

A SALON-BASED CERVICAL CANCER EDUCATION PROJECT: A MIXED-METHODS
STUDY CONDUCTED IN TRINIDAD AND TOBAGO

by

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(Under the Direction of MARSHA DAVIS)

ABSTRACT

Cervical cancer is a major public health problem in the developing world, including Latin America and the Caribbean. Most countries in this region lack organized programs of screening for cervical cancer, despite the proven survival benefits associated with the Pap test. The purposes of this mixed-methods study are to explore the barriers that prevent women in Tobago from obtaining Pap smears and implement and evaluate an intervention designed to affect knowledge, attitude, and Pap smear receipt. Two focus groups (N= 6 and 7) were conducted using a semi-structured interview guide. The proceedings were audio-taped, transcribed verbatim, and coded to generate themes using the constant comparative approach. The main barriers identified by all participants were availability and accessibility of quality services, facilities that lack comfort and privacy, courtesy of providers, knowledge, gender of providers, cancer fatalism, and embarrassment. Phase Two of the four-month pilot study recruited and trained eight hairstylists from seven beauty salons, to deliver cervical cancer messages to women in Tobago. Stylists attended a 5-hr training session to develop skills for delivering messages designed to increase knowledge and Pap test receipt. The intervention consisted of hairstylists delivering the health chat to their clients, in addition to the placement of pamphlets in the salons.

Participants (N= 133) completed a questionnaire at the start of the intervention and a telephone follow-up four months later. At baseline, 27% of eligible women had never had a Pap test, while only 37% had obtained one in the last year. Pap test receipt increased at the end of the intervention. Twenty-six percent of the women in the intervention reported that their hairstylists had spoken to them about cervical cancer and Pap smear receipt. Knowledge of the human papillomavirus as the cause of cervical cancer did not increase post-intervention. This pilot study suggests that there is a continuing need for intervention programs that will raise awareness and increase cervical cancer knowledge and behavior in communities. This study further suggests that hairstylists are willing to use their skills to educate and encourage their customers to engage in informed decision-making. Physicians should also be targeted to increase recommendations from providers for cervical cancer screening.

INDEX WORDS: Cervical Cancer, Barriers to Screening, Salon-Based

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CHAPTER 1

INTRODUCTION

Problem Background

Cervical cancer is a slow growing cancer that forms in the tissue of the cervix; however, cervical cancer is curable and preventable if detected early. The American Cancer Society (2012) estimates that in 2012, 12,170 new cases of cervical cancer with 4,220 related deaths will emerge in the United States. In developed countries, Pap smears and human papillomavirus (HPV) testing have reduced the incidence and mortality from cervical cancer, but the reductions in cervical cancer rates are not equal across all ethnic and racial groups as significant disparities exists. These disparities are evident not only in mortality and incidence rates but also in screening rates. The observed differences can be partially attributed to differences in screening practices, particularly for Hispanics and Asian Americans (del Carmen, 2009).

Cervical cancer is a major public health problem in the developing world, including Latin America and the Caribbean (LAC) (Almonte, Albero, Carcam, Garcia, & Perez, 2008; Muñoz, Franco, Herrero, Andrus, de Quadros et al., 2008; Murillo, Almonte, Pereira, Ferrer, Gamboa et al., 2008). Cervical cancer is the second most common cancer (after breast cancer) among women in LAC (Muñoz, et al., 2008), but until recently, accurate statistics on cancer incidence and cancer- related mortality in LAC countries were not widely available (Phillips, Jacobson, Magai, Consedine, Horowicz-Mehler et al., 2007). In many countries in LAC, cancer registries are non-existent or have limited coverage, and the estimates are usually based on limited registry data in addition to mortality data. Mortality statistics have the great advantage of comprehensive

coverage and availability; however, in many LAC countries coverage is incomplete, and varies according to geographic area and age group (Parkin, Almonte, Bruni, Clifford, Curado et al., 2008). In reality therefore, actual deaths from cervical cancer could be much higher than recent estimates.

Pap smear screening was introduced in LAC at the beginning of the 1960's and although attempts to implement national programs have been engaged in, the successful reduction of cervical cancer incidence and mortality that has been achieved in other developed countries has not been replicated in LAC (Murillo, et al., 2008). Screening programs have failed to reduce the burden of cervical cancer, but other socio-economic factors have been associated with the lack of cervical cancer control. In 2002, an estimated 72,000 cases of cervical cancer and 33,000 related deaths occurred in LAC (Muñoz, et al., 2008). This figure is expected to increase as major demographic changes are occurring in LAC, including population growth and aging. Recent estimates by Parkin et al. (2008) indicate that if current incidence rates continue, and current screening efforts are kept at present levels of effectiveness, by 2025 developing countries will face an increase of 75% in the burden of cervical cancer due to the demographic changes (Almonte, et al., 2008; Muñoz, et al., 2008).

Cervical cancer rates in LAC countries are high compared to other regions of the world, except Africa (Murillo, et al., 2008). The LAC region accounts for 14.6% of the worldwide total of cervical cancer cases, and 11.95% of cervical cancer deaths (Parkin, et al., 2008). Age standardized incidence and mortality rates for the Caribbean are much higher than those for North America according to recent statistics (Table 1) (M. J. Lewis, 2004). The cervical cancer incidence rate in Trinidad and Tobago is about two times higher than the worldwide rate (Ragin, Wheeler, Wilson, Bunker, Gollin et al., 2007). Trinidad and Tobago ranks number 18 in the

region with an age standardized incidence rate of 27.1 per 100,000, which is high when compared to a region such as Puerto Rico with a rate of 8.8 per 100,000 (Almonte, et al., 2008). Mortality rates are much higher in Caribbean countries including Trinidad and Tobago (10.7 per 100,00) than in North America which has a rate of 2.3 per 100,000 (Almonte, et al., 2008).

Table 1

Comparing Age Standardized Cervical Cancer Incidence and Mortality Rates

Country	Incidence	Mortality
Barbados	24.9	9.4
Haiti	87.3	48.1
Puerto Rico	8.8	2.8
Trinidad and Tobago	27.1	10.7
Caribbean	32.6	16.0
North America	7.7	2.3

Source: Almonte et al., (2008)

Description of the Community

Trinidad and Tobago is the second largest and southern-most territory of the West Indies. According to the 2000 national census, the population in both islands is approximately 1.2 million. Of this total, 96% reside in Trinidad and 4% in Tobago. The population is also ethnically diverse with 41% East Indians, 40% Africans, and 19% other groups including Chinese, European, and Middle Eastern residents (Pan American Health Organization, 2007). The estimated literacy rate in 2003 for the population aged 15 and over was 99% with no significant gender differential. Trinidad and Tobago enjoys a stable economy with a high gross

domestic product. At the national level, 21% of households in Trinidad and 26% in Tobago were designated as poor (Pan American Health Organization, 2007).

In 2000, heart diseases, diabetes, malignant neoplasms, and cerebrovascular diseases together accounted for 61% of all deaths. Malignant neoplasms are the third highest cause of death, accounting for 12.4% of all deaths. Among females in the 25 to 85 and older age group, more than half of all deaths were the result of neoplasms of the breast (23%); cervix uteri (11%); colon and rectum (11%); and corpus uteri and ovary (8%) (Pan American Health Organization, 2007). This data shows that cancer education should be made a top priority if efforts are to be made to reduce cancer mortality rates in Trinidad and Tobago.

Significance of the Study

Cervical cancer has many far-reaching effects. Its importance lies in the fact that it affects relatively young, poor women, and as a result devastates families, and is an important cause of lost years of life in developing countries (Muñoz, et al., 2008; Schiffman & Castle, 2005). Sixty percent of this type of cancer occurs in women between 35 and 60 years of age who are in the prime of life and are important supporters of their families (Creel, 2011). For a mix of biological and social reasons, women are more likely to be infected by sexually transmitted infections; are less likely to seek care; are more difficult to diagnose; suffer more severe disease sequelae; and are more subject to social discrimination (Becker & Leitman, 1997).

Approximately two-thirds of all cervical cancers are caused by the HPV 16 and 18 (Almonte, et al., 2008) and women typically become infected with HPV during their teen years and their twenties or thirties (Creel, 2011), while the peak prevalence of HPV is within five to seven years after sexual debut (Scarinci, Garcia, Kobetz, Partridge, Brandt et al., 2010). However, cervical

cancer may require 20 or more years to develop after the initial infection (Creel, 2011), therefore this necessitates the need for continual screening of women once their sexual debut.

Barriers for cervical cancer screening in the region include women's low literacy, cultural and religious factors, competing health needs, limited resources, poorly developed health care services, and limited information on cervical cancer prevention (Murillo, et al., 2008). In many LAC countries, due to limitations, resources are sometimes inefficiently allocated from women at highest risk, (over 30 years old) to low-risk young women who usually attend family planning clinics. The main challenges for screening include high-risk populations (women over 30, those who live in rural areas and/or low socio-economic status), and using a high quality-screening test with adequate diagnosis (Murillo, et al., 2008). Additionally, being able to provide adequate treatment services for women with positive screening results presents another challenge (Murillo, et al., 2008) because of the cost of treatment and lack of treatment clinics.

Most LAC countries lack organized programs of screening for cervical cancer and offer opportunistic screening mainly in urban areas of the region usually through public family planning and reproductive health care facilities and through private medical practices (Murillo, et al., 2008). Vaccination against the two types of HPV that cause 70% of all cervical cancers is not regarded by professionals as a viable option for LAC countries because of the high costs associated with the three-dose vaccine and the logistics of reaching adolescents (Almonte, et al., 2008). Secondary prevention still represents the only recourse for controlling the burden of cervical cancer (Muñoz, et al., 2008).

Vaccination

According to the Centers for Disease Prevention and Control (2011) two vaccines Cervarix and Gardasil are available to protect females against the strains of HPV that cause most cervical

cancers. Gardasil administered in three separate doses, has been shown to protect against HPV types 6, 11, 16, and 18 (Centers for Disease Control and Prevention, 2011). Gardasil also protects against anal, vaginal, and vulvar cancers and is recommended for girls aged 13 to 26 and is most effective when received prior to one's sexual activity. Gardasil also protects males against most genital warts and is available for boys and men who are nine to twenty six years of age (Centers for Disease Control and Prevention, 2011).

Screening Guidelines

According to the American Cancer Society (2012) in newly released screening guidelines, women should begin screening at age 21. Women between the ages of 21 and 30 should have a Pap test every three years and should not be screened for HPV unless it is required after an abnormal Pap test. New cervical screening guidelines no longer recommend that women without symptoms receive Pap tests every year. Women who are between the ages of 30 and 65 should have both a Pap test and a HPV test every five years. Additionally, women who are 65 years and older who have had regular screenings with normal tests results should no longer be screened for cervical cancer, and women who have been diagnosed with precancers should continue to receive screenings (American Cancer Society, 2012a).

Cervical cancer may not have symptoms but can be found with regular Pap tests, which is a procedure in which cells are scraped from the cervix and reviewed under a microscope. A Pap test cannot determine if one currently has or has had HPV; only the HPV test can be used to test for HPV. For women who are 30 years old or older, the HPV test can be performed at the same time as the Pap test.

Cervical cancer is almost always caused by an HPV infection (Almonte, et al., 2008; Parkin, et al., 2008), and HPV is widely accepted as the primary etiologic agent in the

development of cervical cancer (Almonte, et al., 2008). Although cervical cancer starts from cells with precancerous changes, only some of the women with precancers of the cervix will develop cancer. The change from precancers to cervical cancer usually takes several years, but the process can occur in less than a year (American Cancer Society, 2010). Most cases tend to occur in midlife, and most cases form in women who are younger than age 50.

Screening Programs

The current standard of cervical cancer prevention requires three clinical visits. One visit is for screening; one is for colposcopically guided biopsy for women with abnormal screening results; and the last visit is for treating precancerous conditions. Program effectiveness is achieved through iterations of the three-visit cycle, but such repeated testing is usually unattainable in a resource-limited region (Murillo, et al., 2008; Schiffman & Castle, 2005). Furthermore, necessary infrastructure must also be available to transport samples to high quality labs for sample processing and for analysis and interpretation of the results. Quality control within such laboratories must also be monitored over time. The shortage of diagnosis and treatment centers often requires that women with positive screening tests undergo diagnosis, and eventually treatment at distant centers that require the patients to travel repeatedly, or for extended periods of time (Murillo, et al., 2008). This lengthy process often leads to women not obtaining their testing results and forgoing treatment even when diagnosed.

Given the various challenges with implementation of successful screening programs in LAC, novel interventions must be used to increase screening rates. Studies that have observed barriers in several large Spanish speaking countries have been conducted, but LAC is a vast region with many differences including, language, culture, and ethnicity as well as institutional differences. The research for this study comes from Trinidad and Tobago and provides data to

bridge this gap and presents the opportunity to study a population that has been previously unexplored in terms of cervical cancer screening behavior.

Purpose and Rationale

The purposes of this mixed-methods study were to explore the barriers that prevented women in Trinidad and Tobago from obtaining Pap smears and to implement and evaluate a salon-based intervention that was designed to affect knowledge, attitude, and Pap smear receipt. For this project, the target population was women between 25 to 45 years old. Formative evaluation was conducted in Phase 1 of the project. Focus groups were conducted with women to help the researcher to understand the barriers between Trinidad and Tobagonian women and cervical cancer screening as well as their perceptions of cervical cancer screening. Focus groups may be useful at almost any stage in the research process, but such activities may be especially useful for exploratory research when little is known about the phenomenon of interest (Stewart, Shamdasani, & Rook, 2007). Little information is available about the barriers to and perceptions about cervical cancer screening among women in Tobago. Criteria for selection included women between 25-45 years old, who are not already diagnosed with cervical cancer; and women who have not had a hysterectomy.

Results obtained from the focus groups were used to culturally tailor the curriculum to be delivered to the hairstylists enrolled in the study. Hairstylists due to their unique role in the community were chosen to deliver a cancer education intervention to their salon clients. This provided a more targeted intervention and ensured that the barriers and perceptions of the women reached by the intervention were considered.

Phase 2 of the project began by recruiting hairstylists who were trained to act as lay health workers (LHW). A windshield tour was used to identify the salons in the capital,

Scarborough, where hairstylists were invited to join the study. Hairstylists who volunteered and attended training sessions were selected for the research project. Hairstylists were trained to speak to their clients during their hair appointments about the risks and protective factors for cervical cancer and were expected to encourage their clients to obtain Pap smear screenings.

Research Questions

To frame the study, the following questions were posed:

1. What barriers prevent women from obtaining Pap smears?
2. Can women who participate in the beauty shop intervention show an increased rate of Pap smear receipt?
3. Can women who participate in the beauty shop project show increased levels of risk perception toward cervical cancer?
4. Can women who participate in the beauty shop intervention demonstrate an increase in knowledge about cervical cancer?

CHAPTER 2

REVIEW OF RELATED LITERATURE

This chapter reviews, as well as critiques the literature related to cervical cancer screening as well as the use of salons and barbershops as a setting for health education. Particularly, this chapter is organized as follows: 1) risk factors for cervical cancer; 2) barriers to cervical cancer screening; 3) previous interventions and programs; 4) health behavior theoretical constructs; 5) psychosocial factors that influence sexual behavior in the Caribbean; and 6) focus group methodology. First, risk factors for cervical cancer will be discussed. Second, barriers to cervical cancer screening in the United States, United Kingdom and LAC will be discussed. Limited research on cervical cancer that emanates from the LAC region is available; therefore, other studies will be reviewed and it will be hypothesized that some of these barriers may be similar in LAC. Second, well-known interventions and programs that utilize beautyshops/ beauty salons and barbershops will be discussed to present a historical background of the literature. Next, health behavior theoretical constructs are discussed to provide a solid foundation for the conceptual framework used in the study.

Theoretical constructs from the health belief model (HBM) and social cognitive theory (SCT) are reviewed to determine their association with screening behavior evaluated in previous studies. The salient constructs include perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self-efficacy, and cues to action.

Numerous factors influence sexual behavior among Caribbean males and females. These include tourism, violence against women, gender socialization, and communication about

sexuality. The acknowledgment of these psychosocial factors is critical, so interventions that are developed will be culturally relevant to the population.

Risk Factors for Cervical Cancer

HPV 16 and 18 cause the majority of all cervical cancers and these high-risk types of HPV are also associated with other anogenital cancers, penile cancer in men, and anal cancer in both men and women. Investigators found that a total of 26.8% of women overall in the United States tested positive for one or more strains of HPV (Almonte, et al., 2008). The prevalence of the HPV virus was highest in women ages 20 to 24. The persistence of HPV infection is the key to whether exposure to a high-risk type of HPV leads to cervical cancer. If an infection from a specific oncogenic HPV type does not clear within approximately six months, such infected women are at greater risk for cervical cancer precursor lesions (Burchell, Winer, de Sanjose, & Franco, 2006).

Co-Factors for Cervical Cancer

The presence of certain co-factors in combination with the infection will significantly increase the risk of developing cervical cancer. Because HPV infections are sexually transmitted, sexual behavior, including age at first sexual intercourse, number of sexual partners, and sexual behavior of the partner are associated with an increased risk of acquisition (Almonte, et al., 2008).

Number of Sexual Partners

Acquisition of HPV infection is associated with an increase in lifetime sexual partners. In a study among 8,513 participants of the Guanacaste project, the odds ratio for four or more sexual partners compared to one partner was 2.1 (95% CI: 1.7-2.5) (Almonte, et al., 2008). More spousal partners and non-spousal/non-cohabiting partners are more often reported among men

than women, and among the young than the old. The timing of sexual partnership plays a role in determining sexually transmitted infections (STI) spread. Concurrent partnerships are not uncommon; 32 to 54% of adolescents and 12 to 40% of adults in the United States have reported this behavior (Burchell, et al., 2006). Knowing a partner for more than 8 months before sexual intercourse has been associated with a lower risk of HPV acquisition among women, which could be explained by clearance or waning infectivity in the male (Burchell, et al., 2006).

Age at First Sexual Intercourse

Several cross-sectional studies have reported that earlier sexual debuts, or shorter intervals between menarche and sexual debut, are risk factors for prevalent HPV infection. Earlier intercourse may be a marker for other risky sexual behavior, such as greater lifetime number of partners and concurrent partnerships (Almonte, et al., 2008; Burchell, et al., 2006). Observation of a cohort of women in Peru found that acquisition of HPV infection started with the onset of sexual activity and was found to be as high as 42.5% in women aged 15 to 19 after four years of follow-up (Almonte, et al., 2008). LAC provides evidence that the prevalence of virginity among young women is declining over time and that premarital sex is increasing (Burchell, et al., 2006).

The Male Factor

Geographic and cultural variations may influence sexual behavior of women and their male partners and may result in differential rates of new HPV acquisition. Sexual behavior of older men may be more critical than women's in determining HPV spread (Burchell, et al., 2006). Women in LAC tend to remain monogamous once married or cohabiting; however, men do not, so a woman's risk of contracting HPV infection depends strongly on the sexual behavior of her male partner(s). In case-control studies of cervical cancer, male partners of cases reported

higher numbers of partners than those of the control women (Burchell, et al., 2006). Despite its importance, few studies have explored sexual behavior and HPV infection in males mainly because of difficulties in recruiting men and obtaining adequate genital samples for HPV testing (Almonte, et al., 2008). Further research should be focused on HPV in males as this virus can also cause health problems in males including genital warts.

Number of Full-Term Pregnancies

Women with seven or more full-term pregnancies were at higher risk of developing cervical cancer than those who had one or two full-term pregnancies. Research indicates that high parity has probably been an important contributor to the incidence of cervical cancer in LAC region (Almonte, et al., 2008). The overall fertility rate in LAC was 3.9 between 1980-1985 decreasing to 2.5 between 2000-2005. According to the American Cancer Society (2010) studies have pointed to the possibility of hormonal changes during pregnancy causing women to be more susceptible to HPV infection or cancer growth (American Cancer Society, 2012b). Young age at first full-term pregnancy has also been highlighted as a risk factor. Women who were younger than 17 years at their first full-term pregnancy are almost twice as likely to contract cervical cancer later in life than women who waited until they were 25 years or older to become pregnant (Burchell, et al., 2006).

Oral Contraceptives

Among current users of oral contraceptives the risks of cervical cancer increased with duration of use (five or more years versus never use, RR: 1.90). The risks declined once women stopped using oral contraceptives; also, after 10 years or more of cessation, the risks were the same as women who had never used oral contraceptives. This increase in risk can be partially attributed to the fact that women who use oral contraceptives are more likely to be exposed to

HPV than those who use barrier methods or refrain from having sexual intercourse. Even if oral contraceptives are not causally associated with cervical cancer, HPV-positive women who use them instead of barriers methods might be at increased risks (Almonte, et al., 2008). In LAC the use of oral contraceptives is less common than in the United States or the United Kingdom and is unlikely to have had an impact on cervical cancer rates (Almonte, et al., 2008).

Smoking

Women who smoke are almost twice as likely to contract cervical cancer (American Cancer Society, 2012b). A number of laboratory studies have shown that smokers are more likely than non-smokers to have mutagenic cervical fluids. It has also been suggested that smoking may have an immunologic effect that allows HPV to persist in cervical cells and that smoking may contribute to chromosomal instability (Nasca & Pastides, 2008). However, the existence of a dose-response effect of cigarettes per day, and duration of smoking are still controversial. Among high-risk HPV women in the Portland Cohort Study, former smokers, those who smoked less than one pack of cigarettes per day, and those who smoked one or more packs of cigarettes per day were at higher risk of developing cervical cancer compared with those who had never smoked cigarettes (RR: 3.3, RR: 2.9, RR: 4.3 respectively) (Almonte, et al., 2008).

HIV Co-Infection

The UNAIDS estimated that there were approximately 333,000 persons with Human Immunodeficiency Virus (HIV) in the Caribbean in 2005, a region that bears a huge burden of HIV/AIDS. HIV and HPV are both transmitted sexually, but the fact that immunosuppressed women are at increased risk for HPV persistence, and hence cervical cancer, creates great concern in the efforts to reduce cervical cancer (Almonte, et al., 2008). Other sexually

transmitted diseases, such as chlamydia and herpes simplex virus type 2 (HSV-2) have also been associated with an increased risk of cervical cancer among HPV positive women. The mechanism through which chlamydia and HSV-2 operate is likely through the introduction of inflammation at the cervix that could lead to genotoxic damage via oxidative metabolites (Almonte, et al., 2008).

Cervical Cancer Risk Reduction

According to the American Cancer Society (2010) the following measures are effective in avoiding (HPV) infection and thus cervical cancer: abstinence from sexual activity; barrier protection and/or spermicidal gel during sexual intercourse; screening via regular gynecologic examination and cytologic test (Papanicolaou smear); and treatment of precancerous abnormalities. Additionally, avoiding active and passive smoking will decrease the risk of cervical cancer (National Cancer Institute, 2009). Diets high in fruits and vegetables may also protect women against cervical cancer. Recent studies have indicated that low levels of vitamin C carotenoids are linked to increased risk for cervical neoplasia. Evidence also shows that a deficiency of vitamin E and folate may also play a lesser role in cervical neoplasia (Nasca & Pastides, 2008). A focus on dietary guidelines could be effective in lowering rates of cervical cancer in LAC.

Barriers to Cervical Cancer Screening

Cervical cancer occurs mainly in low-resource, underserved regions as part of a complex of diseases linked to poverty, race/ethnicity, and or other health disparities. However, the only two significant determinants of cervical cancer incidence are persistent HPV infection and lack of access to screening (Scarinci, et al., 2010). Cervical cancer screening has been attributed for

the decline in cervical cancer deaths, but middle-aged African American women have the lowest adherence to Pap smear screening (Hoyo, Yarnall, Skinner, Moorman, Sellers et al., 2005).

Hoyo and colleagues (2005) utilized qualitative methods with women between ages 45 to 64 to determine barriers to screening. They defined adherence to the screening guidelines as a self-reported history of a Pap test within the previous 3 years. The perception that the Pap tests were painful was associated with non-adherence to screening recommendations. Difficulty to pay for the office visit, coupled with perceived pain, was associated with a nearly six-fold increase in risk of non-adherence (Hoyo, et al., 2005). Identified barriers to screening also included poor access to health care, a failure to understand the benefits of screening, and perceived racism by health care providers. Perceived pain was found to be a more significant barrier for women who were no longer sexually active (Hoyo, et al., 2005). Pain was also reported as a barrier in another qualitative study with 24 African American women (Ackerson, 2010).

