

Fall 2019

Improving Cervical Cancer Screening and HPV Vaccination Rates among Ghanaians in Ghana, and Ghanaian Immigrants Living in Georgia, U.S.A

Catherine T. Palmer

Follow this and additional works at: <https://digitalcommons.georgiasouthern.edu/etd>



Part of the [Social and Behavioral Sciences Commons](#)

Recommended Citation

Palmer, Catherine T., "Improving Cervical Cancer Screening and HPV Vaccination Rates among Ghanaians in Ghana, and Ghanaian Immigrants Living in Georgia, U.S.A" (2019). *Electronic Theses and Dissertations*. 2036.

<https://digitalcommons.georgiasouthern.edu/etd/2036>

This dissertation (open access) is brought to you for free and open access by the Graduate Studies, Jack N. Averitt College of at Digital Commons@Georgia Southern. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of Digital Commons@Georgia Southern. For more information, please contact digitalcommons@georgiasouthern.edu.

IMPROVING CERVICAL CANCER SCREENING AND HPV VACCINATION RATES AMONG GHANAIS IN GHANA, AND GHANAIAN IMMIGRANTS LIVING IN GEORGIA, U.S.A

by

CATHERINE PALMER

(Under the Direction of Bettye Apenteng)

ABSTRACT

Introduction: Cervical cancer is the most common type of HPV- associated cancer, disproportionately affecting minority women worldwide. Various strains of the human papillomavirus have been linked to the incidence of this disease. The gradual development of cervical cancer makes it one of the most preventable female cancers, as malignant cell changes can take up to two decades to occur. Regular Pap smears lead to early detection of persistent HPV infection. Together with HPV vaccination, Pap smears are effective in controlling cervical cancer incidence. Although these preventative programs are readily available in the U.S., screening and vaccination rates have been consistently suboptimal among immigrants. Previous studies have examined the enablers as well as the challenges experienced by immigrants in accessing cervical cancer prevention services. The purpose of this qualitative research was to explore the attitudes, barriers, and sociocultural factors that facilitate the uptake of cervical cancer preventative services among Ghanaians in Ghana, and Ghanaians immigrants living in Georgia. **Methods:** Semi-structured interviews were conducted in two parts; (a) a preliminary study in Ghana with 35 females and 15 males, and (b) the main study in Georgia, U.S.A. among Ghanaian immigrants, with 17 females and 10 males. Nvivo 12 was used to code the interview transcriptions, from which emerging themes and sub-themes were identified. The Social Ecological Model and the Theory of Reasoned Action were applied to examine the impact of personal and contextual influences on the participants' decision to access prevention programs. **Results:** Barriers to screening and vaccination included the lack of knowledge, fear of cervical cancer, fear of the side effects of the HPV vaccine, embarrassment with a physical examination, and cost. Facilitators to screening and vaccination included increased knowledge of and access to cervical cancer prevention programs, health insurance, and encouragement from healthcare

providers to utilize these services. Immigration, improved knowledge, and access to Pap smear and HPV vaccines were the strongest influences of change. **Conclusion:** The study results show that health education and social support could significantly improve the willingness of Ghanaian immigrants to access Pap smear, and HPV vaccination. These findings could serve as an outline for the implementation of related programs in Georgia, and other locations with similar high-risk populations.

INDEX WORDS: Cervical cancer, Pap smear, HPV vaccination, Ghana, Social Ecological Model, Theory of Reasoned Action.

IMPROVING CERVICAL CANCER SCREENING AND HPV VACCINATION RATES AMONG
GHANAIS IN GHANA, AND GHANAIS IMMIGRANTS LIVING IN GEORGIA, U.S.A

by

CATHERINE PALMER

A.D.N., Kingston School of Nursing, Jamaica, 1994

B.S.N., Grand Canyon University, 2010

M.P.H., Capella University, 2013

A Dissertation Submitted to the Graduate Faculty of Georgia Southern University

in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PUBLIC HEALTH

STATESBORO, GEORGIA

© 2019

CATHERINE PALMER

All Rights Reserved

IMPROVING CERVICAL CANCER SCREENING AND HPV VACCINATION RATES AMONG
GHANAIS IN GHANA, AND GHANAIAN IMMIGRANTS LIVING IN GEORGIA, U.S.A

by

CATHERINE PALMER

Major Professor:
Committee:

Bettye Apenteng
Raymona Lawrence
Samuel Opoku
Evans Afriyie-Gyawu
(Non-voting Member)

Electronic Version Approved:
December, 2019

DEDICATION

This dissertation is dedicated to my mother, Precious Hamilton, who lost her battle with cervical cancer so young, even before she had fully realized that she was fighting it. Mommy, you are loved, you are missed, and I hope I've made you proud. May your soul continue to rest in peace.

And to every woman who has been underserved in your quest for wellness, because you didn't have the means, the time, the access, the knowledge, or the courage to seek care for your most intimate being.... you matter! Health is indeed the pursuit of a (seemingly unattainable) state of complete physical, mental, and social wellbeing, and not the mere absence of disease or infirmity. May we all live in a world that affords every woman the privilege to be healthy, to be well, and to be whole.

ACKNOWLEDGMENTS

First, I would like to acknowledge the Most High God in whom I live, and move, and have my being. Without you, I am nothing, and this dissertation would not have been possible. My help came from you (Psalm 121: 1-2).

To three men in my life who have played a pivotal role in getting me to this place:

The man whom I came from, my beloved father, Cover Palmer. From the time I was a little girl, you established in me a love for reading, and a curiosity for a world found only in the written word. Thank you for showing me that learning is an adventure. You made sacrifices to give me a life that you could only dream of. I am eternally grateful.

The man who came from me, my Sun (yes Sun, not a typo). Joshua, in case I haven't told you enough, you are the center of my world. You've been by my side for every degree, as a little boy playing quietly while Mommy studied, and as a young man helping me with statistics and all the "computer stuff." What a paradox to watch your baby become your teacher! I love you, Son.

The man who has my heart, Mawuli. Thank you for all your support, love, and patience. You've been with me throughout this degree, through all the tears, the setbacks, and the triumphs. Thank you for being present, and for understanding when I needed the space to get into "my zone" to write.

To my tribe of female friends who cheered me on with words of reassurance and comfort; Desmarie, Carlotta, Ambie, and Lula. You are true warrior goddesses, and rocks in a weary land. A million thanks for listening to me.

My carpool buddies; Jeremy, Juanita and Stephanie; and my study group Brendan, Ola, Angela, and Pascal; what a journey this was! Keep pushing on; the journey is almost over. We survived together, and will continue onward to accomplish great things.

To my sisters, brothers, aunts, uncles, and other family and friends both here and in Jamaica, you all played a role over the years in helping me to realize this dream. A special

acknowledgment goes to my loved ones who have gone on before; my beloved god-mother and my grandmother. The seeds you have sowed are now bearing fruits. Thank you.

Thank you to all the medical students in Ghana, who took me around the community, and assisted with the recruitment and data collection process. You were all so accommodating. I remain grateful for all your help. And finally, thank you to my dissertation team. Dr. Apenteng, “*You Rock!!!*”. Thank you for keeping me grounded and focused. Your kind and gentle nature were very soothing to my frayed nerves! Dr. Evans, you were the first one who instilled that love in my heart for Ghana. What a beautiful country and people! I am so honored to know that my roots began on that continent hundreds of years ago, and I had the privilege of journeying there to kiss the ground of my Motherland. Dr. Lawrence and Dr. Opoku, thank you for agreeing to be on my committee; for your attention to details, and invaluable feedback, which made this research possible. Together, you were the dream team that made it possible to accomplish this monumental feat!

TABLE OF CONTENTS

ACKNOWLEDGMENTS	3
LIST OF TABLES	8
LIST OF FIGURES	9
LIST OF ABBREVIATIONS	10
CHAPTER 1: BACKGROUND	11
Introduction	11
Problem Statement	13
Research Questions:	15
Study Purpose.....	16
Significance of the Study	16
Definition of Terms	17
CHAPTER 2: LITERATURE REVIEW	19
Cervical Cancer and HPV Vaccination – Global Perspective.....	19
Cervical Cancer and HPV Vaccination – Ghana	22
The Importance of African Men’s Opinion about Cervical Cancer and HPV Vaccination.....	25
Cost Barriers.....	28
Cervical Cancer Prevention and Control among Immigrant Women Living in the U.S.	29
The Impact of Immigration and Acculturation on Health-Seeking Behavior of Immigrants ...	32
The Potential Impact of Community-based Interventions on Cervical Cancer Prevention	34
Summary of Literature Review	36
Theoretical Frameworks.....	36
<i>Overview: Social Ecological Model and Theory of Reasoned Action.....</i>	36
Summary	41
CHAPTER 3: METHODOLOGY	43
Research Questions:	43
Research Setting.....	43
Study Design	44
Recruitment.....	45
Inclusion and Exclusion Criteria.....	47
Instrumentation.....	47

Qualitative Process	56
Human Subject Protection.....	61
Formative Study: Ghanaians living in Ghana	61
CHAPTER 4: RESULTS	66
Descriptive Characteristics of Participants	66
Thematic Analysis – SEM and TRA.....	71
<i>Individual Level</i>	71
<i>Interpersonal Level</i>	82
<i>Community Level</i>	83
<i>Policy Level</i>	85
CHAPTER 5: DISCUSSION AND RECOMMENDATIONS.....	88
Summary of Findings	88
Conceptual Framework Integration: SEM and TRA.....	88
Individual Level.....	89
Interpersonal Level	91
Community Level	92
Policy Level.....	95
Public Health Implications	96
Strengths and Limitations.....	98
Recommendations for Future Research	100
Conclusion.....	101
REFERENCES	102
APPENDIX.....	112
APPENDIX A: Institutional Review Board Approval Letter (U.S.A.)	113
APPENDIX B: Amendment of Institutional Review Board Approval Letter to include Participants who spoke Twi (U.S.A.).....	114
APPENDIX C: Komfo Anokye Teaching Hospital (KATH) Letter of Cooperation – GHANA	115
APPENDIX D: CHRPE Letter of Approval – GHANA.....	116
APPENDIX E: Semi-structured Interview Questions.....	117
APPENDIX F: Consent Form for U.S. Participants	123
APPENDIX G: Consent Form for Ghanaian Participants	126
APPENDIX H: Additional Consent Form (GHANA)	129

APPENDIX I: Letter of Cooperation from Ghanaian Church in Georgia – U.S.A.	134
APPENDIX J: NVIVO Code Guide	135

LIST OF TABLES

Table 3.1	Conceptualization: Application of SEM and TRA	49
Table 3.2	Participants' Descriptive Studies – Ghanaians Living in Ghana	62
Table 4.1	Participants' Descriptive Studies – Ghanaians Immigrants	67

LIST OF FIGURES

Figure 2.1	Estimated Age-Standardized Rates of Cervical Cancer Incidence, 2012.....	20
Figure 2.2	Estimated Age-Standardized Rates of Cervical Cancer Mortality, 2012.....	20
Figure 2.3	Social Ecological Model.....	39
Figure 2.4	Theory of Reasoned Action.....	40
Figure 3.1	Thematic Analysis Process.....	58
Figure 4.1	Knowledge of Pap smear among Participants.....	69
Figure 4.2	Knowledge of HPV and HPV Vaccination among Participants.....	69
Figure 4.3	Educational Levels of U.S. Participants.....	70
Figure 4.4	Occupation of U.S. Participants.....	70

LIST OF ABBREVIATIONS

CHW: a member of the community who serve as a liaison between the healthcare system, and their clients. Their role is to educate and advocate for underprivileged individuals to improve health outcomes.

GAVI: (Formerly the Global Alliance for Vaccines and Immunizations). Now known as the GAVI Alliance, this is an international health partnership comprised of public and private organizations. This organization is dedicated to providing immunization and other public health services for all nations.

HPV: Human papillomavirus is a group of viruses which can be transmitted sexually, and certain types of this virus can cause cervical cancer.

IARC: International Agency for Research on Cancer – an affiliation of WHO

PI: Primary Investigator – main researcher conducting a study

SEM: Social Ecological Model

STD: Sexually Transmitted Disease

TRA: Theory of Reasoned Action

U.S: United States

U.S.A: United States of America

WHO: World Health Organization – a specialized agency that is concerned with international public health issues.

CHAPTER 1: BACKGROUND

INTRODUCTION

Cervical cancer is the 4th most common gynecological cancer worldwide, with 85 percent of new cases occurring in the developing regions of many Asian and African countries (World Health Organization, 2018; Bayu, Berhe, Mulat, & Alemu, 2016). In 2012, the incidence, mortality, and 5-year prevalence estimated rates were approximately four times greater in Africa, compared to North America and Europe (World Health Organization, 2018; World Health Organization, 2019). Ghana, a middle-income country in West Africa, is one such example. Recent data indicated that Ghana has a high incidence of cervical cancer, with mortality rates three times that of the global average (Williams & Amoateng, 2012; Nartey et al., 2018). This disparity in Ghana has been attributed to cervical cancer screening rates as low as 2.7 percent, sociocultural beliefs, lack of a national HPV vaccination and cervical cancer screening program, and late diagnosis of the disease (Nartey et al., 2018; Williams, 2014). With the knowledge of these global trends in cervical cancer, it is understandable why many Ghanaian immigrant women now living in the U.S. may face the same challenges, compounded further by acculturation barriers (Katigbak, Devanter, Islam, & Trinh-Shevrin, 2015).

In 2014, approximately 12,000 women in the U.S had (human papillomavirus) HPV-associated cervical cancer, of whom nearly 4,000 subsequently died (Centers for Disease Control and Prevention, 2017). Georgia's cervical cancer incidence rate was 8.1 per 100,000 women in 2015 (Centers for Disease Control and Prevention, 2018). This rate is consistent with higher rates of new cases in southern and low-income states such as Alabama (9.4 per 100,000), Mississippi (9.1 per 100,000), and Louisiana (9.8 per 100,000), when compared to Maine (5.7 per 100,000), Washington (6.8 per 100,000), Iowa (7.2 per 100,000), and Arizona (7.3 per 100,000) (Centers for Disease Control and Prevention, 2018). National surveillance data for the United States indicate that cervical cancer incidence has declined in the last fifteen years. This is demonstrative of a meaningful return on investment through timely screening and early detection (Centers for Disease Control and Prevention, 2017). Despite this progress,

access to healthcare services, a *Healthy People 2020* goal, is a significant concern for many immigrant women in the U.S., leading to worse health outcomes, and quality of life (The United States Department of Health and Human Services, 2017).

Despite the availability of free or reduced-price Pap smear and HPV vaccination through many local health departments, utilization of this program is lacking in several communities with minority women (Centers for Disease Control and Prevention, 2015b, White & Wong, 2015). Data support that adaptation of culturally competent care, and the implementation of health promotion strategies can significantly improve screening rates (Forney-Gorman & Kozhimannil, 2015). A long-term secondary yield from these interventions could be the increase of HPV vaccination rates among the children of these women who receive cervical cancer screening (Adegboyega & Hatcher, 2017). Ultimately there would be lower rates of HPV- related cancers in the next generation.

Over 500 relevant articles from the last decade have examined the disparity of cervical cancer in the U.S. among immigrant, minority, and lower-income women (Menard et al., 2010; Sharmeen Shommu et al., 2016; Adegboyega & Hatcher, 2016; Forney-Gorman & Kozhimannil, 2016; White & Wong, 2015). These studies have identified barriers to cervical cancer screening among immigrants from Asia, Africa, and the Caribbean (Menard et al., 2010; Sharmeen Shommu et al., 2016; Adegboyega & Hatcher, 2016; Forney-Gorman & Kozhimannil, 2016; White & Wong, 2015). These barriers consist of cultural and religious norms, such as some immigrant women being passive about seeking health care, and if married deferring health-related decisions to their husbands' discretion. Other barriers reported were lack of awareness about the disease and screening recommendations, and discomfort with being naked or being touched, especially by male clinicians. Some participants also stated that they preferred not to know about a disease they believe has no cure. Child care and transportation issues, inability to afford a Pap smear and other social determinants of health have also been identified as barriers (Adegboyega & Hatcher, 2017). A community-based approach to prevention has been identified as an

effective strategy to improve suboptimal screening rates (Barbee et al., 2010; Hae-Ra et al., 2017; Sharmeen Shommu et al., 2016; Katigbak et al., 2015; Office of Minority Health, 2018).

PROBLEM STATEMENT

HPV infections are prevalent among sexually active individuals, resolving without intervention in most cases. An estimated 90 percent of all cases of HPV infection resolve spontaneously within two years (World Health Organization, 2018). For those infections which persist and lead to cervical cancer, HPV types 16 and 18 are the causative strains for approximately 70 percent of cases (World Health Organization, 2018). Despite the availability of low-cost screening and HPV vaccinations, cervical cancer rates remain unduly high among minority women in America and across the globe.

Ghana has a population of over 8 million women age 15 years and older who are at risk of developing cervical cancer. In a Ghanaian 2017 report, cervical cancer was the most commonly occurring female cancer, and the second leading cause of cancer death among women 15 to 44 years in Ghana (HPV Information Center, n.d.; Nartey et al., 2017). Of the approximately 3,000 women diagnosed with cervical cancer every year in Ghana, at least half will die from the disease (Williams, 2014). Among both Ghanaian males and females, approximately 10 percent of 15-year-olds have had sexual intercourse, with the median age being 18 years old for the first sexual encounter (HPV Information Center, n.d.). Therefore the need for sex education regarding HPV risk factors, and the benefits of HPV vaccination should be started in early adolescence, rather than later. Although Ghana has a public health program to screen women between the targeted ages of 25 - 64 years, in 2003, only 2.8 percent of this group was screened at the recommended interval of three years. The highest screening rate of 4.0 percent was among women 30-39 years (HPV Information Center, n.d.; Williams, 2014). Some of the major barriers identified which may have contributed to these low screening rates are limited knowledge about cervical cancer, underutilization of existing screening services, fear, cultural beliefs, embarrassment, health illiteracy, and taboos about women's sexual health (Nartey et al., 2017; Williams, 2014).

Recent data is currently unavailable about cervical cancer rates among Ghanaian immigrant women to the United States, or the actual burden of the disease in Ghana. Further, there is a limited number of studies assessing the role of immigration and subsequent acculturation on Ghanaian immigrants in modifying socio-economic and cultural influences which affect cancer screening utilization. The literature that does exist, however support that these immigrants may still experience similar barriers as listed above, necessitating collaboration community associations (Barbee et al., 2010; Hae-Ra et al., 2017; Sharmeen Shommu et al., 2016; Katigbak et al., 2015). According to Barbee et al. (2010), underutilization of Pap smear might be responsible for incidence rates of cervical cancer four times higher than that of the national average in Haitian immigrant women. Further contributing factors cited by these authors include poverty, unfamiliarity with the U.S. healthcare system, the lack of perceived importance of preventive care, and lost to follow-up if these women receive abnormal Pap smear results. Another pertinent finding among African-born immigrants is that routine health screenings are almost nonexistent in the average population. When compared to the public health resources allotted to commonly occurring illnesses such as malaria, cervical cancer risk is not considered to be a priority (Adegboyega & Hatcher, 2017).

Studies have been completed to examine the role of peer navigators or Community Health Workers (CHWs) in supporting recommended screening and chronic disease management among minority U.S. immigrants. These findings showed statistically significant improvement in health outcomes following such collaborations (Hae-Ra et al., 2017; Sharmeen Shommu et al., 2016; Katigbak et al., 2015). Lower-income Ghanaian immigrants, particularly those who are uninsured or underinsured, may be faced with similar constraints following relocation to a new country. These types of partnerships might be beneficial in this community in increasing their awareness about cervical cancer through culturally competent care. By building trust, and connecting immigrants with available public health resources in their host country, the barriers of lack of awareness, and access can be reduced.

In 1996, the 5-year survival rate of localized cervical cancer among all females diagnosed in the U.S. was 92 percent when detected early. Concurrently, the estimated cervical cancer mortality, morbidity, and financial impact were \$1.7 billion in cancer care (Centers for Disease Control and Prevention, 2017). In contrast is the affordability of a Pap-smear and HPV vaccinations. The cost of these services is covered under preventive care by all health insurance plans. They are also offered free or at a reduced price for the uninsured or underinsured through federal programs such as the CDC's National Breast and Cervical Cancer Early Detection Program (NBCCEDP) (Centers for Disease Control and Prevention, 2017). Accordingly, among immigrant women now residing in America, health outcomes could be improved if they are accessing these cancer screening services in a consistent and timely manner.

RESEARCH QUESTIONS:

This study attempts to address the following research questions:

1. What are the attitudes, barriers, and facilitators of Ghanaian immigrants living in the U.S. to cervical cancer screening (Pap smear) and HPV vaccination in the prevention of cervical cancer?
2. What are the socio-economic and cultural factors that influence Ghanaian immigrants' access to, and utilization of cervical cancer screening and HPV vaccination?
3. What is the perception of Ghanaians living in the U.S. of the influence of immigration on their attitudes, beliefs, and knowledge about cervical cancer screening and HPV vaccination?
4. Would community collaborations with organizations such as churches, school officials, or small business owners improve the willingness of Ghanaian immigrants to utilize cervical cancer screening and HPV vaccination programs?

