply.

   a) A swab of the cervix
   b) Test for sexually transmitted diseases
   c) A speculum in the vagina
   d) Scraping to look for abnormal cells
   e) Don't know

4. Have you ever discussed cervical cancer with a healthcare professional?

   a) Yes

   b) No

   a) .

5. Have you ever had a screening test for cervical cancer

   a) Yes
   b) No

    c) Don't remember
    d) Prefer not to answer

6. If you have had a Pap test before; how often do you undergo cervical cancer screening (e.g., Pap test, HPV test)?

    a) Regularly (as recommended by my provider)
    b) Occasionally (not as frequently as recommended)
    c) Every three years
    d) Not regularly
    e) Rarely/never

7. If you have never had a cervical cancer screening, what barriers have prevented you from getting it regularly? Select all that apply

    a) Lack of awareness
    b) Cost of screening
    c) Lack of access to care
    d) Time or transportation
    e) Personal beliefs or cultural factors
    f) discomfort during the exam
    g) Being embarrassed
    h) Having a male practitioner
    i) Other reasons (please specify)
    j) Prefer not to answer

8. Have you received the Human Papillomavirus (HPV) vaccine?

    a) Yes
    b) No
    c) Don't remember
    d) Prefer not to answer

9. Are you aware that HPV vaccine can prevent cervical cancer?

    a) Yes
    b) No
    c) Don't know
    d) Prefer not to answer

10. What are the primary methods used for HPV screening in women? Select all that apply)

    a) Pap smear
    b) HPV DNA test

    c) Visual inspection
    d) Blood test
    e) Not sure

11. What is examined when having an HPV and cervical cancer screening?

    a) The vagina
    b) The cervix
    c) Don't know
    d) Refuse to answer

12. What is the recommended frequency for cervical screening test?

    a) Every 3 years
    b) Every 5 years
    c) Every 6 months for abnormal results
    d) Don't know

13. What do you think an abnormal result might mean?

    a) I have STDs
    b) I have cancer
    c) I don't know
    d) Prefer not to answer

14. How concerned are you about your personal risk of developing cervical cancer?

    a) Very concerned
    b) Somewhat concerned
    c) Not very concerned
    d) Neutral/Unsure

15. Which factors increase the risk of cervical cancer? Select all that apply.

    a) Untreated or repeated HPV infection
    b) Smoking
    c) Weakened immune system
    d) Lack of routine cervical cancer screening
    e) Multiple sex partners
    f) Family history of cervical cancer
    g) Early sexual activity
    h) None of the above

16. How important cervical cancer screening is to you?

    a) Very important

    b) Somewhat important
    c) Unsure
    d) Not important at all

17. How likely do you think it is for cervical cancer to be successfully treated if detected early?

    a) Very likely
    b) Somewhat likely
    c) Not very likely
    d) Unsure

18. Are you aware of self-sampling option for cervical cancer screening?

    a) Yes
    b) No
    c) Vaguely
    d) Never heard of it

19. If you received education about it, is it something you might be open to do?
    a) Definitely
    b) Probably
    c) Probably not
    d) Not at all

Appendix D

PARTICIPANTS RECRUITEMENT METHODS AND

PROJECT IMPLEMENTATION PLAN

Implementation Plan

Participants' recruitment for the project was done in the following order:

1. Obtained management/preceptor consent.

2. Made a list of all eligible established female patients of Haitian descent who are due for cervical cancer screening for the months of July and August 2023.

3. Number of participants is expected to be approximately a total of 100 – 120 during the study.

4. The clinic staff placed out phone calls to these eligible participants reminding them of their upcoming appointment for Pap test.

5. After the front desk staff had scheduled their appointment, they let the patients (potential participants) know about the study as follow: "We also have a project going on that includes a short survey and educational materials that you may be asked to participate. It's completely voluntary and you'll receive a packet on your appointment day with more information. There is no obligation to participate. Thank you. See you soon.

6. On the appointment day a consent letter and a survey were provided to each patient to fill out while in the waiting room.

7. Post educational survey was given to patient. They were asked to leave it in an envelope provided in encounter and will be collected by student investigator at end of encounter.

8. Survey results was uploaded to online data management software. Surveys was then be destroyed after results are uploaded.

Appendix E

FLORIDA INTERNATIONAL UNIVERSITY

CITI ETHICS CERTIFICATION

This is to certify that:

Rose Jeudine

Has completed the following CITI Program course:

Basic/Refresher Course - Human Subjects Research

(Curriculum Group)

Biomedical Human Research Course

(Course Learner Group)

2 - Refresher Course

(Stage) Under requirements set by:

Florida International University

Completion Date 09-Jun-2023 Expiration Date 09-Jun-2026

Record ID: 49822699

Verify at www.citiprogram.org/verify/?wd4f24db5-75c7-4da0-937e-a5386586b8c2-49822699

Not valid for renewal of certification through CME.

101 NE 3rd Avenue, Suite 320 Fort Lauderdale, FL 33301 US www.citiprogram.org

DECLARATION PAGE

I, Rose Jeudine, declare that this Quality Improvement Project titled: "Improve Cervical Cancer Screening Adherence Among Minority Group of Haitian Women Living in South Florida as a Result of Education" is my original hard work done as the partial requirement for the accomplishment of the DNP program at Florida International University conducted under the supervision and guidance of Dr. Deana Goldin.

Rose Jeudine

Student ID: 6220631

Palm Beach, Florida

09/2023