Qualitative interviews with 24 African American women revealed that providers were influential in encouraging routine use of screening (Ackerson, 2010). Additionally, the gender of the provider was cited as a reason for not complying with screening guidelines as many women preferred a female provider and felt that a female provider would make the process easier (Ackerson, 2010).

A study by Fatone and Jandorf (2009) that was conducted in northern Manhattan did not agree with the commonly accepted findings that physicians' recommendations are very significant for screening adherence. The study of 194 African American and Latina women, found that neither insurance nor physician referral for screening played a role in the obtaining of cervical cancer screening. The sample did not represent the typical Hispanic sample as 75-88%

of the women were insured and 76-85% had a primary care provider (Fatone & Jandorf, 2009). Lack of adequate healthcare insurance is a significant factor in screening practices. This situation is evident in many low-income women and is a major factor among Hispanics and African Americans.

Waller, Jackowska, Marlow and Wardle (2011), conducted a qualitative study of 46 women in the United Kingdom who had either never attended cervical screenings or did not attend regularly. Women in the United Kingdom are invited to be screened every three years from 25 to 49 years old; and every five years from 50 to 64 years old. The study found age differences in barriers to screening as older women were more likely to have made an active decision not to attend screening and may cite reasons, such as embarrassment and the fear of pain. Practical barriers were raised more often by younger women such as time, or difficulties in arranging an appointment, and older women had more negative attitudes to screening (Waller, Jackowska, Marlow, & Wardle, 2011). System level barriers have been cited by health professionals and may include time pressures, risk perception, lack of knowledge, and psychological barriers (Waller, et al., 2011).

Another contributing factor to screening behavior is a woman's level of knowledge regarding HPV, its link with cervical cancer and Pap test (del Carmen, 2009; Hoyo, et al., 2005). Having a regular source of care (Mandelblatt, Gold, O'Malley, Taylor, Cagney et al., 1999), and a regular clinician at the source of care has also been found to be associated with screening behavior (O'Malley, Mandelblatt, Gold, Cagney, & Kerner, 1997). Having a physician recommend screening can encourage compliance among women (Ackerson, 2010).

The most frequently reported barriers to African American women obtaining recommended cancer screenings in a community-based cancer prevention trial in North Carolina

were lack of knowledge of which tests to have; failure to obtain a physician's recommendation; lack of knowledge of when to have tests; not knowing anyone who talks about screening tests; not thinking about getting screening tests; and fear that screening tests may find cancer (Reiter & Linan, 2011). These barriers need to be specifically addressed in interventions targeting African Americans so that screening and mortality disparities can be reduced.

Cancer Fatalism

Cancer fatalism is the belief that death is inevitable when cancer is present. This has been identified as a barrier to participation in cancer screening, detection, and treatment (Powe & Finnie, 2003). Straughan & Seow (1998) define fatalism as a belief that some health issues are beyond human control on the basis of certain views about luck, fate, predestination, and destiny (Straughan & Seow, 1998). Fatalistic beliefs about cancer prevention may inhibit individuals from engaging in prevention behaviors by increasing external locus of control, reducing self-efficacy, and motivation to perform screening behaviors. Cancer fatalism is often listed as a barrier for African Americans who access screening and can be regarded as the end result of historical, cultural, and socio-economic dynamics that have impacted their life experiences (P. D. Morgan, Tyler, & Fogel, 2008). Fatalistic beliefs about cancer prevention among adults are characterized by pessimism, helplessness, and confusion about ways to avoid getting cancer. These beliefs are associated with lower odds of engaging in prevention behaviors including, regular exercise, not smoking, and regular fruit and vegetable consumption (Niederdeppe & Levy, 2007).

African American women are more likely than any other racial and ethnic group to present with breast cancer at a later stage when initially diagnosed (Vona-Davis & Rose, 2009), and this outcome is partially due to delayed screening. Cancer fatalism may be one of the

reasons why screening behavior is delayed. Across numerous studies, the majority of female participants who held fatalistic views were African American, less educated (Niederdeppe & Levy, 2007), of lower socio-economic status, and over the age of 50. Studies have found that cancer fatalism scores are also higher for African American women than for Caucasian women or men of either race (Gullatte, Brawley, Kinney, Powe, & Mooney, 2010). Fatalism is also closely linked to spirituality and religiosity in African American women.

Spirituality

Historically, the church has been used as setting to reach African Americans with many health messages including cancer screening, hypertension, and weight loss. Traditionally, African American women hold strong religious and spiritual beliefs upon which they often base decisions regarding health and illness (C. L. Holt, Lee, & Wright, 2008). Older African Americans, in particular, are often frequent church attendees and can have high levels of religiosity (Paskett, Case, Tatum, Velez, & Wilson, 1999). Through faith-based educational interventions, the power of faith as experienced by African Americans can counteract the cancer fatalistic attitude that has been documented in low-income, low-literacy, and isolated neighborhoods (P. D. Morgan, et al., 2008).

Belief in the superiority of spiritual or religious intervention by a higher power through prayer or laying on of hands as an alternative to medical treatment could be a reason why African American women may delay screening even when lumps are felt (Gullatte, et al., 2010). A national study found that African American women reported using religion/spirituality for health reasons, and those women who did were more likely to have used complementary and alternative medicines and to have seen a medical doctor in the past year compared to those who did not report using religion/spirituality (C. L. Holt, et al., 2008).

Obesity

African American women have the highest rates of being overweight or obese compared to other groups in the United States. Approximately four out of five African American women are overweight or obese (Office of Minority Health, 2011). Obese women may have higher mortality from cancer because of lower rates of cancer screening (Amy, Aalborg, Lyons, & Keranen, 2006; Ferrante, Chen, & Jacobs, 2006). Clinicians are seeing more overweight patients, and lower screening rates in obese women can be expected to result in late stage diagnoses among these women. Lack of screening is evident in cervical cancer data where mortality rates are higher among obese women.

Obesity through its hormonal action may play a role in the pathogenesis of cervical cancer. Maruthur and colleagues (2008) conducted a literature review to determine whether obesity is associated with cervical cancer screening and whether this association differed by race. They reviewed a total of 11 studies and found that there was an inverse association between obesity measured by body mass index (BMI) and cervical cancer screening. The results indicated that compared to lean women, women with BMI above 40 were 40% less likely to undergo cervical cancer screening. This study did not find any association between obesity and race (Maruthur, Bolen, Brancati, & Clark, 2009). Additionally, another study that used retrospective chart review focused on minority women revealed similar findings that obese African American women are also less likely to obtain cervical cancer screening (Ferrante, et al., 2006).

Body weight is being independently recognized as an independent predictor of gynecologic cancer screening (Aldrich & Hackley, 2010). Several reasons have been cited that relate to possible patient and physician related barriers to Pap testing. First, obese women may

delay medical care because of negative body image, embarrassment, and a perceived lack of respect from health care providers. Second, they may also be trying to avoid unwanted weight loss advice (Aldrich & Hackley, 2010; Amy, et al., 2006). Clinicians usually ascribe patient's diverse health complaints to obesity alone and give unwanted counsel on weight loss (Aldrich & Hackley, 2010). Third, obese women may have differences in attitudes toward the process. Obese women are often reluctant to undergo pelvic exams and physicians may also be reluctant to perform pelvic exams on reluctant patients (Ferrante, et al., 2006). Fourth, providers have reported difficulty in providing care for obese women and have cited technical difficulties in performing Pap testing in obese women due to anatomy and inadequate equipment. Overweight women report that the use of medical equipment, gowns, and examinations tables that were too small made the visit awkward or even painful (Aldrich & Hackley, 2010; Amy, et al., 2006; Ferrante, et al., 2006). Obesity rates are on the increase and may be a significant factor that needs to be addressed to improve screening rates among women.

A study with primary care providers found that more than half of the respondents also stated that they had received no specific training on providing gynecologic care to severely obese patients and expressed a desire for such training (Aldrich & Hackley, 2010; Amy, et al., 2006). Obesity-related comorbid conditions may hinder performances of purely preventative services in obese women (Aldrich & Hackley, 2010; Ferrante, et al., 2006). Additionally, physicians may suffer from biases against obese women, which make them less likely to recommend routine screening (Amy, et al., 2006; Maruthur, et al., 2009). A literature review by Aldrich and colleagues (2010) found that in general, the association between BMI and breast cancer screening was not as consistent as the association between obesity and cervical cancer screening.

Obesity is associated with Pap smear receipt among minority women but not with mammography receipt (Ferrante, et al., 2006).

Barriers to Cervical Cancer Screening in Latin America and the Caribbean

Qualitative studies conducted in the five LAC countries of Venezuela, Ecuador, Mexico, El Salvador, and Peru highlighted the barriers of cervical cancer screening. Barriers to seeking prevention services highlighted from this study can be classified as barriers that relate to the provision of health services and barriers that pertain to women's beliefs. The main barriers from the perspective of health service providers include: accessibility to health centers and the availability of quality health services. These barriers included having to travel long distances to get to the facility and poor performance of service delivery, including long wait times inside the clinic. Slow turnaround time of results including mismanagement of information and even loss of results were cited as additional barriers. In many regions partial delivery of services was noted, as older women at risk for cervical cancer did not undergo screening because this service was offered primarily within family planning or maternal health services (Agurto, Bishop, Sanchez, Betancourt, & Robles, 2004).

Agurto and colleagues (2004) advanced transportation costs and time as constituting barriers to prevention and treatment in Mexico and Ecuador. Financial dependence on the husband often acted as a preexisting barrier for the woman, as was found in Ecuador. Women were also concerned about the costs of treatment and medicine, which acted as a deterrent to their obtaining screening. Privacy was not guaranteed during pelvic examinations at health care centers and women reported interruptions during their examinations. Examinations were also held in corridors of the facility or in other similarly inconvenient locations. In Venezuela, women mentioned that health campaigns perform pelvic examinations in places that are not

appropriate for the examinations, such as in schools or in houses (Agurto, et al., 2004). Women in all studies reported discourteous and disrespectful manners from health providers.

Information and counseling were often not adequate for women's understanding, and when they were referred for treatment, they often did not fully understand why they were referred (Agurto, et al., 2004).

Fear has been cited as an additional barrier that can prevent screening. A great amount of fear stems from negative images of cancer and gynecological care in LAC. Women interviewed in a variety of countries have reported powerful and frightening perceptions of cancer. Cancer seems to be understood as a disease that penetrates and takes over different parts of the body. These fears may contribute to a woman's reluctance to obtain screening. Images of cancer were associated with words such as "devour or eating," "putridity or plague." For example, in Mexico, terms used to describe cervical cancer included, "rotting or devouring of the womb" (Agurto, et al., 2004).

Summary of Studies on Barriers to Cervical Cancer Screening

Barriers to screening highlighted in this review included painful Pap smears, lack of a physician's recommendation, lack of health insurance, obesity, and cancer fatalism. Most of the studies conducted to identify barriers to cervical cancer screening utilized qualitative methods (Ackerson, 2010; Hoyo, et al., 2005; Waller, et al., 2011). Qualitative methods usually indicate that small sample sizes have been used and the results are therefore not generalizable. On the other hand, qualitative data provides rich and in-depth information and is well suited to capturing the detailed experiences of the women, which is hardly gained by quantitative means. Fatone and Jadorf (2009) in their study had a larger sample size of 194 women that completed a needs

assessment survey. It is clear that more studies are needed to further understand barriers that women face in accessing and undergoing screening.

Beauty Salons and Barbershop Interventions

Beauty salons are unique and important institutions within the African American community. Beauty salons are located in all communities and women frequent them regularly, with visits that may range from weekly to at least once every 4 to 8 weeks. Women may usually spend from 45 minutes to 5 hours depending on the services received (Linnan & Ferguson, 2007). The beauty salon is a place where women exchange social support often in the form of advice, support, and empathy. Cosmetologists are often perceived as central to the supportive atmosphere and may be regarded as “natural helpers” for the exchange of information (Solomon, Linnan, Wasilewski, Lee, Katz et al., 2004). Focus group data gathered from clients in a salon-based intervention indicated that they regarded their stylists as trusted advisors and had known them for an average of eight years (Madigan, Smith-Wheelock, & Krein, 2007). Research shows that the average cosmetologist sees 47 clients per week (Linnan, Kim, Wasilewski, Lee, Yang et al., 2001), which places a large audience in close proximity to them for health education.

Health is usually a topic that may be discussed (Linnan & Ferguson, 2007), and customers and cosmetologist talk to each other regularly on topics, such as nutrition and physical activity (Linnan, et al., 2001; Solomon, et al., 2004). Salons may also have multi-media equipment e.g. televisions, DVD players, and usually have a wide range of reading materials, including magazines (Solomon, et al., 2004). Black cosmetologists have been used to promote diabetes awareness, hypertension knowledge, stroke awareness, chronic kidney disease awareness, and breast cancer screening (Solomon, et al., 2004). Beauticians, in conjunction with barbers have also educated patrons about sexually transmitted diseases and HIV/AIDS (Y. R.

Lewis, Shain, Quinn, Turner, & Moore, 2002). Beauticians and barbers are poised to educate a large segment of the population if given access to training and information to present to their consumers.

The North Carolina Bringing Education and Understanding to You (BEAUTY) and Health Project was a pioneering study funded by the American Cancer Society that began in 2000, and ran for four years. It was designed to test different cancer prevention strategies among African American women who attended 40 North Carolina beauty salons. Salons were eligible to participate in this study if they: (1) served at least 75 customers, (2) served primarily African American customers, (3) were located within a 75 mile radius of Chapel Hill, and (4) were not part of a franchise (Linan, Rose, Carlisle, Evenson, Mangum et al., 2007). This study utilized a community-based participatory research (CBPR) approach and worked in partnership with beauty salons and licensed cosmetologists who formed an advisory board to manage the project.

Linnan et al. (2001) designed a study to assess the interests and preferences of licensed cosmetologists about sharing health information with clients and used mailed surveys to collect data from 49 women. The results indicated that stylists routinely talk with their customers and health was a key topic. The stylists were interested in obtaining additional health training to promote health in their salons. The cosmetologists preferred sharing health information with clients by distributing pamphlets or reading materials (69.4%); talking with clients (61.2%); placing posters/mirrors stickers in the work area (59.2%); referring clients to other health agencies (44.9%); and showing clients a video (18.4%). Stylists felt most comfortable discussing physical activity, healthy eating, and maintaining and achieving a healthy weight with their customers (Linnan, et al., 2001).

Another pilot study by Linnan et al. (2005) utilized a community-based participatory

research (CPRB) approach to recruit and train five licensed cosmetologists from two beauty salons to deliver health promotion messages to their customers. The study examined the effectiveness of using stylists to deliver health messages. One salon served predominantly African American women while the other served predominantly White women. Stylists attended a 4-hour workshop to learn skills for delivering targeted health messages. Key cancer prevention messages included eating fruits and vegetables and engaging in physical activity. Educational displays in the salons were used to reinforce these messages during the 7-week intervention. Qualitative and quantitative methods assessed satisfaction, readiness to change, and self-reported health behavior changes in customers immediately post-intervention and at 12 months. Results indicated that 81% of the customers read the educational displays, and 86% of customers talked with their cosmetologists about the Bringing Education and Understanding to You Project (BEAUTY). At 12 months, 55% of customers reported making changes in their health because of conversations they had with their cosmetologists. Customers who spoke more often with their cosmetologists about health also reported a higher percentage of self-reported behavior change.

Linnan, Emmons & Abrahams (2002) in a study titled, "The Rhode Island Smokefree Shop Initiative," tested the feasibility of using hairdressing facilities to deliver smoking policy interventions. A smoking policy intervention was developed and tailored to the shop owner's self-reported readiness level. After 12 months, telephone calls revealed that 22% of the high readiness facilities reported a change to a more restrictive smoking policy, and 48% of the respondents reported adopting a total smoking ban (Linnan, Emmons, & Abrams, 2002). It was also made clear that hairdressing facility owners were interested in the link between beauty, health, and smoking. Respondents exposed to the intervention demonstrated improved knowledge about the health and beauty risks of smoking and secondhand smoke. This study

revealed that hair salons could be used to address smoke free policy in the workplace (Linnan, et al., 2002).

Sadler, Thomas, Gebrekristos, Dhanjal & Mugo (2000) pilot-tested a randomized trial using eight cosmetologists who were recommended by community leaders to change knowledge and attitudes about breast cancer. They were randomized to either an active or passive educational intervention. Cosmetologists in both arms of the study received one-on-one training, printed materials, and posters. Cosmetologists in the active arm though, received more in-depth training and additional training materials for clients. An African American ancestral storyteller worked with the stylists to be able to include key health facts in a manner that could be retained and repeated to clients easily as a part of the tradition of oral storytelling. Telephone follow-up of 145 clients four months later, revealed that 64% indicated that their cosmetologists had given them breast cancer information compared to 4.3% of the women in the control group (Sadler, Thomas, Gebrekristos, Dhanjal, & Mugo, 2000). Limitations of this study included a small and non-representative sample.

Another study by Sadler et al. (2004) successfully utilized beauty salons in San Diego, CA as a place for African American women to complete surveys about diabetes-related beliefs, screening behaviors, knowledge, and attitudes. African American clergy and female church leaders identified cosmetologists that may have been suitable for the study. Twenty stylists enrolled their salons in the study. An undergraduate African American research assistant was used to recruit the salons' clients, along with a display of self-administered consent documents and surveys, in conjunction with the cosmetologists' encouragement. Fifty-nine percent of the women in the study perceived diabetes to be a serious health threat, while 32% percent had been screened for diabetes. Almost 37% of the participants reported never having been screened for

diabetes. Women in the study had a limited knowledge of the symptoms of diabetes, ways to decrease the risk factors, and the sequelae of diabetes (Sadler, Meyer, Ko, Butcher, Lee et al., 2004).

Sadler et al. (2007) based a study about breast cancer knowledge and screening practices among (N= 1,055) African American women in 20 salons in San Diego, CA. African American community leaders identified the salons through word-of-mouth referrals. Salon clients reported low rates of adherence to recommended breast cancer screening guidelines. Thirty-one percent reported performing breast self-examinations every month. Among participants 40 and older, 57% reported having a clinical breast exam and 43% reported having a mammogram in the past year (Sadler, Ko, Cohn, White, Weldon et al., 2007).

Another large salon-based study was evaluated by Madigan, Smith-Wheelock & Krein (2007) who examined the National Kidney Foundation of Michigan's program titled, 'Healthy Hair Starts With a Healthy Body', which started in Detroit in 1999. The campaign was designed to educate African American men and women about their risk factors for chronic kidney disease and aimed to reduce diabetes and hypertension. Between 1999 and 2005, the campaign trained approximately 700 stylists and reached more than 14,000 clients (Madigan, et al., 2007). The intervention relied on hairstylists to educate their clients on nutrition awareness and the importance of exercise. The hairstylists received eight hours of training, which was completed on two consecutive Mondays, their weekly day-off prior to starting the intervention. The intervention utilized the "health chat," educational materials, and risk assessment information. Self-reported data indicated that after the evaluation period of 12 weeks, 60% of the clients had taken steps to prevent chronic kidney disease or to seek a physician's advice. A telephone survey conducted six months after the intervention suggested that clients maintained some

behavioral changes, and remembered an enduring campaign message of eating healthier and exercising regularly. Focus group data indicated that the clients had patronized their shops for an average of 90 minutes on a bi-weekly basis. Hairstylists received \$4.00 for each “chat form”, which was a self-administered survey instrument that was completed by the salon clients (Madigan, et al., 2007).

Wilson et al. (2008) evaluated the effectiveness of breast health promoting messages administered by African American or Afro-Caribbean salon stylists over a three-month period in a quasi-experimental study design (n= 816 experimental group). Forty salons that mainly served African Americans, Afro-Caribbean and a Hispanic clientele were targeted in Brooklyn, NY. Training for the hairstylists were two, 2-hour workshops. The hairstylists were also provided with written materials that indicated where to obtain breast-related health services. These salon stylists usually saw an average of 33 clients weekly. Post intervention surveys were conducted with 1,210 participants and at the conclusion of the intervention, 37% of the women at the experimental salons compared to 10% at the control salons reported exposure to breast health messages. Self-reported exposure was associated with improved breast self-examination rates (Wilson, Fraser-White, Feldman, Homel, Wright et al., 2008).

The beauty shop stroke education project was conducted by Kleindorfer, et al. (2008) in Cincinnati, OH and Atlanta, GA with thirty beauticians. The African American beauticians were educated about stroke warning signs and risks factors by the principal investigator. A stroke survivor was used to describe her experiences during the training of the beauticians. Study packets with brochures describing strokes, heart healthy cookbooks, and wallet cards with warning signs of strokes were distributed to beauticians to be given to clients. Clients were assessed on knowledge at baseline, six weeks, and five months with a pre and post survey. The

number of women who knew three warning signs significantly improved from 40.7% at baseline to 50.8% at six weeks. This improvement was evident even at the five-month follow-up. The intervention was ineffective for identifying three risk factors among participants. Women were also more aware of the need to call 911 after a stroke; this knowledge increased from 85.9% to 94.1% from pretest to post-test. Beauticians received \$10.00 from the study coordinator for each completed survey (Kleindorfer, Miller, Sailor-Smith, Moomaw, Khoury et al., 2008).

Barbershop Interventions

Black churches are commonly used as community partners for medical outreach, but regular church attendance is less common among black men than women (Hart & Bowen, 2004; Victor, Ravenell, Freeman, Leonard, Bhat et al., 2011). Thus, other secular sites have been regarded as appropriate for reaching large numbers of African American men. For decades African American barbershops have been places where men go to engage in dialogue and debate. They go to barbershops for fellowship without feeling threatened, regardless of age, income, background, or walk of life. These places are also used for playing cards, chess, or board games. Topics that range from sports and local events, to religion, and family issues are discussed (Hart, Underwood, Smith, Bowen, Rivers et al., 2008). In his book, *“Do Bald Men Get Half-Price Haircuts,”* Staten says that the barbershop is the community center in many places. He also writes that one learns more in the barbershop than could ever be learned from any newspaper (Staten, 2001).

Studies have found that barbers like cosmetologists do not require scripts for cancer-prevention conversations but needed to learn the facts, so they could weave facts naturally into their exchanges with clients (Luque, Rivers, Kambon, Brookins, Green et al., 2010). In a recent report of African American barbershop recruitment for prostate cancer education, Hart et al.

(2008) reported that all of the proprietors would allow their clients to learn about prostate cancer, and 96% indicated they would consider allowing their clients to have access to handheld computers to learn about prostate cancer (Hart, et al., 2008). A pilot study in eight barbershops in Miami, FL also showed that African American men were willing to participate in nutrition education and gave positive reviews during and after the process (Magnus, 2004). The barbershop may be the ideal setting to target medical problems that disproportionately affect African American men, such as prostate cancer, hypertension, nutrition, and diabetes.

African American men have world's highest rates of prostate cancer, with more than twice the mortality rate of Caucasian Americans (Woods, Montgomery, Belliard, Ramirez-Johnson, & Wilson, 2004). In an effort to address this disparity, the Prostate Cancer Education Council of Central New York was formed in 1999 to promote education, prevention, and early detection of prostate cancer in African American men. In 2000, the Prostrate Cancer Education Council began planning an educational program that would be offered in barbershops. The purpose of the study was to raise prostate cancer awareness and to promote healthier behaviors (Coward, Brown, & Biro, 2004). Owners of six barbershops in Syracuse, NY were recruited and offered on-site education from nurses that targeted African American males over age 40. The study concluded that the natural social environment of the barbershop fostered relaxed interactions about a challenging topic that helped to dispel fears about cancer, as well as the distrust of health care providers among this population.