STUDY PURPOSE

This research aims to explore the barriers to and facilitators of Pap-smear screening and HPV vaccination among immigrant Ghanaians living in Georgia. The study also tries to obtain insight into how immigration is shaping such influences. To this end, findings are assessed comparatively with a formative study conducted in Ghana. By characterizing the findings of the study within that of the formative or preliminary study, the researcher can gain insight into the cultural views toward preventive services, the impact of community relationships in improving health outcomes, and the role of immigration in modifying health-seeking behaviors. Thus, through this comparative lens, the researcher hopes to get a better understanding of the socio-economic and cultural influences which shape the utilization of cervical cancer screening among Ghanaian immigrants.

SIGNIFICANCE OF THE STUDY

Existing evidence suggests that the reduction of sociocultural barriers faced by minorities, and immigrant populations can enhance the utilization of preventative health services, and consequently decrease cervical cancer incidence (Forney-Gorman & Kozhimannil 2016; Grandahl, Tydén, Gottvall, Westerling, & Oscarsson, 2015; Adegboyega & Hatcher, 2016; Adegboyega & Hatcher, 2017). Improving knowledge about cervical cancer, increasing access to recommended screening and vaccine services, and facilitating community collaborations would reduce barriers to early detection and disease prevention (Office of Minority Health, 2018). The derived benefits of such an investment may be enjoyed by individuals, families, and communities alike. A cervical cancer diagnosis does not only impact a woman physically, financially, and emotionally. It disrupts the family unit, can result in loss of income and can tax state and federal funds for the uninsured. By comparison, the cost of a Pap smear or an HPV vaccination series is relatively small, and therefore a worthwhile enterprise. Eliminating these barriers, reducing the health disparity in minority and immigrant populations should hence remain a public health priority.

Immigrants experience health disparities at a higher average than American-born residents when assessed for preventive screenings for cancer and chronic disease management. Sharmeen Shommu et al. (2016) reported that ethnic minorities with chronic diseases, such as diabetes and hypertension, utilized primary care services infrequently, and were more likely to visit the emergency room instead when they were sick. This practice strains healthcare resources as these individuals had more advanced disease processes, such as elevated blood pressures and HbA1c that were more expensive to treat than to prevent. A similar study by Katigbak et al. (2015) emphasized the negative financial and physical impact of delayed care among immigrants on the U.S. healthcare infrastructure and discussed the role of community health workers (CHWs) in mitigating this.

If not addressed, the poor health outcome of lower-income immigrant women faced with these barriers will continue to prevail and pressure the delivery of public health services (Sharmeen Shommu et al., 2016; Katigbak et al., 2015). Establishing community-based programs could potentially be the most economical and prudent way to gain insight about these groups, and to achieve the objective of national mandates such as that of the *Healthy People 2020* initiative (The United States Department of Health and Human Services, 2017). Through its focus on the Ghanaian immigrant population, this study aims to gain an understanding of the attitudes and existing barriers toward cervical cancer prevention, experienced by the study population. The findings of the study may inform policy development targeted at improving access to cervical cancer screening and HPV vaccination among Ghanaian immigrants.

DEFINITION OF TERMS

Acculturation: the process of assimilating to the norms of a different culture.

Attitude: a way of thinking or feeling about a person or a thing.

Barrier: an obstacle that prevents access to a service or product.

Cervical cancer: a type of cancer that occurs in the cells of the lowest part of the uterus that is joined to the vagina.

Facilitator: a person or thing which makes it easier to perform a behavior or achieve a goal.

Health-Seeking behavior: any activity taken by individuals who perceive that they have or they are at risk for a health problem, in an attempt to find a treatment.

HPV Vaccine/Vaccination: vaccines that can protect individuals against certain strains of the HPV.

Immigrant: a person who moves to, and reside in a foreign country permanently.

Minority: a group of people who make up a smaller number or part of a population.

Pap smear/Pap test: a procedure that is performed to obtain a sample of cells from the cervix to be tested for abnormalities, which can lead to cancer.

Screening: an evaluation or investigation to discover diseases before an individual has symptoms.

Subjective Norms: the belief that an important person or group of people approve of a given behavior, and would support a person performing this behavior.

Uninsured: a person who does not have health insurance coverage.

Underinsured: a person who has health insurance coverage, but it is inadequate.

Underserved: a person who does not have sufficient access to or availability of services.

CHAPTER 2: LITERATURE REVIEW

This literature review serves as a comprehensive summary of the existing evidence about the attitudes, knowledge, barriers, and facilitators to cervical cancer screening, prevention, and management among Ghanaian women. The global burden of the disease, as well as global HPV vaccination and Pap testing uptake, are also discussed. Additionally, the effectiveness and public health implications of preventative approaches in other developing and high-income countries are discussed. The findings from this review were instrumental in guiding the development of the present study.

CERVICAL CANCER AND HPV VACCINATION – GLOBAL PERSPECTIVE

According to the World Health Organization International Agency for Research on Cancer (2018), the estimated number of women worldwide diagnosed with cervical cancer in 2018 was 569,847 (3.2% of all cancers), and 311,635, more than half (54 percent) of whom were expected to die from the disease. Of this number of new cases of cervical cancer, African and Asian countries have the highest burden of the disease (World Health Organization - International Agency for Research on Cancer, 2018). The literature reports that in 2012, 445,000 (84%) of all new cases of cervical cancer occurred in developing countries, and approximately 85 percent of the 270,000 women who died from cervical cancer worldwide were from these regions (World Health Organization, 2018). The global disparity of cervical cancer mortality and incidence rates is illustrated in Figure 2.1 and Figure 2.2. Consequently, there is a global quest to improve health outcomes in African and Asian countries through health education, primary prevention, and early detection (World Health Organization, 2018).

The World Health Organization (2018) recommends a multidimensional approach to maximize cervical cancer prevention and control. This recommendation includes public health education for HPV related cervical cancer, HPV vaccination for girls aged 9-13 years (preferably before first sexual intercourse), regular Pap tests for early detection of precancerous cells in women starting at age 30, and early intervention following a positive diagnosis for HPV (World Health Organization, 2018).

Estimated age-standardized rates (World) of incident cases, cervical cancer, worldwide in 2012

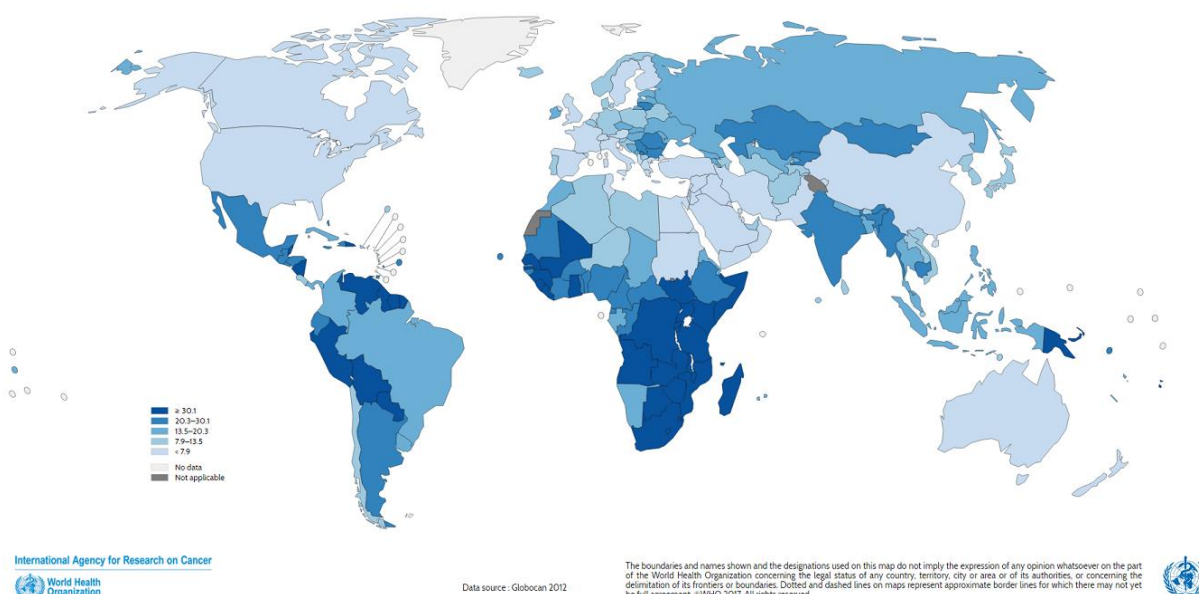


Figure 2.1 Estimated age-standardized rates of cervical cancer incidence 2012. Reprinted from “World Cancer Day, 2017”, by WHO-IARC, 2019

Estimated age-standardized rates (World) of deaths, cervical cancer, worldwide in 2012

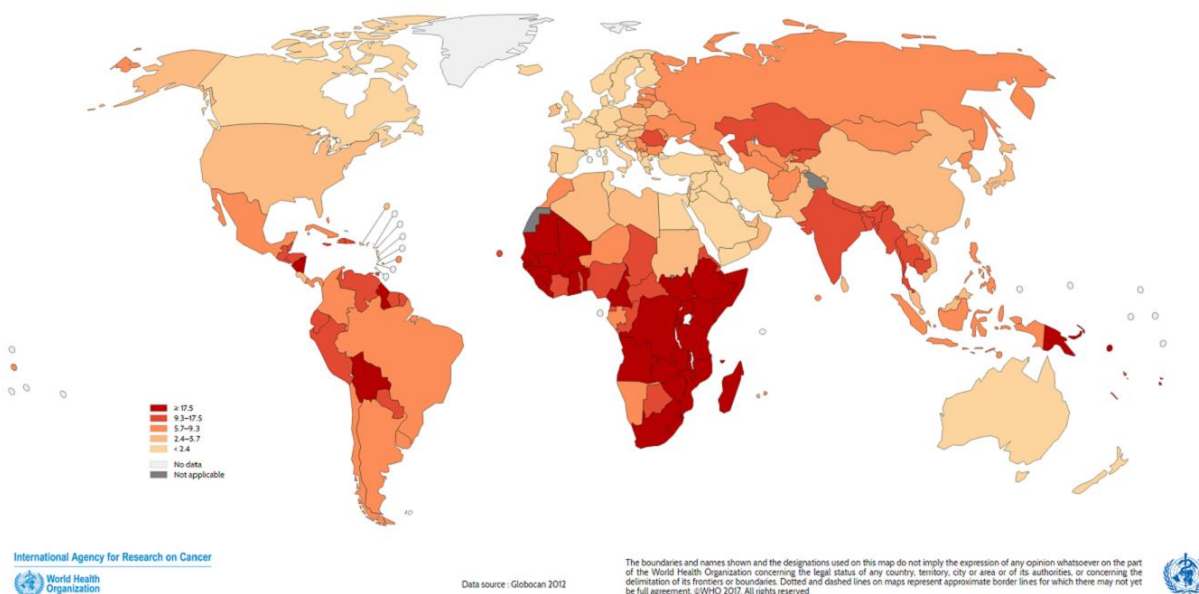


Figure 2.2 Estimated age-standardized rates of cervical cancer mortality 2012. Reprinted from “World Cancer Day, 2017”, by WHO-IARC, 2019

Cervical cancer screening tests and HPV vaccination have been recognized globally as the gold standard for the prevention and management of cervical cancer. Developed countries such as Australia, have reported significant improvement in cervical cancer incidence and mortality rates in the last two decades with this dual approach (Hall et al., 2018). Many low-income and middle-income countries have not been able to attain this success, despite these preventive measures being relatively inexpensive. The barriers cited in a recent article for these shortcomings include the lack of (a) designated and sustained funding for these programs, (b) community awareness and urgency, (c) partnerships with stakeholders, (d) collaboration between other health programs, (e) effective communication, and (f) strong political advocacy (Wittet et al., 2017). Factors including education, awareness, funding, advocacy, partnerships, and evaluation were described as pillars of an effective strategic plan to address issues of this magnitude (Wittet et al., 2017). The authors described the success of programs such as the national reduction of road traffic deaths in many countries, as one such example of the effectiveness of this multifaceted approach.

As one of the founding members of the Global Alliance for Vaccine and Immunization (GAVI), the World Health Organization is committed to increasing access to HPV vaccines globally. As of 2016, GAVI has assisted twenty-three countries with funding for HPV vaccines. Among this group, three developing countries (Uganda, Honduras, and Rwanda) have successfully included HPV vaccines for girls in their national vaccination program for children (Global Vaccine Alliance, 2018). The goal is to vaccinate approximately 40 million girls in more than 40 low-income countries by the year 2020, through the GAVI program. Strategies include offering vaccines through school-based programs and raising awareness and community mobilization through engaging private, public, and political stakeholders in this shared effort (Global Vaccine Alliance, 2018).

To date, seventy-four countries, including many regions of Africa, Asia, and Latin America, have national immunization programs. Notwithstanding, only an estimated 3% - 23% of eligible girls globally have received the HPV vaccine (Wittet et al., 2017). In 2016, the former Secretary-General

of the United Nations proposed that cervical cancer could be eliminated globally by the year 2030, and the authors ventured that this goal could be realized through the above-mentioned multifaceted strategies described by Wittet et al. (2017). In 2015, Uganda achieved a 53 percent HPV vaccination rate of eligible girls, becoming the first African nation to initiate a dual cervical cancer prevention strategy (HPV vaccination and cervical screening). This achievement was attained through raising awareness about cervical cancer by a prominent female politician, nationally televised public health education campaigns, establishing vaccination pilot sites, partnerships with community stakeholders, and requesting funding from the GAVI Alliance (Wittet et al., 2017). Though not as successful as they had anticipated, Uganda laid the groundwork for future national cervical cancer programs in Africa.

CERVICAL CANCER AND HPV VACCINATION – GHANA

Approximately 3,050 new cases of cervical cancer were diagnosed in Ghana in 2012, with more than 50 percent of these women dying from the disease (Nartey et al., 2018). In 2000, approximately 7 million Ghanaian women, 15 years and older, were at risk of developing cervical cancer (Opoku et al., 2016). Of those diagnosed, 64.3 percent were confirmed to have cancer of the cervix stage IIB, which had advanced to the surrounding tissues of the uterus, or more progressive (Opoku et al., 2016). The death rate for cervical cancer in Ghana is threefold that of the global average at 27.6 per 100,000 women (compared to 7.8 per 100,000 women), with approximately 2.7 percent of eligible Ghanaian women obtaining Pap tests regularly (Williams & Amoateng, 2012). Although HPV vaccines, HPV DNA cervical tests, visual inspection (of the cervix) with acetic acid (VIA), and the Pap tests are available through many public and private health facilities, these services were grossly underutilized throughout Ghana (Williams & Amoateng, 2012).

The prevalence of cervical cancer in Ghana can be attributed to several factors, perhaps the most significant being a lack of knowledge about the disease process, prevention, causes, predisposing risks, and management. Knowledge of Pap smear and HPV vaccine has been characterized as low, especially among low-income Ghanaian women, resulting in most diagnoses of cervical cancer made in

the advanced stages of the disease. (Nartey et al., 2018; Opoku et al., 2016). Binka, Doku, and Awusabo-Asare (2017) affirmed this assertion in a qualitative study conducted with fifteen participants, aged 40 - 62 years, who had cervical cancer in varying stages. All the participants reported not knowing about the disease before their diagnoses, and all but one woman stated they did not know the cause of the disease or its signs and symptoms. These authors also reported that none of the women had any knowledge of the screening or treatment options for cervical cancer. They all expressed surprise and confusion about the symptoms they were experiencing, and the severity of their diagnoses (Binka et al., 2017).

Cultural norms and taboos about the cause and risk factors of cervical cancer, as well as when to seek care, are substantial barriers to consider in policy development for improved health outcomes in Ghana. The consensus and best practice guideline from all of the reviewed literature was the recommendation for health education about cervical cancer screening and HPV vaccination programs, to be culturally applicable. Williams (2014), in her study, stated that although pamphlets and other educational materials were available in Kumasi, Ghana, they were American and European based, written at high reading proficiency levels, and not culturally tailored for that population. Hence, despite the availability of these resources, and Pap tests in different regions of the country, the author speculated that these implementations were not very practical. This was evident from the study as less than 4 percent of Ghanaian women regularly sought cervical cancer screenings (Williams, 2014).

Cervical cancer rates vary geographically by region in Ghana. Variation in cervical cancer incidence rates existing between two of the country's twenty-two regions was observed: Greater Accra region 24.5 percent, and Ashanti region, 14 percent. In Kumasi, the large metropolitan capital city of the Ashanti region, cervical cancer was estimated to be 29.4 percent of all female cancers (Nartey et al., 2018). A retrospective study involving 1,725 women from two major referral hospitals in both Kumasi and Accra, reflected the progression of cervical cancer based on tumor staging. Ninety women (15.2%) were diagnosed at stage 1, stage 2 = 428 (24.8%), stage 3 (the majority) = 631 (36.6%), and stage 4 = 162 (9.4%). A quarter of the women studied did not have a staging of their cancer done through

histology, but it was estimated that a possible 40 percent of these patients were diagnosed at an advanced state (Nartey et al., 2018).

Perceived susceptibility to cervical cancer also emerged as an important factor influencing awareness and uptake of preventative services. A study conducted among women in Tamale, northern Ghana by Opoku et al. (2016) assessed the perception of the women of developing the disease. The main risk factors assessed in this study were sexual intercourse beginning at an early age, smoking, having multiple sexual partners, and being in a polygamous relationship, or being with a partner who has had more than two sexual partners in his past. Of the three hundred women interviewed, 23 percent felt they had at least one risk factor, 61 percent did not think that they had any particular risk factors. More than 50 percent of those in polygamous relationships did not believe they had any risk factors. For example, two women reported having more than five sexual partners in their lifetime; however, they did not believe that they had any increased risk factors (Opoku et al., 2016).

Williams (2014), affirmed this reduced perception of risk factors for cervical cancer in a study involving thirty-four women in Kumasi, Ghana. Twenty-five of the women were ages 18-36 years, twelve had a college degree, and ten had completed high school. Interestingly, despite one-third of the group having a college degree, only two of the women had ever had a Pap test done. The low rate of screening among this study population was attributed to a lack of social support for screenings and preventive care, lack of perceived susceptibility to cervical cancer, and lack of awareness about the disease. The most significant factor which contributed to the prevalence of cervical cancer in the Ashanti region, according to this study, was the misconceptions about one's susceptibility to developing the disease (Williams, 2014). These myths included belief about the causal agents of cervical cancer, including chemical agents or herbs inserted in the vagina, poor hygiene, heat in the vaginal area, toilet paper, and some forms of birth control (Fang & Baker, 2013; Williams, 2014). The findings highlighted the magnitude of the limited knowledge, and low levels of perceived susceptibility to cervical cancer among Ghanaians, and the need for more significant public health education on the topic.

The HPV vaccination, which is the second arm of cervical cancer prevention, is faced with parallel barriers to acceptance among Ghanaians. These include a lack of knowledge, low levels of perceived susceptibility to cervical cancer, and decreased social approval. In 2009, two hundred and sixty-four women aged 18 - 65 years from Kumasi, Ghana, were surveyed to assess their knowledge and attitudes toward the HPV vaccine. Approximately 40 percent of the participants reported they had heard about the vaccine, and of that number, 94 percent would willingly accept the vaccine for their daughters and themselves (Coleman, Levison, Sangi-Haghpeykar, 2011). Most of the participants were educated (74%) with at least one year of college. Ninety-seven percent had heard of cervical cancer, but only 15 percent had a Pap test done at least once (Coleman et al., 2011). Education in schools and public health campaigns on television about cervical cancer and HPV vaccination were mentioned by 80 percent of the respondents, as potentially favorable methods of increasing awareness. The most notable barriers discussed were; (1) the low perception of risk for developing the disease, (2) inadequate knowledge of the HPV vaccine, (3) accessibility, and (4) limited community and social support for Pap smear and HPV vaccination (Coleman et al., 2011).

THE IMPORTANCE OF AFRICAN MEN'S OPINION ABOUT CERVICAL CANCER AND HPV VACCINATION

Knowledge deficiency regarding cervical cancer was also present among males, who, in low and middle-income countries like Ghana, play a role in the health-seeking behaviors of women. A partner's perception or attitude may, therefore influence a woman's decision to access medical services. In some instances, African women may also need permission and financial support from their male partners to participate in recommended Pap smear screening, and HPV vaccination for themselves and/or their children. Given the potential role men play in these decisions, Williams and Amoateng (2012) examined the knowledge of cervical cancer, its screening programs, and treatment regimens in a study among men living in Kumasi, Ghana. The study consisted of five focus groups with twenty-nine men, performed in both English and the local language Twi. The general themes which emerged from the focus groups were

knowledge about cervical cancer, risk factors, cause, screening, and cultural beliefs impacting how women accessed care. Some views described by the men about the risk factors of Ghanaian women included: (1) poor personal hygiene practices, (2) multiple sexual partners, (3) frequency of sexual intercourse, (4) use of herbs in the vagina, (5) chemicals used by males on their genitals before sexual intercourse, (6) skin bleaching products used by women, and (7) abortions (Williams & Amoateng, 2012). None of the participants knew of any family member who had cancer, and they explained that in many extended families, illness is not discussed. Only one man in the group knew of the correlation between cervical cancer and HPV (Williams & Amoateng, 2012).

In addition to the identification of a general lack of awareness about cervical cancer among the male participants, the study by Williams and Amoateng (2012) also revealed that many of the participants would be supportive of their spouses receiving a Pap test. This was if the men (1) they knew more about the disease, (2) felt it was necessary, (3) the test was free, and (4) the test was performed by female staff (Williams & Amoateng, 2012). When asked about their willingness to support and assist with payments for screening for their partners, the men's responses varied. The majority of the participants stated that it would be a waste of money for a woman who does not have symptoms to get a Pap test done, and it would be helpful if the government provided the screening for free. Another potential barrier described by the respondents was that Ghanaian women were very private, and may not want to have this screening done because they feared their information would not be kept confidential by hospital staff (Williams & Amoateng, 2012).

The authors concluded that increasing the knowledge level about cervical cancer could garner more significant support from the men who played crucial leadership and financial roles in many Ghanaian households. The authors also noted that if Ghanaian health officials raised more public awareness about cervical cancer, its risk factors, and screening recommendations, this would help to dispel most of the myths about the disease among both men and women (Williams & Amoateng, 2012).

Another qualitative study which was conducted among rural Nigerians (13 men and 15 women) identified the significance of the cultural norm of men's opinion regarding the healthcare decision of their partners. Men in this population were viewed as the head of household and major decision-makers (Onyenwenyi and Mchunu, 2018). Being unemployed, many of the female participants stated that they were not able to afford a Pap smear, so they could not access it if their husbands wouldn't agree to pay for it. The barriers of lack of knowledge about cervical cancer in the absence of symptoms and the necessity of Pap smears for early detection led several of these men to decline screening for their wives (Onyenwenyi and Mchunu, 2018). The social barriers described by the women included embarrassment if they had an abnormal Pap smear result, and the possibility of losing their spouse if the men thought they had cheated and contracted HPV from another partner (Onyenwenyi and Mchunu, 2018).

A third study conducted by Dodo, Sykes, and Powell (2016) supported the importance of understanding the role of African men in the decision-making process of cervical cancer prevention among their spouses. The study findings were similar, in that many of the female participants reported a fear of discrimination by their husbands if they were found to have an abnormal Pap smear result and the accusation of being unfaithful. Besides, the women reported needing permission from their spouse and family to have a Pap smear done, due to the prevailing belief in the use of herbal medicines, and avoidance of western medicine (Dodo et al., 2016).

Mupandawana and Cross (2016) explored the role of African immigrant men living in England, as head of households, regarding the acceptance of HPV vaccination for their daughters. Among the five African couples interviewed, awareness of the HPV vaccine was low and even lower among the men. There was a general unacceptance of the HPV vaccine among the parents because (a) it was deemed unnecessary, (b) cervical cancer was considered to be a disease caused by promiscuity, and (c) there was a fear that their daughters would act accordingly. Even for the mothers who would have consented for their daughters to receive the vaccine, they could not do so without their husbands' permission. This was

because disregarding the men's authority as the head of the household could result in divorce and or disruption of the family dynamics (Mupandawana & Cross, 2016).

Knowledge of these cultural beliefs and social norms was instrumental in the decision to include Ghanaian men in this study. By including the men, the researcher hoped to further explore this potential barrier among Ghanaians immigrants in the U.S. This insight could help understand these practices, and their public health implications when proposing campaigns for HPV vaccine education, and acceptance.

COST BARRIERS

As of 2018, there was no national publicly-funded cervical cancer screening or HPV vaccination program in Ghana (Nartey et al., 2018; Adanu et al., 2010). Some hospitals throughout the country provide free Pap smears to low-income women. However, the charge for most Pap smears is billed to the clients, whether performed during routine wellness checks or requested by a physician for diagnostic studies (Nartey et al., 2018; Adanu et al., 2010; Williams 2014). In July 2018, the cost of a Pap smear at the Komfo Anokye Teaching Hospital (KATH) reproductive health clinic was 45 GHC (approximately USD 9.40), and a total of 600 GHC (roughly USD 125.25) for the three-dose series of HPV vaccine (Juliana Ofori-Addai, Principal Nursing Officer, personal communication, July 2018). In contrast, Pap smears in the United States are covered 100 percent through many health insurance plans as preventive care. Otherwise, there could be a charge of approximately \$80 - \$200, which may be reduced on a sliding scale based on a woman's income. Underinsured or uninsured women in the U.S. also can receive free Pap smear through the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) for uninsured women (Howmuchisit.org, 2018; Centers for Disease Control and Prevention 2015b; White & Wong, 2015). Likewise, HPV vaccines are covered by most private and federally funded public health insurance policies, or can be purchased after subsidizations at many participating local pharmacies (American Cancer Society, 2018).

For perspective, the minimum wage in Ghana was 9.68 GHC (approximately 2 USD) per eight-hour workday in 2018 (WageIndicator, 2018). The U.S. federal and Georgia minimum wage was USD 7.25 per hour or \$58 per day in 2018 (Minimum-Wage.org, 2018). Therefore a woman living in Georgia earning minimum wage could be eligible for a free or reduced-cost Pap smear that she could pay for with a day's wage after a discount. A woman living in Ghana may need to save a week's salary to have this same test performed. It is understandable then why low-income families paying for a Pap smear in Ghana might not prioritize Pap testing, and likewise, obtaining the HPV vaccine would be a stretch. Cost remains one of the most significant barriers to cervical cancer screening in low and middle-income countries, and a reality that must be factored into all policy recommendations for program planning.

In spite of varying cultural views, and a general lack of awareness about cervical cancer, Ghanaian women have reported interest in screening and HPV vaccines for themselves, and their daughters (Williams & Amoateng, 2012; Williams, 2014; Nartey et al., 2018). Knowledge, cost-effectiveness, accessibility, and community approval have emerged in the existing literature as important enablers for acceptance for these public health measures. Various authors opined that the most effective way to increase awareness about cervical cancer, risk factors, screening tests, and treatment options is to develop culturally competent strategies to reduce these barriers (Williams & Amoateng, 2012; Williams, 2014; Nartey et al., 2018). A recurrent response among participants in these studies was that cervical cancer messages would be well received. They expressed their interest in obtaining this information if it's delivered by Ghanaian cancer survivors, health workers from local communities, grass-roots organizations, and through media sources such as the local radio and television (Williams & Amoateng, 2012; Williams, 2014; Nartey et al., 2018).

CERVICAL CANCER PREVENTION AND CONTROL AMONG IMMIGRANT WOMEN LIVING IN THE U.S.

Cervical cancer rates continue to decline considerably in the United States since the increased availability of screening tests for early detection, and the HPV vaccine. However, disparities

persist among Blacks, with disparities being wider for African immigrants. Forney-Gorman & Kozhimannil (2015) examined a population of six hundred and fifty-six African-American women living in America (N = 656: n = 620 American-born, and n = 36 African-born). The study controlled for standard demographic variables, including education, age, income, marital status, and health insurance. The authors found that American-born black women were 3.37 times more likely to have had a Pap smear within the last three years, in comparison to African-born women (Forney-Gorman & Kozhimannil, 2015). Interestingly, the study revealed a positive correlation between income and current Pap smear status among the American-born participants, but not among African-born respondents. African-born women with higher incomes did not necessarily have correspondingly higher screening rates (Forney-Gorman & Kozhimannil, 2015). Having health insurance also played a vital role as a determinant of screening rates. The main enabling factors which the authors identified as impacting cervical cancer screening and early detection were awareness, and more importantly, culturally competent care (Forney-Gorman & Kozhimannil, 2015). While this study raised some interesting theories, the relatively small sample size of African-born participants (n = 36) may have been a significant limitation.

The findings from a similar study about the utilization of health services by immigrants supported this ongoing disparity. Adegboyega & Hatcher (2016) examined five constructs that influence the maximization of health promotion services among African-born immigrants to the United States. These were accessibility, affordability, accommodation, availability, and acceptability. The lack of health insurance, distance from health care facilities, health illiteracy, lower socioeconomic status, language, and cultural barriers were all found to influence an immigrant's ability to access quality health services (Adegboyega & Hatcher, 2016). These factors result in immigrants typically not seeking preventive care and or delaying treatment and follow-up services when an illness occurs. Even legal immigrants may have to wait at least five years to be eligible for federally funded health programs such as Medicaid (Adegboyega & Hatcher, 2016). Many immigrants experience under or unemployment within the first few years of arriving in the U.S.A as their academic qualifications may not be equally transferable,

therefore requiring additional training and education for employment (Adegboyega & Hatcher, 2016). This setback could affect immigrants' ability to afford preventive care.

Accommodation and acceptability are very closely related; the first focuses on language and communication barriers, which are innate to many immigrants for whom English is not their first language. Acceptability goes a bit further; many African immigrants reported feeling discriminated against by health care providers because of their accent, cultural clothing and customs, and their inability to understand the subtle nuances of the English language (Adegboyega & Hatcher, 2016). These barriers hinder equitable access to health care services, subsequently worsening the health disparities among African immigrants to the United States. Confounding this state is the reality that Blacks as a racial minority group in America characteristically experience more significant health disparities (Adegboyega & Hatcher, 2016; Adegboyega & Hatcher, 2017). African-born immigrants living in America are, therefore, more likely to report insufficient access and limited use of health care services than American-born individuals (Adegboyega & Hatcher, 2016).

Proper utilization of the health care system begins with having sufficient access. However, it is a widely documented phenomenon that having health services available in a community does not necessarily equate to full utilization by all the individuals they are intended to benefit. Immigrants, ethnic minorities, the poor, and other underserved groups in society are examples of populations caught in this public health dilemma. Consequently, they experience higher rates of morbidity and mortality from many preventable diseases. According to White and Wong (2015), many premature deaths among underserved women are avoidable and are the result of social determinants of health that extend beyond mere access to primary care.

The National Breast and Cervical Cancer Early Detection Program (NBCCEDP) has provided free screening to eligible low-income women who have no health insurance or have minimal coverage. This program is federally funded through the Centers for Disease Control and Prevention and has served millions of women in all fifty states and U.S. territories since its inception over twenty years

ago (Centers for Disease Control and Prevention, 2015b); White and Wong, 2015). Despite being widely available, screening rates have not been optimal. According to the demographic data collected in this study, approximately only 6.5 percent of women aged 18-64 years eligible for Pap tests through the program were screened annually. Immigrant and minority women who had never been screened or those not screened within the last five years were at higher risk for precancerous and cancerous cervical changes (White and Wong, 2015). The authors determined that there were underlying barriers to routine screening for these women besides cost, such as lack of awareness about the disease, transportation, childcare, and cultural and language differences, which pose are deterrents to fully accessing this preventive care. To overcome these challenges, and to eliminate health disparities and increase access to care for all Americans, the recommendation is for further investigation into strategies to improve community partnerships (Office of Disease Prevention and Health Promotion, 2018).

With the burden of cervical cancer being historically higher in African and Asian countries and the custom of routine preventive care being impractical or financially unattainable for many, these same attitudes toward preventative service utilization may be carried over by some to their host country after migration (Sharmeen Shommu et al., 2016; Hae-Ra et al., 2017; Forney-Gorman & Kozhimannil, 2015). Cervical cancer screening programs and policies would be more effective among African-born immigrants if they are tailored to incorporate the cultural, religious, and social norms of this population (Forney-Gorman & Kozhimannil, 2015). Interventions at this fundamental level could prove to be very useful in connecting the women with the healthcare programs established to implement them.

THE IMPACT OF IMMIGRATION AND ACCULTURATION ON HEALTH-SEEKING BEHAVIOR OF IMMIGRANTS

The effect of immigration and, consequently, acculturation on improving cervical cancer screening and HPV vaccination among Ghanaian immigrants is a pivotal part of this study. Sofolahan-Oladeinde, Iwelunmor, Tshiswaka, and Conserve (2014), describe acculturation as the interaction between immigrants and their host country, which inevitably result in one of four possible outcomes:

separation, integration, marginalization, or assimilation. First, individuals may inadvertently give up most of their traditions and adapt to the new norms of that society through assimilation. Secondly, they may preserve their traditions, choosing to remain separate from the values of the new culture. A third outcome is, through integration, some immigrants maintain traits of their ethnic identity, while simultaneously adopting favored practices of the new way of life. Lastly, the authors also explained the alternative of marginalization, which is very rare and is described as not identifying meaningfully with either culture (Sofolahan-Oladeinde et al., 2014). Acculturation is a process that gradually occurs over time and is frequently not a deliberate decision but the result of the understated influences of socialization. Critical determinants of acculturation are the age of migration, the length of time living in a new country, the presence of a support system or a community sharing similar beliefs, and the value placed on practices of the host country (Sofolahan-Oladeinde et al., 2014).

Other influences affecting acculturation of female immigrants and their health-seeking behaviors include (1) gender role of women as primary caregivers in the home, (2) embarrassment with having a pelvic examination done, and (3) deprioritizing of their self-care (Sofolahan-Oladeinde et al., 2014; Nguyen, Clark, & Belgrave, 2014; Fang & Baker, 2013). Preventive care is not customary in many developing countries. Therefore this practice, along with other barriers such as language, religion, belief in alternative medicine, fear of losing wages or lack of sick days, modesty, lack of health insurance, and social isolation, must be considered when planning health promotion strategies for immigrants. While diet and physical activity levels may be negatively impacted by migration, the literature support that women who have lived in America greater than five years are more likely to adopt positive health screening behaviors through acculturation, such as Pap testing (Sofolahan-Oladeinde et al., 2014). It is the hope that understanding the factors which influence acculturation, and incorporating them into programs for immigrants will result in better outcomes and utilization of available services.

THE POTENTIAL IMPACT OF COMMUNITY-BASED INTERVENTIONS ON CERVICAL CANCER PREVENTION

Many immigrants who are unemployed or who have other social determinants of health, which may lead to decreased utilization of these preventive services, may benefit from the safety network of collaborations with community-based organizations. These collaborations include churches, local businesses, and community associations related to the countries of origin (Barbee et al., 2010; Hae-Ra et al., 2017; Sharmeen Shommu et al., 2016; Katigbak et al., 2015). This may facilitate increased knowledge about screening programs, and support from trusted leaders to access them. The use of community health workers (CHWs), for example, has been identified as a model to deliver culturally-competent care populations, such as immigrant populations. These individuals can foster collaboration of at-risk immigrant Ghanaians with the U.S. healthcare services, primarily through local churches. As reported by many participants in the study both in Ghana and among immigrants in the U.S., churches represent a key social and religious support system in the Ghanaian culture. This partnership could serve as a platform for information about local cervical cancer programs for these Ghanaian immigrants.

CHWs make up a vital part of the public health team, with the importance of their role being recognized more significantly as the demographics of the United States continue to change. These individuals live in or have a thorough knowledge of the community they serve and are respected and accepted by its members (Centers for Disease Control and Prevention, 2015a). CHWs (also known as patient navigators, outreach workers, and community health representatives in some settings), are instrumental in forming that liaison between the public and healthcare professionals. According to the Centers for Disease Control and Prevention (2015a), CHWs have helped improve health-seeking behaviors, and the management of chronic diseases such as asthma, diabetes mellitus, cardiovascular diseases, and breast, cervical, colorectal, and prostate cancer screenings. Additionally, including CHWs in the care of at-risk populations with chronic illnesses have been recognized as being cost-effective. Their assistance in helping clients to navigate the health sector has resulted in greater utilization of preventive

services, earlier detection of illnesses, and lower cost in managing diseases before advancement in severity (Centers for Disease Control and Prevention, 2015a).

Members of a given community who have not been formally trained or certified as CHWs can also serve effectively in this capacity for specific disease prevention programs. A randomized control study was conducted in the Washington D.C. area between 2010 and 2014 among Korean-American women, to assess improvement of breast and cervical cancer screening rates through partnerships with peer navigators (Hae-Ra et al., 2017). These navigators were not certified CHWs but were women with in-depth knowledge of this population, and they were able to recruit participants through the twenty-three ethnic churches they attended. Twenty-nine community health workers who had no prior work experience with breast or cervical cancer were trained. Fourteen workers received training over three days (16 hours) for the intervention group to include instructions about client counseling, navigating the health care system, and improving health literacy for breast and cervical cancer. The remaining fifteen workers who were assigned to the control group received five hours of training in orienting participants to the study, and basic health information about the topics (Hae-Ra et al., 2017). Participants in the intervention group received brochures and a digital video disc (DVD) tailored to their ethnic background about breast and cervical cancer, monthly check-in phone calls, individual counseling, and assistance with making appointments for screenings. None of these women had received any breast or cervical cancer screening within the last two years before the study. Within six months of enrollment, 54 percent of participants in the intervention group had received a Pap smear compared to 9.2 percent in the control group, and the likelihood of receiving a Pap smear was 13.3 times greater for those who had received the intervention compared to those who had not (Hae-Ra et al., 2017).

Although this study was limited in its generalization outside of the Korean-American community who attended church, the significance of its results warrant further exploration and indicate a possible health promotion strategy for other low-income immigrant women. It is important to note that while many of these participants had lived in the United States for at least a decade, they had not utilized

these preventive screenings, which are available across the nation for free or covered fully with most health insurance plans. The authors concluded that several key factors other than health insurance predispose and enable health-seeking behaviors among immigrants, including proficiency in English, health literacy, social norms, education, and community support (Hae-Ra et al., 2017). Therefore the use of CHWs formally trained or otherwise could be an inexpensive, effective, and efficient method of improving health outcomes for immigrant women, for cervical cancer and other prevention programs, a finding supported by other studies (Sharmeen Shommu et al., 2016; Katigbak et al., 2015).

SUMMARY OF LITERATURE REVIEW

Despite the availability of affordable screening and prevention services, immigrants in the U.S. continue to experience higher incidence and mortality rates of HPV-associated cervical cancer. The existing literature indicates that reduced awareness, cultural beliefs, and underutilization of screening, and vaccination services are modifiable contributing factors. There are gaps in the literature concerning cervical cancer awareness in Ghana, the actual burden of the disease there. These variables could have some bearing on the attitude of Ghanaian immigrants and how they negotiate health services in America. The purpose of this study is, therefore, to fill the gaps in the existing literature on the health-seeking behavior of Ghanaian immigrants toward cervical cancer prevention. Also, the researcher hopes to gain more insight into strategies that could improve how these immigrants make decisions about preventive care.

THEORETICAL FRAMEWORKS

OVERVIEW: SOCIAL ECOLOGICAL MODEL AND THEORY OF REASONED ACTION

Social Ecological Model

The Social Ecological Model (SEM) is a theoretical framework that was developed to understand and explain the interdependence of human behavior with social influences, such as the

environment and political systems. According to Sharma (2017), this model is the work of developmental psychologist Urie Bronfenbrenner, who first deliberated that the basis of human development is through the interaction of individuals with various systems, which subsequently shaped their lives.

Bronfenbrenner speculated that interaction with levels of the environment ranging from the immediate (family, school, job site), to the distant (culture, community, socioeconomic status, beliefs), all converge to determine the complexity of behavior (Sharma, 2017). Beginning in the 1970s, Bronfenbrenner first conceptualized the five subsectors of the greater ecological system (Sharma, 2017). The microsystem is the first environment an individual comes in contact with; his/her immediate family, household, religious organizations, work, or school. Biological makeup and personality play a role in this system. The mesosystem is the association between these settings, such as the impact of the church on the family, while the exosystem is the impact of situations outside of a person's immediate environment, which has an indirect effect on their quality of life. Macrosystem is the influence of one's culture, beliefs, and social norms on their thoughts and actions and chronosystem explain the progression of behavior that persons experience over a lifetime through interaction with their environment (Sharma, 2017).

Later generic versions of the Social Ecological Model evolved from the Social Ecological Theory to be more relevant to health promotion strategies and factors that empower individuals to make positive health changes. Sharma (2017), describes the intrapersonal level as the first level of individualized factors which impact behavior, such as attitude and personality traits. The second level, interpersonal, is where the effect of interactions between individuals, such as friends and family, are directed. The social and the cultural level interventions are those concerned with existing norms, regulations, and policies which foster or deter health practices. The last two levels of interventions (organizational and policy), target issues such as systems, and public health laws for disease control (Sharma, 2017; Glanz, Rimer, & Viswanath, 2008).