Barbershops vary in size and demographics, so an understanding the uniqueness of these environments is vital to tailoring the message to be delivered. A mixed-methods study by Fraser et al. (2009) was designed to develop and test the efficacy of a prostate health curriculum to train African American and Afro Caribbean barbers in Brooklyn, NY. Focus groups were conducted

to inform the curriculum, which was pilot-tested in training sessions that lasted 2.5 hours on Mondays, (which barbers reported were not very busy days). Twenty-one barbers participated in the focus groups. In surveys administered to 19 barbers and 92 customers, more than 90% of the barbers expressed a willingness to obtain prostate cancer information specifically to share with their customers. Eighty-three percent of customers expressed an interest in obtaining prostate cancer information, and they were willing to obtain that information from their barbers (Fraser, Brown, Homel, Macchia, LaRosa et al., 2009). Limitations of the study included a small sample size and lack of generalizability to other barbershops with a different demographic clientele

Victor et al. (2009) designed a randomized clinical trial to assess whether barbershops could be used to promote hypertension screening in Dallas County, TX. Sixteen African American-owned barbershops that had been in business for 10 years or more, were randomized in a 10-month trial. Barbers were instructed to offer a blood pressure check with each haircut and encourage appropriate medical referrals. The clients were offered free haircuts as an incentive to give their consent to receive blood pressure screenings. Additionally, financial incentives and training were provided to the barbers who incorporated stories of other clients modeling the desired behaviors to support and encourage improved health behaviors. The comparison barbershops received standard pamphlets written by the American Heart Association. Participants in the study underwent a 10-week baseline blood pressure screening. At the 10-month follow-up, the hypertension control rate increased more in the intervention barbershops than in the comparison barbershops. Comparison barbershops also realized an improvement in blood pressure rates. Barbers were paid \$112.00 per hypertensive patron and \$21.00 per patron for haircuts (Victor, et al., 2011). Limitations included the lack of generalizability as it was confined to one county and a population that was predominantly middle-class.

Blood pressure testing was also the target of a study by Hess et al. (2007) in which two non-randomized feasibility studies were conducted to determine whether barbershop blood pressure monitoring and peer education would lower blood pressure more than standard education and screening. The participants were African American men between the ages of 40 and 60 years and were the clients of three barbershops in Dallas, TX. The first part of the study was a screening intervention administered by study personnel for eight months. In the second study, barbers were trained to perform blood pressure monitoring, recording, and interpreting for customers. Six barbers reported 8953 blood pressure checks during 11,066 haircuts. Results indicated that blood pressure monitoring, health education, and referrals can be appropriately made by barbers (Hess, Reingold, Jones, Fellman, Knowles et al., 2007).

Luque et al. (2010) assessed the feasibility of training barbers to deliver a culturally and literacy appropriate prostate cancer educational intervention to urban African American men. Eight barbers identified by snowball sampling received 10 hours of training to deliver a two-month educational intervention. The main criteria for barbershop inclusion was service of predominantly older, African American clientele, and willingness of a pair of barbers at each shop to complete the training and pilot the intervention. The training curriculum was adapted from an existing curriculum designed for Hispanic lay health workers, on cervical cancer. The barber's prostate cancer knowledge gains were evaluated with a pre and post survey. The training workshops led to a significant increase in mean prostate cancer knowledge score among the barbers (60% before to 79% after training). The barbers reported positively on the intervention and the relative ease of engaging the clients. During the intervention period the barbers completed 115 encounter notecards and distributed approximately 500 brochures (Luque, et al., 2010).

The National Minority Male Health Project at Bowie State University developed a campus and community-based model to gather health-related information from African American men as a result of health screenings that were conducted in local barbershops during a routine visit for a haircut. Forty-two African American males, aged 16 to 65 who visited the barbershop for their routine haircuts received health screenings in seven areas. Health screenings conducted in the barbershops included blood pressure, body mass index (BMI), glucose level, prostate-specific antigen, cholesterol, triglyceride level, and carotid ultrasound scans. Subjects who completed a health screening also completed an anonymous written survey. The screenings revealed that 86% of the men had blood pressure levels that were above normal; and 60% of the men had above normal BMI levels. Two participants in danger of developing a stroke due to carotid artery blockages detected during screenings were referred to a hospital. Limitations to this study included the non-random selection of barbershops and clients, and a moderate sample size (Bragg, 2011). Early detection of disease can help to reduce the mortality rate of African American men due to chronic disease; and barbershops may be well poised to do so.

Review of Methodologies

The majority of interventions carried out in barbershop and beauty salons utilized a pre-post design (Linnan, et al., 2002; Linnan, Ferguson, Wasilewski, Lee, Yang et al., 2005; Madigan, et al., 2007; Sadler, et al., 2000). This design is efficient for use and cost, but they may be prone to history, testing, instrumentation, and regression threats. The single group design may also be problematic and may yield biased estimates of the program. Victor et al. (2009) utilized a control group in a cluster randomized trial in his barbershop study to educate patrons about hypertension; cluster randomization can be seen as a strength of this study design as it may have prevented contamination of the intervention. Wilson et al. (2008) also had a

control group in his study designed to address breast cancer education. Sadler et al. (2000) used a randomized trial to change knowledge and attitudes about breast cancer in their pilot study, which clearly showed that the changes in the study might have been due to the intervention.

Hess et al. (2007) utilized a quasi-experimental design with a sufficiently long follow-up time of eight months to assess changes in hypertension. The groups were also similar at baseline, but this study also had a high rate of non-participation. The attrition rate was noted due to changing barbers, but 80% of the cohort was followed. Wilson et al. (2008) had a randomized trial but noted that only 16% of the salons that were approached agreed to participate in the study. This study may also have been affected by a history threat, when high profile studies placed doubt on the effectiveness of mammograms and breast self examination in the media.

The selection of samples was generally cross-sectional and one could assume a selection bias. In addition to using a cross-sectional sample, sample sizes were also small and not representative of the general population (Linnan, et al., 2001; Madigan, et al., 2007; Sadler, et al., 2000). Sadler et al. (2000) also had a small potentially non-representative sample with an unclear refusal rate. Many studies neglected to include the refusal rate for their studies. Statistical analysis also did not control for education, age, or many other variables that may have affected the results. The small sample sizes may have overestimated the effects of the intervention. Hoyo et al. (2005) study results had large confidence intervals, which casts doubt on the reliability of the results.

The validity and reliability of the instruments used to measure the constructs of knowledge and attitudes in the studies have not been adequately assessed. Standardized scales have not been used and the differences noted may be due to the difference in tests. Identical pre

and post-test questions were used to assess attitudes and knowledge in Sadler et al. (2000). Most interventions were also conducted for 3-4 months.

The education levels of the barbers and hair stylists have not been provided, except in one study conducted by Kleindorfer et al. (2008). Wilson et al. (2008) suggested that the health information might have been too complicated for the stylists to convey, which, as a result, degraded the effectiveness of the intervention. The nature of health information may sometimes be technical and could affect the delivery of the intervention or even prove to be crucial to the delivery of the interventions. Consequently, the result of the interventions may vary as hairdressers or barbers vary in the degree to which they administer the interventions.

Results from beauty salons may not be generalizable as the study sample may represent a sample that is better educated than the average woman or man, in that they had sufficient discretionary income to purchase beauty salon services (Fraser, et al., 2009; Kleindorfer, et al., 2008; Sadler, et al., 2004). Also, the population that accesses these services more frequently are likely to have heard more messages and may be the population that needs it the least. They may have higher incomes than the average population and may be better educated.

Summary of Theories Used in Interventions

The social ecological framework (SEF) has been the basis of many of the interventions that utilize the barbershops and beauty salons. This theory posits that individual health behavior is influenced at multiple levels. The political economy of health, a macro-level theoretical perspective has been introduced (Linan, et al., 2007) to fill the gaps created by the SEF. SEF has tried to address factors at the intrapersonal, interpersonal, and organizational level, but there exists a gap in recognition of how to best understand and intervene at the macro levels of the SEF. It is argued that the ecological perspective may neglect the historical and political context

critically important to successful settings-based health promotion research and practice (Linan, et al., 2007). Political economy of health is not a single theory but a broad theoretical framework that emphasizes how history, the economy, policy, and society affects the lives, experiences, health status, and life chances of individuals and groups. The political economy of health theory offers a critical lens that allows one to fully explore the beauty salon as a historical, economic, political, and social context for understanding how to best reach and address disparities in health among African American women.

Hess et al. (2007) based his intervention on the social cognitive theory. Several interventions incorporated a community-based participatory research approach to their research (Cheryl L Holt, Kyles, Wiehagen, & Casey, 2003; Kleindorfer, et al., 2008; Linnan, et al., 2005; Linnan, et al., 2001; Luque, et al., 2010). Another study by Victor et al. (2011) developed a behavior theory based intervention that was conducted by barbers. The theoretical underpinning was the CDC's Prevention AIDS Community Demonstration Project. Several key elements of the program included an in-depth assessment of the needs of the target population to sharply define specific behavioral objectives; a focus on making risk avoidance socially desirable; mobilization of trusted community peers to administer the intervention; utilization of peer experience (role model stories as the primary medium for health messaging; and provision of medical equipment in daily life).

Health Behavior Theories

The health belief model (HBM) has been widely used to frame studies relating to the prediction of health related behaviors. The HBM was first developed in the 1950s by social psychologists Hochbaum, Rosenstock and Kegel working in the U.S. Public Health Services to prevent and detect disease. The model was initially developed in response to a free tuberculosis

(TB) screening program in mobile X-ray units located in various neighborhoods (Hochbaum, 1958). Initially, Hochbaum (1958) studied perceptions about whether individuals believed they were susceptible to TB and their beliefs about personal beliefs of early detection. Among those individuals who believed they were susceptible to tuberculosis and believed in the overall benefits of early detection, 82% had at least one voluntary chest X-ray. Of the group with neither of these beliefs, only 21% had X-rays during the period. The model was later extended to study people's responses to symptoms and their behaviors in response to a diagnosed illness, particularly adherence to medical regimens (Glanz, Rimer, & Lewis, 2002, p. 47).

The HBM contains several primary concepts that predict why people will take action to prevent, screen for, or control illness conditions; these concepts include susceptibility, seriousness, benefits, barriers to a behavior, cues to action, and most recently self-efficacy (Glanz, et al., 2002). A stimulus is usually thought necessary to trigger the decision-making process, and this cue to action might be internal or external, such as a physician's recommendation. In 1988, Rosenstock and colleagues suggested that the HBM would be strengthened by the addition of self-efficacy; which is a belief in one's own competence in implementing a specific recommended behavior (Janz & Becker, 1984).

The HBM is based on the core assumptions that a person will take a health-related action if that person feels that a negative health condition can be avoided. Action is also likely to be taken if the person expects a positive result due to the following a recommended action, he/she will likely avoid a negative health condition. If the person feels that he/she can successfully follow the recommended health action, that confidence is likely to further encourage them to practice the health-related behavior.

HBM constructs have been associated with cancer screenings in many previous studies. Assessments of HBM constructs relevant to breast cancer screening have been related to both the behaviors of breast self-examination (Champion, 1993) and mammography (Champion, 1999). In 1984, Champion developed and validated scales for perceived susceptibility, severity, benefits, and barriers to breast self-examination. Rawl, Champion, Menon and Foster (2000) have developed HBM scales for use with colorectal cancer screenings (Rawl, Champion, Menon, & Foster, 2000).

Self-Efficacy

Self-efficacy is defined as the conviction that an individual can successfully execute the behavior required to produce the outcome (Bandura, 1977). Bandura (1977) hypothesized that expectations of personal efficacy determine whether coping behavior will be initiated; how much effort will be expended; and how long it will be sustained in the face of obstacles and aversive experiences. The idea that self-efficacy beliefs influence the feelings, choices of humans and their motivation has been widely used to study a variety of behaviors from increasing physical activity among children (Kelder, Hoelscher, Barroscos, Walker, Cribb et al., 2005), to smoking cessation among adults (Gotay, 2005), and improved disease management for arthritis (Theis, Helmick, & Hootman, 2007). Self-efficacy makes an ideal target for intervening in health promotion studies because it is a modifiable factor that can be targeted through interventions by using personal experiences, persuasion, and vicarious experiences learned from observing or modeling. Self-efficacy has been adopted for use in many other theories, including the theory of planned behavior and social cognitive theory.

Social Cognitive Theory

Social cognitive theory (SCT) was first known as social learning theory, which was a theory proposed by Miller and Dollard in 1941 and was based on the operation of established principles within the human social context (Bandura, 1977). Social learning theory was later renamed social cognitive theory when concepts from cognitive psychology were integrated to accommodate the growing understanding of human information processing capacities and biases that influence learning from experience, observation, and symbolic communication (Glanz, et al., 2002, p. 170). SCT posits that human behavior is the product of the dynamic interplay of personal, behavioral and environmental influences.

Self-efficacy belief is the concept for which SCT is most widely known (Glanz, et al., 2002). SCT identifies four major ways in which self-efficacy can be developed: 1) mastery experience, 2) social modeling, 3) improving physical and emotional states, and 4) verbal persuasion (Glanz, et al., 2002, p. 176).

The human capacity for observational learning is central to SCT. Access to family, peer, and media models determine what behaviors a person is able to observe and, therefore, model. Many studies have shown that models are imitated most frequently when observers perceive the models as similar to themselves, which makes peer modeling a well-recognized method for influencing behavior (Glanz, et al., 2002, p. 173). SCT suggests that modeling is one way to help people gain self-efficacy for complex and difficult new behaviors. This model stresses the utility of coping models which confront and successfully struggle with the same challenges and barriers to change that the observers face (Glanz, et al., 2002). This form of peer modeling has often been used in entertainment education in the United States and internationally. Applications of SCT in peer modeling and building community networks for peer reinforcement, combined

with improvements in access to services, have been used to promote cancer screening among Spanish speaking women (Ramirez, Villareal, McAlister, Gallion, Suarez et al., 1999).

For promoting observational learning of health behaviors, storytelling in the form of narratives may be more effective than the presentation of directly didactic or persuasive messages (Hinyard & Kreuter, 2007). Narrative approaches have been especially successful when used to communicate with populations that have a strong oral tradition (Hinyard & Kreuter, 2007) as is the case in Trinidad and Tobago. Stories of the hairstylist's experience in addition to secondhand stories will play a pivotal role in the intervention. In SCT, behavioral modeling is central to observational learning. By observing a model, individuals can learn a behavior and will be more likely to perform it if they see the model reinforced for the behavior in ways that appeal to them (Bandura, 2004). The use of personal narratives have been proven to increase self-efficacy and has been demonstrated in the Witness Project to increase mammography and breast self-examinations (Erwin, Spatz, Stotts, Hollenberg, & Deloney, 1996). SCT will be used to change the social environment of the customers in the salons and hair stylists will provide social support (informational and emotional).

Lay Health Workers

The World Health Organization defines community health workers as individuals who reside in the community they serve; are chosen by the community; and are accountable to the community (Martin, 2005). Community health advisors (CHA) may also be called lay health advisors; lay health workers (LHW); and indigenous lay workers (Earp & Flax, 1999). They usually receive training, but it is accepted that the training is brief and focused (Martin, 2005). A study by Earp and Flax (1999) suggests that LHWs influenced the individuals they counseled because the clients knew the advisors well; felt comfortable talking with them about private

issues; and considered LHWs credible sources of information. As trusted natural helpers, LHWs provide emotional support, advice, and tangible aid to members of their social network. Their understanding of community culture allows LHWs to provide culturally appropriate, informal, and spontaneous assistance to community members. LHWs are usually able to reach individuals who are regarded as difficult to reach or underserved (Martin, 2005).

Building on the informal helping systems inside communities, interventions using LHWs typically identify and train ‘natural helpers,’ who are individuals whom others seek out for advice, support, and assistance. Once they are trained, LHWs offer a community-based system of care and support that complements the formal health care system (Earp & Flax, 1999). The use of LHWs has been very effective in reaching racial/ethnic minority groups in interventions to increase breast and cervical screening (Martin, 2005). LHWs have been successfully used to increase colorectal screening rates among Chinese Americans (Nguyen, Love, Liang, Fung, Nguyen et al., 2010); breast and cervical cancer screening among Latinas (Navarro, Senn, Kaplan, McNicholas, Campo et al., 1995); and cervical cancer screening among Vietnamese Americans (Mock, McPhee, Nguyen, Wong, Doan et al., 2007). The use of men as LHWs has also been used successfully with Latino men to reduce sexual risk in North Carolina (Vissman, Eng, Aronson, Bloom, Leichliter et al., 2009).

LHWs who educate others about cancer screenings are often also cancer survivors who come from similar backgrounds as the women with whom they try to communicate. One example of this would be *promotoras*, who are Hispanic female cancer survivors who are trained to be health educators in their own communities. By sharing information, personal contacts, and frequent follow-up reminders *promotoras* successfully encourage women to obtain screenings (Hansen, Feigl, Modiano, Lopez, Escobedo Sluder et al., 2005). Martin (2005) reviewed seven

studies among racial and ethnic minority groups that used LHWs for cancer education and found the interventions effective. It was concluded that future cancer prevention and control efforts should include a component that is community-based and work in partnership with LHWs.

Psychosocial Factors that Influence Sexual Behavior in the Caribbean

It is important that the culture in which LHWs operate and practice be explored, as a pivotal step in designing an intervention. Most of the extant literature that highlights sexual behavior and factors that affect sexual behavior has come from the wealth of literature that focuses on HIV/AIDS and its spread in the Caribbean region. In this region, the youth have become a vulnerable subpopulation for sexually transmitted diseases, including HIV. Younger persons are among the group with the highest risk of acquiring the virus, with 50% of the new infections occurring in young people between 15 and 24 years. Seventy percent of all new HIV cases are falling within the age group of 15 to 44 (Douglas, Reid, & Reddock, 2009, p. 217). HPV is the most frequently spread sexually transmitted infection, and the risk factors that predispose citizens to HIV also allow for the possible transmission of HPV.

Transactional Sex

Researchers have recognized that transactional sex which is described as sex exchanged deliberately for money, material goods, or security is common in the Caribbean, but its extent is still unknown. The concept of transactional sex describes sexual-economic relationships that are not considered by the actors to be prostitution, but are not based exclusively on intimacy or love. Women who barter sex out of economic necessity are more prone to HIV infection (Kempadoo & Taitt, 2006). Some sexual-economic activities and relations are lodged in needs and desires for comfort and security. These may include 'basic' or immediate needs, such as lunch money or electricity while others may be related to long-term residential, economic or emotional security.

Women and girls are particularly in danger of entering into sexual-economic exchanges from disadvantaged, stigmatized positions (Kempadoo & Taitt, 2006) and thus hold little power with which to negotiate safe sex.

Many Caribbean countries rely on tourism to fuel their economic development. As a result, many tourists to the Caribbean are using their economic power to also obtain sexual experiences. This has fueled the term “sex tourism” or “romance tourism” which involves an informal sex industry. This informal sex industry which has developed in many Caribbean resorts means that sexual transactions may have a quality of ‘difference’ that allows tourists and some sex workers to convince themselves that what is happening is not straightforward prostitution (Clift & Carter, 2000). Studies in Barbados, Cuba, the Dominican Republic, and Jamaica have all reported that women and men frequently perceive tourism work as one of the most lucrative employment options, which may often overlap with commercial sexual exchanges with tourist (Padilla, Guilamo-Ramos, Bouris, & Reyes, 2010). A large number of ethnographic studies of female sex workers in the Dominican Republic have found a strong preference for tourists, because many women hope to obtain visas or citizenship abroad as a result of relationships with foreigners (Padilla, et al., 2010).

Some studies show that individuals who work in tourism areas or engage in transactional sex with foreigners report higher rates of HIV risk behaviors. Studies among hotel and resort employees in the Dominican Republic have found that hotel employees have high rates of sexual contact and high-risk sexual behaviors with foreign tourist (Padilla, et al., 2010). Much of the ethnographic research on sex workers in the region has shown that relationships with tourists could often be described as “romance tourism” rather than “sex tourism.” Romance tourism may be the preferred term because the instrumental dimensions of these exchanges are often subtle,

and may involve gifts, rather than direct sex for money transactions. These relationships may often involve romance and other forms of emotional exchanges that may extend beyond just the sexual act. These more intimate exchanges may involve regular visits, mutual affection, and significant remittances or financial support from abroad (Padilla, et al., 2010). As a result of the emotional and economic dependencies of these sustained exchange relationships, local women who are involved in these situations may confront many of the same barriers to condom negotiation that has been observed for stable or married couples globally (Padilla, et al., 2010).

Violence

Violence against women increases their risk of sexual infections. Fear of violence prevents women from refusing unwanted sex and discussing fidelity or condom use with their partners. A survey conducted in 15 Latin American countries revealed that physical abuse by intimate partners could be as high as 69% among all women (Roberts, Reddock, Douglas, & Reid, 2009, p. xviii). It is felt that violence in general, and gender violence in particular is endemic in Trinidad and Tobago. Data received from a 1998 study of 200 women in Trinidad conducted by the Caribbean Association for Feminist Research and Action found that 84% of respondents thought that violence against women was prevalent in Trinidad. A characteristic feature of this phenomenon is spousal murder of women, which is often accompanied by male suicide. Between 1990 and 1996, 41 women and 39 children in Trinidad and Tobago were murdered by partners/fathers as a result of domestic violence (Reddock, Barclay, & Clarke, 2000).

Men may also use violence against women who refuse to have sex. Women in the Caribbean are not expected to refuse sexual intercourse with their intimate partners. Additionally, refusing to have sex may also incur economic consequences for women. Men may

refuse to give money, or they may withdraw their financial support if a woman refuses to engage in sexual intercourse. Poverty and dependency often expose women to risky situations because their need to keep a man remains a higher priority than the practice of safe sex (Bombereau & Allen, 2008).

Adolescent Sexualities

Attitudes to sex and sexuality often begin during adolescence. Focus group data from Trinidad revealed that young women in the study reported that older women like their mothers, aunts, older sisters, and cousins were the ones who taught them about sex. To a lesser extent, friends, books, and television shows also provided knowledge (Roberts, et al., 2009, p. 229). On the other hand, the male students in the study learned about sex through pornography, and the print and electronic media, especially the television and the Internet (Roberts, et al., 2009, p. 229).

Some girls are sexually initiated by older men, and age differences between girls and young women and their older male counterparts can also be substantial (Bombereau & Allen, 2008). Allen et al., (2000) showed that among female teenage respondents to a survey in Tobago the male partners were at least four years older than they were. Additionally, child labor studies in the Caribbean have revealed that some girls engage in transactional sex with older men who provide them with school fees, money, and clothing. It is well accepted that youth who are initiated early are likely to be involved in risky sexual behavior, such as multiple partnerships (Roberts, et al., 2009, p. 218).

Sexual behavior surveys conducted across the region have shown median age at first sexual intercourse to be in the early to mid-teens, or in the case of some studies with boys, at even younger ages. Data from the largest English speaking Caribbean Youth Health Survey that

was conducted among 15,695 youths who were still attending school, and were aged 10-18 in nine countries, revealed that 34% reported that they had ever had sexual intercourse (Halcon, Blum, Beuhring, Pate, Campbell-Forrester et al., 2003). Over half of the sexually active boys, and a quarter of the sexually active females said that age at first intercourse was at ten years of age or younger (Halcon, et al., 2003). It was also reported that 47.6% of girls and 31.9% of boys who were sexually active reported that their first sexual intercourse was forced or coerced (Roberts, et al., 2009, p. xxiii). Incest appears to be a problem in many of the Caribbean islands even though it does not always receive a lot of attention. The Pan American Health Organization's adolescent survey revealed that 38% of young people said their first intercourse was forced. In Tobago, 7% of first sexual encounters by males and 6% of those by females were reported to be incestuous (Allen, 2002). Victims of incest usually have little choice over whether birth control would be used during the encounter and victims may often contract a STI.

Gender Socialization

In the Caribbean as in other countries, male and females are socialized differently. Cultural scenarios usually influence attitudes towards casual sex, sexual permissiveness, anxiety or guilt about sex, and sexual behavior, including number of sexual partners and frequency of intercourse (Oliver & Hyde, 1993). The sexual double standard which has existed for a very long time usually suggests that women are permitted to engage in sexual relations only within committed love relationships; however, men are culturally permitted to have as many sexual partners as they want without conditions (Milhausen & Edward, 1999). In the Caribbean, men can indulge in sexual activity with women without guilt whereas women are constrained by value systems that often associate guilt with their sexual activity (Roberts, et al., 2009, p. 113). It is commonly accepted in the region that the mark of a man's success is having more than one

partner (Bombereau & Allen, 2008). Socialization that encourages multiple partnerships affects the rate of spread of STIs in the region and a high prevalence of STIs can be expected.