The Social Ecological Model was chosen for its relevance to the factors which predispose and enable individuals to practice health-seeking behaviors. These factors are based on the levels of the

SEM used in this study. These are individual (attitudes, knowledge), interpersonal (social support, family, friends), community (cultural norms, socioeconomic factors), and policy (public health programs). This theoretical framework was used to assess the knowledge, barriers, and facilitators to cervical cancer screening and HPV vaccination among the study population, and the potential impact of community liaisons in improving these rates. The constructs of the SEM were applied to examine an individual's behavior, not in isolation, but how the influence of interpersonal relationships, community, and existing policies impact decisions made about health. These concepts are not mutually exclusive in their application; there are overlaps in their categorization into groups based on their influence on individuals in the study.

A four-level adaptation of this model was chosen to address the research questions, as shown in Figure 2.3. The factors which influence cervical cancer prevention and control among the study population and the intervention strategies to evaluate them were analyzed. These levels of intervention are; individual, interpersonal, community, and policy (Nuss, Williams, Hayden, Huard 2012; Sharma, 2017; Glanz et al., 2008). From the literature review, it is evident that improving cervical cancer screening and vaccination rates among immigrant populations extend beyond knowledge deficit or lack of compliance with screening recommendations (Martínez-Donate et al., 2013). Community-level influences such as having health insurance and being able to go for a Pap smear influences behavior. Policy level factors, including state and local mandates to reach underserved populations, facilitate compliance with screening and vaccination recommendations.

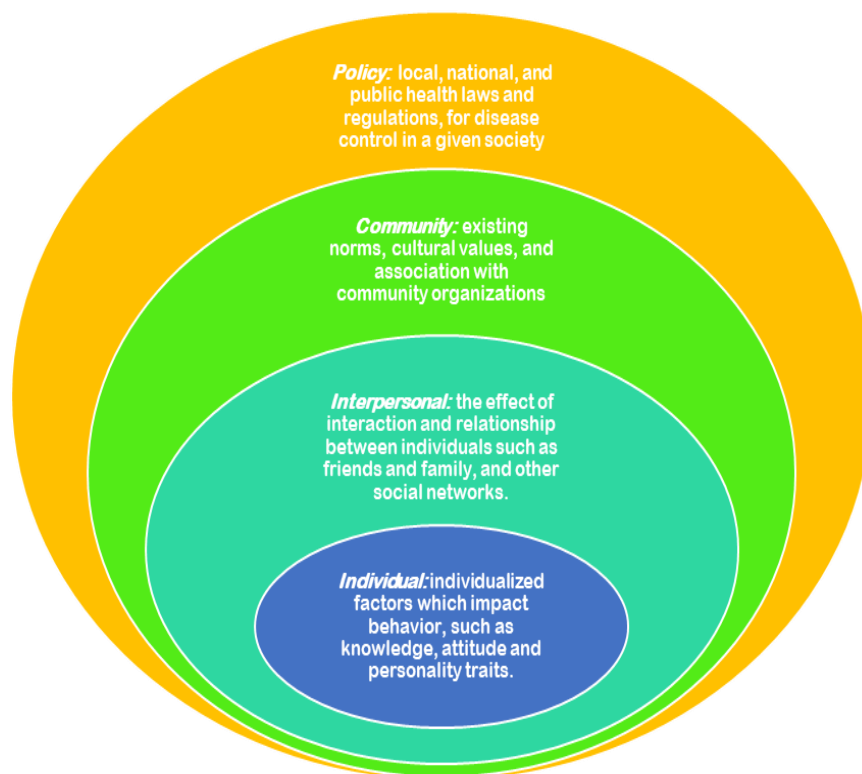


Figure 2.3 Social Ecological Model. Adapted from Theoretical foundations of health education and health promotion (Sharma, 2017)

Theory of Reasoned Action

The Theory of Reasoned Action (TRA) was first developed in 1967 by Martin Fishbein and Icek Ajzen to serve as a conceptual model for the explanation of the process of voluntary human behavior (Ajzen & Fishbein, 1980; Sharma, 2017). According to the authors, decision making among individuals is a well thought out process which is preceded by one's personal attitude towards the behavior, and their existing subjective norms. The eight constructs of the TRA were used to assess the process by which Ghanaian immigrants make an informed decision to participate in cervical cancer screening and HPV vaccination programs. These constructs were integrated with the SEM at the individual level. The constructs include six predictor variables which comprise distal constructs (Behavioral Beliefs, Outcomes Evaluation, Normative Beliefs, Motivation to Comply), proximal constructs (Attitude toward Behavior, Subjective Norms), and two outcome variables (Behavioral

Intention, Behavior) (Ajzen & Fishbein, 1980; Sharma, 2017). The interdependence of the constructs of this continuum is demonstrated in Figure 2.4.

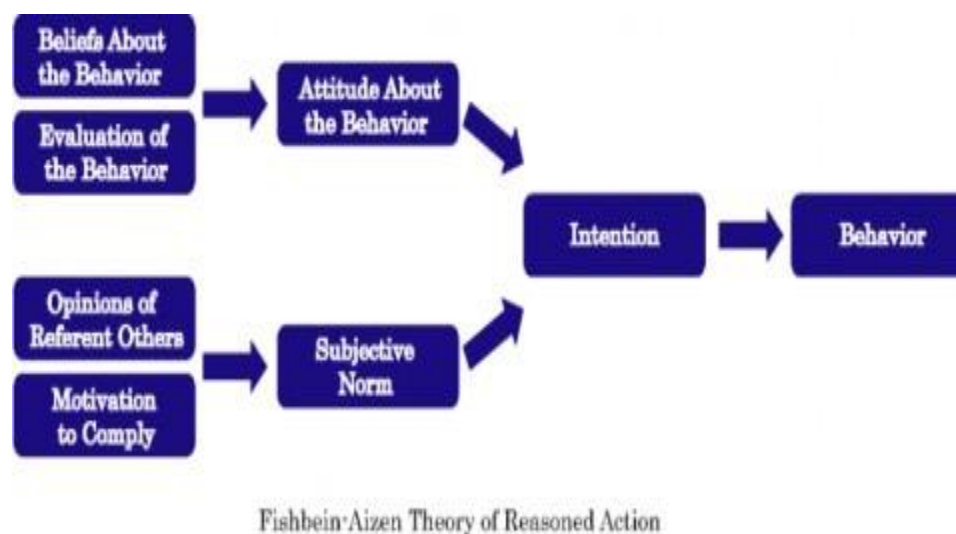


Figure 2.4 Theory of Reasoned Action. Reprinted from *Theory of reasoned action* (Communication Studies, 2019)

Attitude toward Behavior: Attitude toward behavior is shaped by an individual’s belief about the benefits of the behavior (“if I have a Pap smear or HPV vaccine done I/my children will be protected from HPV-associated cancer”), and the evaluation of the outcome of the given behavior (“being healthy and free from HPV-associated cancer is a good thing”).

Subjective Norm: Normative beliefs (“my friend, family, doctor, nurse, supports my decision to Pap smear/HPV vaccination done”) and the motivation to comply (“I want to do what my doctor, family, friend suggests”) form a person’s perception of what they should do. Subjective norm is based on the social support available for the performance of the given behavior, and whether or not this individual values the opinion of the advisor.

Behavioral Intention: The intention to perform a given behavior is the result of the direct measures of an individual’s attitude towards behavior and his/her subjective norms. Once an intent is formed, the

individual is likely to carry out the behavior. Availability and access to community resources however, directly drive behavioral intention.

Behavior: This final construct is the culmination of the entire decision process wherein the individual act upon his/her intent, and performs the behavior (Pap smear, HPV vaccination).

Rarely is the decision to perform a behavior one dimensional; it is often contingent on several dynamics which either facilitate or hinder one's effort, regardless of knowledge or convictions (Shui Hung Wong & Yin Man Chow, 2017; Dippel, Hanson, McMahon, Griese, & Kenyon, 2017). Hence, these models were deemed the most comprehensive to evaluate the attitudes, social norms, and the levels of influence which impact Ghanaian immigrants. Appropriate interventions that could improve their willingness to utilize cervical cancer prevention services were also evaluated through the lens of these theories. Applicable interview questions based on both the SEM and TRA were developed for both female and male participants. The decision to include males was based on the literature review supporting the cultural norm that men often play a role in the way African women make decisions about their health care (Williams & Amoateng, 2012). The questions for the men allowed the researcher to explore any additional barriers or facilitators that the men's attitude and opinions may present towards cervical cancer screening and HPV vaccination for their partners and children.

SUMMARY

Cervical cancer screening and HPV vaccination rates have remained low among immigrants and ethnic minority groups worldwide, although these services are readily available in many developed countries. The SEM and TRA were selected for this study among competing theories, for their ability to guide the holistic assessment of health determinants, and the development of tailored public health interventions. Together the building blocks of these models show the process of decision-making, which ultimately culminate in performing a behavior. Both frameworks have been used extensively to guide

health promotion programs in the United States and throughout the world. In the next chapter, the methodological approach for this study is discussed.

CHAPTER 3: METHODOLOGY

A qualitative exploratory approach is the methodology chosen for this study. This chapter will discuss the research settings, sample population, study design, instrumentation, data collection, and data analysis processes. According to Trochim, Donnelly, and Arora (2016), a qualitative research method allows for the in-depth interpretation of the intricacy of the human experience, in social science research. Due to the inductive nature of this research problem, a semi-structured, one-to-one interview tool was chosen to allow respondents to discuss their knowledge, perceptions, and behaviors about cervical cancer (Trochim et al., 2016).

RESEARCH QUESTIONS:

1. What are the attitudes, barriers, and facilitators of Ghanaian immigrants living in the U.S. to cervical cancer screening (Pap smear) and HPV vaccination in the prevention of cervical cancer?
2. What are the socio-economic and cultural factors that influence Ghanaian immigrants' access to, and utilization of cervical cancer screening and HPV vaccination?
3. What is the perception of Ghanaians living in the U.S. on the influence of immigration on their attitudes, beliefs, and knowledge about cervical cancer screening and HPV vaccination?
4. Would community collaborations with organizations such as churches, school officials, or small business owners improve the willingness of Ghanaian immigrants to utilize cervical cancer screening and HPV vaccination programs?

RESEARCH SETTING

As part of this study, a formative study was conducted in Ghana to obtain contextual sociocultural information for characterizing the findings from the main study, which was conducted in Georgia, USA.

- **Ghana**

Ghana is a West African nation with the Atlantic Ocean to the south and with bordering countries Togo, Ivory Coast, and Burkina Faso to the east, west, and north, respectively. According to The World Bank Group (2018), Ghana has an estimated population of 29.6 million in 2018. Additionally, in 2016, Ghana had (1) an annual GDP growth 3.7 percent with a debt to GDP ratio of 69.2 percent, (2) primary school gross enrollment ratio (GER) of 106 percent, (3) life expectancy at birth of 62.7 years and (4) approximately 24 percent of the population were living below the national poverty level (The World Bank Group, 2018). The participants for the formative study were recruited from Kumasi, which is the second-largest city in Ghana, and the capital city of the Ashanti region. A 2010 Ghana census data reported by Millennium Cities Initiative: Columbia University (n.d.). indicated the following: (1) Kumasi had a proposed population of 1,722, 806 (52.2 percent females, and 47.8 percent males), (2) 56 percent were younger than 25 years old, (3) 53 percent of women were of childbearing age (15-44 years), (4) and 575,705 or 33 percent of these women were aged 15 - 64 years, the typical age of sexual activity, and screening age for cervical cancer (Millennium Cities Initiative: Columbia University, n.d.).

- **Georgia, U.S.A**

The main study's population was recruited from the metropolitan Atlanta area in Georgia. The 2010 United States Census Bureau report for Atlanta, Georgia included the following demographics; (1) population 420,003, (2) median age 33.5 years, (3) foreign-born 7.6 percent, (4) African region of birth 10.3 percent, (5) high school graduate or higher 89.5 percent, (6) median income \$49,398, (7) females 18 - 64 years 69 percent, and (8) individuals living below the national poverty level of 24 percent (United States Census Bureau, n.d.).

STUDY DESIGN

The study design is cross-sectional. Qualitative data was collected through participant interviews. Personal interviews are one type of interview conducted in qualitative research. Trochim et al., (2016) describe this form of data collection instrument as more personal in nature and allowing direct

contact between the interviewer and the participant. When conducting a semi-structured interview, the interviewer has the opportunity to provide privacy, ask open-ended questions, and offer explanations to elicit clarifications, resulting in higher completion rates (Trochim et al., 2016). Semi-structured interviewing is a combination of the features of traditional structured interviewing and unstructured interviewing.

This adaptation permits the interviewer to explore an issue more broadly, allowing respondents to expound on their opinions, but within the boundaries of some guided prompts (Trochim et al., 2016). There are inherent disadvantages in using a personal interview instrument; it is difficult to avoid social desirability among respondents, interviewers can inadvertently alter questions, and it requires more time, personnel, and finance. However, the depth and quality of the responses solicited allow for greater insight into the research phenomenon, an achievement that could be minimized with the use of other survey tools (Trochim et al., 2016).

RECRUITMENT

Both men and women were included in this study, as the role of men in the healthcare decision of women and their children was important in this population (Mupandawana & Cross, 2016; Williams & Amoateng, 2012; Dodo et al., 2016; Onyenwenyi & Mchunu, 2018). Participants were recruited through faith-based organizations, local hospitals, universities, and community organizations in Kumasi, Ghana, and within the state of Georgia. To obtain representativeness, during sampling, the length of residency in the U.S. was considered for the immigrant participants. The U.S. population was classified into two broad categories; residents who have lived in the U.S. for less than five years and those living in the U.S. greater than five years. This stratification allowed the researcher to evaluate the effects of length of stay in the United States on the participants.

- **Ghana**

Participants in Kumasi, Ghana were recruited through facilitation with a Georgia Southern University (GSU) professor, in collaboration with the director of the Research and Development Unit at the Komfo Anokye Teaching Hospital (KATH). The Komfo Anokye Teaching Hospital is the partnering hospital for the annual GSU-Ghana Study Abroad program. Flyers were used for the recruitment of the survey participants and distributed throughout the hospital's departments, the surrounding community, a local church, and a market. GSU undergraduate students and Ghanaian medical students were trained by the primary investigator (PI), and medical director to recruit individuals to participate in the research. The principal researcher assigned each student volunteer to perform specific tasks, including dissemination of study flyers, getting informed consent forms completed, and providing and reading interview instructions to study participants. Twenty Ghana Cedis (20 GHC, ~\$4) was given as an incentive to each participant interviewed. Volunteers were asked to sign up before the study. All information about the interview, study objectives, and the potential risks involved were explained to participants before the interviews were conducted. The participants' contribution to the study was discussed, and voluntary participation emphasized. This process was repeated in the United States during the second portion of the data collection. The findings from the formative study conducted in Ghana allowed the PI, along with members of the research committee, to refine the interview questions. These questions were modified to allow for more probes, if necessary, to enable the U.S. participants to give broader and more in-depth responses.

- **Georgia, U.S.A**

Ghanaian immigrant participants in the U.S. were recruited through convenience and purposive sampling, from community associations such as churches, local restaurants, and networking with personal and professional contacts. Flyers were used for the recruitment of survey participants, and each person interviewed was given 15 USD. Interviews in the United States were performed by the PI and were only be conducted in English.

INCLUSION AND EXCLUSION CRITERIA

The study population is a combination of two main subgroups; Ghanaian men and women living in Georgia, U.S.A, and those residing Kumasi, Ghana. The U.S. population was stratified by the number of years that they have resided in the United States; (> 5 years, and < five years of residency). All participants were between the ages of 18 - 65 years, who had agreed to participate in the study and had signed the informed consent document before being interviewed. Exclusion criteria were non-Ghanaian immigrants, and individuals younger than eighteen or older than sixty-five years old.

INSTRUMENTATION

Semi-Structured Interviews

Semi-structured interviews were used to gather empirical data around the central themes of the study. The interview script was created based on the research questions, the SEM and TRA, and the study objectives. The questions were designed to solicit detailed responses to several prompts asked by the interviewer. Interviews are one type of established methodology, used in similar qualitative studies about cervical cancer. The purpose of the use of this instrument was to examine the most frequently identified barriers and facilitators to cervical cancer screening among minority and immigrant populations (Fang & Baker, 2013; Binka et al., 2017).

Shi (2008) identified the following guidelines to ensure content and face validity of interview questions. These are: (1) the sampling frame should be relevant to the research topic, (2) open-ended question format encourages broader and more detailed responses, (3) sufficient time should be allowed to complete interviews for thoroughness, (4) questions should be worded to avoid ambiguities, gain insight into participants' background, knowledge, opinions, behavior, and attitudes, (5) the researcher should consider the educational background of population when phrasing questions, (6) interviews should start with simple questions then advance accordingly, (7) interviewers should be trained for standardization of the interview process and to reduce bias, and (8) a pretest should be performed with a sample pilot to facilitate clarification and revision as needed Shi (2008).

An extensive literature review was conducted to define the research problem, purpose, questions, sampling population, and suitable data collection instrument. Interview questions were written by the primary researcher and edited after feedback from members of the researcher's dissertation committee, and medical professionals in Kumasi, Ghana. Pilot interviews were done in Kumasi, Ghana, with medical students from KATH, and GSU undergraduate students, for clarity and appropriateness of the content. The TRA guided the interview questions to evaluate the decision-making process of individuals regarding the acceptance of Pap smear and HPV vaccination. The constructs of the SEM were used as the framework for formulating the interview questions as they related to the proposed levels of intervention; individual, interpersonal, community, and policy (Sharma, 2017; Glanz et al., 2008).

First, individual-level category questions focused on participants' awareness of cervical cancer, and how this knowledge affected their attitude and subjective norms toward screening and vaccination. Second, the interpersonal level included questions that were related to the impact of partners', family, and friends' view of the disease. Third, community-level questions addressed information sources about cervical cancer, cultural considerations, barriers, and community resources and associations. Lastly, policy-level questions assessed strategies to improve social determinants of health as they relate to increasing access to care, and advocacy for the affordability of national screening and vaccination programs. These questions are outlined within the four levels in Table 3.1.

Table 3.1 *Conceptualization: Application of SEM and TRA*

Levels of the Social Ecological Model	Application to Interview Questions
<p>INDIVIDUAL</p> <p>(Attitude toward Behavior and Subjective Norms: individualized factors which impact behavior such as knowledge, personality, beliefs about the behavior, and the expected outcome if the behavior is performed)</p>	<p>CERVICAL CANCER</p> <p>Please describe to me what you know about cervical cancer.</p> <ul style="list-style-type: none"> - Please tell me what you know about the risk factors for cervical cancer. - What are some things that you believe increase a woman's risk of developing cervical cancer? - How serious do you believe the risk of developing cervical cancer is? - What are some of the signs or symptoms of cervical cancer that you are aware of? - Describe some of the treatment options for cervical cancer that you are aware of. - Please tell me where you obtained your information about the disease. <p>Please explain what you know about the Pap test/Pap smear.</p> <ul style="list-style-type: none"> - What experience have you had with the Pap test? - What information have you received about the Pap test? - Where did you get this information from? - How important do you believe it is for women to have regular Pap tests done, for the prevention of cervical cancer? - What has any doctor/healthcare provider told you about the importance of having regular Pap tests done? - If you've not had a Pap smear done, what are some of the reasons why you haven't had regular Pap tests as recommended? <p>What has been your experience with the Pap test (A Pap test is used to screen for cervical cancer)?</p>

Levels of the Social Ecological Model	Application to Interview Questions
	<ul style="list-style-type: none"> - Have you ever had a Pap test done before? - If yes, can you tell me about the experience? - What if anything, made the testing process easier for you? - What if anything made the testing process harder for you? - If you have not had a Pap test done, please explain any reason(s) why you haven't. - What would be some of the reasons why you would or would not be willing to have a Pap test done? - Can you describe the screening recommendation for cervical cancer? - Have you been screened for cervical cancer as recommended (every 3-5 years)? <p>Tell me about your thoughts on the importance of the Pap test.</p> <ul style="list-style-type: none"> - What are some possible benefits of having a Pap test that you can think of? - What are some possible disadvantages of having a Pap test that you can think of? - What are some potential barriers you believe women would face regarding Pap testing? (child care, transportation, cost, embarrassment with pelvic exams) - Please describe how likely it is that you will have a Pap test done this year, if you have not had one done in the last three years. - If a Pap test result is abnormal do you believe it's important to know early? Why or why not? <p>As you may know, the Pap test involves a pelvic examination by a healthcare provider. How do you feel about a pelvic exam?</p> <ul style="list-style-type: none"> - What are some of the reasons why you would not feel comfortable about a pelvic exam by your healthcare provider? - Please explain if you would skip having a Pap test done because it involves a pelvic exam, and why? - What can be done to increase your comfort level with having a pelvic exam? <p>What can be done to make it easier for you to get the information you need on cervical cancer, and to get your Pap test done?</p>

Levels of the Social Ecological Model	Application to Interview Questions
	<ul style="list-style-type: none"> - Please describe what kind of information about a Pap test would be helpful. - Risk factors and cause of cervical cancer? - Type and location of services? - Cervical cancer facts? - Assistance with transportation to get a Pap test done? - Assistance with child care? - Assistance with cost for testing? - Time off from work/college to get test done? <p>HPV VACCINATION</p> <p>The Human Papillomavirus (HPV) is the main virus which cause cervical cancer. The HPV vaccine can reduce the risk of developing cervical cancer.</p> <p>Please tell me about your experience or understanding about HPV and HPV vaccinations.</p> <ul style="list-style-type: none"> - Tell me about where you got this information from. - Describe what your doctor/healthcare provider has told you about the importance of the HPV vaccine for the prevention of cervical cancer. - Have you ever had a HPV vaccine? Please tell me about your experience. - If you've had the HPV vaccine, did you get all the recommended doses? If no, please explain why not. - What would make you change your mind about receiving the HPV vaccine? - Would you be more willing to receive the HPV vaccine if your doctor/healthcare provider thought it was important, and recommended it? - Would you be more willing to receive the HPV vaccine if your family or friends thought it was important? - How important do you think it is for the HPV vaccine to be given to girls and boys, for the prevention of cervical cancer? - How much do you know about the connection between the HPV and cervical cancer? <p>HPV vaccine for children</p>

Levels of the Social Ecological Model	Application to Interview Questions
	<ul style="list-style-type: none"> - If you have children, have any of them received the HPV vaccine? - If yes, have they received all of the doses of the vaccines? - Please explain why you decided to have them vaccinated. - If no, what were the reasons which influenced your decision not to have your child/children vaccinated against HPV? - Do you know of any child in your family or among your friends who have received the HPV vaccine? - What can be done to make it easier for you to get the information you need on the HPV vaccine, and to get yourself or your children vaccinated? - What kind of information would be helpful? <ul style="list-style-type: none"> - Location of services? - Assistance with transportation? - Assistance with child care? - Cost of the vaccine? <p>Additional questions specifically for MALES</p> <ul style="list-style-type: none"> - Please describe what you know about cervical cancer and the screening tests (Pap test) for it. - What is your understanding about the risk factors for cervical cancer? - Please describe what you know about the treatment options for cervical cancer. - Please tell me where you got your information about cervical cancer from. - Describe what you have heard about cervical cancer through the media (TV, radio, internet)? - How serious do you believe the risk of women developing cervical cancer is? - How do you feel about your partner/s or family members having Pap test done? - Please explain what your understanding is about the HPV vaccine, for the prevention of cervical cancer. - How important do you believe the HPV vaccine is for the prevention of cervical cancer? - How do you feel about your partner or your children receiving the HPV vaccine?

Levels of the Social Ecological Model	Application to Interview Questions
<p>INTERPERSONAL</p> <p>(the influence of an individual's social network)</p>	<p>Please describe your experience with cervical cancer among members of your community, family and friends.</p> <ul style="list-style-type: none"> - Do you know anyone who has been diagnosed with cervical cancer? - If yes, please explain how knowing about their experience with cervical cancer affected you. - What have you heard about cervical cancer from family and friends? - Has anyone you know (family, friends, church members) ever discussed with you the importance of having regular Pap tests done? Please explain what they said. - What is your relationship status? - If you are in a relationship what do you believe is your partner's opinion about you having a Pap test done? - How would your partner's opinion about the Pap test affect your own decision of whether or not to get the Pap test done? <p>HPV Vaccine</p> <ul style="list-style-type: none"> - Has anyone you know (family, friends, church members) ever discuss with you the importance of receiving the HPV vaccine? - Please explain what you have heard. <p>What has been your experience with cancer screening for yourself or a family member?</p> <ul style="list-style-type: none"> - Have you or any of your family members had any experience with any type of cancer screening? - Please tell me more about that experience. - What was the screening test, and for which type of cancer? - Where did you or your family member get the information concerning the screening? - Where did you or your family member get the screening done? - Would you be more willing to have a Pap test if your doctor/healthcare provider thought it was important? - Would you be more willing to have a Pap test if your family or friends thought it was important?

Levels of the Social Ecological Model	Application to Interview Questions
<p>COMMUNITY</p> <p>(the influence of the availability and access of community resources and cultural norms, on decision making)</p>	<p>If you could learn more about Pap tests through a woman who is a community health worker, and receive assistance to make an appointment to visit your health center for a Pap test, do you believe this would be helpful? Why or Why not?</p> <ul style="list-style-type: none"> - Would you feel more comfortable talking with a woman who is a community health worker from your area about Pap tests, than talking to your health care provider? - If yes, where are some potential meeting places you would recommend for the community health worker to talk with women about pap smears? (church, community health center, beauty shop, market) <p>How do you think we can reach and motivate women in your community/family to get cervical cancer screening done?</p> <ul style="list-style-type: none"> - Please explain if there are any community and cultural considerations you think would be important when planning to have a Pap test done. - What are some steps you think would be helpful in reducing these potential barriers? - Do you think it would be easy or difficult for you to schedule an appointment to have a Pap test done? - Please describe how easy you think it would be for you to have a Pap test done - Please describe how difficult you think it would be for you to have a Pap test done <p>Please explain if there are any community and cultural considerations you think would be important when planning to have the HPV vaccine.</p> <ul style="list-style-type: none"> - What are some potential barriers you believe women could face if receiving a HPV vaccine? (child care, transportation, cost) - Describe any steps you think would be helpful in reducing these potential barriers. - Do you think it would be easy or difficult for you to schedule an appointment to receive a HPV vaccine? - Please describe how easy you think it would be for you to receive a HPV vaccine - Please describe how difficult you think it would be for you to receive a HPV vaccine.

Levels of the Social Ecological Model	Application to Interview Questions
	<p>How can we reach and motivate women like you to get the HPV vaccine for themselves and/or their children?</p> <ul style="list-style-type: none"> - What are some of the community and cultural considerations about HPV vaccination for children and young women? - If you could learn more about the HPV vaccine through a community health worker, and receive assistance to make an appointment to visit your health center for the HPV vaccine do you believe this would be helpful? - Would you feel more comfortable talking with a woman who is a community health worker from your area about the HPV vaccine, than your health care provider? - If yes, where are some potential meeting places you would recommend for the community health worker to talk with women about the HPV vaccine?
<p>POLICY (The existence of state/federal programs, policies and their impact on health behaviors of individuals)</p>	<ul style="list-style-type: none"> - What factors/conditions would make it easier for you to have regular Pap tests done? - Please tell me about any healthcare facility that you're aware of that you could visit to have a Pap test done. - What has your doctor/healthcare provider told you about cervical cancer, and the screening tests for it? - What have you heard about cervical cancer through the media (TV, radio, internet)? - Please describe what you have heard about the HPV vaccine through the media (TV, radio, internet).

QUALITATIVE PROCESS

Sampling

Formative Study: Kumasi, Ghana

The population from which the sampling frame was selected include Ghanaian men and women living in Kumasi, Ghana. Sampling was a combination of snowball and purposive methods. Snowball and purposive sampling were performed in Ghana in various hospital departments, throughout the community, a local church, and a market. Snowball or opportunity sampling, as the name denotes, is selecting participants randomly from individuals who are present, and asking these individuals to tell their acquaintances about the study. Purposive sampling is another type of non-probability sampling. However, this process is based on a given criteria such as age or income bracket and is more selective (Trochim et al., 2016).

Main Study: Georgia, U.S.A.

Ghanaian men and women who have immigrated to Georgia, U.S.A., were recruited similarly through the same non-probability sampling methods; snowball and purposive. Purposive sampling and stratification of these respondents were performed to obtain representativeness in the sampling frame. These participants were recruited through faith-based and business organizations and networking with personal and professional acquaintances.

Data Collection

Formative Study: Kumasi, Ghana

Data collection was completed initially in Ghana to obtain preliminary findings for cultural relevance. This process was to allow for the comparison of the difference in the attitude and behavior of Ghanaians living in Ghana and Ghanaian immigrants following migration to America. The pilot study data collection was completed in Kumasi, Ghana. Gender representativeness was important in

the study to collect data from men regarding the significance of their opinion about cervical cancer prevention measures. All information about the interview, study objectives, and the potential risks involved were read to participants before each interview. The participants' contribution to the study was explained, and voluntary participation discussed. Participants were asked to provide consent before each interview. After this process, they were directed to an interview room or space with at least one trained investigator, where the privacy and confidentiality of the participant were maintained. Participants were informed that demographic information except for their names would be collected for coding purposes and that all interview sessions would be audio-recorded for accuracy. The interview session began after the participant was comfortably seated, and the recorder turned on to audio-record the interview. All interviews in Ghana were face-to-face. However, some interviews in the United States were conducted via telephone, if this was deemed more convenient for the participant. The interview process took approximately 45 to 60 minutes to complete, up to a maximum of 90 minutes. After the interview, the Ghanaian participants were compensated with 20 GHC. A total of fifty (35 females, 15 males) interviews were completed in Ghana from July 17– 31, 2018.

Main Study: Georgia, U.S.A.

Upon return to the U.S.A., the data collection process, as described above, was repeated for the U.S. population. The interview questions were modified by the PI, and members of the dissertation committee based on the responses obtained in Ghana. The interview questions were edited to allow for more prompts for follow-up questions if needed and to provide more detailed open-ended responses. This was based on the observed limitation of the original question design, in gathering thorough information from the Ghanaian participants. It was observed that the interview questions used in Ghana did not encourage respondents to give detailed replies, but solicited many binary yes/no answers (Shi, 2008). This limitation in the instrument design was not conducive for gathering rich qualitative data for the main study. The data collected in Ghana later served as a preliminary study for comparison with the findings from the primary research in the U.S.A. Interviews in the U.S. were completed face to face or via

telephone if this was deemed more convenient by a participant. Twenty-seven interviews were completed in the U.S. population from March to July 2019. A 15 USD incentive was offered to the U.S. participants.

Data Analysis

All data were analyzed using a codebook and reported in aggregation. No individual participant was identified in the data. The codebook was developed based on the central themes of the research questions. Codes were grounded in the concepts being explored, what they were, and what they were not. Exemplary quotes were included to clarify what each code represented. After coding, the final data were analyzed using standard qualitative techniques. Emerging themes and sub-themes were identified from the codes, and categorized based on their thematic content.

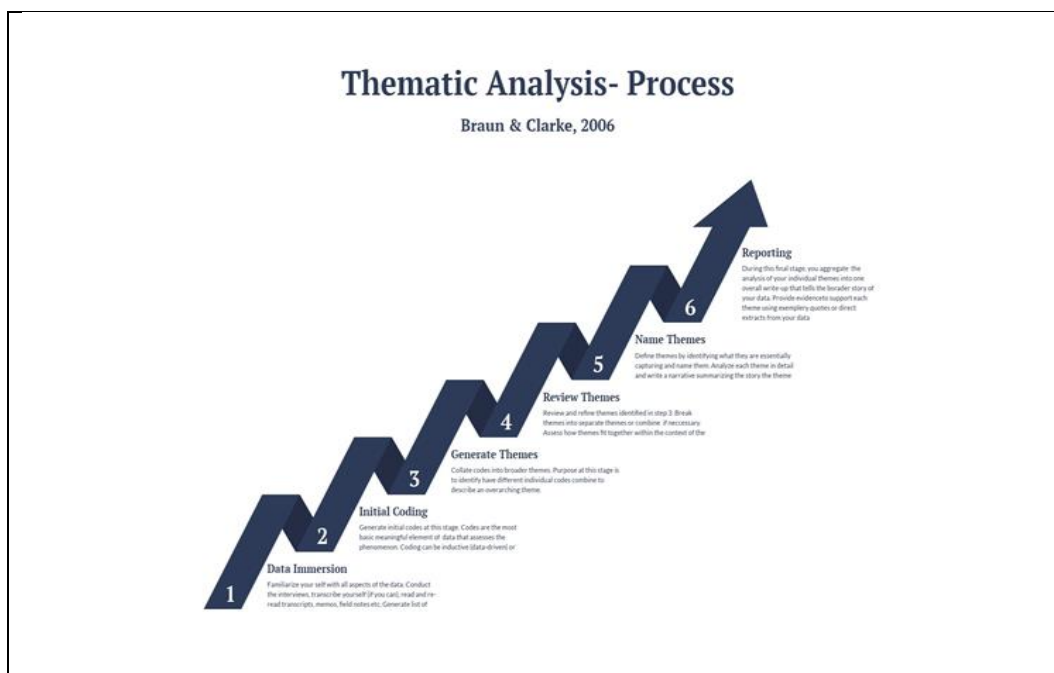


Figure 3.1 Thematic Analysis Process. Adapted from *Using thematic analysis in psychology* (Braun & Clarke, 2006)

Data Saturation

An initial thirty-five interviews (10 men and 25 women) were completed in Ghana. To get a representative sample, twelve participants who were fluent in English were interviewed (4 men and 8 women), and twenty-three of those whose primary language was Twi; (6 men, and 17 women). This first group was predominantly low-income participants. Therefore, the decision was made to interview another fifteen participants, obtained through purposive sampling. This second group comprised of respondents who had at least completed high school, and some had more advanced degrees. This group of Ghanaian participants all spoke both Twi and English and preferred to have their interviews completed in English. Data saturation was reached after seventy-seven interviews were completed (fifty in Ghana, followed by twenty-seven in the U.S.A), and no new findings emerged (Shi, 2008).

Coding

After the data collection process was completed, the interview transcripts were first reviewed and transcribed verbatim into Microsoft Word documents by the primary researcher, for use with the Nvivo software. Thematic analysis was the method used to extract details and patterns in the data and to describe the phenomena presented. Braun and Clarke (2012) discussed the process of thematic analysis in six necessary steps; becoming familiar with the data, identifying initial codes found in the transcripts, recognizing, defining and categorizing central themes, and writing the final report. The steps of this systematic process are illustrated in Figure 3.1. A codebook was developed for the classification of coding responses in the study, and to establish the process by which these variables were identified (Trochim et al., 2016). Data collected were coded and categorized for emerging themes, through a combination of inductive (emerging from data), and deductive (informed by the SEM and TRA, and guided by the study's research questions) coding.

Common themes identified included knowledge and attitude about HPV screening and vaccination, access to care, cultural and social norms influencing health behaviors, and the importance of

community partnerships in health promotion. Shi (2008) describes coding as the process of categorizing interview responses so that they can be identified numerically in a data file. Coding was performed during analysis of the data, to ensure that emerging themes were extracted and categorized (Shi, 2008). The themes and the relationship between them were identified from the interview responses, the related levels of intervention of the SEM, and the TRA.

Data Trustworthiness and Reliability

Triangulation of the data and the investigator's objectivity was ensured in several ways. The data were collected both in Ghana and the U.S.A. to allow for observations of the Ghanaians in Ghana, within their natural, cultural setting. The primary researcher spent a month in Ghana, immersed in the culture, and regularly interacting with the healthcare staff at the Komfo Anokye Teaching Hospital. This strategy allowed the PI to have a better understanding of the healthcare system in Kumasi, Ghana, and the contextual relevance of the study participants both in Ghana and the U.S. immigrants. Ghanaian respondents were interviewed with the observation of their socio-cultural norms in mind, to witness and document the authenticity of their experiences. Participants' exemplary quotes were included in the study to illustrate their understanding of the interview questions: this added credibility and trustworthiness to the research. Furthermore, the diversity of the study population allowed for greater triangulation and the credibility of the data findings. This diversity included recruiting both males and females with various socio-demographic variables, and a wide range of length of residency of the immigrant participants.

Three individuals (the PI, a doctoral student who has received training in coding and analysis of qualitative data, and the dissertation committee chair) reviewed the codebook independently for its applicability to the analysis of five preliminary transcripts. Objectivity and consistency of the coding process were evaluated for inter-rater reliability, resulting in a Kappa score of over 90.5 percent. Throughout the research process, the PI remained mindful of her own potential biases regarding the way the research questions were phrased, the recruitment of participants, and the implementation and analysis of the semi-structured interviews. These unavoidable potential barriers are that the PI is a registered

nurse, an immigrant, and a family member of someone who died from cervical cancer. To maintain impartiality and transparency, each of these processes was discussed and reviewed with the research committee several times. This led to multiple discussions and edits within the guidelines of the two Internal Review Boards, to streamline data collection and data analysis.

HUMAN SUBJECT PROTECTION

Ethical Approval and Consent

Before data collection commenced, approvals for the study from the Georgia Southern University's Institutional Review Board (IRB), and the Committee on Human Research, Publications and Ethics (CHRPE) in Ghana, were granted. Participants were asked to provide consent before being interviewed. They also received notification about the study's purpose, risk, benefits, and incentive offered for participation. Ghanaian medical students who assisted as interviewers were instructed and supervised in providing the translation of the consent form and interview questions into Twi, for Ghanaians who spoke English as their second language. With approval from the review boards, a small monetary incentive was given to each participant, twenty Ghana Cedis (20 GHC) for Ghanaian respondents, and 15 USD to the U.S. participants.

FORMATIVE STUDY: GHANAISANS LIVING IN GHANA

The socio-demographic characteristics of the fifty Ghanaians who participated in the preliminary study were fifteen men (10 spoke Twi, 5 English) and thirty-five women (24 spoke Twi and 11 English). Table 3.2 is a depiction of socio-demographic characteristics of this sample population. The highest age bracket of the respondents (36%, N=18) was age 18-29 years, followed by (28%, N=14) 50-59 years, and combined (32%, 9, and 7 respectively) 30-39 and 40-49 years. Approximately half of the respondents (54%, N=27) were married, and thirty-eight percent (N=19) reported being single. The majority of the participants' (42%, N=21) highest grade completed was secondary high school, followed by junior high school at 26% (N=13), and bachelor's degree (16%, N=8). Half of the respondents (N=26)

described their occupation as being unskilled laborers (e.g., traders), while a third (16%) described themselves as professionals.

Table 3.2 *Participants' Descriptive Statistics (Ghanaians Living in Ghana)*

Variables	Frequency (n)	Percentage (%)
<i>Gender</i>		
Male	15	30
Female	35	70
<i>Age</i>		
18 – 29	19	38
30 – 39	7	14
40 – 49	7	14
50 – 59	14	28
60 – 69	3	6
<i>Race</i>		
Black/African American	50	100
Other	0	0
<i>Primary Language</i>		
English	27	54
Twi	23	46
<i>Relationship Status</i>		
Single		
Cohabiting but unmarried	19	38
Married	0	0
Separated	27	54
Divorced	0	0
Widowed	1	2
	3	6
<i>Education</i>		
Primary/Elementary School	3	6
Junior/ Middle School	13	26

Variables	Frequency (n)	Percentage (%)
Secondary/High School	21	42
Certificate/Diploma	2	4
Associate Degree	2	4
Bachelor's Degree	8	16
Master's Degree	1	2
Doctorate Degree	0	0
<i>Occupation</i>		
Skilled (e.g. plumber)	4	8
Unskilled (e.g. trader)	26	52
Technical/Intermediate (secretary)	3	6
Professional (teacher)	8	16
Unemployed	7	14
Students	2	4

Of this group, 28 percent knew about cervical cancer, and 14 percent had heard of the HPV vaccine. The most significant media sources were the local radio and television stations, with 55 percent stating that they learned about the disease through this format, and 15 percent mentioning that they learned about cervical cancer at their local church. Only 23 percent (N=8) reporting having a pap smear done at least once, and none of the respondents or their children had received the HPV vaccine. Several Ghanaians reported cost, lack of knowledge, transportation and or location of healthcare facilities, beliefs in herbal medicines, and embarrassment about Pap smears as the most significant barriers to HPV vaccination and cervical cancer screening. Among Ghanaians living in Ghana, only 14 percent and one percent felt that the Pap smear and HPV vaccine were accessible, respectively.

The most significant finding among the Ghana study population was the lack of knowledge about cervical cancer, its diagnostic screening tests, and preventive measures through early detection and HPV vaccination. Interestingly, both younger and older females reported not knowing about

cervical cancer or Pap smear. Among the female respondents, twenty-seven (77%) had not had a Pap smear done. The remaining eight women (23%) had a Pap smear done at least once because they were more educated, employed, encouraged to do so by healthcare personnel, or they had a medical reason to seek care related to this issue. Participants reported a lack of priority given to cervical cancer screening and HPV vaccination in the country. The gender of the health provider conducting Pap smears was not an observed barrier to cervical cancer screening; only two Ghanaian residents felt that a female health worker should be the one to perform Pap smears.

Participants also noted that herbal medicines and alternate over-the-counter treatments were sought after by many low-income Ghanaian residents as the first-line management for illnesses. Seeking care from traditional healthcare providers is often pursued as a last resort. Based on the discussions held, herbal medicine was embraced as the first choice for many, because of longstanding cultural norms, its accessibility, and affordability. However, if given the opportunity, almost all of the participants stated that they would go to a medical doctor when sick and would purchase western medicines, even if they would still seek the services of an herbal doctor as an adjunct to care.