Caribbean women are often presented with conflicting definitions of femininity and womanhood. They are usually socialized to achieve academically and financially, while being cautioned on the other hand not to become too self-sufficient, so they can meet expectations in which women defer to men in sexual-decision making (Roberts, et al., 2009, p. 113). The fear of community gossip and sanction usually prohibits single females from planning to have sex; therefore, female rarely purchase condoms (Bombereau & Allen, 2008). The Tobago Youth Sexual Health Study showed that fewer girls than boys felt that they had access to condoms and control over their use. Common opinions resulting from focus group data indicated that girls in love would give in to not using a condom during intercourse. They also felt that it was a man's responsibility to get the condoms and mentioned that girls felt more embarrassed to purchase condoms (Allen, 2002). It is also viewed by couples as a sign of mistrust to ask a partner to use a condom (Bombereau & Allen, 2008) as condoms are often regarded as less necessary once partners become better acquainted with each other. For most girls and women, sexual activity is most commonly seen as a signifier of maturity and is often perceived by girls and women as attached to fertility, through which one becomes a "real" Caribbean woman (Kempadoo & Taitt, 2006) and achieves authenticity in the Caribbean culture.

Communication about Sexuality

Qualitative research in several Caribbean countries reveals a general lack of communication about issues concerning sexuality. In particular, discussions about the use of condoms are rare. In Tobago, Allen and colleagues (2000) found that this culture of silence exists at various levels of the society. A lack of communication exists between males and

females in relationships; parents and children; and teachers and students. The problem is often compounded by a conservative religious culture and by policies and laws; such as in Trinidad and Jamaica. These policies also make it difficult for school-going children to be given access to condoms, and sex education that target HIV spread to youths usually stresses abstinence (Kempadoo & Taitt, 2006).

Youth respondents in a survey in Tobago felt that adults often condemned and criticized sexual activity without showing them any understanding and support. Fear of social sanctions in a small community creates silence and secrecy about sexual issues. Fear of religious sanctions were also mentioned in qualitative research (Allen, Da Costa Martinez, Wagner, McLetchie, Da Gazon Washington et al., 2000).

Multiple Partnerships

Research studies in the Caribbean show that many persons are involved in multiple partnerships (Bombereau & Allen, 2008). In a review of symptoms of sexually transmitted diseases and sexual behavior among adolescents and young persons in Jamaica, one-fifth of the sample reported multiple sexual partnerships with just slightly more than half reporting condom use at last coitus. Statistical analyses also revealed that being older; having multiple sexual partners; using condoms inconsistently with steady partners; and having cultural attitudes conducive to high-risk sexual activity were all associated with having symptoms of sexually transmitted disease (Norman, 2001). In four Organization of Eastern Caribbean States countries that conducted Behavioral Surveillance Surveys with youth in 2006, a majority of young male adults declared more than one non-commercial sex partners in the past 12 months (CAREC, 2007). The percentages of young males who reported more than one non-regular partner ranged from 45% in Dominica, to 64% in St. Kitts and Nevis and St. Vincent and the Grenadines. The

same study revealed that among adults in 10 Caribbean countries, the percentage of males that reported having more than one non-regular partner in the past 12 months ranged from 9% in St. Vincent and Grenadines to 36% in St. Kitts and Nevis (Bombereau & Allen, 2008).

Quite a large number of people in the Caribbean who have more than one partner, especially adults, are in fact involved in steady multiple partnering arrangements. A quantitative survey in the French Caribbean among 3014 participants aged 18-69 years old revealed that 33% of the men reported having more than one sexual partner in the past year. These men also indicated that they were with these partners for more than one year (Bombereau & Allen, 2008). Some studies also document multiple partnerships among women as an economic survival strategy. The multiple partnerships are often developed independently of love or pleasure (Kempadoo & Taitt, 2006). Women are often very tolerant of men with multiple partnerships, and the male practice of multiple partnerships is often accepted as the norm. Research shows that women may fear losing economic resources by breaking up with a man, so they are often prepared to share him. Women are often prepared to share a man even in relationships they perceive to be risky, in which a man refuses to wear a condom, and is having sex with other women (Bombereau & Allen, 2008).

Summary of Psychosocial Factors that Influence Sexual Behavior in the Caribbean

The tourism industry in the Caribbean region has created an informal sex trade in which women may practice many HIV risk behaviors. Along with the informal sex trade, transactional sex, which is common in many Caribbean countries because of the economic needs of many women, may make it difficult for women to practice safer sex. Violence against women, which increases their risk of sexual infection often, prevents women from refusing unwanted sex or negotiating condom use during sexual intercourse.

As previously noted socialization in the Caribbean often seeks to reinforce the sexual double standard, and it is culturally accepted that men are permitted to have as many sexual partners as they want without conditions. Multiple partnerships are accepted, and many persons are usually involved in steady multiple partnership arrangements. Women are also socialized to defer to men in sexual decision-making. Additionally, there appears to be a general lack of communication about matters concerning sexuality with adolescents, and when a conversation occurs abstinence is often suggested as the appropriate behavior choice. These factors may contribute to the high rates of STIs in the Caribbean region.

Focus Groups

Focus groups may be defined as a research technique that collects data through group interaction on a topic determined by the researcher (D. L. Morgan, 1996). This definition presents three essential components. First, focus groups are devoted to data collection. Second, focus groups locate the interaction in a group discussion as the source of the data. The definition also acknowledges the researcher's role in creating the group discussion for data collection. A focus group usually contains the two core elements: a trained moderator who sets the stage with prepared questions or an interview guide and a goal of eliciting participants' feelings, attitudes, and perceptions about a selected topic (Puchta & Potter, 2004, p. 6). Morgan (1997) suggests that the hallmark of focus groups is their explicit use of group interaction to produce data and insights that would be less accessible without interaction that participants found in a group. The primary difference between focus group research and other types of research, such as surveys, individual interviews, and laboratory experiments is that data collection occurs in and is facilitated by a group setting (Stewart, et al., 2007, p. 19).

The main logic for conducting research in a group rather than in an individual setting is to allow observations of how and why individuals accept or reject group members' ideas. Stimulating interactions among group participants are hypothesized to generate more information than individual interviews would provide (D. L. Morgan, 1996). Focus groups may be used to provide data from a group of people more quickly and at a lower cost than if each person were interviewed separately (D. L. Morgan, 1996; Stewart, et al., 2007, p. 42). Focus groups also allow the researcher to interact directly with respondents. Therefore, opportunity exists for clarification of responses through probing. Respondents may also be given the opportunity to clarify responses. Additionally, the moderator is able to observe nonverbal responses, such as gestures, smiles, and frowns (Farnsworth & Boon, 2010). These cues may be used to supplement answers; also these gestures can be noted when they contradict a speaker's verbal response. The open response format of a focus group provides an opportunity to obtain large and rich amounts of data in the respondent's own words.

According to Stewart, Shamdasani, and Rook (2007) depending on the intent of the research, the moderator may be more or less directive with respect to allowing the discussion flow naturally, as long as it remains on the topic of interest. The amount of direction provided by the interviewer influences the types and quality of the data obtained from the group. When the moderator suggests a new topic for discussion by asking a new question, the group has a tendency to comply.

Sample size

The number of focus groups to conduct cannot be deduced by a statistical calculation. The ideal number should reflect the research plan, including which sub-groups are targeted; which groups' views need to be compared; the variability of responses as well as available time

and money. If groups are segmented by age, gender, sexuality, or socio-economic status more groups will be necessary. Focus groups are labor-intensive in recruitment, transcription and analysis; therefore, attempts should be made to limit the numbers (Bloor, Frankland, Thomas, & Robson, 2001, p. 28). The number of groups utilized should be determined by the amount of data produced in the groups. The end point of data collection is usually considered to be when the moderator can accurately anticipate what will be said in the next group, or when the data are saturated.

Summary of Related Literature

With the HBM and SCT as the guiding theoretical framework, the researcher endeavored to explain barriers to cervical cancer screening. Barriers to cervical cancer screening included painful tests, lack of a physician's recommendation, cancer fatalism, obesity, lack of knowledge, and lack of health insurance. Practical complications such as time and difficulty scheduling an appointment were also noted as barriers.

Psychosocial factors that influence sexual behavior indicated that limited communication about sexuality might contribute to the spread of sexually transmitted infections, such as HPV. Transactional sex and romance tourism, in addition to violence also contribute to the lack of power women may feel in these relationships.

Previous research utilizing barbershops and beauty shops have been reviewed and critiqued. Barbers and beauticians function in special social and cultural roles in the African American community. Studies have shown the feasibility of partnering with barbershops and beauty salons to educate African Americans about disease and healthy behavior. It is believed that barbers are naturally accustomed to one-on-one and small group interactions; therefore their talking about sensitive topics, such as prostate cancer screening may only require a modest

amount of training. Beauticians also see clients regularly and cultivate relationships in which their clients hold them in high esteem. Additionally, it is also important that the community be involved in the planning and delivery of the intervention for the best success.

CHAPTER 3

METHODOLOGY

In this chapter research design and rationale, paradigmatic stance, recruitment of participants, sampling, data collection, data analysis methods, incentives, and study limitations are described. Due to this study's use of mixed-methods, each phase of the study will be described separately.

The literature review indicates that even though some qualitative studies have looked at the barriers for the receipt of Pap smears, they have focused specifically on Spanish speaking LAC countries. No studies have focused on barriers and perceptions among women in Tobago. This research project is a pivotal step in designing culturally relevant interventions that could increase screening among women in Tobago. The purposes of this mixed-methods study are to explore the barriers that prevent women in Trinidad and Tobago from obtaining Pap smears and implement an intervention designed to affect knowledge, attitude, and Pap smear receipt.

This study titled the Hair and Cancer Education study (HACE) was designed to critically evaluate the effectiveness of a salon-based intervention for cervical cancer. The primary objective was to test whether Pap smear receipt; intention to be screened; knowledge; perception of barriers and risks; and self-efficacy would change at the conclusion of the intervention. It is hypothesized that as a result of the study, screening rates will increase among the participants in the study.

Research Design and Rationale

The study utilized a mixed-methods design, which is characterized by the use of both quantitative and qualitative methods, research techniques, approaches, concepts, or languages in a single study. Because all methods of data collection have limitations, the use of multiple methods can neutralize or negate some of the disadvantages of certain methods (Creswell, Plano Clark, Gutmann, & Hanson, 2003, p. 211). A wide consensus maintains that mixing different types of methods can strengthen a study. Mixed-methods designs usually make use of the pragmatic method and system of philosophy. Other considerations include whether to give the quantitative and qualitative components of a study equal status, or to assign one method the dominant status. Another dimension pertains to where the mixing should occur, and how data collection should occur (i.e., sequentially or concurrently) (Johnson & Onwuegbuzie, 2004). Challenges to conducting mixed-method research include its time consuming nature, higher cost, and attention to two forms of methodological rigor, which may be difficult for a lone researcher (Johnson & Onwuegbuzie, 2004).

This study utilized a sequential exploratory design. Consistent with the sequential exploratory design, the study was conducted in two separate and distinct phases with the qualitative data collection and analysis conducted first, followed by quantitative data collection and analysis (Creswell, et al., 2003, p. 227). Using standard notation for mixed-method research originally developed by Morse (1991) Figure 1 depicts the sequential exploratory design. This method usually indicates the relative weight that is placed on quantitative or qualitative data; the sequence of data collection; and where the data will be integrated. As Figure 1 indicates, the sequential exploratory mixed-methods design is characterized by two distinct phases of data collection and analysis. The first phase involved collection and analysis of qualitative data,

which was given lower priority in the research effort and written report of this study. The dominance of the quantitative phase is represented by the use of uppercase letter (e.g. QUAN) and lowercase letters imply less emphasis (e.g. qual). The sequential nature of the two phases (represented by an arrow) is inherent to the exploratory approach and is distinct from concurrent data collection (represented by a plus sign), which is more commonly used in triangulation mixed-method designs (Plano Clark & Creswell, 2008, p. 152).

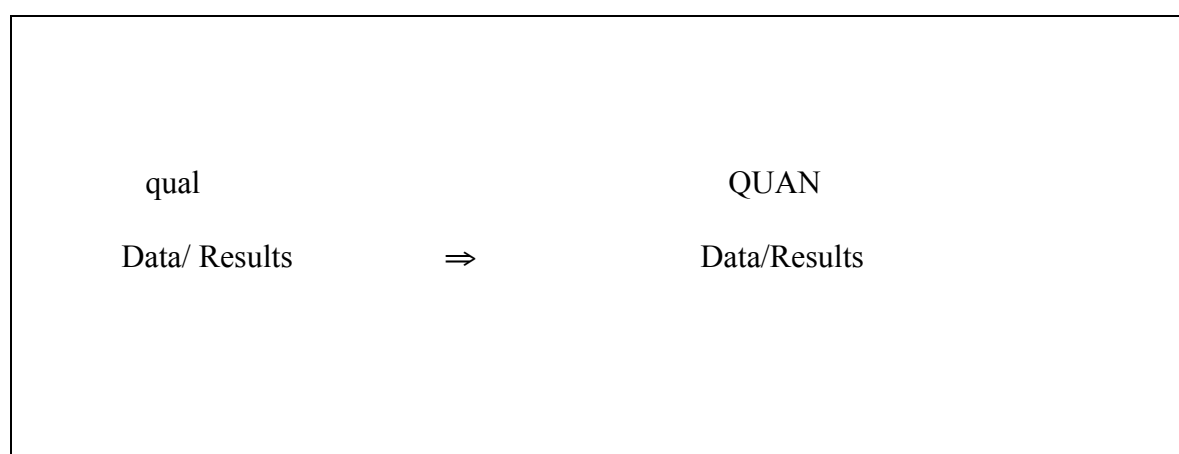


Figure 1. Depiction of sequential exploratory mixed-methods design

Rationale for Mixing Quantitative and Qualitative Data

Multiple reasons exist for combining qualitative and quantitative approaches within an inquiry. Greene, Caracelli, and Graham (1989) have outlined the following purposes: triangulation, complementarity, development, initiation, and expansion. When development is the purpose of a mixed-methods design, the result from one method is usually used to develop or inform the other method. This relationship is usually regarded as a way to increase the validity of constructs and inquiry results by capitalizing on inherent method strengths (Greene, Caracelli, & Graham, 1989). In the present study, the purpose of the qualitative phase is development, as

the results from the qualitative phase will be used to tailor an intervention that will be implemented in the community. The mixed-methods development rationale seeks better understanding via capitalizing on inherent method strengths.

Strengths and Limitations

The study has several strengths. First, the use of a mixed-methods design will provide more in-depth understanding of the barriers women may face in obtaining cervical cancer screening than surveys alone could provide. Second, the recruitment of women from an underexplored community-based setting is a unique aspect of this project. Third, the intervention is community-based and is designed to be delivered by women from the community. Community-based interventions may address health issues by reaching women where they live, work, and socialize (Reiter & Linan, 2011). Finally, the hair stylists do not require clinical training or advanced degrees (Linnan & Ferguson, 2007) and they likely already possess some of the skills needed to deliver this intervention from the daily management of their businesses.

Limitations of the study design would include the fact that the qualitative results represent those of a small sample that may not be representative of the general population as women volunteered for the focus groups. Additionally, only two focus groups were conducted. My subjectivity in conducting the interviews and data analysis could have been a limitation. The Quantitative phase of my study also has similar limitations: a small sample size, and lack of generalizability to all the women in Tobago as women reached in the salon-based intervention may only be those who can afford to visit the salons. The study is designed to be a pilot study and therefore will not use a control group; other limitations include a short follow-up time of four months between the pre and post-questionnaires. Also, because of the process involved in the decision to obtain a Pap test; making an appointment; and waiting to see a provider, a longer

time interval might have allowed additional cases of Pap smear receipt to be measured.

Additional limitations include fidelity of program implementation, and reliance on self-reported screening data on Pap smear receipt. Possibly in the post-intervention questionnaire some women may have reported that they had obtained a Pap smear in order to please the LHWs and the researcher. It is possible that the use of different questionnaire procedure (in person vs. telephone) may have produced differences in the accuracy of the data.

Paradigmatic Stance

The HBM and SCT provided the theoretical framework for the project. The HBM has been widely used to frame research studies related to the prediction of health-related behavior in relation to health belief patterns (Glanz, et al., 2002, p. 45). The project focused on four cognitive variables cancer knowledge, estimates of personal risks, perceived barriers, perceived benefits, and self-efficacy. These variables have been linked to screening behavior. Poorer knowledge; beliefs that cancer treatments do not work; and lower estimates of personal risks have all been associated with poorer screening practices (Consedine, Magai, Horton, Neugut, & Gillespie, 2005). A substantive theory stance was taken in the design and implementation of this project. Unique to this stance is the idea that what matters most in guiding practical inquiry decisions is the substantive issues and conceptual theories, and not philosophical paradigms themselves (Greene, 2007, p. 74).

Subjectivity Statement

I have several subjectivities to acknowledge before beginning this study. First, I am young black woman who has always throughout my childhood and adult life had access to private health care. As an adult, the health insurance provided through my employer has enabled me to have access to excellent care. Therefore, my experiences in dealing with the health care

system may vary significantly from that of the women I worked with in this research project. My previous experiences in the health care sector have occurred mostly in the private setting as opposed to public hospitals, usually defined by longer wait times, less access to medications, and poorer quality service. Second, I am young in age, currently in good health and have no chronic health conditions. I have a strong desire to practice wellness behaviors, and these motivating factors may influence how I perceive women who are unwilling to obtain health screenings. I may view their poor health behavior in a condescending manner. Third, I have limited experience in conducting focus groups. I have gained minimal skills in conducting focus groups during the qualitative courses in my doctoral courses.

In addition to researcher subjectivities, I have roles as an insider and outsider in the research setting. I am from the island of Tobago by birth and grew up there for the first 20 years of my life; I completed my high school education there and I worked on the island as well. I have a great understanding of the culture and customs on the island from my experiences in my formative years. I may appear to be an outsider because I have not lived on the island for the past 17 years, and my regular forays to the island have usually been for short vacations. I may have appeared very different to many of the women I worked with as a result of having a slightly different accent and social mannerisms. As a doctoral student at a large university, I visited Tobago in my capacity as a researcher and not strictly as a Tobagonian.

Research Questions

As noted in Chapter 1, my research questions for this study are:

1. What barriers prevent women from obtaining Pap smears?
2. Can women who participate in the beauty shop intervention show an increased rate of Pap smear receipt?

3. Can women who participate in the beauty shop project show increased levels of risk perception toward cervical cancer?
4. Can women who participate in the beauty shop intervention demonstrate an increase in knowledge about cervical cancer?

Qualitative Phase

The following sections will outline the two phases of the research process, providing details of sampling, informed consent, data collection and data analysis for each phase of the research process. Phase 1 of the research process provided qualitative data that were utilized in the development of the cervical cancer-screening curriculum that was used in the intervention, which was conducted during Phase 2 of the study.

Sample Selection

Women who are eligible for the focus groups should represent women who are likely to be recruited for the project. A purposeful sample was selected to ensure that the participants would have had experience with the central phenomenon of Pap smear receipt. Selection was guided by the research questions and key characteristics that were considered relevant to the study. Criteria for selection included women between the ages of 25 to 45 years old; women who have been sexually active in the past; women who would have been screened at least once previously; women who have not already been diagnosed with cervical cancer; and women who have not had a hysterectomy.

Guidelines suggested by the American Cancer Society were explained in Chapter One. New research has indicated that the benefits of screening women who are younger than 25 years are small because of the low prevalence of lesions that will progress to invasive cancer. Screening in women aged 20 to 24 has little or no impact on the incidence of cervical cancer in

women under the age of 30 (Sasieni, Castanon, & Cuzick, 2009). In contrast, screening in older women leads to a substantial reduction in incidence and mortality from cervical cancer.

Screening is not beneficial in women older than 60 years if they have had a history of recent negative tests. Screening is also not useful in women who may not have a cervix as a result of a hysterectomy for a benign condition.

Recruitment

Focus groups may be useful at almost any stage in the research process but may be especially useful for exploratory research when little is known about the phenomenon of interest (Stewart, et al., 2007, p. 41). Little information is known about the barriers and perceptions to cervical cancer screening among women in Tobago. This dearth of knowledge provided the ideal environment to begin exploring the topic from women who would be targeted by the cervical cancer screening intervention. It has been suggested that smaller focus groups may work better for sensitive and more emotionally charged topics while larger groups worked better with less emotional topics that generate lower levels of involvement (D. L. Morgan, 1996). Additionally, larger groups may be more difficult to manage and may inhibit participation of all members.

Two focus groups consisting of 6 to 10 women between the ages of 25 and 45 were conducted for approximately 60 to 75 minutes in an accessible location. One meeting was conducted at the conference room at the regional hospital, and the other was held at a conference room at the government's main administrative office. Because of the possibility participants might not attend the focus groups; participants were over-recruited by 10-25%. Fliers that announced the focus groups were posted in hair salons in the Scarborough area to recruit participants. A small newspaper advertisement in a weekly paper on the island was also used for

recruitment. A 20-minute radio interview on a morning talk show hosted on the island generated interest in the study and recruited additional participants. Participants were advised by these advertisements to call for further information on the location of the focus group meeting. Participants were then asked screening questions by the researcher via the telephone to ensure suitability and encouraged to call with any questions or state reasons why they would be unable to attend. One day preceding each group meeting, the women were given reminder phone calls.

A semi-structured interview guide was used during the focus groups, and the researcher's prepared questions flowed from general to the specific. The HBM was used in formulating the questions. Questions were asked on the barriers that women face in accessing Pap smears. Additional questions were asked on self-efficacy to develop ideas for building self-efficacy among women who could be in the study. Before group discussions began, demographic data were collected through an anonymous questionnaire that was given to each participant. A semi-structured guide was used to ensure that the participants had the opportunity to elaborate on their responses. The focus group interviews were audio-taped and transcribed verbatim. A sample interview guide is included in Appendix A.

Data Analysis

According to Rabiee (2004) the process of data analysis begins during data collection by skillfully facilitating the discussion to generate rich data from the interviews while complementing it with observational notes. The fact that a number of people are speaking in focus groups makes the transcription of focus group interviews more complex than transcription of data collected by other qualitative methods, such as interviews (Bloor, et al., 2001). All attempts were made to transcribe all recorded speech by each speaker. Facilitator notes were

made immediately after concluding focus groups to create portraits of the focus groups and noted anything that was unusual about the interviews.

It is critical that when qualitative data are analyzed that the process is systematic and rigorous, and reflects the views of all cases, not only those that may fit the researcher's own agenda (Bloor, et al., 2001, p. 62). The "framework analysis" approach described by Kruegar (1994) was used in the present study. The advantage of this approach is that it provides a clear series of steps, which may be helpful for novice researchers in managing large and complex amounts of data. The framework analysis uses a thematic approach, but it also allows themes to develop from the research questions and from the narratives of the research participants (Rabiee, 2004).

Familiarization with the data began by listening to the tapes and reading the transcripts in their entirety several times. During this process, themes, such as fear of the test, fear of cancer, embarrassment, and privacy concerns began to emerge. To assist in the process of identifying the thematic framework, memos were written in the margins of the text in the form of short phrases, ideas, or concepts arising from the text and began the process of developing categories. Memo-writing is noted as being a pivotal intermediate step between data collection and writing the draft of a paper. Memo-writing enables certain codes to stand out and to take form as theoretical categories, as successive memos are written. Memos also catch the reader's thoughts; highlight the comparisons and connections; and point to directions that the research can follow (Chamaz, 2006, pp. 11-12). Methods for producing memos rely on making them spontaneous, not mechanical. Chamaz (2006) indicates that memo-writing forces the reader to stop other activities and engage a category; it allows you to let your mind rove freely and be creative, writing whatever comes to mind based on the transcript.

Memos were used to generate thoughts on the idea of privacy as a major concern. As participants spoke about knowing the doctors or their reluctance to visit health professionals who were acquainted with them, it became clear that further delving into the data could lead to privacy as a theme. Notes on the number of participants who alluded to privacy concerns showed it to be a major theme.

Kruger and Casey (2000) advocate the use of either a long table or a computer-based approach for cutting, pasting, sorting, arranging, and rearranging data through comparing and contrasting the relevant information. The practical method of cutting and sorting was used to systematically match quotations to themes. Miles and Huberman (1994) suggested that the data be displayed in the form of tables to move the analysis forward. Data were compared and contrasted both within and across focus groups according to the constant comparative method (Glaser, 1992). The results of the focus groups were written in narrative form and incorporated into Phase 2 of the project. The curriculum used for training the hairstylists was adapted based on the focus group results that provided information on the perceptions of Pap smears and the barriers faced by the women. This adaptation was done to make the project more culturally relevant and to provide information to target the barriers that resulted from analysis of the focus group interviews.

Quantitative Phase

A pre- post design will be used in Phase 2 of the study.

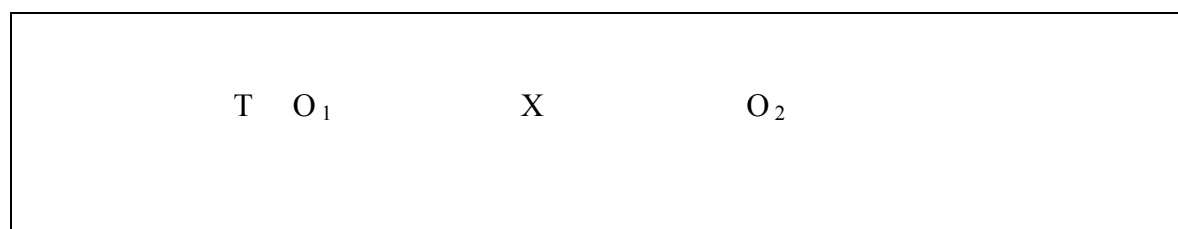


Figure 2. Depiction of Phase Two Study's Design

Phase 2 of the project began in June 2011 with eight hairstylists recruited from salons in the capital, Scarborough to act as LHWs. Hairstylists were approached and snowball sampling was used to obtain additional hair stylists. A recruitment letter outlining the details of the study was signed by the co-principal investigator and given to proprietors of salons that serve a high proportion of women between the ages of 25 and 45. The salons were visited within one week of receiving the letter to discuss the project. Beauty salons are usually very busy on Friday and Saturdays; therefore, visits were not scheduled for any of these days.

The hairstylists who volunteered to be in the study completed two, 2 ½ hours training sessions held over two weeks on their weekly day-off which was either Monday or Wednesday. They were trained as LHWs to provide information on the benefits of Pap smear receipt; where this service can be obtained; and how to overcome the barriers to Pap smear receipt. The goals of the sessions were to: 1) introduce the hairstylists to the project; 2) educate hairstylists to help them deliver selected cancer prevention messages; 3) train hair stylists to help them deliver cancer prevention messages to their customers in the context of a typical salon appointment.

The curriculum for the intervention was based on the Woman-to-Woman program. The Woman-to-Woman program is a 16-month worksite intervention to be implemented by LHWs designed to increase breast and cervical cancer screening. The intervention is available to be tailored to the needs and interests of the worksite. Over the course of the intervention, it was intended that the LHWs would deliver an average of six small group discussions on breast and cervical cancer screening. This program has been recommended and made available by the Guide to Community Preventative Services as a part of its Research Tested Intervention Program. While the program received a score of five for age appropriateness and gender

appropriateness, and a score of four for dissemination capability, no score has been provided for cultural appropriateness (Guide to Community Preventive Services, 2011).

The Guide to Community Preventative Services (2011) describes evidence-based cancer prevention and control programs that have been implemented in community or clinical settings for specific populations and includes free program materials that can be previewed, downloaded, or ordered. To be included, a program must meet the following criteria: research findings must have been published in a peer-reviewed journal, and it should include messages, materials and other intervention components that can be used in community or clinical settings. Additionally, the intervention should have been conducted in the last ten years (Guide to Community Preventive Services, 2011).

The Train the Trainer manual covered information on the basics of screening for breast and cervical cancer; including benefits of being screened; and treatment for breast and cervical cancer. Modules were provided on; 1) why is cervical cancer screening important; 2) early detection methods-the Pap; 3) risk factors for cervical cancer and; 4) barriers to screening. The objective of the first module was to familiarize participants with the magnitude of cervical cancer as a public health problem. The module on cervical cancer was designed to discuss the importance of finding cervical cancer early or before its development. The third module was intended to teach about the characteristics that place women at elevated risk for cervical cancer, and discuss what women can do to reduce their risk. The last module on barriers to screening was designed to review the barriers to breast and cervical screening and develop strategies that would help women to overcome these barriers.

The material for training the hairstylists was culturally tailored based on feedback from the focus groups conducted in Phase 1 of the study that addressed barriers to Pap test receipt.

The curriculum did not list specific barriers to be taught to the women, but was designed to solicit these responses from the participants during the training sessions by asking, “*What are some reasons that women don’t get Pap tests?*” Focus groups participants suggested barriers such as embarrassment, fear, cancer fatalism, and lack of knowledge. These barriers were incorporated into the training curriculum and taught to the hairstylists during their training and a sample script developed with hairstylists to respond to clients if they mentioned these barriers during their routine conversations. The co-principal investigator conducted the training for the hairstylists. The training workshops included role-play exercises to build skills and techniques for either introducing or reinforcing cancer prevention messages during a typical conversation that might occur in a routine salon visit.

Sampling and Recruitment

Recruitment of salon participants occurred during the months of June and July and involved both active and passive processes. Fliers were placed in the salons that informed women of the project and asked them to call if they were interested in joining the study. It was expected that the hairstylists would notify women of the project and assist in recruiting them. Previous work in the North Carolina BEAUTY project revealed that customers were more likely to join when recruited by the participating hair stylist (Linnan, et al., 2005). The co-principal investigator and a graduate student sat in the salons that were chosen as intervention sites, and they recruited participants while the customers waited for their treatments to begin or during their treatment process. Most salons did not offer appointments, so customers usually faced a long wait time during which the women were recruited. Participants were invited to enroll in the study and allowed to read the consent form, which explained the study. After giving consent the women were asked to complete the pre-test survey. To allow clients to be recruited at times

when the principal investigator was not present and to increase the client sample, hairstylists were also trained to recruit participants. The hairstylists ensured that consent forms and baseline surveys were completed.

All participants were women between 25 and 45 years of age who were getting their hair processed in the salons that were selected in the intervention sites. Women recruited for the study should not have been diagnosed with cervical cancer in the past and should not have had a hysterectomy.

Sample Size

A preliminary survey has indicated that salons may see an average of 40 clients weekly. Because this study is a pilot study that is being tested in a new environment, a small sample size of 133 women was recruited from intervention salons.

Intervention

The intervention included the hairstylists' speaking to their clients, and delivering the "health chat." The health chat occurred during the regular activities of the hairstylists as they processed their client's hair. It was intended that the conversation should develop naturally and would be stimulated by posters and pamphlets that were strategically placed in the salons. The intervention lasted for 4 months.

Study Instrument

Pre and post-outreach intervention questionnaires were used to collect data on demographics, changes in attitudes, barriers, knowledge, and screening practices. Participants completed a written pre-outreach questionnaire and a telephone administered post-outreach questionnaire. Demographic data were obtained by the use of seven questions that collected information on ethnicity, age, marital status, and education level. Compliance with Pap test

screening guidelines was measured with a single item, “*When was your last Pap test?*” This item wording closely matches recommendations and wording used in other studies on screening behavior (James, Campbell, & Hudson, 2002).

Barriers to Pap testing were assessed on a scale ranging from 1-5 “*Strongly agree to Strongly disagree.*” For the purpose of this study, a perceived barrier was regarded as, “a person’s estimation of the level of challenge of social, personal, environmental and economic obstacles to a specified behavior” (Glasgow, Whitlock, Valanis, & Vogt, 2000). According to Glasgow et al., (2000), barriers for mammography and Pap smears receipt appear to be similar. The questions were, therefore, based on Champion’s barriers scale which has been widely adopted and used in many studies (Champion, Skinner, Hui, Monahan, Juliar et al., 2007). Eight questions were adapted and used with options ranging from “*Strongly agree to Strongly disagree.*” Screening intention was measured by the single question, “I intend to have a Pap smear every three years.” Screening attitudes was measured by the question, “On a scale of 1-10 how willing are you to have a Pap smear done?”

Perceived susceptibility to cervical cancer, or the belief regarding one’s chances of developing cervical cancer, was measured using a 5-point Likert scale. These two questions were patterned after Champion’s 3-item breast cancer susceptibility scale ($\alpha=0.87$) (Champion, 1993). Participants were asked the likelihood of developing cervical cancer in general during the next few years as well as within their lifetime.

Knowledge of risks and protective factors were measured by the use of three questions that were asked about HPV, smoking, and a healthy diet. A 5-point Likert scale was used to assess knowledge about cervical cancer. Two items using a 4-point Likert scale with options ranging from, “*not at all possible, a little possible, moderately possible and very possible*”

assessed perceived control over disease risk. Women were asked to identify their beliefs regarding the likelihood of their being able to reduce their risk for developing cervical cancer (See Appendix B).

Data Collection

At baseline, women were asked to provide the name and phone number of another woman who did not reside at their residence who would likely know where they might be contacted at follow-up. Each person was called at least five times before concluding they were lost to follow-up after contacting the additional contact. The questions at follow-up focused on recency of Pap smears and knowledge of risk and protective factors.

Data Analysis

SPSS version 19 was used to analyze the results. The primary outcome variable assessed was increased Pap smear receipt. Secondary outcomes included improved knowledge of risk and protective factors, self-efficacy, attitude and intention to be screened. For the outcome analysis the student's *t* test was conducted to compare means at baseline and four-month follow-up, to test whether knowledge, attitude, efficacy, and screening behavior changed after time. Logistic regression was used to calculate odds ratios. Additionally, sub group analyses were conducted using demographic data that were based on age, marital status, and education. Logistic regression was used to analyze these covariates. Missing data were excluded from the analyses.

Incentives

Gift cards for a local department store valued at 5.00 USD (approximately 35.00 Trinidad and Tobago dollars) (TTD) were distributed to participants for remaining for at least three-quarters of the time allotted for the focus group. Participants also shared a snack plate valued at 2.00 USD (approximately 12.00 TTD) at the end of focus group discussions. Participants signed

a form for auditing purposes for the department that provided funding for the gift cards.

Consistent with other intervention projects the women received an incentive valued at 5.00 USD (approximately 35.00 TTD). This payment was disbursed after the four-month follow-up to participating women. Hairstylists received a gift certificate valued at 10.00 USD (65.00 TTD) compensation for each training session attended. Lunches valued at 5.00 USD (approximately 35.00 TTD) were provided for hairstylists after their training session.

Informed Consent and Human Subjects

Intervention and data collection activities were approved and monitored by the University of Georgia's Office of Human Subjects (OHS). The OHS approved all procedures, protocols, and instruments utilized by this study prior to the start. Active informed consent was obtained from each participant. The consent process was discussed and any questions or concerns were addressed before asking women to sign the consent forms.

Risks to Human Subjects

No significant risks were associated with the project; the only minor risk was that participants might have felt uncomfortable answering a survey or focus group question. Participants were informed that they could have stopped the assessment at any time if they felt uncomfortable. The information provided by the women could lead to the development of programs that will benefit the island of Tobago. The potential benefits to the participants include increased knowledge about the risks and protective factors of cervical cancer. The potential benefits to society include important information about barriers for women who do not obtain Pap smears. The data can be used to improve screening programs for this population to reduce cervical cancer rates and to tailor programs for this community.

CHAPTER 4

RESULTS

This chapter describes the findings of this study and is organized in the following manner: 1) the demographics of the participants; 2) perceptions of Pap smear screenings; and 3) barriers to Pap smear screenings by the women in the study. The section is followed by a final summary of the qualitative data. Quantitative results will then be presented.

Qualitative Results

Demographics

The sample consisted of 13 women who were interviewed in two focus groups. The participants were evenly split as 46.2% of the participants were between the ages of 25 to 35 and 46.2% were 36 to 45 years. One participant was older than the age of 45. The majority of the 13 participants were single while 46.1% of them were married. Recommendations for Pap test first appeared for 7.7% of the participants from their mother or another relative; 15.4% of them had been given the recommendation by a friend. A physician gave the recommendation to 46.2 % of the participants and 30.8% of the women identified the category of “other” as the source of the information for their first Pap test. Forty-six percent of the focus group participants had completed Pap smears in the last year while 46% were overdue for one, having had one more than three years ago. The Family Planning Association’s office was the place where the majority of the participants, 46.2%, obtained their Pap smears while the 30.8% of the women obtained their tests at their private gynecologist’s office (Table 2).

Table 2

Participant Demographics

Demographic characteristics	Categories	%
Age	25-35	46.2%
	36- 45	46.2%
	> 45	7.7%
Marital Status	Single	53.8%
	Married	46.1%
Children	Yes	69.2%
	No	30.8%
Pap Test Recommendations	Mother	7.7%
	Friend	15.4%
	Doctor	46.2%
	Other	30.8%
Recency of Pap Test	1 Year	46.2%
	2 Years	7.7%
	3 Years	0.0
	> 3 years	46.2%
Pap Test Location	Health Center	23.0%
	Gynecologist	30.8%
	Family Planning	46.2%

Research Question #1: What barriers prevent women from obtaining Pap smears?

I found themes relating to availability and accessibility of quality services, embarrassment, logistics, fear, gender of the gynecologists, facilities that lack privacy, cancer fatalism, knowledge, and physician-patient interaction. The first set of focus group questions that sought to understand the barriers to screening were: 1) Can you tell me any concerns you

may have with going to a gynecologist? 2) Tell me what led to your first occasion to obtain a Pap test? 3) What do you think are barriers that prevent women from obtaining Pap smears?

Recommendations for Pap Smears

In describing what initially led the women in the focus group to obtain Pap smears, recommendations came from a variety of sources. Women in the focus groups were initially advised to obtain Pap smears by their physicians, mothers, and friends. It seemed customary on the island that after having delivered a baby, women were advised to return to obtain a Pap smear. As a result of her physician's recommendation after having her first baby one participant recalled, "My first Pap smear was after I had my daughter. I was 24 after having had my child; well, you know the doctor told me to come back within a certain period of time to have the Pap smear done. So that was my first experience with having Pap smears." The majority of participants related that childbirth also led to their receipt of their first Pap smear with recommendations provided from healthcare workers.

One participant was encouraged to obtain a Pap smear by her mother. Having a family history of cancer was also a reason why one participant began obtaining screenings. A participant in reference to the Pap test said, "I have no hang ups really with it. I go too, and I'm curious because of the fact that I have recognized in my immediate family we have a problem with breasts and breast cancer." One participant, a recent university graduate had first obtained a Pap smear on a free mobile unit that had visited her university. The medical requirement of a job was also a reason for the first Pap smear that was obtained by another participant.

Embarrassment

Women in the study used words, such as frustrating, uncomfortable, embarrassing, and nerve-wracking to describe their first visit to the gynecologist. The discomfort seemed to stem from their not knowing what to expect. A young female in recalling her experience remarked:

The whole lying down and opening up your leg, it's just; it could become frustrating, embarrassing. It's like a lot of things happening at once. For me, that's what it's like. And then reading his or her facial expression, I am trying to figure out if there is some 'hmm' or you know, spread your legs period, sucks!

Another participant remarked on the embarrassment experienced during the visit even though she already had a daughter. This comment implied that she felt she should have been more comfortable with the process. Other women agreed with this sentiment and seemed very concerned with modesty:

Well sometimes it could be embarrassing, and you might never think that I have a daughter, and you had to go and get your daughter, so it wouldn't be such a bad thing to go and get a Pap smear. That is something different. It is kind of embarrassing for me, although you have to do it. I feel a bit embarrassed especially with a male gynecologist because I don't know what does be going through his mind when he have everything opened up in front of him (shared laughter) so that is my only phobia about that.

Logistics

The Family Planning Association, a non-governmental organization received many positive comments from participants who had received Pap smears at this facility. Because female clinicians staff the Family Planning Office on the island, privacy during screenings is usually guaranteed and women generally feel comfortable during their visits. Even while these

advantages were acknowledged, one woman spoke about the difficulty in scheduling an appointment with the Family Planning Association. Appointments usually have to be made in advance and typically one has to think about when your menstrual cycle would begin. Not being able to always determine the dates of your menstrual cycle months in advance could contribute to the level of difficulty, if the only available appointments are months away. A young participant recalled her difficulty in scheduling an appointment:

For me after I had my son I was told I needed to have one. I took him to the health center, and they told me I had to wait until they had seen every child in the health center before they could do the Pap smear. So I was done at 10:00 o'clock, and it had about 12 or maybe 20 person left for the nurses and doctors to see. So I just had to sit there and wait and wait, so I opted not to. And then I tried in January, I think it was, I tried to make an appointment at the FPA. They have a new system; they don't have someone there all the time any more. So you call and leave a message, you have to make an appointment or push a note under the door or some kind of story. I called and called and many times. There was no one out there, or the person ran out. So, at one time when she gave me, like January, she called and gave me an appointment for February. Now the appointment she gave me, the day before my appointment my period came, so I had to call and cancel. So that was February; then she told me she didn't have another appointment until the end of March or April or something.

It was interesting to note that the government run health centers did not provide appointments for services, such as Pap smears and as a result it was a very long wait even though Pap smears were available free of charge at this facility. Logistics were highlighted as many women wanted to plan ahead for Pap smears, so they could be clean and did not want to do a Pap

smear at the end of the day. One woman was adamant in saying, “I am not going to work and sit down whole day and then go for a Pap smear at the end of the day. So I wanted an early appointment.” Other women seemed very concerned with the practical aspects of the visit, such as having had a bath before the visit and feeling clean enough to be examined. They spoke about the mental discomfort they experienced in obtaining a Pap smear after their workday ended, as well as visiting a their health care provider at a time when it was not convenient to have had a bath first. A participant recalled an experience at the Family Planning Association’s office:

I remember going to the Family Planning Association, and the hours are after work, and you can’t go home and bathe, (shared laughter). One day when I went to the FPA it was an elderly lady who was attending to me, and I didn’t even get a chance to freshen up and she said, “I know, I know,” I was embarrassed. She said, “I know you a little sweaty.” I don’t know about anybody else, but I could smell my vagina if I do this (action shown of moving hands) I could smell how it smells. You know you could be a little conscious of not being at your best. So it could be embarrassing especially if I would have gone because I think something is wrong if I’m getting an odor that I think is not normal.

Fear

Fear of the test was also mentioned as a reason why women avoided going to the gynecologist. A participant who recalled her first experience identified fear as a major emotion experienced during the visit:

I’ve only went, done a Pap smear once in my life and that one occasion, it was umm I was afraid. I didn’t know what to expect, the waiting as I said, she mentioned that the instrument was cold. It was really cold, but the whole, the whole waiting process, cause the doctor was doing something else, he was multi-tasking, so there was somebody else

in the next room and just me here with my leg up waiting you know, and then he came. It was the whole thing, the whole experience was cold you know, and then when he come into the room he lectured lalalala. I didn't like it, and I deliberately went really far from my address so that, the doctor, I didn't want to know the doctor. After that I never went back.

This was the participant's first experience and not knowing what to expect had generated a high level of fear. The process of waiting and the actual encounter with the doctor prevented her from obtaining another Pap smear. She appeared to dislike the physician's lecture to her while she was in the vulnerable position of her sample being taken, with her legs open. Privacy concerns, another barrier was evident in her mentioning her choice of an unknown physician and one in a location that was not in close proximity to her residence.

In addition to fear of the test, fear of the results appeared to constitute a barrier for a young participant. The participant commenting on fear being a reason for avoiding Pap smears remarked:

I think it's a fear of the unknown. It's not to say that you think you doing stuff that may be so promiscuous or whatever, but I mean you could only be so sure of your own self (ummm). Yes its good to know, but I think it's the knowledge that kinds of kills you faster. That makes you a bit scared. That's my fear.

In contrast, easy and fast were words used by another participant to describe her experience while obtaining Pap smears: "I've been to male gynecologists for a normal check, and most of them seem to be doing what they have to do, and just quick, they always quick." Three other women viewed the process as easy, painless, and fast. A female who routinely obtained Pap smears, viewed the process in a positive light and remarked:

For me it is something that we have to do, and I just go and do it. I never thought about it as a major thing. I just go with a positive mind..... I go to the FPA as well, and I do it with a nurse. I do it every year for the past how many years since I had my children, for the past 15 years.

Gender of the Gynecologist

Gender of the gynecologist appears to be a major reason why participants may be having negative experiences with Pap smears. One participant immediately mentioned the gender of her gynecologist while she recounted her first experience:

My first years of doing Pap smears, it was a male doctor. I, to me, I felt like he was invading my privacy. Having to be sitting with my legs open and his head you know, I did it, well like I said the first one was when I had my daughter. But I wanted to know why a woman couldn't do it? So eventually I started having women doing it. But really and truly at first, I find that it was really uncomfortable and I found, I found that this man was just poking his whole head to see what was happening inside of me and I didn't like it very much.

Another woman felt that the process was more painful than it should have been, because a male doctor conducted the procedure:

I thought well because it was a male doctor. He probably would have been gentler. But I find he, you know was rough yeah. I find it was really rough. He's like "Please! I don't know okay." You have your legs all hooked up there, and you expecting that this doctor this male doctor would take his time or something. But, I find it was really rough. Up until well, I found a female person to do it; well it was a little better.

Another participant, a health care worker, who also had a negative experience with a male physician, suggested that the physician was “fingering” her during what should have been a routine Pap smear examination. This comment suggests this participant experienced a highly sexual and inappropriate examination that could likely act as a deterrent to obtaining further Pap smears:

I remember going to this male gynecologist who on examination, even up to today I believe that he was checking me out. He was fingering me. No serious, because when I left the office, I... I went straight to this friend and I said, “I am certain that is what he did.” When I kinda was like you know, he pulled away his hand and ... and pretended to be doing something. But, something else and asking you know, if I am having discomfort. And I think that was part of my problem, earlier up in the having a male do the examination.

Privacy

Privacy appeared as a theme, and may act as a barrier to many women who should be accessing screening. Women tended to dislike going to health facilities where they might be familiar with the workers. Due to the small population of 55,000 on the island of Tobago, it is likely that the women who visit health centers would know the nurses who work there. Some women reported feeling uncomfortable because they knew the nurses at the various health facilities. One woman recalled, “I had just made my daughter and I was bit uncomfortable, why? Because I knew the person.” Confidentiality of the results was also reported as a major concern. The women also mentioned the environment and the privacy accorded to the women during the exam as contributing to their negative views of the process.

The place where women obtained their Pap smears influenced how they viewed their experiences. Women who obtained their Pap smears from the public health center had mainly negative experiences. One woman with great emotion recounted:

I went to this health center and I think it was so disgusting. With this doctor and these nurses and all of them come in peeping as though they never see anything like that. I didn't go back to the health center after that, and I went private after that. But I never had a bad experience except for that one going to the public health center.

The presence of nursing students at the public health center which is a common practice may make the visit less comfortable for women who view their privacy as being taken away because of the presence of so many persons in the examination room. They also perceive these nursing students as being less professional and more likely to discuss their test results with other persons outside of the health care field.

Visits to the health center were often described in many negative terms with women commenting on the wait times, professionalism of the staff, and difficulty in obtaining the results. Privacy was also a major concern at the health centers. One participant commented, "I wouldn't do it here in Tobago especially because of umm.... I don't have trust in my situation whether it may or may not be confidential because you know there's always some leak." Privacy dictated where women would be willing to obtain their Pap smears with many women choosing locations far away including on the other island, Trinidad, where the Family Planning Association was often selected as a low cost-option. A current worker in the health care system commented:

I usually go to Trinidad Family Planning; I find it more private. It's a more private setting. I go to the same building every year. I kind of know some of them, but not

personally. They across the waters anyway. (Laugh) I find it more private, because it is like ummm the nurse and yourself in the room and you know talk, and you know she does her stuff and that is it. Compared to the health center exam, especially when they have students and Miss O would say a whole barrage. Everybody just looking at you (shared laughter), you know, no privacy. And somebody, trust me somebody in the group know you, or two persons. Yes you know.

As a worker in the health care system, she was especially concerned with other health care workers' recognizing her and knowing her results. She feels this leak of her results is a great possibility as they are quite familiar with her and may be more inclined to share the result with other workers. Her concerns with privacy can be regarded as a barrier; but she has been able to overcome this potential barrier by going to the other island where she will not be known to complete her Pap smears. Traveling to the other island may be possible for her because she possessed the economic means, as travel to the other island can only be done by ferry or airplane. Women recalled situations in which they had heard health professionals share information that was supposed to be confidential and used this rationale to formulate their reasons for avoiding health facilities on the island where they might be known.