A notable 98 % (N = 49) reported interest in Pap smear and or HPV vaccination for their children. This interest was contingent on having more information about these programs, adequate access, and if these services were more affordable. Currently, in Ghana, there is no national HPV vaccination program for children. Therefore the majority of those interviewed in Ghana had never heard of the vaccine (86%) or could afford the 600 Ghana Cedis needed to pay for it out of pocket. The majority of the salient reasons expressed for the negative attitudes toward Pap smear and HPV vaccination were interrelated to a lack of knowledge about cervical cancer and shared cultural views about the disease. With improved access and greater knowledge, the need for collaboration with community organizations such as churches to support screening initiative was less significant. Ninety-five percent of the study participants reported that cost subsidization and public education campaigns through community collaborations could increase screening and vaccination rates. The stark contrast of the knowledge of Pap

smear and HPV between the two research populations is shown in Figure 4.1 and Figure 4.2. This knowledge level between both groups might be parallel to their formal educational status and corresponding occupations, as shown in Figure 4.3 and Figure 4.4.

CHAPTER 4: RESULTS

DESCRIPTIVE CHARACTERISTICS OF PARTICIPANTS

This chapter describes the findings of the semi-structured interviews completed with Ghanaian immigrants living in Georgia, U.S.A. The responses to the interview questions were used to evaluate the respondents' attitude regarding Pap smear and HPV vaccination, and the social influence which help to shape their views. Preliminary results from Ghana served as a pilot for understanding the cultural undertones of this population, and the potential barriers and facilitators of cervical cancer screening and HPV vaccination. The data also subsequently provided some insight into the views and incentives for the improvement of the utilization of these services among these Ghanaian immigrants.

Twenty-seven interviews were completed with Ghanaians living in Georgia. Table 4.1 shows an overview of the demographic statistics of these participants. The age groups of this population included were: 18 – 29 (15%), 30 – 39 (30%), 40 – 49 (22%), and 50 – 59 (33%). The participants' length of stay (LOS) in the U.S. was distributed as follows: (1) 0 - 5 years, 30 percent, (2) 6 - 10 years, 15 percent, (3) 11-15 years, 0, (4) 16 – 20 years, 33 percent and (5) 21 years or more, 22 percent. Eighteen percent reported being single (N = 5), while 8 percent stated that they were unmarried but cohabiting with a partner (N = 2). One individual was widowed, one separated, and two divorced, with the largest group (58%) being married (N =16). In comparison to Ghanaian residents who participated in the preliminary study, the U.S. population was more educated (figure 4.3); 37 percent (N=10) had a masters' degree, and 26 percent (N=7) a bachelors' degree. Correspondingly, 63 percent (N=17) were professionals, and all participants except one were employed (Figure 4.4).

Table 4.1 *Participants' Descriptive Statistics (Ghanaian Immigrants)*

Variables	Frequency (n)	Percentage (%)
<i>Gender</i>		
Male	10	37
Female	17	63
<i>Age</i>		
18 – 29	4	15
30 – 39	8	30
40 – 49	6	22
50 – 59	9	33
60 – 69	0	0
<i>Race</i>		
Black/African American	27	100
Other	0	0
<i>Primary Language</i>		
English	27	100
Twi	0	0
<i>Relationship Status</i>		
Single	5	18
Cohabiting but unmarried	2	8
Married	16	58
Separated	1	4
Divorced	2	8
Widowed	1	4
<i>Education</i>		
Primary/Elementary School	0	0
Junior/ Middle School	0	0
Secondary/High School	5	18
Certificate/Diploma	4	15
Associate Degree	1	4
Bachelor's Degree	7	26
Master's Degree	10	37

Variables	Frequency (n)	Percentage (%)
Doctorate Degree	0	0
<i>Occupation</i>		
Skilled (e.g. plumber)	4	15
Unskilled (e.g. trader)	2	7
Technical/Intermediate (secretary)	1	4
Professional (teacher)	17	63
Unemployed	1	3
Student	2	8
<i>Length of Stay (USA)</i>		
0 – 5 years	8	30
6 – 10 years	4	15
11 – 15 years	0	0
16 – 20 years	9	33
20 – 25 years	3	11
26 years +	3	11

Eighty-eight percent of the participants reported having had a Pap smear done at least once, with intentions of having future tests per their doctors' screening recommendation. All the interviewees had heard of a Pap smear (Figure 4.1). Fifty-nine percent reported some knowledge of the HPV or the HPV vaccine (Figure 4.2). Almost half (40%) of those whose children were eligible for the HPV vaccine had not completed the series. Nearly all participants agreed that cervical cancer was a serious condition (96%) and that it was important for women to get their Pap smear done (100%). The attitudes toward HPV vaccination were mixed. More than half of the U.S. participants knew about the HPV vaccine (59%, N = 16). Thirty-three percent (N = 9) felt their children needed to receive the HPV vaccine, 7 percent (N = 2) were ambivalent, and 18.5 percent (N = 5) declined the vaccine because they had concerns about its necessity or the potential side effects (Figure 4.2).

Notable differences between Ghanaian immigrant participants and the participants who lived in Ghana are illustrated in Figures 4.1, 4.2, 4.3, and 4.4. Briefly, compared to Ghanaians living in

Ghana, Ghanaian immigrants in the U.S. had more knowledge about HPV and Pap smears, and a higher proportion had received these services, either for themselves or their children. Additionally, Ghanaian immigrant participants were more educated and were more likely to be in the “professional” occupation category. This difference in formal educational level and equivalent occupational status could be related to the immigration criteria and process of African immigrants (Kaba, 2011; Geber, 2013; Thomas, 2016; Ikubolajeh & Thomas 2012; Imoagene, 2017). Having a higher educational achievement coupled with greater access to and awareness about cervical cancer services could be the explanation for why the U.S. participants had more significant percentages of Pap smear and HPV vaccination utilization.

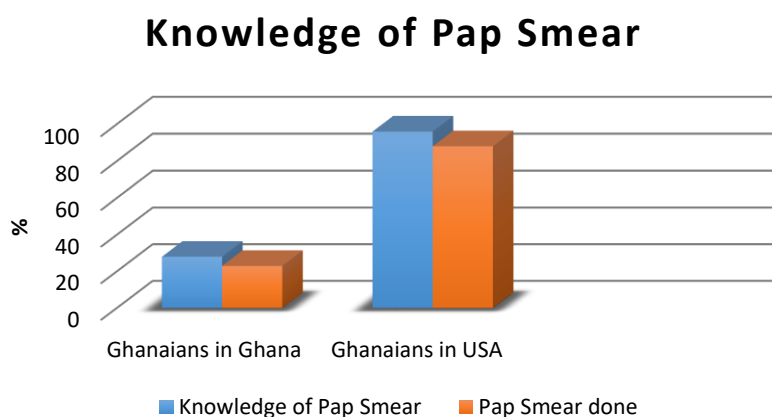


Figure 4.1 Knowledge of Pap smear among Participants

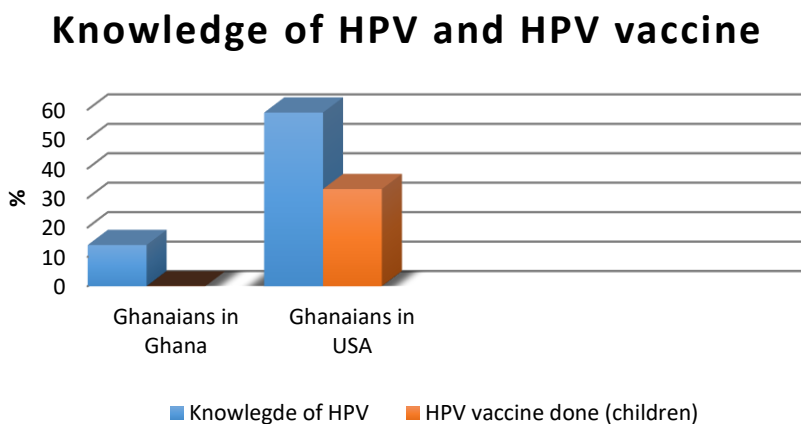


Figure 4.2 Knowledge of HPV and HPV vaccines among Participants

Education levels of U.S. Participants

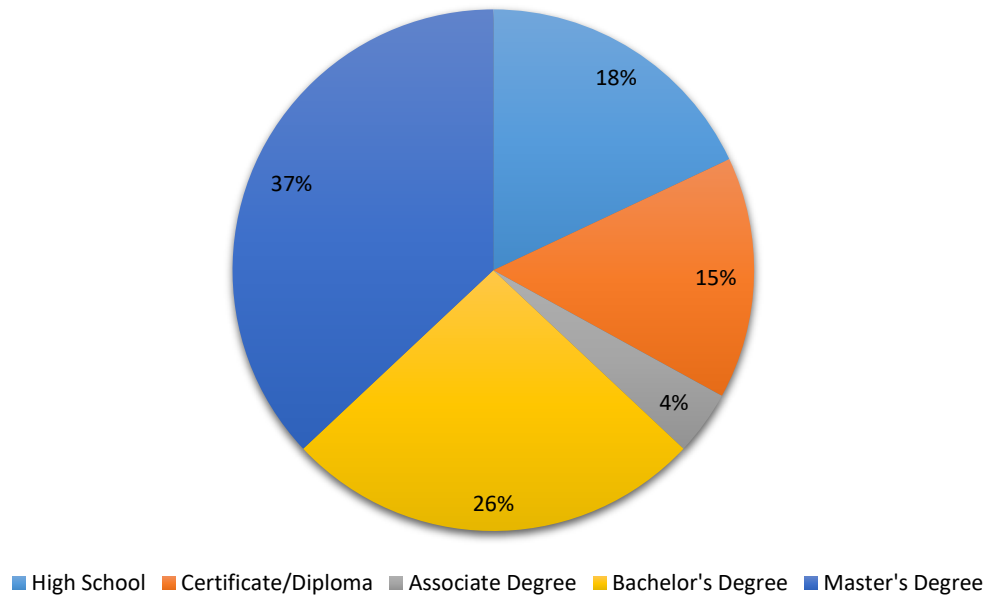


Figure 4.3 Educational levels of U.S. Participants

Occupation of U.S. Participants

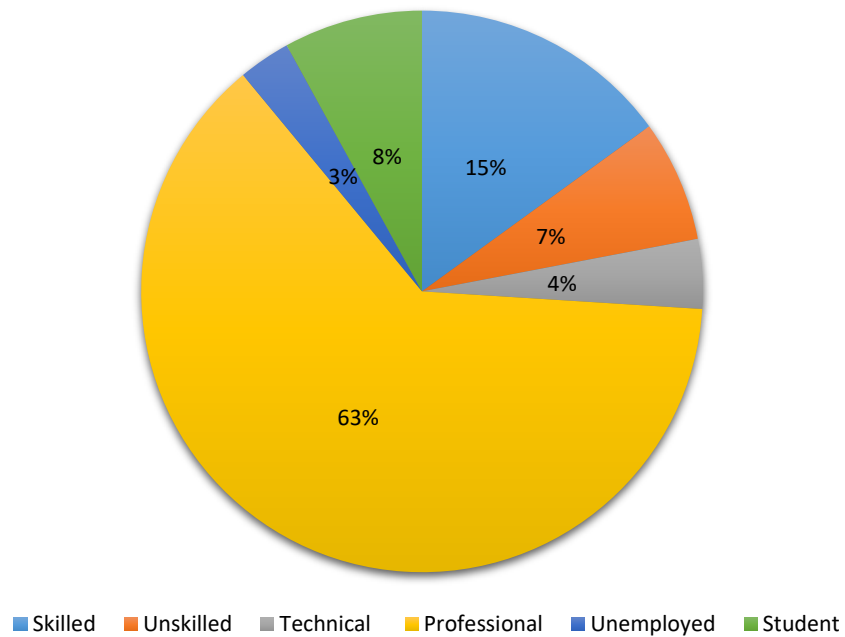


Figure 4.4 Occupation of U.S. Participants

THEMATIC ANALYSIS – SEM AND TRA

The thematic analysis of the interview data revealed five themes (Figure 3.1), which emerged through inductive and deductive coding, based on the study's research questions (Braun & Clarke, 2006). The five broad themes were (1) attitudes, (2) barriers, (3) socioeconomic and cultural factors, (4) immigration/acclimation, and (5) community collaborations. The relationship between these themes and subthemes is examined in-depth, and their findings presented within the integrated components of the SEM and TRA, as previously described.

INDIVIDUAL LEVEL

1. Attitude Toward Behavior

(a) What are the attitudes of Ghanaians Immigrants toward Pap smear and HPV vaccination?

Attitudes toward Pap smear and HPV vaccination were predominantly positive. Many of the participants who were interviewed in the U.S. felt that having a Pap smear was not only important but necessary, and intended to have this screening performed as recommended by their healthcare providers. Notably, the majority of Ghanaian residents interviewed also had positive beliefs toward the importance of these preventive measures and were open to receiving these services if they were able to access them. Certain negative factors about cervical cancer prevention also shaped the attitude of participants and the value they placed on cervical cancer prevention initiatives. These consequently became barriers to their decision to seek these services. The attitude of the Ghanaian immigrants was formed by the following factors: awareness and knowledge of cervical cancer, experience with cancer or cancer screening, perceived significance of cervical cancer, stigmas about the disease, lack of knowledge about cervical cancer, fear of a positive diagnosis of cervical cancer, fear of potential side effects of the HV vaccine, immigration, and views concerning preventive care.

- **Awareness and knowledge of cervical cancer**

Participants with knowledge of cervical cancer generally exhibited positive attitudes about cervical screening and HPV vaccination. For those who held contrary views, it was mainly based on a lack of knowledge about the disease. It was observed that even those who had felt negatively or indifferent towards Pap smear while living in Ghana, were at the very least interested in learning more, and had their interest piqued after receiving information about it. Those who had acquired knowledge through education from various information sources, or through personal experience demonstrated a greater interest in the topic than those who were merely aware of the issue. Having this awareness about cervical cancer prevention programs impacted the respondents' attitude toward the decision to seek out these services, and to follow through with healthcare providers' recommendation.

The following exemplary quotes capture the positive perceptions of immigrant participants about Pap smear:

I think it's very important. If, for twelve months, I put myself on the back burner and take care of everyone else, as we do as women, my physical is that time for myself that I take and to make sure I'm okay. We all know how devastating cancer is and how it creeps up on you, so with regular screenings, you're able to identify or at least preempt a problem. (U.S. Female 8).

I think it would be a very good thing if women did this test (Pap smear) regularly. Even if they have something going on, it would be caught early for early detection if something is wrong. I think the good outweighs the fear factor. (U.S. Male 2).

These quotes indicate that some participants who may have been indifferent or felt negatively towards screening, had a change of opinion when they learned more about it.

Some women might be embarrassed, even though it's a medical procedure. I think education is not there, and culturally there is still a lot of taboo around women's sexuality

and anything to do with that part of the body. They might say, “There’s nothing wrong with me, so I don’t want anyone touching me down there,” but if they’re educated that this is normal and for their benefit, they would be okay with it. The more educated ones, especially those who have had children, wouldn’t have any problems with this. (U.S. Female 13).

When I was in Ghana, I never heard of Pap smear, so I didn’t know anything about it. But now that I know I will do it. The first time I heard about it was when I was in the U.K. Living in America has been an eye-opener. There are so many places that you can get information for your health. (U.S. Female 7).

So when I came here (America), I was supposed to go for a normal check-up, and it was the doctor who told me it was necessary and important that I have to do it. So he explained to me why I have to do it. I decided to let me go ahead and make sure that I’m okay. At least it would give me a sound mind. (U.S. Female 17).

After being educated about cervical cancer prevention, these participants’ quotes reflected more than a passing interest, but the motivation to seek screening.

Two of my neighbors, ladies, both have cancer. One had breast cancer and is doing chemo, and I don’t remember the name of the cancer that the other one had. When I heard about this, it made me see how important it is for me to get a regular check-up to know about my health. I’m also in the process of trying to get a primary care doctor. (U.S. Female 4).

My uncle was telling me that you have to do Pap smear every year. I didn’t feel comfortable doing it because you had to open up yourself for somebody to go inside you, so at first, I didn’t want to do it. But when I learned that you could get cancer from it (cervix), I said, hey, I have to do this. (U.S. Female 15).

After given birth, my doctor (in America) told me that when I came back for my six weeks check-up, I needed to do the test. So I did it. He told me that every year I need to do it. Because the doctor told me about it, it made me want to do it. My doctor told me to do it every year. I did it two months ago and will do it again when the time comes. (U.S. Female 2).

Also, opinions about HPV vaccines were generally positive. Interestingly, almost all the male immigrant participants interviewed (N = 9, 90 %) knew of and had positive attitudes toward cervical cancer screening. Of those U.S. immigrant participants who had children eligible for the HPV vaccine, approximately two thirds (61%) had completed the series. The remaining respondents refused or were ambivalent about HPV immunization for their children. These parents voiced fear of impotence for their sons, fear of later side effects for both girls and boys, and ignorance about the vaccine as the reasons for their present refusal.

Two parents who felt that HPV vaccination was important for their children described the reasons for their acceptance:

My children have received all the recommended doses. It is something small to do to avoid a bigger consequence later. I think it is very important for both boys and girls because both of them are capable of transmitting that virus, so why treat one and not the other? (U.S. Female 8).

Knowing what I know today in America, I would not object to my children (or partner) receiving the vaccine. I would want my boys to receive it. The only reservation I would have is about the potential side effects, and to have some proof that the vaccine prevents it (the disease) because many of these side effects are quite harmful. I would want to research this first before agreeing, but I think anything that is preventive is important. (U.S. Male 3).

- **Experience with cancer or cancer screening**

Prior experience with cancer or cancer screening, including Pap smear, played a role in influencing the attitudes of some participants towards Pap smear.

I know that it is a very deadly cancer; people die from it. I have a friend from college who died from it; she was just thirty-four, and she died from it. I believe it's very important for women to get regular Pap smear because people die from it (cervical cancer), so I do my Pap smear. (U.S. Female 15).

Because my friend was talking about it, I decided to find out more about what she was talking about. That's when I got to know about cervical cancer that her mother had. The mother, she died. She bled for some time, was in the hospital for some time, and then she died. (U.S. Female 17).

- **The perceived significance of cervical cancer**

Likewise, knowledge of cervical cancer influenced participants' perceptions regarding the importance of cervical cancer, Pap smear, HPV vaccination, and the potential seriousness of the disease.

Yesterday I was talking about it with my brother in Ghana, the nurse, about our family member who died from this disease. He told me that cervical cancer is caused by a virus; HPV, and here in the U.S, there's a vaccine for girls before preteen before they become sexually active. He told me that I should ask my girls if they've taken all the necessary injections. It's very serious and can cause death. In my cousin's case, her family had kept it a secret from all of us. She had done so many treatments before, and she couldn't bear it anymore, so she finally agreed to the surgery as a last resort. She died three days after the surgery; it was too late. After what happened to my cousin and my sister (who also died from cervical cancer), it makes it more significant. (U.S. Male 8).

- **Stigmas about cervical cancer**

Socialization, deeply rooted cultural beliefs about cancer, and the stigma which surrounds discussions about a woman's sexual health and organs also impacted how cervical cancer and Pap smear were perceived.

One female participant stated:

“Because it involves a woman's private parts, there's a lot of stigmas, and people don't want to talk about it.” (U.S. Female, 14).

A male respondent voiced similar statements about this stigma:

It doesn't look good when a female has any form of STDs such as gonorrhoea. Everyone will be talking about it. So any sickness in that area brings a lot of stigma to it. Hence people in Africa will more readily talk about breast cancer and the upper parts than cervical cancer in the lower parts. I think they (women) should do Pap smear. I'm a strong believer in everybody going for frequent check-ups. (U.S. Male 3).

Some participants noted that this stigma about the female genitals might be stronger among older Ghanaians and that migration to western countries didn't necessarily change that perception in that age group.

While still living in the U.K., my mother came from Ghana to live there, and she was diagnosed with cervical cancer. They recommended that she removed her uterus, which she did. However, it had spread, and she decided to go back home and continued with radiation therapy in Ghana, but she passed shortly after the disease. When it is cancer, the person affected will try to prevent people from knowing that they have cancer, because there's a stigma about cancer. Like my mom, when she was dying, she didn't want to be buried back home. She wanted to be cremated in England because she had gotten very

skinny and didn't want people to see her body gaunt like that. People just don't want others to know they passed away from that disease. (U.S. Male 5).

(b) What are the common barriers affecting Ghanaians when seeking Pap smears and HPV vaccination?

All participants, except for one male, knew about Pap testing. Among the female participants, only 11.7 percent (N=2) had not had a Pap smear done due to fear and lack of time, respectively. Even though the fear of an abnormal result had only prevented one woman from actually screening, this challenge was echoed throughout several of the interviews as a potential barrier that could implicitly affect others. Embarrassment was also a potential barrier for some respondents concerning their willingness to be screened. Regarding knowledge of the connection between cervical cancer and HPV, and the HPV vaccine, 41 percent (N=7) of females and 40 percent of males (N=4) reported a lack of awareness. No Ghanaian immigrant had personally received the HPV vaccine because they were no longer eligible, and 40 percent of those with children who were eligible for the vaccine had declined because of fear or lack of knowledge. Not knowing about Pap smear and HPV vaccines are some of the significant barriers which intersected with many cultural norms and perceptions about cervical cancer among participants. These identified barriers among respondents contributed to their negative beliefs about screening and vaccination, and the value they placed on performing these behaviors.