Health professionals who were members of the focus group commented on the underutilization of the mobile cancer-screening unit on the island. Privacy was again mentioned as the reason why the mobile unit was underutilized in many villages in the island. In this instance, the villagers were not only concerned with the guarantee of privacy from other health professionals, but they were also concerned with other villagers' knowing they were accessing the services.

I don't know if you saw the bus going around. Republic Bank gave us a bus (the mobile unit), and it goes to villages all over Tobago. People still don't come when you go to their village, but they will come when you in town. I guess they don't want other people to see them. We still kind of little because when we on the Port, a lot of people will come. When we up at hospital a lot of people will come, and when you go to the villages when we thought they weren't coming forward because the care was not accessible, you go right in the village and you park up there, and they wouldn't come.

Cancer Fatalism

The stigma that is attached to cancer may be viewed as another barrier. Participants were often afraid of obtaining the results of the Pap tests and viewed a cancer diagnosis as a death sentence. Women in the study had known other persons who had died from cancer and used that experience to influence their decision-making process. One participant remarked, "Not to sound as a pessimist, or whatever but, cancer treatment is so aggressive. It's like watching the person die from what I saw. I prefer to just live and if today the cancer shoot me, pow." This participant was willing to not be diagnosed and was willing to die from cancer suddenly. The death from cancer appeared to be as sudden as a gunshot to her, while we know that cancer is a chronic disease that occurs quite slowly. It was important to note that another participant when referring to the mobile unit called it the "cancer van." This comment suggests the fear with which cancer is usually regarded and the negative views that may be pervasive in the community.

Similar to the thoughts of the previous participant, another participant shared the experience of a relative who had been diagnosed and died shortly afterwards:

I think when you know, actually know it in your head, I don't know if it is your brain working tricks on you or whatever okay. You might be, you might have had cancer for years, years not knowing, didn't do any testing. That last six months, like when the doctor tells you, you have that six months. Before the six months are even up, because I have actually seen it myself. My cousin was like her size, just start to lose weight. She lost weight, till she was smaller than me in like two months or so. That is when she found out that she had cancer and she didn't even live two months after that.

Based upon her experience, the participant seemed to feel that once diagnosed with cancer, a patient inevitably faces sudden death. This belief in the inevitability of death in the face of a diagnosis removed some of the motivation to access screening. It was felt that knowledge of the diagnosis would hasten death from cancer.

Lack of Knowledge

Lack of knowledge and time were cited as barriers that prevented women from obtaining screening. It was felt that many women did not realize the importance of being screened; therefore, education about the benefits of screening could increase screening rates. Time was cited as a barrier as self-care habits, such as screening may often not be a priority for women who are often concerned about their families. This delay in screening may possibly be attributed to women who do not think they are susceptible to cervical cancer, as they had no visible signs in the early stages. A participant said, "Some people tend to say, if I was sick, I would be standing up here talking to you? I healthy, if I sick I would fall down. So they actually wait until they get sick with some other thing and then they actually do an overall thing." The perception of not needing the test due to good health or the absence of symptoms may affect the screening behavior of women causing them to delay screening and avoid preventative care.

Physician-Patient Interaction

Women often highlighted physician-patient interaction as a problem when they accessed screening services. Most women indicated that they would like their health care professional to guide them through the testing process, and focus on what would be happening during the procedure. It was felt that a conversation with the client was needed before the examination began. One woman pointed out, “You need to talk to people, you need to make people comfortable. The nurse tells you to undress from your waist down and it’s very impersonal, it is not a nice setting.”

A young participant commented on the interaction with her physician. She said she was uncomfortable during the examination as the physician attempted to speak to her during the examination while taking her sample. It may be best for physicians to speak to patients before beginning the examination. She recalled how this experience made her feel:

Mine was a little uncomfortable because I felt like he was giving me a lecture. You know how young people does feel when older people talk to them. Though it might be sense, I felt like it was direct lecture, he was lecturing to me. This guy you know was going on with me and it was a lecture, so I was a bit uncomfortable.

Summary of Barriers to Screening

Barriers may be classified as personal beliefs and health care systems barriers. Participants in the focus groups reported personal belief barriers to receiving Pap smears, including fear, logistics, time, and lack of knowledge. Negative beliefs and stigma surrounding cancer were mentioned as barriers that may affect why women may not access the screening services on the island. Health-care system barriers highlighted by the participants included facilities that lack comfort and privacy; physician-patient interaction; and gender of the

physician. The majority of the women in the focus groups also mentioned privacy concerns. Women who worked in healthcare services had greater concern about their test results being kept private. The women in these focus groups did not mention cost as a barrier due the low cost at the Family Planning Association and free provision of the screening service at the government health center.

Quantitative Results

The study was conducted in seven hair salons with a predominantly black clientele from July 2011- December 2011. Figure 3 presents the study design that used a single group, pre-post design. The intervention was delivered for a four-month period after the recruitment of the participants.

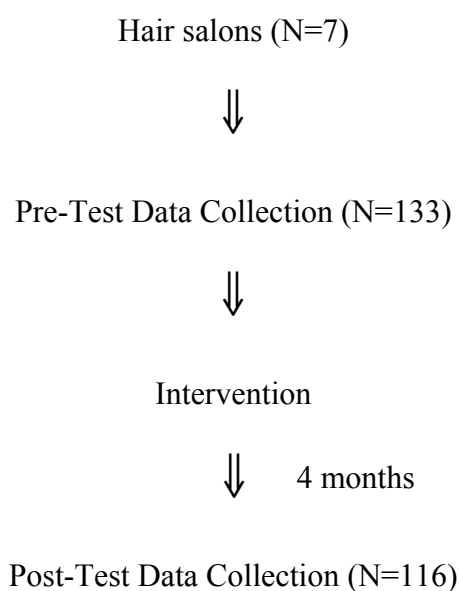


Figure 3 Overall Study Design

Hairstylists Characteristics

All the hairstylists in the study self-identified as Black. The majority of the stylists, 57% fell into the created age group of 36-45. None of the stylists had been previously diagnosed with cancer, but two stylists had a family history of cancer. None of the stylists had health insurance however; they all reported accessing their health care needs at their doctor's office. When the training was conducted in June 2011, 29% of the stylists were not in accordance with the current screening guidelines having had a Pap test more than three years ago, and 29% had never had a Pap test done.

Sample Characteristics

Most women enrolled in the study self-identified their ethnicity as Black (86%), while 10% identified as multi-racial. The majority of women (68%) fell into the age group of 25-35 years. No one in the study had a previous diagnosis of cancer. Most women indicated that their highest level of education was graduation from high school (36%); while 20% indicated that they either had some college education; or a college degree (26%). Less than half of the women in the study were currently married (31%) or living with a partner (10%). The majority of women did not have health insurance (60%), but most women in the study obtained their health care at a doctor's office. Table 3 presents the demographic and health characteristics of the women in the study.

Table 3

Demographic and Health Characteristics of Women in the Study (N= 116)

Demographics characteristics	n (%)
Ethnicity	
Black	100 (86)
Indian	2 (2)
Multi-racial	11(10)
Age, years	
25-35	79 (68)
36-45	20 (17)
46-55	14 (12)
Cancer Diagnosis	
Yes	0 (0)
No	113 (100)
Education	
Elementary school	11 (10)
Some high school	8 (7)
High school graduate	42 (36)
Some college	23 (20)
College graduate	30 (26)
Trade or beauty school	2 (2)
Marital Status	
Married	35 (31)
Single	66 (57)
Divorced	2 (2)
Living with a partner	11 (10)

Demographics characteristics	n (%)
Source of Health Care	
Doctor's office	92 (80)
Community health center	37 (32)
Hospital emergency room	22 (19)
I don't get health care	1 (1)
Other	1 (1)
Health Insurance	
Yes	46 (40)
No	70 (60)

Totals may be less than stated sample size due to missing data.

Cervical Cancer Screening

Data about Pap smear testing were provided by 116 women, of whom 42 (36%) reported their most recent Pap test within the last year. Forty-eight percent had obtained a Pap smear in the last three years. Twenty-four percent of women had obtained a Pap smear more than three years ago, while 28% had never undergone one. The majority of women (52%) were not up to date with the current screening guidelines (Table 3). The majority of women (85%) when asked if Pap smear could help to find cancer when it is just getting started believed that a Pap smear could help find cervical cancer, despite the fact that most of them did not adhere to the current screening recommendations.

Table 4

Pap Test Recency

Pap Test Recency	n (%)
1 year ago	42(36%)
2 years ago	9 (8%)
3 years ago	5 (4%)
More than 3 years ago	28 (24%)
Never	32 (28%)

Potential Barriers to Pap Smears

The most frequently reported barriers to obtaining Pap tests were women feeling that they didn't need it (34%), lack of a physician's recommendation (25%), believing tests were painful (21%), and not viewing tests as important (17%). Other barriers reported were fear of the test (16%) and believing the test was embarrassing (12%) (Table 5).

Table 5

Potential Barriers To Receiving Pap Smears

Barriers	n (%)
Compared to other health problems, having a Pap smear is not important	20 (17%)
At my age I don't need a Pap smear	39 (34%)
I am afraid the Pap smear might show a problem	18 (16%)
A Pap smear is painful	24 (21%)
A Pap smear is embarrassing	14 (12%)
A Pap smear cost too much	7 (6%)
My doctor has not recommended a Pap smear	29 (25%)

Totals may be less than stated sample size because of missing data. For each potential barrier we classified women as having the barriers (women indicated agree or strongly agree) or not having it (women indicated disagree or strongly disagree).

Pap Smear Intention and Confidence in Obtaining Tests

For Pap smears (55%) of women indicated intent to get one every three years. The majority of women indicated that they would be willing to obtain a Pap smear (89%). Women were considered willing to obtain a Pap smear if on a scale of 1-10 they chose a number greater than 5.

Knowledge of Cervical Cancer Risk Factors

Identical attitude and knowledge questions related to cervical cancer were asked before and after the intervention and were measured on a five-point Likert scale ranging from “*Strongly agree to Strongly disagree.*” Thirty-two percent of the women were neutral about HPV being the cause of cervical cancer, while only 50% were aware of this fact. Fifty-two percent of participants indicated knowledge that smoking would increase the risk of cervical cancer (Table 6).

Table 6

Pre-Test Results on Study Knowledge About Cervical Cancer

Knowledge	n (%)
Cervical cancer is caused by HPV virus	58 (50%)
Smoking may increase risk of cervical cancer	60 (52%)
A healthy diet may prevent HPV	64 (55%)

Totals may be less than stated sample size because of missing data. For each potential barrier we classified women as having the barriers (women indicated agree or strongly agree) or not having it (women indicated disagree or strongly disagree)

Perceived Susceptibility and Risk

When the women were asked to respond to the question, “*It is likely that I will get cervical cancer*” 16% agreed, while 35% disagreed. When they were required to indicate their

chances of getting cervical cancer in the next few years 11% agreed indicating they thought they had a high risk, and 42% disagreed. The majority of women were neutral about their risk (45%). This mirrored the response when they were asked about contracting cervical cancer in the next few years, 45% also selected neutral as the answer.

A four-point Likert scale ranging from “*Not at all possible*” to “*Very possible*” was used to determine the risk of contracting cervical cancer when two identical questions were asked pre and post-test. At pretest, 6% of women felt it was not at all possible to develop cervical cancer, while 50% women felt it was very possible. At post-test only 1% felt it was not at all possible while more women, (55%) felt it was very possible to reduce their risk. The women in the study also assessed the risk of other women contracting cervical cancer; at pretest 59%, felt it was very possible for other women to reduce their risk. At post-test this number decreased to 52%.

Table 7 provides the means and p-value of the pre-and post-assessment of knowledge and perceived risk. The intervention showed significant decreases in knowledge that smoking and diet can affect the contraction of cervical cancer. There were no significant increases in knowledge that HPV is the cause of cervical cancer. Women in the study also showed no difference in their perceived risk of getting cervical cancer. The intervention showed significant increases in the perception of one’s own risk of contracting cancer. At post-test there was a significant increase in the number of participants obtaining Pap smears.

Table 7

Comparison of item scores between pre-assessment and post -assessment

Measure	Pre- intervention assessment mean	Post intervention assessment mean	p-Value
Recent Pap test receipt	0.69	2.99	0.001
Knowledge of HPV and cervical cancer	2.10	1.80	0.081
Knowledge of smoking's role in cervical cancer	2.50	1.84	0.001
Knowledge of diet's role in cervical cancer	2.46	1.50	0.001
Perceived risk of getting cancer	3.03	2.86	0.464
Perceived risk of other's getting cancer	3.33	2.80	0.008

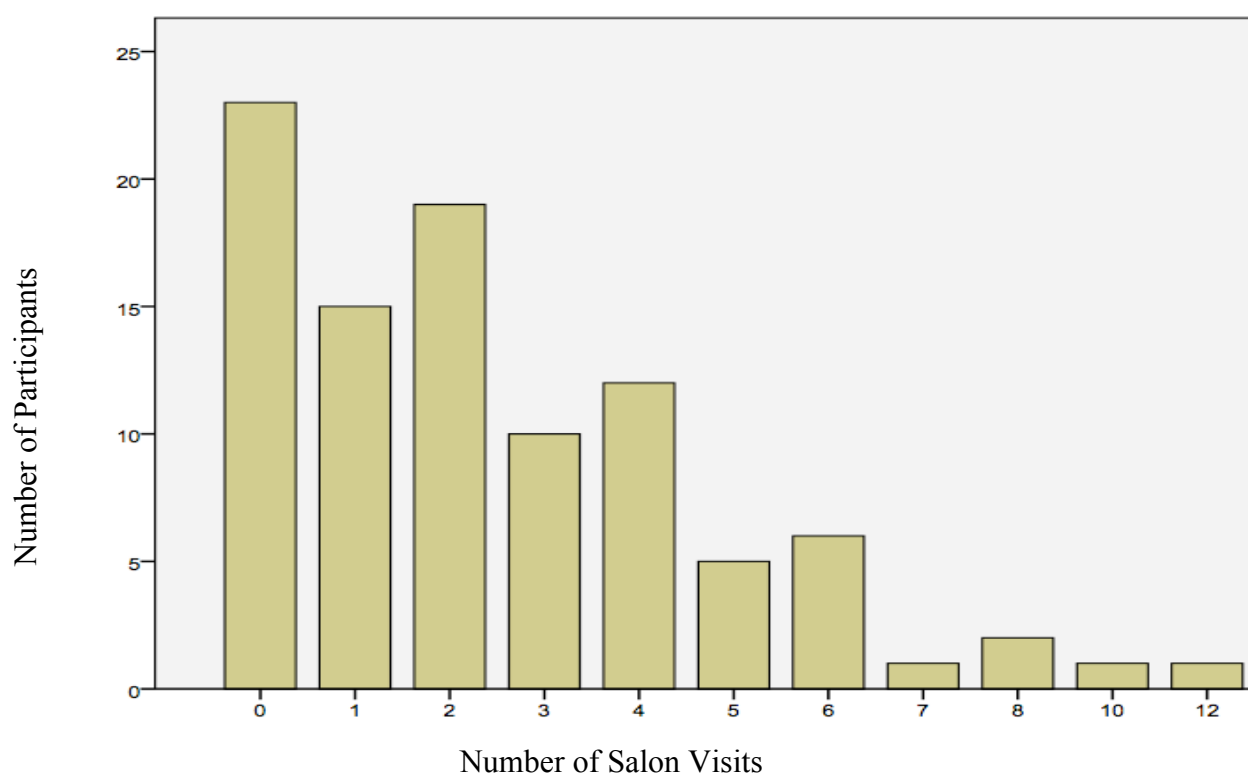
Logistic regression was performed using age, marital status and education to determine the effect on recent receipt of Pap tests. The date of last Pap smear was divided into occurring more than three years ago or less than three years ago. Age was a significant predictor of having received a Pap test less than three years ago (OR 0.39). As age increased there was a 60% (S E 0.340) increased odds of a recent test. Education and marital status did not appear to be significant predictors of screening less than three years ago.

Health Chat

Twenty six percent of the women in the study reported that their hairstylist had spoken them to about cervical cancer and Pap smear receipt. Twenty percent of the women though, indicated that they had not returned to the salon in the four months that the intervention was in effect so they would not have had the opportunity to receive the ‘health chat.’ Thirteen percent of the women reported only visiting the salon once during the intervention period. Figure 4 provides information on the number of salon visits by participants in the study.

Figure 4:

Salon Visits by Participants in the Study



Totals may be less than stated sample size because of missing data.

Figure 4. Salon Visits by Participants in the Study

CHAPTER 5

DISCUSSION

This chapter discusses the findings of this study and applies them to society, research, and practice. In this chapter the qualitative findings are discussed first, then the quantitative findings are discussed. Third, limitations and strengths of the current study are addressed to guide in making appropriate inferences about the data. Fourth, implications for clinical practice, research, education, and policy are presented. Finally, the discussion culminates with general conclusions.

Discussion of Qualitative Findings

Having a health professional recommend screening appears to be a pivotal event for females who access screening services on the island. The central role of a physician's advice comports with the literature, which identifies such advice as a key motivator in cancer screening (Ackerson, 2010). This study's results are similar to a recent qualitative study among African American women in the United States. Having a health professional recommend screening has also been identified as a major factor in screening behavior among African Americans (Ackerson, 2010). Ackerson (2010) found that women who had routinely obtained Pap smears had been influenced on the importance of routine care by their mothers and health care providers. Social networks are also regarded as very important factors that influence screening behavior because they serve as sources of health information (Ogedegbe, Cassells, Robinson, DuHamel, Tobin et al., 2005); this includes advice from friends and family members.

Having a regular source of care is an important factor in accessing preventative services among Black women (Datta, Colditz, Kawachi, Subramanian, Palmer et al., 2006). Most of the women in the focus groups did not have a personal gynecologist, so it would have been more difficult for them to obtain recommendations and reminders for Pap smears. Women in the focus groups mentioned that they were told to obtain Pap smears by a clinician and this recommendation usually occurred after having delivered a baby. Therefore, women who have not delivered babies or who may be past childbearing ages may not obtain recommendations for Pap smears as frequently as needed. Agurto et al. (2004) found that many LAC countries did not provide preventative services for older women as Pap smears were routinely offered as a part of family planning and postnatal care services, thus targeting a lower age group. Middle-aged women who may be at greatest risk for cervical cancer should be specifically targeted in campaigns to increase screening in this population. Patients who defer retesting because of past experiences may also require special attention. Research indicates that women with positive experiences routinely obtain Pap smears (Ackerson, 2010). Studies in the United States have revealed that approximately half of all diagnosed cases of cervical cancer are in women who have never been screened, and an additional ten percent occur in women who have not been screened in the past five years (Saslow, Runowicz, Solomon, Moscicki, Smith et al., 2002).

Fears of the test and anxiety about obtaining the results have appeared to be major barriers that are supported by many studies (Agurto, et al., 2004; Scarinci, et al., 2010). Agurto et al. (2004) found these to be barriers in the five LAC countries they studied. These fears are strongly linked to cancer fatalism, which is a belief that death is inevitable when cancer is present. Cancer fatalism was evident during the focus group discussions as experiences of females who were diagnosed with late-stage cancers and subsequently died, were often

mentioned. Deep cultural views appear to be present as women feel that once cancer is discovered, the person dies soon after the diagnosis. This view is not only necessarily related to cervical cancer but to any cancer, including breast and prostate cancer. Late stage diagnosis may occur very frequently as women delay screening and often die within a few months of their diagnosis. Death though, is not regarded as the result of late diagnosis but as the result of receiving the diagnosis. Women did not feel that there was a cure for cancer and the fact that cancer can be cured has to be a part of the message that is delivered to women on the island. In a recent qualitative study on breast and cancer screening, strong cancer-related worry has been shown to be a barrier among African American women in the United States (Ochoa-Frongia, Thompson, Lewis-Kelly, Deans-McFarlane, & Jandorf, 2011).

Fear and fatalism have been explored as barriers that impact breast cancer screening among African American women (Talbert, 2007). Fear and fatalism may also be linked to cervical cancer screening as fear has the effect of impairing judgment, behavior, and standard practice. When individuals are fearful of finding cancer they may decide not to obtain screening. Cultural beliefs about cancer are also closely linked to how women regard screening. Fear of cancer can coerce women into thinking that hair and weight loss present too much of a risk if they are diagnosed with cancer. Some women would rather not risk the social consequences of the obvious physical symptoms that can accompany cancer treatments, in order to avoid others discovering that they have cancer.

Religious beliefs also appear to play a role in delayed screening because it is a common religious belief on the island that if it is your time to die, then it would happen regardless of what medical interventions take place. Other studies have shown that religious beliefs, which are usually an important coping mechanism among African American women, may also be a barrier

for cancer screening. Many women may not take control of their medical care in favor of faith in the ability of God to handle their medical problems (Ochoa-Frongia, et al., 2011). It is crucial that women recognize the importance of preventative screenings. Having personal knowledge regarding the importance of the Pap smear and of one's risk factors for cervical cancer is important if one is to take action to prevent an adverse outcome (Ackerson, 2010). Self-efficacy should be a target of interventions that are designed to increase screening behavior. This self-efficacy may need to also be extended to coping with cancer in the event there is a positive diagnosis.

Gender of the gynecologist has been identified as a barrier to screening in other studies in LAC (Agurto, et al., 2004). Ackerson (2010) found that participants who did not routinely obtain a Pap smear found that having a Pap smear and pelvic exam was perceived as an unpleasant procedure. Negative experiences were also connected to the provider being male. The island of Tobago currently has five male gynecologists, and no female gynecologist. Other studies have suggested that female patients who see female practitioners have higher rates of breast and cervical cancer screening (Kreuter, Strecher, Harris, Kobrin, & Skinner, 1995; Lurie, Margolis, McGovern, Mink, & Slater, 1997). It is felt that female practitioners place greater emphasis on prevention and health history, and may be more comfortable conducting examinations such as Pap smears. Women who feel great discomfort toward seeing male practitioners have limited options presented to them on the island. Nurses, who are predominantly female, would therefore play a critical role in creating a positive screening environment and positive perceptions toward screening. Nurses are in a position to influence positive screening behavior among women and to promote these important self-care behaviors.

Nurses may require additional training to ensure that client-professional interaction can be more positive. Nurses would first need to be educated, so they can educate others about the benefits of screening and of early diagnosis. Nurses and other clinicians should be aware of how women regard cancer and emphasize that it can often be cured when diagnosed early. Such information should become a regular feature of conversations when clinicians speak to women about accessing screening services.

The public health centers, which are run by the government and provide free Pap smears, have not received any positive feedback from the participants in the study. Lack of privacy, an unwelcoming environment, and unprofessionalism from the staff would be major factors that need to be improved in order to increase screening at these facilities. Additionally, the inability to make appointments for services at the public health centers makes it difficult to plan for accessing these services. Health service delivery needs to be targeted through quality control mechanisms, which can be very cost-effective.

Privacy concerns emerged as a major barrier that affected Pap smear receipt. The common practice of having nursing students present during Pap smears at the public health centers contributes to the women's perceptions that the examinations lack privacy. Prior to initiating the procedure, patients should be informed of the reasons for the presence of the nursing students, and their permission sought before allowing the nursing students into the room during the examinations. While female nurses predominantly staff these centers, the fact that the centers are located in the villages and may be staffed by nurses from that village or nearby villages, act as a deterrent for women who intend to receive Pap smears due to privacy concerns. Ethics training should be conducted with the staff at all health facilities annually to ensure that

they understand the importance of protecting patient confidentiality; and mass media campaigns can educate patients on their rights if they feel that their privacy was violated.