- Lack of knowledge

Lack of knowledge emerged as the most substantial barrier to cervical cancer screening and HPV vaccination. Two participants explained their lack of knowledge or fear of the side effects of HPV vaccines.

I know I would not be getting my children vaccinated at the age recommended because I think it's too early. At first, it wasn't a requirement for boys, but then it became a requirement. And I think if I would have them vaccinated, I will do it much later on.

Regarding boys, for me, I vaccinate my kids, but I would first look at the data out there to

see what are the risks involved. But when it comes to boys, I don't have a general feeling that it is an urgent need. (U.S. Female 10).

When my first daughter was younger, the school sent home information about this vaccine for her to get it, and I objected to it because, with these vaccines, you never know some of the side effects that they'll have on your children later on. None of my children have received it. I decided to let them choose for themselves when they're older, whether or not they wanted to receive it. (U.S. Male 5).

- **Fear**

Fear was also a deterrent for some participants and affected their decision to have screenings done.

I'll use myself as an example. I'm someone who has not done this test because I would tell myself that it's better if you don't know. If it's not broken, don't fix it. Don't go looking for trouble. So until I think I see symptoms or I have pain, I haven't bothered doing any screening. So I have the mindset of lots of people in Ghana. Even since I'm living here (in America), I haven't bothered. I actually booked the appointment, but because I don't take it seriously, I didn't do it. That is the closest I ever came to doing it, but I chicken out. (Fear of) bad news, that's why I have avoided it (participant laughs). (U.S. Female 14).

“Fear (participant laughs). People will not go to the doctor because of fear of finding out that they have something that they could die from.” (U.S. Female 7).

Not in Ghana, but when I came here, we had to do the Pap because they talk to me about it. The need for me to make sure I do the Pap to check whether or not everything is ok. So I have done it here (in America). That's how I got to know about it. When I was living in Ghana, I never did any Pap (smear) there. In Ghana, you don't even think about it (participant laughs). There are so many things that prevent you from doing those things.

One is fear, just to think that you have this type of cancer puts the fear into you. So it is better you don't know than to know. Because when you know, it's expensive. And getting the money to treat it is another thing. So if you don't know about it, it doesn't cause you to go looking for money to go into (treat) it. (U.S. Female 17).

“Fear of knowing that you are sick is also another reason why many Ghanaians will not go to the doctor or the hospital.” (U.S. Male 4)

- **Embarrassment**

Some participants reported embarrassment about being examined by a doctor/nurse and or having an abnormal vaginal discharge.

If someone hears that you are having an abnormal discharge, you don't want to hear that that is being said about you. That's probably why it was hidden so long. They will probably try the herbal medication until they realize it's not working, and then they will go to the doctor. Because they find it embarrassing to go to the doctor with a discharge. If you have an abnormal discharge, the assumption is that you are not clean or you are not washing yourself well. It's as simple as that. So telling people, you have a challenge like that it seems to imply that you've not been practicing good hygiene, and you've not been cleaning yourself good. (U.S. Female 14).

I think this subject is not generally discussed because it has to do with a woman's private parts. Over here (in America), it's very easy to discuss that, but maybe not the same in Ghana. I think there would be a little bit of resistance to talking about it. It's just the embarrassment, and people are shy to talk about it. It's just a cultural thing and not something that we generally discuss, so that's where that stems from. (U.S. Female 12).

A family friend had breast cancer, and she didn't tell anybody about it, not even her children, even though her son was in medical school. I was driving her to her doctor's

visits, and she didn't even tell me that she had this issue. Even when she was dying in the hospital and a little confused, she did something that really shocked me. A doctor wanted to check her breasts, and she was kind of unconscious, but even then, she was holding onto her blouse. She didn't want the doctor to remove her clothes, even then! I was so shocked. Some people are shy and embarrassed about being examined by a doctor. (U.S. Female 7).

(c) How do immigration and the length of stay in the US influence the perception, attitudes, and acceptance of Pap smears and HPV vaccination among Ghanaians living in America?

- Immigration

Although 96 percent of the female participants reported having knowledge of Pap smears and having a screening done at least once, 76 percent attributed their compliance with recommended screening to migration, to more economically developed countries such as the U.S.A. Migration facilitated screening by increasing knowledge and awareness, improving the availability of healthcare resources, including health insurance, and systematic encouragement by their healthcare providers. These factors contributed to the paradigm shift in the thought process regarding preventive care, in comparison to seeking medical services only after becoming ill. This acquired knowledge and awareness of cervical cancer, the importance of recommended screening and HPV vaccination contributed to the participants having favorable opinions about these programs. Ghanaian immigrants in America, therefore, demonstrated a greater willingness to participate in cervical cancer screening and HPV vaccination programs for their children.

The roles that the influence of migration, availability, access to community resources, and the significance of education by healthcare providers play, are reflected in the following quotes.

“My wife and I get our annual checks every year, so I think it's important for her to have her Pap smear done, and she knows it. If I were still living in Ghana, I wouldn't even worry about check-ups and these things. I'd just be eating and drinking. It's all about awareness.” (U.S. Male 10).

When I was in Ghana, I never knew about Pap smears, and we don't do physicals in Ghana like we do here. We don't have physicals; it's like the first time I had a physical is when I was coming to this country. We don't have physicals every year as they do here. We go to clinics when we're sick. The only time I would go to the clinic is when I'm sick like I have malaria or something. That is when I go to the clinic. (U.S. Female 15).

- **Views concerning preventive care**

Participants noted that, in general, the lack of priority placed on preventative care in the Ghanaian culture led to the reduction of utilization of these types of services. The healthcare system was seen as only needed when a person was sick. The following exemplary quotes summarized this sentiment:

I actually have a friend who works in a diagnostic center as a radiographer, and she does all these screenings, and so she would tell me about some of the cases she's had, of people bleeding, and how complicated it gets, but still I haven't bothered to go. And even though she does this work, she still has my mindset that if she doesn't see anything wrong, why go checking it and looking for trouble. (U.S. Female 14).

Preventive care is not common there (in Ghana). It also has to do with a person's upbringing. Like for me, I was taken to the doctor regularly for check-ups, so that has become a part of me. But for others that are not used to that, they will only go to the doctor or hospital only when they are sick. People in Ghana actually brag about not going to the hospital in five years or seven years, and they feel proud. Because they feel that they are in good health, and they haven't been to the hospital in five years or so. (U.S. Female 6).

2. *Subjective Norm*

- **Social support for cervical cancer screening and HPV vaccination**

Participants who received encouragement from family and friends were more inclined to access screening and vaccination. Some noted that such social support was necessary to overcome the discomfort associated with the Pap smear process and the perception of it being an invasive procedure.

So if a family member hadn't encouraged me, I probably wouldn't have done it then.

When I first came to America, I didn't know about it. My uncle was telling me that you have to do Pap smear every year. He works in a hospital, and his wife does it every year. (U.S. Female 15).

When my mother live here (in America), she had to go and do it (Pap smear), and she didn't like it. I had to talk to her and talk to her and talk to her before she went and did it, and she didn't like it. That's why we made sure to look for a woman doctor because she doesn't want to have a man do that for her. She and I do our pap smear at the same place. (U.S. Female 15).

"I've done a pap smear maybe three or four times. I started when I was about 22 or 24 years old. My mom made me do it. I didn't know about it before that." (U.S. Female 6).

INTERPERSONAL LEVEL

1. *Socioeconomic and Cultural Factors*

(a) **What influence do socioeconomic and cultural factors have on Ghanaians seeking cervical cancer prevention services?**

Sociocultural factors affected behavioral intent in the utilization of cervical cancer prevention programs, among respondents. These factors inadvertently were either barriers or facilitators to the health-seeking behaviors of the participants. Access, availability, and affordability of services were mentioned by participants as the most important determinants of healthcare utilization, both in their native

country and after migration to the U.S.A. However, Ghanaian immigrants living in the U.S. conversely did not experience any substantial challenge from these factors, as it related to cervical cancer prevention services. All, except one respondent, voiced having the ability to pay for a Pap smear, and everyone mentioned knowing the location of healthcare facilities offering Pap smear, and having access to these services in their community. Cultural norms, views concerning preventive care, and social support for cervical cancer prevention were the major social and economic factors that influenced immigrant participants.

COMMUNITY LEVEL

1. Cultural norms

Cultural beliefs, such as those about the female genitals, religiosity, or the lack of acceptance of illness or death as naturally occurring phenomena, were factors in Ghanaian women's willingness to discuss cervical cancer or to have a Pap smear done.

Most Ghanaian women, anything to do with their private parts is not really talked about. For example, when we were growing up, they would refer to the women's private parts as a "kakai." "Kakai" in translation is something that is either evil or almost scary; you don't talk about that kind of thing. It's untouchable; you shouldn't talk about it. Another example would be when a woman goes through her menses that is something that is not talked about either. It's considered culturally taboo to talk about that. They would use a local word or a term saying, "She's gone to the backyard" or "wo ko efikyere" (participant laughs). (U.S. Male 6).

If someone does have cervical cancer or die from it, it probably wouldn't be discussed as much, so people wouldn't know about it. I think another reason why it's not discussed much is because cervical cancer is linked to a woman's sexual behavior and if you're

married, it's ok to talk about it, but if you're a young woman, not married and trying to talk about that, it's like there's still a cultural issue with that. (U.S. Female, 10).

I think the culture, ignorance, and especially those of the Christian faith they don't want to accept it (sickness). As long as they don't accept it or claim it, then it's not really happening, and they can pray it away. Even common diabetes, they will say, "Eh, don't call that on me, I don't accept it." There is also a stigma with being sick; one of my cousins had diabetes, and each time when I called him, he became upset. He talks as if I'm calling down some disease on him, just ignorance. In our family, they don't believe that persons die of natural causes; somebody did something to them, like witchcraft.

Those who are educated usually don't think like this. (U.S. Male 8).

2. *Community Collaboration*

(a) **What significance does community collaborations have on Ghanaian immigrants accessing cervical cancer prevention programs?**

- **Community Leaders**

Immigrant Ghanaians who were insured reported that they learned about Pap smear or HPV vaccination from a healthcare provider. They would, therefore, rely less on community-based organizations to learn about these topics. For those individuals who are uninsured, however, these organizations, such as local churches, provide a more significant purpose.

"The churches too are helpful, because a lot of Ghanaian women go to church. Here in Georgia, there are several Ghanaian churches to reach people. African women love to go to church, and then after church, they sell food and eat and socialize. So that's a good time to talk with them." (U.S. Male 10).

In a Ghanaian community, if the women are educated, probably they will relate to it (health education) and follow through. But for older Ghanaian women or for those who are illiterate, to communicate with them, you'd have to use a different approach. They have to trust what you are

about and why you are there. The best way, therefore, would be getting to know their culture and collaborating with a community leader. They will listen more to their community leader, their pastor, and their chiefs. So you have to go through these people as gatekeepers. (U.S. Male 2).

- **Churches**

These participants shared quotes about the importance of churches in the Ghanaian culture.

“They hear doctors telling them, but sometimes it doesn’t matter as much. If they get further teaching about it like in churches where women are gathered, it would then seem more important. When the doctor is telling you about it, it just seems like he’s doing his job.” (U.S. Female 1).

“Churches would be a good place to do such programs because a lot of people go to church. Even at the churches, a lot of times, the health workers will come and give an address to the congregation.” (U.S. Male 4).

POLICY LEVEL

- **Availability of and access to healthcare resources**

Ease of access, the convenience of making appointments, location of clinics, and reminders and incentives from health insurance companies, were all identified as enablers of screening behavior.

I think having health insurance here (in America.) and them (healthcare providers) constantly educating you when you go in about preventive screenings it’s almost like its mandatory like they will ask you about the flu shot, “Have you had your flu shot?”. They will ask you and educate you, not just wait for you to ask about it. I think for most people in Ghana, not having health insurance, you are paying directly for your visits, so no, they’re not just gonna go to the doctor for check-ups. But I think that difference in the standard of care here in the U.S. has improved our outcome. Ghana doesn’t have that as efficiently unless you have the knowledge to do these things and the money to pay for it. (U.S. Female 13).

I have health insurance, transportation, and everything, and I was told about the importance of the test (Pap smear). If I didn't have health insurance, the cost might have been a problem (for having a Pap smear done). In this country (America), having health insurance makes it easier. (U.S. Female 5).

- **Significance of the role of healthcare providers**

Healthcare providers (doctors, nurses, midwives) play a pivotal role in not only educating populations about screening measures but advocating for their necessity.

“After given birth, my doctor (in America) told me that when I came back for my six weeks check-up, I needed to do the test. So I did it. He told me that every year I need to do it.” (U.S. Female 2).

Before getting pregnant, I never went to the doctor's office to do it, but when I got pregnant, I did it. They told me it was important to get the test done regularly, but at that time, I wasn't listening to them because I don't believe I'm going to get any infections. I only did it because they told me to, and to protect myself and not affect my baby. (U.S. Female 1).

My OB/GYN recommended it as a part of a routine check-up. I looked at it more as a requirement when you get to a certain age, so I go there to do it and keep it moving. I first learned about it when I moved to the U.S. During the time of living in Ghana, I don't remember hearing anything about doing Pap smears.” (U.S. Female 10).

Likewise, being educated about their children's need for the HPV vaccine, having health insurance to cover the cost, and the vaccines being offered during routine wellness visits, were responsible for improved vaccination rates upon their emigration to the U.S.A.

“My daughter received all of her (HPV) shots through frequent visits for physical.” (U.S. Female 8).

“If the children’s (two boys) doctor recommended it as important, I would want them to receive it when the time comes. I would first discuss it with their father, but I would want them to receive it.” (U.S.

Female 1).

CHAPTER 5: DISCUSSION AND RECOMMENDATIONS

SUMMARY OF FINDINGS

This study explored the barriers, facilitators, and sociocultural factors that influence cervical cancer screening and HPV vaccination rates among Ghanaians living in the U.S.A. The results of the study revealed that Ghanaians immigrants generally have a positive attitude toward preventive care, and found value in services such as cervical cancer screening and HPV vaccination. Cultural norms, like the use of herbal medicine, reluctance to discuss women's sexual health publicly, or denial about illnesses, did not substantially negate interests in health education and promotion. The findings also revealed that while male partners do play a role in the health behaviors of Ghanaian females, most men were supportive of these decisions. Only a small number of men (16%) reported discomfort with male healthcare professionals providing cancer screening services for their partners. Ultimately, the opinions of Ghanaian men did not appear to weigh heavily in the final decision-making practices of their female partners.

Results from the preliminary study suggest that some Ghanaians residents were unaware of cervical cancer prevention programs. They had limited knowledge about these services, mainly due to affordability, availability, and accessibility considerations. Migration to western countries like the U.S.A notably decreased these barriers. Access to health insurance, increased knowledge, education, and support from healthcare providers improved the attitude of Ghanaian immigrants toward these services.

CONCEPTUAL FRAMEWORK INTEGRATION: SEM AND TRA

The SEM and TRA were the frameworks used to examine the study findings and to analyze the results within these contexts. The applicable constructs of the SEM utilized were individual, interpersonal, community, and policy (Sharma, 2017). Within the SEM's individual level, components of the TRA were evaluated to assess how the attitudes and subjective norms of Ghanaian immigrants impacted their intent to utilize cervical cancer prevention procedures (Ajzen & Fishbein, 1980; Sharma,

2017). It was noted distinctly among many of the immigrant Ghanaians interviewed that once their attitude toward Pap smear and HV vaccination were modified following relevant health education, this intersected with their motivation to comply with the screening and vaccination recommendations. This convergence led to their intent to accept these recommendations and resulted in the outcome of the TRA model, which was to perform the health-seeking behaviors. All four levels of the SEM were noted to overlap in various instances, and it was sometimes difficult to distinguish where one level started, and the others ended.

INDIVIDUAL LEVEL

At the individual level, it was observed that personal beliefs, knowledge, and the lived experience of respondents were among the strongest influences discussed (Fang & Baker, 2013; Nartey et al., 2018; Opoku et al., 2016; Williams, 2014). These foundations guided individuals' beliefs about cervical cancer, and eventually determined their persuasion toward screening and vaccination. Despite the other levels of influence, it was noted that the final cues to action were dependent on an individual's intent to perform a given behavior and their actual implementation of this decision. Being knowledgeable about cervical cancer influenced their perception of the severity of the disease and the importance of prevention (Williams & Amoateng, 2012; Mayeaux, 2005; Coleman et al., 2011; Sofolahan-Oladeinde et al., 2014). The majority of the Ghanaian immigrants reported the benefits, and advantages of regular Pap smear and HPV vaccination. Endorsement from family members, friends, and healthcare providers, as described in some participants' quotes, reflected their normative beliefs about screening and vaccination, and their motivation to comply with these recommendations (Adegboyega & Hatcher, 2016).

- Attitudes and Subjective Norms

Positive attitudes of immigrant Ghanaian males and females toward cervical cancer prevention were consistent with the findings of existing literature (Williams & Amoateng, 2012; Williams, 2014; Nartey et al., 2018). The majority of the respondents reported their perceptions about the importance of a Pap smear and the HPV vaccine, and the seriousness of a cervical cancer diagnosis.

These included a willingness to screen, and interest in HPV vaccinations for themselves or their children (Williams & Amoateng, 2012; Mayeaux, 2005; Coleman et al., 2011). As conveyed in other studies, an increase in screening and vaccination rates after immigration was reported by some study participants (Sofolahan-Oladeinde et al., 2014). While the attitude and perceived importance of cervical cancer of Ghanaian participants ranged between indifference to unawareness (Opoku et al., 2016), these views were predominantly positive after migration to the U.S.A.

The men interviewed were found to be equally receptive to these preventive measures for their partners and children, as discussed in another study (Williams & Amoateng, 2012). For the men who expressed unease, views about the gender of the healthcare provider were insignificant, and concerns were regarding the efficacy, necessity, and side effects of the HPV vaccine. This acceptance was closely linked to being knowledgeable about cervical cancer, Pap smear, and HPV vaccines, and finding these services to be affordable, available, and accessible, a finding similar to that reported by Adegboyega & Hatcher (2016). Conversely, negative attitudes of participants were rooted in the lack of knowledge about cervical cancer, stigmas surrounding the cause of the disease, and fear of receiving a positive diagnosis, a finding supported by the existing literature (Bayu et al., 2016; Williams & Amoateng, 2012).

Ambivalence about the HPV vaccine and the relative lower acceptance rates, as reported by the participants, was not much different from that reported in the study conducted by Mayeaux (2005). These views did not differ significantly from that of many American-born individuals who refrain from accepting these vaccines for their children, even if they are affordable or accessible (Kaiser Family Foundation, 2018; Stewart, 2008). It's notable though that among Ghanaian immigrants, there was still a profound lack of knowledge about the HPV vaccine, which is consistent with the national average among minority populations living in the U.S. (Kaiser Family Foundation, 2018). Three individuals reported having an initial Pap smear done or knowledge of the test while living in Ghana (17%). A combined 78 percent of the Ghanaian immigrant participants attributed their improved response to cervical cancer screening and HPV vaccination to migration to America, with four individuals living in Europe prior.

Strategies to reduce these barriers should be focused on improving awareness through ongoing education and public health advocacy. Using appropriate and effective media sources to reach different members of the target population, such as social media, television, and radio, and connecting the uninsured with programs in their communities, is paramount.

Previous studies have reported the erroneous beliefs of some Ghanaians about the causes of cervical cancer, including using chemicals in the vagina, bath soaps, witchcraft, or contraceptive use (Fang & Baker, 2013; Williams, 2014). These beliefs impact screening practices, as those who accept them as accurate, are less likely to have Pap smears done. Likewise, even after moving to America, without education and increasing awareness of the disease, some Ghanaians may not think that obtaining a Pap smear is necessary. Knowing about cervical cancer, and having a motivation to screen and accept vaccination were also found to improve utilization. These prompts included endorsement and encouragement from healthcare providers, reminders, and incentives from health insurance agencies and the motivation to participate in these programs.

INTERPERSONAL LEVEL

Following very closely was the interpersonal level, which involved interaction between participants and persons in their immediate social network; spouse, family, friends. Some participants reported increased interest in cervical cancer and HPV vaccines after learning about these topics and being encouraged by family and friends. This indicated that family and friends could play a decisive role in supporting a person's intent to screen or accept HPV vaccination, similar to the finding in another study (Williams, 2014). The weight of the opinion of spouses was negligible; however among Ghanaian immigrants, and was not a factor in determining the screening behavior of participants even if their spouses objected (Williams & Amoateng, 2012).