Discussion of Quantitative Findings

The primary purpose of this pilot study was to investigate whether recruiting and training hairstylists would be an effective way to change knowledge, attitudes, and increase Pap smear receipt. This model of education has been successfully proven in educating about breast and colorectal cancer. It has also been used to collect information about cervical cancer screening but not to educate women about cervical cancer. This appears to be the only study to use this model to educate about cervical cancer. The North Carolina BEAUTY project has been successful in showing that beauty salons may be an effective community-based setting for recruiting African American women who were willing to participate in a wide range of cancer prevention screening and education programs (Reiter & Linan, 2011). Its success has been shown in other states such New York and California with breast cancer screening and diabetes (Sadler, et al., 2004; Wilson, et al., 2008). Cervical cancer is a much more intimate and private topic and while this setting has not extensively been used for cervical cancer education it shows that it has potential to alleviate a major health problem in LAC countries. Cultural norms surrounding sex and sexuality in Tobago may have made this a more difficult topic to initiate with customers in a public setting. It is clearly an issue that 28% of the sample had never had a Pap smear, and another 24% had been screened more than three years ago. This indicated a low rate of adherence to screening guidelines. This is disconcerting since this sample of women probably does not represent the most disadvantaged, and uneducated women since they were able to access and afford the services of a hairstylist.

This research underscores the idea that trained hairstylists can deliver targeted health messages to their customers. Results from the study indicated that 26% of the women had a conversation with their stylists about cervical cancer and cervical cancer screening. These results attest to the feasibility and potential effectiveness of using hairstylists as natural change agents and capitalizing on the relationship between the client and the stylists. It may be feasible to investigate the effects and frequency of the health chats by hairstylists who were not up to date with the screening guidelines.

Pap smear receipt demonstrated a significant increase after the intervention despite no significant increases in knowledge about cervical cancer's link with HPV. This could be due in part to women accepting the intervention as a reminder to get screening, and as a cue to action even though knowledge was not increased. Age was correlated with recent Pap smear testing. Women aged 36-45 showed increased odds (60%) of having undergone recent screening. It is important that women outside of the group who may have accessed post-natal care also receive messages to obtain screening as more than 20% are likely infected with HPV and are at higher risk for cervical cancer (Dunne, Unger, Sternberg, McQuillan, Swan et al., 2007). Lay health workers have been successful at increasing screening rates among minority women in the United States, and may be especially poised to reach many younger women, as they may frequently go to their hair salons.

These results suggest that there should be widespread education campaigns to inform women on the benefits of screening, as the lack of awareness of the need for screening was the most cited barrier. Education materials should be culturally relevant and should specifically target the barriers most commonly cited by women in the study. These results also suggest that increased efforts are needed to ensure that women receive doctors' recommendations for these

tests. Communication between the patient and the physician may need to be improved so that during conversations surrounding Pap smears, physicians would address the barriers to screening.

In the absence of specific programs to ensure that women obtain relevant cancer screenings recommendations; interventions that increase the use of provider and client reminders, small media, or one-on one client education can be effective in increasing cancer screening. Client reminders are printed or telephone communications that tell people they are due (reminders) or late (recall) for screening. Client reminders may also include information about indications for screening; benefits of screening; ways to overcome barriers to screening; and help with appointment scheduling. It would be important that reminder systems be created for reminding women who may have been screened in the past of the continued need for regular screening when it is becoming due. This may be cost-effective and can even be done through the use of a text message or other eHealth technology, which may be fast, cheap, and effective. Small media would include videos or printed communications such as letters, brochures, leaflets, pamphlets, flyers, or newsletters that are distributed from healthcare systems or other community settings. An advantage of small media messages is that it can address unique circumstances and characteristics of specific individuals that are identified through assessments, and for example it can be geared to stages of change (Guide to Community Preventive Services, 2011).

Additionally, one-on-one education has been recommended to increase cervical cancer screening. One-on-one education refers to the communication of information to individual clients by telephone or through face-to face encounters, conducted by a healthcare professional, LHWs, or volunteers. This method of education can be easily tailored to individual clients and their level of preparedness for the recommended health service.

According to the Community Guide (2011) there was insufficient evidence that the removal of structural barriers which would include offering services in alternative, non-clinical settings (e.g. mobile vans) can work to increase screening. This may be crucial for the health care administrators on the island to consider, as it is a relatively small island and women are already in close proximity to a health care facility. The reasons for women not accessing screenings on the island may not be related to proximity to a health facility, as this was not mentioned as a barrier in this study. Women in this study were also very concerned with privacy and the reactions of other women who may see them accessing the services on the mobile unit. These findings by the Community Guide have been applicable for studies in the United States and further research is needed to see if they are applicable for LAC countries.

This study emphasizes the great need for widespread sex education among the population of Tobago. Approximately half of the participants were unaware that HPV was a necessary cause for cervical cancer. This would suggest that greater emphasis should be placed on sex education, and education about sexually transmitted infections. In a culture where transactional sex and violence against women limit the ability that females may have to insist that condoms and other barrier methods be used during sexual intercourse, education has to be crucial target. Emphasis should be placed on the use of condoms during sexual intercourse as a risk reduction technique. This education should begin in high schools, as this is the age when youths are most likely making their sexual debut. Health educators should be specifically trained to speak comfortably about the need to use condoms to prevent HPV and other sexually transmitted infections. Women should also be taught greater skills for negotiating condom usage with their partners.

The HBM has been extensively applied to breast cancer screening. Following the theoretical framework of the HBM, lower perceptions of personal risk has been associated with lower frequency of cancer screenings (Consedine, et al., 2005), in theory because there is a low perception of risk, there is no need to screen. Very few women in the study believed that they were likely to get cervical cancer and this possibly contributed to the extremely low screening rates. Women in the study had limited cancer knowledge, as they were mostly unaware that HPV was the cause of cervical cancer. On the other hand, even while the women had low screening rates, the majority of women believed that a Pap smear could help find cancer early and saw the perceived benefits of having a Pap smear. Most women highlighted many barriers that prevented them from following screening guidelines and may not have felt that they had the self-efficacy to overcome the barriers they perceived. Poorer knowledge and beliefs that cancer treatments do not work have been associated with lower rates of breast cancer screening and may also be applicable to cervical cancer screening (Consedine, et al., 2005). It was envisioned that the hairstylists would have acted as models for clients who may not have been previously screened. But, not all the hairstylists enrolled in the study were adhering to the screening guidelines and may not have been effective models if they were asked about their screening experiences.

Integration of Qualitative and Quantitative Results

The majority of women in the study intended to be screened in the next three years. However, reported barriers to screening ranged from no awareness of need for screening, lack of knowledge, lack of a doctor's recommendation, perceived pain, embarrassment, and fear. A contrary finding was observed in the focus group data as embarrassment was listed as a major factor that inhibited screening behavior among these participants, but only 12% saw this as a

barrier when provided with response options as cues. This discrepancy may be due in part to differences in the framing of the questions and composition of the samples in both phases of the study. Most of the women in the focus groups had been up-to-date with the screening recommendation when compared with the sample that completed the survey where approximately 50% of the women had not complied with the current screening recommendations.

Cost was the barrier that was least cited in the surveys and was not mentioned as a barrier when the question was posed in its open-ended format to the focus group participants. This could be due to the availability of free Pap smears at the health centers and low-cost screenings at a non-governmental organization, the Family Planning Association. Current data suggests that reducing out-of-pocket cost has not been shown to be effective in increasing cervical cancer rates in other studies (Guide to Community Preventive Services, 2011). Cost has been recognized as a barrier in other studies in LAC and among African Americans in the United States.

Women in both phases of the study indicated lack of knowledge as a barrier. Merely advising women to obtain screenings may not satisfy their information needs. Even when women were told to obtain screenings they were still unaware of the cause of cervical cancer and did not know its link to HPV. The barrier most often cited in the survey was the fact that women surveyed felt like they didn't need the Pap test. Sixteen percent of the women completing the survey indicated they were afraid that a Pap smear would show a problem. This corroborated the findings in the focus group as fear of the test and fear of the results emerged as major barriers among the women. The pervasive stigma that accompanies cancer may be affecting screening rates in the island.

Privacy emerged as a barrier with the focus group participants, but this was not assessed as a barrier with the intervention participants on the survey. Privacy has been identified in another study in LAC as a barrier among women (Agurto, et al., 2004). In this study, a slight nuance was mentioned, that of being familiar with the health practitioner. This idea has not been explored in other studies on barriers to cervical cancer screening which may be an important barrier especially in islands with small populations such as those in the Caribbean. Pain was not mentioned as a significant barrier in the focus groups, but 21% of the participants identified this as a barrier when provided with the response option on the survey. This finding is consistent with other studies on barriers to cervical cancer screening (del Carmen, 2009), especially among middle-aged women (Hoyo, et al., 2005). It is expected that women who may have experienced painful Pap smears in the past would be less likely to want to return to obtain screenings.

This study has several important strengths; it can enable hairstylists to become health educators, which is an innovative feature of the intervention. Hairstylists enjoy a trusted relationship with their clients and may be suited to delivering health messages. Additionally, hairstylists can be seen as change agents in their communities. A study by Linan et al. (2005) showed that trained cosmetologists confidently and continuously delivered health messages to their customers up to 12-months after the pilot intervention was completed.

The study design required that women be taken through a fully informed consent process. This process offered many of the women their first experience with the research process. This study may be a way to open the door for participation in future research studies. A follow-up rate of 87% was good for a community that was not accustomed to being involved in research studies.

The use of hairstylists as LHWs to deliver health messages may be a relatively inexpensive method of health education. The cost-effectiveness of using 16 African American owned barbershops in Texas to deliver health messages on hypertension has been researched and found to be a feasible method for delivering health messages and could provide great long-term savings (Victor, et al., 2011). Further studies could employ a cost analysis to determine the benefits of using hairstylists as LHWs.

Study Limitations

A small sample size was used and only two focus groups were conducted. The groups were conducted after working hours in Scarborough, the capital of the island; this may have caused women from the rural areas to be less represented as focus groups participants. Several members of the focus groups were health professionals currently working on the island therefore the data captured, may not represent the attitudes and barriers of all women in Tobago. Differences in the framing of the open-ended focus group questions, (i.e. What do you think might be factors that prevent other females from obtaining regular screenings?) compared to fixed survey questions, (i.e. You are afraid to have a Pap smear because it might show a problem) may have introduced a subtle artifact because the questions had different subjects. Focus group participants tended to answer their questions in reference to others they knew and the general population. The survey questions were pre-existing and compiled from pre-existing surveys that were not tailored to the population of women in Tobago. The survey questions were phrased to apply to each person taking the survey.

Additional limitations of the study included the use of self-reported data for Pap smear receipt as women may have wanted to provide socially desirable responses to meet the researcher's expectations, thus inflating the study's results. Post-intervention data collection was

completed by telephone follow-up while the pre-test was paper based and this may have affected the internal validity of the results. Because this was a pilot study, a convenience sample of hairstylists and customers was used and there was no comparison group. The sample used may not represent the generalized population, as women recruited at the hair salons would have been able to afford the services provided at the salons, may have more disposable income, and be better educated than the island's female population. All the salons used in the intervention were also located in the capital city, Scarborough. Follow-up in this study was only for four months; a longer-term follow up may have shown greater effectiveness as qualitative data revealed great difficulty is scheduling appointments. Hairstylists may have varied in the extent to which they delivered the intervention, as there were no financial incentives for the hairstylists in the study. Salons would also have varied in their level of activity and this would have affected how often they spoke to the clients, and when the conversations were initiated. No process evaluation was conducted to determine if the intervention was implemented with fidelity

Study Implications

Implications for Practice

Despite these limitations, these findings can inform healthcare providers about the perceptions of Pap smears on the island and the barriers women face that may prevent them from accessing screening. The low rates of compliance with Pap smear guidelines among this sample of adult women (48%) should sound an alarm to health professionals interested in chronic disease prevention and early detection. While this study had a small sample size and is not a definitive study, these findings raise concerns about adherence to screening guidelines for other chronic diseases.

These findings also show the importance of health care practitioners in recommending screening to their patients. This study can be used to improve patient-provider communication in Tobago and improve rates of Pap smear receipt. The qualitative data indicates that women are often not comfortable when relating to practitioners especially if they are males. Therefore practitioners should be cognizant of this discomfort and always ensure that a female is present when conducting Pap tests and pelvic examinations. Facilities should also be designed to ensure that they guarantee comfort and privacy.

Implications for Research

This study provides multiple implications for future research as rates of oral and throat cancer are expected to surpass cervical cancer by the year 2020 due to HPV. Cancer research is a growing field and novel approaches must be used to encourage screening. While a study has looked at the prevalence of oral HPV among women in Tobago (Ragin, et al., 2007), there have been no previous studies on cervical cancer conducted in Tobago. This study contributes to the literature by providing qualitative information on cervical cancer screening and determines the effectiveness of using hairstylists as LHWs in Tobago.

This model of using salons as a setting for research can be further expanded to facilitate education for other chronic diseases, such as diabetes and hypertension that are currently plaguing LAC countries. This research looked at barriers and perceptions of Pap smear screening however, future studies should target specific age groups to see if barriers among women vary with age. If clinicians recognize the barriers that women face, then these barriers can be specifically addressed during preliminary discussions to alleviate the patient's concerns. Obesity has been found to be inversely associated with cervical cancer screening in other studies (Maruthur, et al., 2009), but no data on BMI were collected during this study. Further research

can explore the association between obesity and Pap smears to determine what can be done to encourage screening among women who may be obese in light of growing obesity trends on the island. Health professionals should also be targeted in further research studies for their views and perceptions of the screening experience. Additionally, the cultural barriers that affect cancer-screening behavior should be understood and become an integral part of the message delivered to females.

Process and outcome evaluation of the intervention should be conducted to identify which elements of the intervention yielded the greatest results. Further work is needed to understand the quality of the health information exchanged, and identify the elements of salons in the LAC culture that would make this an ideal setting for health promotion messages to be delivered. Studies are also needed to assess the dynamics of the client-hairstylist relationship that would enable them to become effective LHWs. Additionally, a randomized trial would be necessary to determine the causal effect of the intervention. Future research should also be focused on educating parents about the HPV vaccine and its effectiveness in reducing cervical cancer.

Implications for Education

The study has implications for educating future clinicians and public health researchers. This study can assist in training future nursing staff on the island of Tobago. Education about cervical cancer should specifically target the barriers most often mentioned by women in the study. Fear of cancer and cancer fatalism has to be specifically addressed when speaking to women, as views on cancer fatalism seem to quite pervasive. Education campaigns should also utilize the experience of cancer survivors to stress the importance and advantages of obtaining an

early diagnosis. Public health researchers can do further qualitative work with larger sample sizes to understand the multi-level factors that may be preventing screening.

Implications for Policy

This study provides legislators with evidence that may be needed to ensure more females are trained as gynecologists and health practitioners. It may be crucial to ensure that scholarships and other incentives are used to attract more females to becoming obstetricians, gynecologists and physicians. Health workers currently practicing may be encouraged to obtain further training and specialize in these fields that focus on women's health. The lack of knowledge displayed about HPV indicates a great need for comprehensive sex education. Ethics training should also be conducted on an annual basis for all healthcare workers to ensure that the importance of confidentiality is continually emphasized. In conjunction, media campaigns should be launched to ensure that patients are fully aware of their rights in the healthcare system, and understand the steps that may be taken if they feel these rights were violated.

Conclusions

The research study expanded the knowledge base about a previously unstudied population on the island of Tobago. Participants in this study reported low rates of adherence to recommended cervical cancer screening guidelines; and innovative strategies are needed to improve these rates. Beauty salons may represent a promising new setting for educating women about disease and illness. Salons are located in almost all communities and women visit frequently, usually for several hours with each visit. Characteristics of hairstylists as natural helpers make them ideal for delivering brief motivational health messages to their clients. It has also been shown that hairstylists are interested in salon-based education and are truly natural helpers in their roles. The salons can also be an ideal location for distributing small media to

clients. Findings from this study demonstrate the feasibility of working with hairstylists to educate about cervical cancer. This study suggests that salons are ideal settings for delivering health promotion programs.

REFERENCES

- Ackerson, K. (2010). Personal influences that affect motivation in pap smear testing among African American women. *Journal Of Obstetric, Gynecologic, And Neonatal Nursing: JOGNN / NAACOG*, 39(2), 136-146.
- Agurto, I., Bishop, A., Sanchez, G., Betancourt, Z., & Robles, S. (2004). Perceived barriers and benefits to cervical cancer screening in Latin America. *Preventive Medicine*, 39(1), 91-98.
- Aldrich, T., & Hackley, B. (2010). The impact of obesity on gynecologic cancer screening: an integrative literature review. *Journal of Midwifery & Women's Health*, 55(4), 344-356.
- Allen, C. F. (2002). *Gender and the transmission of HIV in the Caribbean*. Paper presented at the Society for Caribbean Studies Annual Conference Papers.
<http://www.caribbeanstudies.org.uk/papers/2002/olv3p7.PDF>
- Allen, C. F., Da Costa Martinez, D., Wagner, U., McLetchie, K., Da Gazon Washington, A., Chapman-Smith, T., & Russel- Brown, P. (2000). *HIV and youth in Tobago: silence and secrecy in a small island*. Paper presented at the XIII International AIDS Conference, Durban, South Africa.
- Almonte, M., Albero, G., Carcam, C., Garcia, P. J., & Perez, G. (2008). Risk factors for human papillomavirus exposure and co-factors for cervical cancer in Latin America and the Caribbean. *Vaccine*, 26(Supple 11), L16-L-36.
- American Cancer Society. (2012a). New guidelines for cervical cancer. Retrieved May 11
<http://www.cancer.org/Cancer/news/News/new-screening-guidelines-for-cervical-cancer>

- American Cancer Society (Producer). (2012b, April 19th, 2011). What are risk factors for cervical cancer? Retrieved from <http://www.cancer.org/cancer/cervicalcancer/detailedguide/cervical-cancer-risk-factors>
- Amy, N. K., Aalborg, A., Lyons, P., & Keranen, L. (2006). Barriers to routine gynecological cancer screening for White and African-American obese women. *International Journal Of Obesity* (2005), 30(1), 147-155.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215.
- Bandura, A. (2004). Health promotion by social cognitive means. *Health Education & Behavior*, 31(2), 143-164.
- Becker, J., & Leitman, E. (1997). Introducing sexuality within family planning: The experience of three HIV/STD prevention projects from Latin America and the Caribbean *Quality/Calidad/Qualite* (Vol. No.8). New York: Population Council.
- Bloor, M., Frankland, J., Thomas, M., & Robson, K. (2001). *Focus groups in social research*. Thousand Oaks, CA: Sage
- Bombereau, G., & Allen, C. F. (2008). Social and cultural factors driving the HIV epidemic in the Caribbean: a literature review: Caribbean Health Research Council.
- Bragg, C. A. (2011). The Black barbershop: Increasing health awareness among minority men. *The American Association of Behavioral and Social Sciences Journal*, 15, 1-19.
- Burchell, A. N., Winer, R. L., de Sanjose, S., & Franco, E. L. (2006). Chapter 6: Epidemiology and transmission dynamics of genital HPV infection. *Vaccine*, 24 Suppl 3, S3/52-61.
- Centers for Disease Control and Prevention (Producer). (2011, August 27th). HPV vaccines. Retrieved from <http://www.cdc.gov/hpv/vaccine.html>

- Chamaz, K. C. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Thousand Oaks, CA: Sage.
- Champion, V. L. (1993). Instrument refinement for breast cancer screening behaviors. *Nursing Research*, 42(3), 139-143.
- Champion, V. L. (1999). Revised susceptibility, benefits and barriers Scale for mammography. *Research in Nursing and Health*, 22(4), 341-348.
- Champion, V. L., Skinner, C. S., Hui, S., Monahan, P., Juliar, B., Daggy, J., & Menon, U. (2007). The effect of telephone versus print tailoring for mammography adherence. *Patient Education & Counseling*, 65(3), 416-423.
- Clift, S., & Carter, S. (2000). *Tourism and sex: culture, commerce and coercion*. London: Biddles Ltd, Guildford & King's Lynn.
- Consedine, N. S., Magai, C., Horton, D., Neugut, A. I., & Gillespie, M. (2005). Health belief model factors in mammography screening: testing for interactions among subpopulations of Caribbean women. *Ethnicity & Disease*, 15(3), 444-452.
- Cowart, L. W., Brown, B., & Biro, D. J. (2004). Educating African American men about prostate cancer: The barbershop program. *American Journal of Health Studies*, 19(4), 205-213.
- Creel, L. (2011). Cervical cancer is a major problem in Latin America. Retrieved from <http://www.prb.org/Articles/2000/CervicalCancerIsMajorHealthProbleminLatinAmerica.aspx>
- Creswell, J. W., Plano Clark, V. L., Gutmann, M. L., & Hanson, W. E. (2003). Advanced mixed methods research design. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 209-240). Thousand Oaks: Sage.

- Datta, G. D., Colditz, G. A., Kawachi, I., Subramanian, S. V., Palmer, J. R., & Rosenberg, L. (2006). Individual-, neighborhood-, and state-level socioeconomic predictors of cervical carcinoma screening among U.S. black women: a multilevel analysis. *Cancer, 106*(3), 664-669.
- del Carmen, M. G. (2009). The burden of cervical cancer in minority populations: Effective strategies in reducing disparities. *The Internet Journal of Gynecology and Obstetrics, 10*(2). Retrieved from http://www.ispub.com/journal/the_internet_journal_of_gynecology_and_obstetrics/volume_10_number_2_5/article/the_burden_of_cervical_cancer_in_minority_populations_effective_strategies_in_reducing_disparity.html
- Douglas, D., Reid, S., & Reddock, R. (2009). Gender and sexuality: Behavior, attitudes and taboos among UWI students on the St. Augustine campus. . In D. Roberts, R. Reddock, D. Douglas & S. Reid (Eds.), *Sex, Power & Taboo Gender and HIV in the Caribbean and Beyond*. Kingston: Ian Randler Publishers.
- Dunne, E. F., Unger, E. R., Sternberg, M., McQuillan, G., Swan, D. C., Patel, S. S., & Markowitz, L. E. (2007). Prevalence of HPV infection among females in the United States. *JAMA: The Journal Of The American Medical Association, 297*(8), 813-819.
- Earp, J. A., & Flax, V. L. (1999). What lay health advisors do: An evaluation of advisors' activities. *Cancer Practice, 7*(1), 16-21.
- Erwin, D. O., Spatz, T., S, Stotts, R. C., Hollenberg, J. A., & Deloney, L. A. (1996). Increasing mammography and breast self examination in African American women using the Witness Project model. *Journal of Cancer Education, 11*(4), 210-215.

- Farnsworth, J., & Boon, B. (2010). Analysing group dynamics within the focus group. *Qualitative Research*, 10(5), 605-624. doi: 10.1177/1468794110375223
- Fatone, A., & Jandorf, L. (2009). Predictors of cervical cancer screening among urban African Americans and Latinas. *American Journal Of Health Behavior*, 33(4), 416-424.
- Ferrante, J. M., Chen, P.-H., & Jacobs, A. (2006). Breast and cervical cancer screening in obese minority women. *Journal Of Women's Health (2002)*, 15(5), 531-541.
- Fraser, M., Brown, H., Homel, P., Macchia, R. J., LaRosa, J., Clare, R., . . . Browne, R. C. (2009). Barbers as lay health advocates--developing a prostate cancer curriculum. *Journal Of The National Medical Association*, 101(7), 690-697.
- Glanz, K., Rimer, B. K., & Lewis, F. M. (2002). *Health behavior and health education: Theory, research and practice*. San Francisco: Wiley & Sons.
- Glaser, B. G. (1992). *Basics of grounded theory analysis*. Mill Valley, CA: Sociology Press.
- Glasgow, R. E., Whitlock, E. P., Valanis, B. G., & Vogt, T. M. (2000). Barriers to mammography and Pap smear screening among women who recently had neither, one or both types of screening. *Annals of Behavioral Health* 22, 223-228.
- Gotay, C. C. (2005). Behavior and cancer prevention. *Journal of Clinical Oncology*, 23(2), 301-310.
- Greene, J. (2007). *Mixed methods in social inquiry*. San Francisco: Jossey-Bass.
- Greene, J., Caracelli, J. V., & Graham, F. W. (1989). Toward a conceptual framework for mixed-method evaluation design. *Educational Evaluation and Policy Analysis*, 11(3), 255-274.
- Guide to Community Preventive Services (Producer). (2011, October 20th 2011). What are RTIPs and why consider them? Retrieved from <http://www.thecommunityguide.org/cancer/screening/client-oriented/rtips.html>

- Gullatte, M. M., Brawley, O., Kinney, A., Powe, B., & Mooney, K. (2010). Religiosity, spirituality, and cancer fatalism beliefs on delay in breast cancer diagnosis in African American women. *Journal Of Religion And Health, 49*(1), 62-72.
- Halcon, L., Blum, R. W., Beuhring, T., Pate, E., Campbell-Forrester, S., & Venema, A. (2003). Adolescent health in the Caribbean: a regional portrait. *American Journal Of Public Health, 93*(11), 1851-1857.
- Hansen, L. K., Feigl, P., Modiano, M. R., Lopez, J. A., Escobedo Sluder, S., Moinpour, C. M., . . . Meyskens, F. L. (2005). An educational program to increase cervical and breast cancer screening in Hispanic women: a Southwest Oncology Group study. *Cancer Nursing, 28*(1), 47-53.
- Hart, A., Jr., & Bowen, D. J. (2004). The feasibility of partnering with African-American barbershops to provide prostate cancer education. *Ethnicity & Disease, 14*(2), 269-273.
- Hart, A., Jr., Underwood, S. M., Smith, W. R., Bowen, D. J., Rivers, B. M., Jones, R. A., . . . Allen, J. C. (2008). Recruiting African-American barbershops for prostate cancer education. *Journal Of The National Medical Association, 100*(9), 1012-1020.
- Hess, P. L., Reingold, J. S., Jones, J., Fellman, M. A., Knowles, P., Ravenell, J. E., . . . Victor, R. G. (2007). Barbershops as hypertension detection, referral, and follow-up centers for black men. *Hypertension, 49*(5), 1040-1046.
- Hinyard, L. J., & Kreuter, M. W. (2007). Using narrative communication as a tool for health behavior change: A conceptual, theoretical, and empirical overview. *Health Education & Behavior, 34*(5), 777-792.
- Hochbaum, G. M. (1958). *Public participation in medical screening programs: A Socio-psychological study*. Washington, D.C. : U.S Dept. of Health, Education, and Welfare.

- Holt, C. L., Kyles, A., Wiehagen, T., & Casey, C. (2003). Development of a spiritually based breast cancer educational booklet for African American women. *Cancer Control: Journal Of The Moffitt Cancer Center*, 10(5 Suppl), 37-44.
- Holt, C. L., Lee, C., & Wright, K. (2008). A spiritually based approach to breast cancer awareness: cognitive response analysis of communication effectiveness. *Health Communication*, 23(1), 13-22.
- Hoyo, C., Yarnall, K. S. H., Skinner, C. S., Moorman, P. G., Sellers, D., & Reid, L. (2005). Pain predicts non-adherence to pap smear screening among middle-aged African American women. *Preventive Medicine*, 41(2), 439-445.
- James, A. S., Campbell, M. K., & Hudson, M. A. (2002). Perceived barriers and benefits to colon cancer screening among African Americans in North Carolina: how does perception relate to screening behavior? *Cancer Epidemiology, Biomarkers & Prevention: A Publication Of The American Association For Cancer Research, Cosponsored By The American Society Of Preventive Oncology*, 11(6), 529-534.
- Janz, N. K., & Becker, M. H. (1984). The Health Belief Model: A decade later. *Health Education and Behavior*, 11(1), 1-47.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26.
- Kelder, S., Hoelscher, D. M., Barrosco, C. S., Walker, J. L., Cribb, P., & Hu, S. (2005). The CATCH Kids club: a pilot after-school study for improving elementary students' nutrition and physical activity. *Public Health Nutrition* 8(2), 133-140.

- Kempadoo, K., & Taitt, A. (2006). *Gender, sexuality and implications for HIV/AIDS in the Caribbean: A review of literature and programs*. Unpublished paper prepared for UNIFEM and IDRC.
- Kleindorfer, D., Miller, R., Sailor-Smith, S., Moomaw, C. J., Khoury, J., & Frankel, M. (2008). The challenges of community-based research: the beauty shop stroke education project. *Stroke; A Journal Of Cerebral Circulation*, 39(8), 2331-2335.
- Kreuter, M. W., Strecher, V. J., Harris, R., Kobrin, S. C., & Skinner, C. S. (1995). Are patients of women physicians screened more aggressively? A prospective study of physician gender and screening. *Journal Of General Internal Medicine*, 10(3), 119-125.
- Lewis, M. J. (2004). A situational analysis of cervical cancer in Latin America and the Caribbean. Retrieved from www.paho.org doi:www.paho.org
- Lewis, Y. R., Shain, L., Quinn, S. C., Turner, K., & Moore, T. (2002). Building community trust: lessons from an STD/HIV peer educator program with African American barbers and beauticians. *Health Promotion Practice*, 3(2), 133-143.
- Linan, L., Rose, J., M, Carlisle, V., Evenson, K., R, Mangum, A., Hooten, E., & Ammerman, A. (2007). The North Carolina BEAUTY and Health Project: Overview and baseline results. *The Community Psychologist*, 40(2), 61-67.
- Linnan, L. A., Emmons, K. M., & Abrams, D. B. (2002). Beauty and the beast: results of the Rhode Island smokefree shop initiative. *American Journal Of Public Health*, 92(1), 27-28.
- Linnan, L. A., & Ferguson, Y. O. (2007). Beauty salons: a promising health promotion setting for reaching and promoting health among African American women. *Health Education &*

- Behavior: The Official Publication Of The Society For Public Health Education*, 34(3), 517-530.
- Linnan, L. A., Ferguson, Y. O., Wasilewski, Y., Lee, A. M., Yang, J., Solomon, F., & Katz, M. (2005). Using community-based participatory research methods to reach women with health messages: results from the North Carolina BEAUTY and Health Pilot Project. *Health Promotion Practice*, 6(2), 164-173.
- Linnan, L. A., Kim, A. E., Wasilewski, Y., Lee, A. M., Yang, J., & Solomon, F. (2001). Working with licensed cosmetologists to promote health: results from the North Carolina BEAUTY and Health Pilot Study. *Preventive Medicine*, 33(6), 606-612.
- Luque, J. S., Rivers, B. M., Kamboj, M., Brookins, R., Green, B. L., & Meade, C. D. (2010). Barbers against prostate cancer: a feasibility study for training barbers to deliver prostate cancer education in an urban African American community. *Journal Of Cancer Education: The Official Journal Of The American Association For Cancer Education*, 25(1), 96-100.
- Lurie, N., Margolis, K. L., McGovern, P. G., Mink, P. J., & Slater, J. S. (1997). Why do patients of female physicians have higher rates of breast and cervical cancer screening? *Journal Of General Internal Medicine*, 12(1), 34-43.
- Madigan, M. E., Smith-Wheelock, L., & Krein, S. L. (Producer). (2007). Healthy hair starts with a healthy body: Hair stylists as lay health advisors to prevent chronic kidney disease. *Preventing Chronic Disease*. Retrieved from http://www.cdc.gov/ped/issues/2007/jul/06_0078.htm
- Magnus, M. (2004). Barbershop nutrition education. *Journal Of Nutrition Education And Behavior*, 36(1), 45-46.

- Mandelblatt, J. S., Gold, K., O'Malley, A. S., Taylor, K., Cagney, K., Hopkins, J. S., & Kerner, J. (1999). Breast and cervix cancer screening among multiethnic women: role of age, health, and source of care. *Preventive Medicine*, 28(4), 418-425.
- Martin, M. Y. (2005). Community health advisors effectively promote cancer screening. *Ethnicity & Disease*, 15(2 Suppl 2), S14-16.
- Maruthur, N. M., Bolen, S. D., Brancati, F. L., & Clark, J. M. (2009). The association of obesity and cervical cancer screening: a systematic review and meta-analysis. *Obesity (Silver Spring, Md.)*, 17(2), 375-381.
- Milhausen, R. R., & Edward, H. S. (1999). Does the sexual double standard still exist? Perceptions of university women. *The Journal of Sex Research*, 36(4), 361-368.
- Mock, J., McPhee, S. J., Nguyen, T., Wong, C., Doan, H., Lai, K. Q., . . . Bui-Tong, N. (2007). Effective lay health worker outreach and media-based education for promoting cervical cancer screening among Vietnamese American women. *American Journal Of Public Health*, 97(9), 1693-1700.
- Morgan, D. L. (1996). Focus groups. *Annual Review of Sociology*, 22, 129-152.
- Morgan, P. D., Tyler, I. D., & Fogel, J. (2008). Fatalism revisited. *Seminars In Oncology Nursing*, 24(4), 237-245.
- Muñoz, N., Franco, E. L., Herrero, R., Andrus, J. K., de Quadros, C., Goldie, S. J., & Bosch, F. X. (2008). Recommendations for cervical cancer prevention in Latin America and the Caribbean. *Vaccine*, 26 Suppl 11, L96-L107.
- Murillo, R., Almonte, M., Pereira, A., Ferrer, E., Gamboa, O. A., Jerónimo, J., & Lazcano-Ponce, E. (2008). Cervical cancer screening programs in Latin America and the Caribbean. *Vaccine*, 26 Suppl 11, L37-L48.

Nasca, P. C., & Pastides, H. (2008). *Fundamentals of cancer epidemiology*. Massachusetts: Jones and Bartlett.

National Cancer Institute. (2009). Cervical cancer. Retrieved from

<http://www.cancer.gov/cancertopics/types/cervical/>

Navarro, A. M., Senn, K. L., Kaplan, R. M., McNicholas, L., Campo, M. C., & Roppe, B.

(1995). Por La Vida intervention model for cancer prevention in Latinas. *Journal Of The National Cancer Institute. Monographs*(18), 137-145.

Nguyen, T. T., Love, M. B., Liang, C., Fung, L.-C., Nguyen, T., Wong, C., . . . Woo, K. (2010).

A pilot study of lay health worker outreach and colorectal cancer screening among Chinese Americans. *Journal Of Cancer Education: The Official Journal Of The American Association For Cancer Education*, 25(3), 405-412.

Niederdeppe, J., & Levy, A. G. (2007). Fatalistic beliefs about cancer prevention and three

prevention behaviors. *Cancer Epidemiology, Biomarkers & Prevention: A Publication Of The American Association For Cancer Research, Cosponsored By The American Society Of Preventive Oncology*, 16(5), 998-1003.

Norman, L. R. (2001). Sexually transmitted disease symptoms. A comparative analysis of male

and female youth in Jamaica. *The West Indian Medical Journal*, 50(3), 203-208.

O'Malley, A. S., Mandelblatt, J., Gold, K., Cagney, K. A., & Kerner, J. (1997). Continuity of

care and the use of breast and cervical cancer screening services in a multiethnic community. *Archives Of Internal Medicine*, 157(13), 1462-1470.

Ochoa-Frongia, L., Thompson, H., Lewis-Kelly, Y., Deans-McFarlane, T., & Jandorf, L. (2011).

Breast and cervical cancer screening and health beliefs among African American women attending educational programs. *Health Promotion Practice*, March 30.

Office of Minority Health (Producer). (2011, October 3 2011). Obesity and African Americans.

Retrieved from <http://minorityhealth.hhs.gov/templates/content.aspx?ID=6456>

Ogedegbe, G., Cassells, A. N., Robinson, C. M., DuHamel, K., Tobin, J. N., Sox, C. H., & Dietrich, A. J. (2005). Perceptions of barriers and facilitators of cancer early detection among low-income minority women in community health centers. *Journal Of The National Medical Association*, 97(2), 162-170.

Oliver, M. B., & Hyde, J. S. (1993). Gender differences in sexuality: a meta-analysis. *Psychological Bulletin*, 114(1), 29-51.

Padilla, M. B., Guilamo-Ramos, V., Bouris, A., & Reyes, A. M. (2010). HIV/AIDS and tourism in the Caribbean: an ecological systems perspective. *American Journal Of Public Health*, 100(1), 70-77.

Pan American Health Organization (Producer). (2007, September 22, 2010.). Triinidad and Tobago. *Health in the Americas*. . Retrieved from <http://www.paho.org/hia/archivosvol2/paisesing/Trinidad%20and%20Tobago%20English.pdf>

Parkin, M. D., Almonte, M., Bruni, L., Clifford, G., Curado, M., & Pineros, M. (2008). Burden and trends of type- specific human papillomavirus infections and related diseases in the Latin America and Caribbean region *Vaccine*, 26((Suppl 11)), L1-L15.

Paskett, E. D., Case, L. D., Tatum, C., Velez, R., & Wilson, A. (1999). Religiosity and Cancer Screening. [Article]. *Journal of Religion & Health*, 38(1), 39-52.

Phillips, A. A., Jacobson, J. S., Magai, C., Consedine, N., Horowicz-Mehler, N. C., & Neugut, A. I. (2007). Cancer incidence and mortality in the Caribbean. *Cancer Investigation*, 25(6), 476-483.

- Plano Clark, V. L., & Creswell, J. W. (2008). *The mixed methods reader*. Thousand Oaks, CA: Sage.
- Powe, B. D., & Finnie, R. (2003). Cancer fatalism: the state of the science. *Cancer Nursing*, 26(6), 454-465.
- Puchta, C., & Potter, J. (2004). *Focus group practice*. Thousand Oaks, CA: Sage
- Rabiee, F. (2004). Focus-group interview and data analysis. *The Proceedings Of The Nutrition Society*, 63(4), 655-660.
- Ragin, C. R., Wheeler, V. W., Wilson, J. B., Bunker, C. H., Gollin, S. M., Patrick, A. L., & Tailoi, E. (2007). Distinct distribution of HPV types among cancer-free Afro-Caribbean women from Tobago. *Biomarkers*, 12(5), 510-522.
- Ramirez, A. G., Villareal, R., McAlister, A., Gallion, K. J., Suarez, L., & Gomez, P. (1999). Advancing the role of participatory communication in the diffusion of cancer screening among Hispanics. . *Journal of Health Communication* 4(1), 31-36.
- Rawl, S., Champion, V., Menon, U., & Foster, J. (2000). The Impact of age and race on mammography practices. *Health Care for Women International* 21, 247-257.
- Reddock, R., Barclay, R., & Clarke, R. (2000). National report on gender violence against women and girls *United Nations Inter-Agency Campaign*. Port- Of- Spain: UNDP.
- Reiter, P., L, & Linan, L. (2011). Cancer screening behaviors of African American women enrolled in a community-based cancer prevention trial. *Journal of Women's Health*, 20(3), 429-453.
- Roberts, D., Reddock, R., Douglas, D., & Reid, S. (2009). *Sex, power and taboo: Gender and HIV in the Caribbean and beyond* Kingston, Jamaica: Ian Randle Publishers.

- Sadler, G. R., Ko, C. M., Cohn, J. A., White, M., Weldon, R.-n., & Wu, P. (2007). Breast cancer knowledge, attitudes, and screening behaviors among African American women: the Black cosmetologists promoting health program. *BMC Public Health*, 7, 57-57.
- Sadler, G. R., Meyer, M. W., Ko, C. M., Butcher, C., Lee, S., Neal, T., . . . Gilpin, E. A. (2004). Black cosmetologists promote diabetes awareness and screening among African American women. *The Diabetes Educator*, 30(4), 676-685.
- Sadler, G. R., Thomas, A. G., Gebrekristos, B., Dhanjal, S. K., & Mugo, J. (2000). Black cosmetologists promoting health program: pilot study outcomes. *Journal Of Cancer Education: The Official Journal Of The American Association For Cancer Education*, 15(1), 33-37.
- Sasieni, P., Castanon, A., & Cuzick, J. (2009). Effectiveness of cervical cancer screening with age: population based case-control study of prospectively recoded data. *BMJ*, 339(2968).
- Saslow, D., Runowicz, C. D., Solomon, D., Moscicki, A.-B., Smith, R. A., Eyre, H. J., & Cohen, C. (2002). American Cancer Society guideline for the early detection of cervical neoplasia and cancer. *CA: A Cancer Journal For Clinicians*, 52(6), 342-362.
- Scarinci, I. C., Garcia, F. A. R., Kobetz, E., Partridge, E. E., Brandt, H. M., Bell, M. C., . . . Castle, P. E. (2010). Cervical cancer prevention: new tools and old barriers. *Cancer*, 116(11), 2531-2542.
- Schiffman, M., & Castle, P. E. (2005). The promise of global cervical cancer prevention. *The New England Journal of Medicine*, 353(120), 2101-2104.
- Solomon, F. M., Linnan, L. A., Wasilewski, Y., Lee, A. M., Katz, M. L., & Yang, J. (2004). Observational study in ten beauty salons: results informing development of the North

- Carolina BEAUTY and Health Project. *Health Education & Behavior: The Official Publication Of The Society For Public Health Education*, 31(6), 790-807.
- Staten, V. (2001). *Do bald men get half-price haircuts?: In search of America's great barbershops*. (1st ed.). New York: Schuster.
- Stewart, D. W., Shamdasani, P. N., & Rook, D. W. (Eds.). (2007). *Focus groups theory and practice*. Thousand Oaks, CA: Sage
- Straughan, P. T., & Seow, A. (1998). Fatalism reconceptualized: a concept to predict health screening behavior. *Journal of Gender, Culture, and Health*, 31(2), 85-100.
- Talbert, P. Y. (2007). *An analysis of the relationship of fear and fatalism with breast cancer screening among a selected target population of African American middle class (aamc) women*. 68, ProQuest Information & Learning, US. Retrieved from <http://proxy-remote.galib.uga.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=psych&AN=2007-99016-166&site=ehost-live> Available from EBSCOhost psych database.
- Theis, K. A., Helmick, C. G., & Hootman, J. M. (2007). Arthritis burden and impact are greater among U.S. women than men: Intervention opportunities. *Journal of Women's Health*, 16(4), 441-453.
- Victor, R. G., Ravenell, J. E., Freeman, A., Leonard, D., Bhat, D. G., Shafiq, M., . . . Haley, R. W. (2011). Effectiveness of a barber-based intervention for improving hypertension control in black men: the BARBER-1 study: a cluster randomized trial. *Archives Of Internal Medicine*, 171(4), 342-350.
- Visman, A. T., Eng, E., Aronson, R. E., Bloom, F. R., Leichliter, J. S., Montano, J., & Rhodes, S. D. (2009). What do men who serve as lay health advisers really do?: Immigrant Latino men share their experiences as Navegantes to prevent HIV. *AIDS Education And*

Prevention: Official Publication Of The International Society For AIDS Education,
21(3), 220-232.

Vona-Davis, L., & Rose, D. P. (2009). The influence of socioeconomic disparities on breast cancer tumor biology and prognosis: a review. *Journal Of Women's Health* (2002), 18(6), 883-893.

Waller, J., Jackowska, M., Marlow, L., & Wardle, J. (Producer). (2011). Exploring age differences in reasons for non attendance for cervical screening: a qualitative study. *BJOG*. Retrieved from <http://discovery.ucl.ac.uk/1311459/>

Wilson, T. E., Fraser-White, M., Feldman, J., Homel, P., Wright, S., King, G., . . . Browne, R. (2008). Hair salon stylists as breast cancer prevention lay health advisors for african american and afro-Caribbean women. *Journal Of Health Care For The Poor And Underserved*, 19(1), 216-226.

Woods, V. D., Montgomery, S. B., Belliard, J. C., Ramirez-Johnson, J., & Wilson, C. M. (2004). Culture, black men, and prostate cancer: what is reality? *Cancer Control: Journal Of The Moffitt Cancer Center*, 11(6), 388-396.

Appendix A

Interview Guide

1. What have you done in the past week to take care of yourself physically?
2. Describe any concerns you may have with going to the gynecologists.
3. What led to your first occasion to receive a Pap smear?
4. Think back to some of your experiences with a Pap smear, what were they like and describe that experience?
5. Who provided your first recommendation to receive a Pap smear?
6. Some people might say the gender of the gender of the gynecologist is important, how would you respond to that?
7. What would you say the ideal situation should look like as you go to obtain screening?
8. What do you think might be factors that prevent other females from obtaining regular screenings?
9. What do you think could be done to encourage women who are not getting Pap smears to do so?
10. Are there any final comments that you would like to add to the discussion before we end?

Appendix B

Questionnaire for Hair and Cervical Education Study

Name: _____

Phone number: (Home) _____ (Cell) _____

The best time of the day to reach me is:

☐ 8:00-a.m- Noon ☐ Noon – 3:00 p.m ☐ 3:00 p.m- 6:00 p.m ☐ 6:00 p.m – 9:00 p.m**Please tick the option that best represents your feelings**

1. Do you consider yourself:

☐ Black ☐ Indian ☐ Multi-Racial2. Age ☐ 25-35 ☐ 36-45

3. Have you been told by a physician that you had any type of cancer?

☐ Yes ☐ No

If yes, please specify _____

4. What is the highest grade of school or amount of college you have completed?

<input type="checkbox"/> Primary school	<input type="checkbox"/> Some high school
<input type="checkbox"/> High school graduate	<input type="checkbox"/> Some college
<input type="checkbox"/> College graduate	<input type="checkbox"/> Trade or beauty school

5. Are you;

<input type="checkbox"/> Married	<input type="checkbox"/> Single
<input type="checkbox"/> Divorced	<input type="checkbox"/> Living with a partner

6. Where do you usually go for health care? (Please check all that apply).

☐ Doctor's office ☐ Community health centre

☐ Hospital emergency room ☐ I don't get health care

☐ Other _____

7. Do you have health insurance?

☐ Yes ☐ No

8. Have you ever heard of the Pap test/ Pap smear?

☐ Yes ☐ No

9. When was your last Pap test?

☐ 1 year ago ☐ 2 years ago ☐ 3 years ago ☐ more than 3 years ago

10. Compared with your other health problems, having a Pap smear is not important.

☐ Strongly agree ☐ Agree ☐ Neutral/ No opinion ☐ Disagree

☐ Strongly disagree

11. At your age, you do not need to have Pap smears.

☐ Strongly agree ☐ Agree ☐ Neutral/ No opinion ☐ Disagree ☐ Strongly disagree

12. You are afraid to have a Pap smear, because it might show a problem.

☐ Strongly agree ☐ Agree ☐ Neutral/ No opinion ☐ Disagree ☐ Strongly disagree

13. Having a Pap smear is painful for you.

☐ Strongly agree ☐ Agree ☐ Neutral/ No opinion ☐ Disagree ☐ Strongly disagree

14. Having a Pap smear is embarrassing for you.

☐ Strongly agree ☐ Agree ☐ Neutral/ No opinion ☐ Disagree ☐ Strongly disagree

15. Cost would keep you from having a Pap smear.

☐ Strongly agree ☐ Agree ☐ Neutral/ No opinion ☐ Disagree ☐ Strongly disagree

16. A Pap smear can help you find cervical cancer when it is just getting started.

☐ Strongly agree ☐ Agree ☐ Neutral/ No opinion ☐ Disagree ☐ Strongly disagree

17. Your doctor did not tell you that you should have a Pap smear.

☐ Strongly agree ☐ Agree ☐ Neutral/ No opinion ☐ Disagree ☐ Strongly disagree

18. I intend to have a Pap smear every three years.

☐ Strongly agree ☐ Agree ☐ Neutral/ No opinion ☐ Disagree ☐ Strongly disagree

19. Cervical cancer is caused by the HPV virus.

☐ Strongly agree ☐ Agree ☐ Neutral/ No opinion ☐ Disagree ☐ Strongly disagree

20. Smoking may increase your risk of getting cervical cancer.

☐ Strongly agree ☐ Agree ☐ Neutral/ No opinion ☐ Disagree ☐ Strongly disagree

21. Eating a healthy diet filled with fruits and vegetables may help in preventing cervical cancer.

☐ Strongly agree ☐ Agree ☐ Neutral/ No opinion ☐ Disagree ☐ Strongly disagree

22. It is likely that I will get cervical cancer.

☐ Strongly agree ☐ Agree ☐ Neutral/ No opinion ☐ Disagree ☐ Strongly disagree

23. My chances of getting cervical cancer in the next few years are great.

☐ Strongly agree ☐ Agree ☐ Neutral/ No opinion ☐ Disagree ☐ Strongly disagree

Section 2

24. To what extent is it possible to reduce YOUR risk of developing cervical cancer?

☐ Not at all possible ☐ A little possible ☐ Moderately possible ☐ Very possible

25. To what extent is it possible for MOST WOMEN to reduce their risk of developing cervical cancer?

☐ Not at all possible ☐ A little possible ☐ Moderately possible ☐ Very possible

Using the scale of 1-10 rate the following with 1 being the lowest and 10 being the highest.

26. On a scale of 1-10 how willing are you to have a Pap smear done? _____