COMMUNITY LEVEL

The community level examined the impact of concepts such as cultural norms, organizations, access, and availability of services in ones' environment. Perceptions about the importance of preventive care, social views about females' sexual organs, sexually transmitted infections affecting women, and the influence of immigration were expressively discussed. The consensus among respondents was that openly discussing matters concerning female sexual organs was not the norm of the culture, especially among older Ghanaians (Binka et al., 2017). This led to embarrassment for some individuals in deciding to have a Pap smear done (Bayu et al., 2016; Sofolahan-Oladeinde et al., 2014). The impact of immigration was the most significant finding in the difference between access and utilization of cervical cancer services among the two sample populations in this study. Changes that occurred following immigration were predominantly positive. Participants reported increased awareness about cervical cancer and HPV vaccination, increased willingness to screen and/or accept vaccination, and improved access to community services (Sofolahan-Oladeinde et al., 2014). Health insurance and government-funded programs for the uninsured were reported to be more readily available following migration to the U.S. (Centers for Disease Control and Prevention 2015b; White & Wong, 2015; American Cancer Society, 2018). This change was contributory in shifting the views regarding preventive care, which was accepted as the "new norm." Healthcare providers' routine practice of educating individuals about screening and vaccination recommendations was an additional factor in this behavioral adaptation (Adegboyega & Hatcher, 2016; Mayeaux, 2005). These changes were instrumental in modifying the attitude and subjective norms of several Ghanaian immigrants regarding their views about the importance of cervical cancer prevention.

- Sociocultural Factors

Sociocultural factors were found to be interwoven into all of the emerging themes explored in this study. They intersected with knowledge, attitudes, and barriers toward cervical cancer prevention, the impact of immigration, facilitators of screening and vaccination, and the importance of

community collaborations. A prevailing cultural norm of the average middle to low-income Ghanaian is to seek healthcare only when sick. The literature supports that the concept of preventive care, such as annual physicals, is not the routine practice (Adanu et al., 2010; Barbee et al., 2010; Forney-Gorman & Kozhimannil, 2015; Williams, 2014). Hence the low rates of Pap smear among Ghanaian women living in Ghana, as observed in the preliminary study (Williams, 2014). Contrary to findings in other studies, embarrassment about pelvic exams, or partiality to female healthcare providers was not reported by most Ghanaian immigrants in this study (Bayu et al., 2016; Sofolahan-Oladeinde et al., 2014). While this may have been a personal preference by many of the women, a female healthcare provider was not a prerequisite for having a Pap smear done.

Results from both the preliminary study and Ghanaian immigrants suggest that the utilization of cervical cancer prevention services are influenced significantly by awareness, availability, and affordability of such services. These immigrants then may not be inclined to seek preventive care even after emigration, if they do not have health insurance and medical home (Forney-Gorman & Kozhimannil, 2015). This immersion into a cultural norm of seeking preventive care before becoming sick was new for some of the immigrants, as similarly documented in another study (Adanu et al., 2010). The convenience of scheduling and getting to appointments, and reminders and incentives facilitated participation in recommended screenings and vaccination programs. These findings were consistent with those reported in another research about the willingness of Ghanaians to accept health screenings and vaccines if these were accessible (Mayeaux, 2005). However, the main factors which influenced the utilization of healthcare services for these participants were similar to those identified by Adegboyega & Hatcher (2016); access, affordability, and availability.

According to Sofolahan-Oladeinde et al. (2014), immigrants were more like to adopt the health screening behaviors practiced in their new country, after five years. In this study, thirty percent of participants had been in the US for five years or less. While immigration positively impacted how Ghanaians accessed health care in America, the years of residency did not appear to have any remarkable

bearing. Those who reported living in the U.S. less than five years were equally inclined to having regular Pap smears when compared to those who have lived in the country for more than a decade. The same was true for the acceptance of HPV vaccines.

- **Community Collaboration**

The literature reviewed indicated that community collaborations played a pivotal role in the health outcome of African immigrants (Hae-Ra et al., 2017; Sharmeen Shommu et al., 2016; Katigbak, Devanter, Islam, & Trinh-Shevrin, 2015). Church attendance and the endorsement of church leaders for participating in community programs are an accepted cultural phenomenon among Ghanaians. Soliciting the support of church organizations for some Ghanaian immigrants could serve as a platform for health education. This would be more significant for those who might otherwise not have an opportunity to learn about cervical cancer prevention services. These associations could facilitate the necessary linkage to local health departments' free screening and vaccination programs for uninsured immigrants. For Ghanaian residents who participated in the study, community collaborations to educate individuals about health promotion are far more beneficial than in the U.S.A. This is due in part to the increased opportunities to gain information about diseases through various contact with the U.S. healthcare team. Lower-income Ghanaians living in their home country are less likely to seek preventive care, therefore learning about these services through church or local associations reduced this barrier in America.

Connections with community health workers (Centers for Disease Control and Prevention, 2015a) is expected to facilitate screenings by bridging the gap between some members of this population, and the American healthcare system. They can also collaborate with religious organizations to reach those persons who are at risk for not receiving adequate care due to socioeconomic constraints. Having health insurance or being able to pay for health care impacted Ghanaian immigrants more pointedly. For those individuals without health insurance, community health workers, and collaboration with community-based organizations like churches, may facilitate access to free cervical cancer screening

and HPV vaccination programs (Centers for Disease Control and Prevention, 2017; Kaiser Family Foundation, 2018).

Ghanaians immigrants in the US, however, did not report any challenges relating to accessing culturally competent care, as the barriers they experienced were related to knowledge and cost instead. There are some possible reasons credited for this finding. In spite of having approximately eleven government-sponsored local languages, English is the official written and spoken language in Ghana. This significantly reduces a language barrier for Ghanaians, when compared to other immigrants. Customs such as wearing non-traditional clothing and social mannerisms are similar to the practice of Americans, so adjustment after migration is not a profound change. In addition, many African immigrants to the U.S.A are professionals, recruited for competitive jobs in their host country (Kaba, 2011; Geber, 2013; Thomas, 2016). According to Kaba (2011) in 2000, of the 700,000 African immigrants living in America, approximately 49 percent of individuals aged 25 years and older had a minimum of a bachelor's degree, compared to the U.S. population of 25 percent, and other immigrants such as Asians at 44.9 percent. Other African immigrants are recipients of the U.S. Diversity Visa (DV) Lottery, or green card lottery, as it is commonly referred to (Ikubolajeh & Thomas 2012; Imoagene, 2017). This lottery program of increasing the diversity of the U.S. population is innately selective, as immigrants are required to have at least a high school diploma, and the ability to pay upwards of USD 2,000 to finance their sponsorship (Ikubolajeh & Thomas 2012; Imoagene 2017). These individuals would, therefore, be more educated, an influence that would facilitate adjustment with the process of acculturation in those regards. These factors could explain the increased knowledge and screening and vaccination approval of this sub-population of immigrants.

POLICY LEVEL

The availability of health insurance, and state and federally funded cervical cancer screening and vaccine programs in Georgia, were explored at the policy level. Participants reported that having these services readily available in their communities notably improved their ability and decisions to

utilize them (Adegboyega & Hatcher, 2016; Centers for Disease Control and Prevention, 2017). Educating individuals and endorsement of vaccination and screening by physicians and nurses were identified as the most effective strategies of improving health outcomes among these participants (Mayeaux, 2005; Adegboyega & Hatcher, 2016). These influences at the policy level facilitated compliance with screening and vaccination recommendations.

- **Availability of Public Health Services**

The process of relocating from Ghana to the U.S.A brought many of the participants in closer contact with healthcare providers. For some, this interaction started as early as the immigration medical screening process, which involved education about Pap smear. Linkage to care through having health insurance additionally fostered the opportunity for healthcare providers to educate and encourage screening and vaccination. The current lack of nationally-funded cervical cancer screening and HPV vaccination programs compound the issue of availability of community resources for many current Ghanaians residents (Nartey et al., 2018; Adanu et al., 2010). Middle or low-income families living in Ghana would typically not choose to pay for preventive services instead of daily expenses. However, the availability of these services in the U.S. was not an issue but could impact how some immigrants access these services. Ghanaian immigrants in the U.S. without health insurance have the option of seeking cervical cancer screening through the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) and Vaccine For Children Program (Centers for Disease Control and Prevention, 2017; Georgia Department of Public Health, 2019).

PUBLIC HEALTH IMPLICATIONS

Cervical cancer incidence has been traditionally higher among minorities with lower screening and vaccination rates, especially for those living in the southern states (Kaiser Family Foundation (2018). Ghanaian immigrants living in Georgia are interested in cervical cancer prevention. The findings from this study have public health implications as it relates to improving health education and outreach to immigrant populations. These include avoiding missed opportunities for public health

education, connecting the uninsured with state-funded cervical cancer screening and HPV vaccine programs, and marketing HPV vaccines with routine childhood immunizations. These implications are discussed next.

Healthcare providers must strive to educate Ghanaian immigrants about Pap smear and HPV vaccination at given opportunities. These include childhood wellness checks, visits for adult chronic disease management, or during trips to urgent care facilities. The findings from this study and others (Adegboyega & Hatcher, 2016) highlight the importance of prompts and endorsements by health care providers for the health-seeking behavior of Ghanaians and other immigrants. Offering education, including printed information about Pap smear and HPV vaccines during visits, is one simple but effective approach. It was interesting to note among both male and female participants, how many individuals did not know the connection between HPV and cervical cancer. This resulted in some having an inaccurate understanding of their risks, and that of their children, for contracting or spreading the human papillomavirus (Williams, 2014; Opoku et al., 2016). Accordingly, this indicates the need for ongoing education to empower these persons to make informed and proactive choices about their health and that of their children.

Reaching those individuals who have never been screened or rarely screened for cervical cancer, is a goal of the CDC's National Breast and Cervical Cancer Early Detection Program (NBCCEDP) (Centers for Disease Control and Prevention, 2017; White and Wong, 2015). On a larger scale, this is also the principal goal of the Office of Minority Health and the Healthy People 2020 initiative (Office of Minority Health, 2018; The United States Department of Health and Human Services, 2017). Collaborations can be made between local health departments and Ghanaian associations such as churches, to reach uninsured immigrants. Less than 7 percent of uninsured American women between the ages of 18 to 64 years, who are eligible for screening through federally funded programs, have Pap smears performed annually (Centers for Disease Control and Prevention, 2015(b)). Minorities, including African immigrants, are among the highest number of Americans who are not participating in

recommended screenings. Some of these women may not seek these services if they feel they are not sick or have no symptoms of cervical cancer (Opoku et al., 2016).

Additionally, parents should be educated about HPV vaccines, along with routine childhood immunizations. This could reduce the stigma of the association of HPV vaccines with preventing sexually transmitted diseases (STD), but including the broader benefit of cancer prevention (Mayeaux, 2005; Centers for Disease Control and Prevention (2019). The literature supports that since the availability of the vaccine, HPV related infections in the U.S. have decreased by approximately 60 percent between 2003 to 2006, and again between 2009 to 2012, from 11.5 percent to 4.3 percent among adolescent girls 14 to 19 years old (Kaiser Family Foundation (2018). While more than half of the current study participants knew about the HPV vaccine recommendation for girls, less than 20 percent knew or believed their sons needed to be vaccinated. There is a great need for education for parents on this subject as there were many misconceptions and biases among this population, regarding boys being vaccinated against HPV. Developing a rapport with parents to encourage them to ask questions about HPV and the risks as it relates to both their sons and daughters is still a challenge.

Religious and cultural norms discourage open discussions about a woman's sexual organs among many Ghanaians. If diagnosed with an STD or illness of their reproductive tract, many Ghanaian women often experience embarrassment and low self-esteem and are hesitant to freely talk about these things (Binka et al., 2017). This should be a consideration among healthcare professionals in the U.S. when broaching this topic, to be aware, and to navigate these conversations with cultural sensitivity.

STRENGTHS AND LIMITATIONS

This study had several strengths. It was one of few to examine cervical cancer screening and HPV vaccination simultaneously within an African immigrant population. The findings could inform national policy decision making about improving screening and vaccination rates among this subpopulation. To the best of our knowledge, it is one of few studies which also provide contextual data

from a native country as a reference point. Through its comparison of the findings, the study provided greater insight into the Ghanaian cultural contexts, and its impact on decision-making, concerning the utilization of cervical cancer prevention services. Furthermore, through the use of a qualitative methodology, relevant background information was obtained in the words of the native people.

The study was not without limitation, however, which readers should consider when interpreting these results. Limitations associated with this study are commonplace with qualitative research. These include the possible difficulty of replicating the study in other settings and constraints with subjectivity and generalizability of the findings to a broader population. Recognized potential biases with the instrument, interviewers, and participants are additional challenges with this study (Trochim et al., 2016). The benefits of the study's methodological approach, however, outweigh its challenges. The researcher could have additionally been a potential source of bias by the way the interview guide was developed, and the collection, interpretation, and subsequently reporting of the data. Soliciting the input of other researchers however, who are experts in their field, served to minimize this bias and improved the internal validity of the study.

Another limitation to be considered is that the majority of those interviewed in the U.S. were insured. Notably, while several participants were receptive to Pap smear and HPV vaccines, these individuals had health insurance. The interview questions did not directly address their health insurance status. The results could, therefore, have been different if the information was obtained from the uninsured, regarding their willingness and ability to access services. Further, no questions were included about permanent residency or citizenship status during the interviews; therefore, eligibility status for national health insurance such as Medicare could not be ascertained. This could be a limitation on some respondents' ability or willingness to access screening and or vaccination services.

Some interviews were conducted among Ghanaian participants who primarily spoke Twi. While this instrumentation provided rich data from a valuable subset of the population, the use of English translators to transcribe the responses could have inadvertently biased the interpretation. There was also

an underrepresentation of the subpopulation of Muslims in the Ghana study, as only one female responded to the recruitment invitation. This individual had expressed an absolute necessity for a female provider to perform a Pap smear, a finding which could be significant in that sub-culture. Additionally, the interviews completed in Ghana may not be representative of the views and experiences of the broader Ghanaian population. This limitation is because, being the second-largest city in Ghana, Kumasi may have been the home of a more informed population regarding cervical cancer prevention. This could have been the reason for the higher percentage of those women who had a Pap smear done at least once when compared to the national average.

Self-reporting additionally contributes to recall biases and social desirability of responses, which is inherent to face to face interviews in qualitative studies. To minimize threats to validity, triangulation was facilitated through the comparison of the findings from both portions of the study (Ghana and U.S.A.), and the stratification of Ghanaian immigrants into groups based on their length of stay in America. These categories allowed for closer examination of potential effects of acculturation on those participants who were recent immigrants (less than five years), and those who have lived in America beyond a decade.

RECOMMENDATIONS FOR FUTURE RESEARCH

Behavior does not occur in a silo; how individuals respond is intricately linked to their knowledge and experiences, interpersonal relationships, community norms, and public policies that support their actions. Consequently, more research is needed to understand the barriers and facilitators of immigrants' health to fill the gap of what is still unknown about this subject. This study attempted to understand these challenges faced by immigrants when accessing cervical cancer prevention services. There is merit and a higher return on long-term public health investment, if mothers are educated about the recommendation for regular Pap smears and HPV vaccines simultaneously. This would improve current screening rates in this population, and enhance future screening and HPV vaccination for their daughters and sons. There remains an opportunity to increase our knowledge of how to improve access to

quality care and health equity for this minority group. If successful, perhaps cervical cancer will become a preventable disease through the simple but effective methods of regular Pap smears and childhood HPV vaccinations.

CONCLUSION

Cervical cancer is ranked 4th among the most common cancer affecting women globally, with a profound disparity among Africans and African immigrants to the U.S.A. Ghana shares a substantial burden of this disease, which has public health implications for their migrants to America. It is theorized that the development of cervical cancer in a healthy female takes approximately fifteen to twenty years, from precancerous cervical lesions to malignancy. The slow progression of this type of cancer makes it one of the most manageable cancers of the 21st century, and favorable for successful treatment through early detection and timely screenings. The study findings indicate that adequate knowledge of cervical cancer and its prevention programs were relatively high among some Ghanaian immigrants, primarily due to access to health care resources, including primary care providers and preventative services. The cost-effectiveness and convenience of cervical cancer screening and HPV vaccination for this preventable disease command the attention of policymakers for health promotion mandates. This study provides substantial, comprehensive data identifying barriers and facilitators of cervical cancer prevention, which could serve as a useful template for future policy implementations.

REFERENCES

- Adanu, R. M. K., Seffah, J. D., Duda, R., Darko, R., Hill, A., & Anarfi, J. (2010). Clinic Visits and Cervical Cancer Screening in Accra. *Ghana Medical Journal*, *44*(2), 59–63.
- Adegboyega, A. O., & Hatcher, J. (2016). Unequal Access: African Immigrants and American Health Care. *Kentucky Nurse*, *64*(1), 10-12.
- Adegboyega, A., & Hatcher, J. (2017). Factors Influencing Pap Screening Use Among African Immigrant Women. *Journal of Transcultural Nursing*, *28*(5), 479–487. <https://doi-org.libez.lib.georgiasouthern.edu/10.1177/1043659616661612>
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Upper Saddle River, NJ: Prentice-Hall.
- American Cancer Society (2018). *HPV vaccines*. Retrieved from <https://www.cancer.org/cancer/cancer-causes/infectious-agents/hpv/hpv-vaccines.html>
- Barbee, L., Kobetz, E., Menard, J., Cook, N., Blanco, J., Barton, B., & ... McKenzie, N. (2010). Assessing the acceptability of self-sampling for HPV among Haitian immigrant women: CBPR in action. *CANCER CAUSES AND CONTROL*, (3). 421. DOI 10.1007/s10552-009-9474-0
- Bayu, H., Berhe, Y., Mulat, A., & Alemu, A. (2016). Cervical Cancer Screening Service Uptake and Associated Factors among Age Eligible Women in Mekelle Zone, Northern Ethiopia, 015: A Community Based Study Using Health Belief Model. *PLoS ONE*, *11*(3), 1–13. <https://doi-org.libez.lib.georgiasouthern.edu/10.1371/journal.pone.0149908>
- Binka, C., Doku, D. T., & Awusabo-Asare, K. (2017). Experiences of cervical cancer patients in

rural Ghana: An exploratory study. *Plos ONE*, 12(10), 1-12. doi:10.1371/journal.pone.0185829

Braun, V., & Clarke, V. (2012). Thematic analysis. In H. Cooper, P. M. Camic, D. L. Long, A.

T. Panter, D. Rindskopf, & K. J. Sher (Eds.), *APA handbook of research methods in psychology, Vol. 2. Research designs: Quantitative, qualitative, neuropsychological, and biological* (pp. 57-71). Washington, DC, US: American Psychological Association.

<http://dx.doi.org/10.1037/13620-004>

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101

Centers for Disease Control and Prevention (2015a). *Addressing chronic disease through community health workers: A policy and systems-level approach*. Retrieved from https://www.cdc.gov/dhdsp/docs/chw_brief.pdf

Centers for Disease Control and Prevention (2015b). *National Breast and Cervical Cancer Early Detection Program*. Retrieved from <https://www.cdc.gov/cancer/nbccedp/screenings.htm>

Centers for Disease Prevention and Control (2017). Cervical cancer rates by race and ethnicity. Retrieved from <https://www.cdc.gov/cancer/cervical/statistics/race.htm>

Centers for Disease Prevention and Control (2018). *United States cancer statistics: Data visualizations*. Retrieved from <https://gis.cdc.gov/cancer/USCS/DataViz.html>

Centers for Disease Control and Prevention (2019). Human papillomavirus (HPV): Reasons to get vaccinated. Retrieved from <https://www.cdc.gov/hpv/parents/vaccine/six-reasons.html>

Coleman, M.A., Levison, J., & Sangi-Haghpeykar, H. (2011). HPV vaccine acceptability in

- Ghana, West Africa. *Vaccine*, (23), 3945. Retrieved from
<https://libez.lib.georgiasouthern.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=edscl&AN=edscl.24195246>
- Communication Studies (2019). *Theory of reasoned action*. Retrieved from
<https://www.communicationstudies.com/communication-theories/theory-of-reasoned-action-tra>
- Dippel, E., Hanson, J., McMahon, T., Griese, E., & Kenyon, D. (2017). Applying the Theory of Reasoned Action to Understanding Teen Pregnancy with American Indian Communities. *Maternal & Child Health Journal*, 21(7), 1449–1456. <https://doi.org/10.1007/s10995-017-2262-7>
- Dodo, A. M., Sykes, P., & Powell, C. (2016). Exploring the Barriers to Breast and Cervical Cancer Screening in Nigeria: A Narrative Review. *African Journal Of Reproductive Health*, 20(4), 89–98. Retrieved from
<https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,shib&db=mnh&AN=29566323>
- Fang, D. M., & Baker, D. L. (2013). Barriers and Facilitators of Cervical Cancer Screening among Women of Hmong Origin. *JOURNAL OF HEALTH CARE FOR THE POOR AND UNDERSERVED*, (2), 540. Retrieved from
[https://libez.lib.georgiasouthern.edu/login?url=https://search.ebscohost-com.libez.lib.georgiasouthern.edu/login.aspx?direct=true&db=edsbl&AN=RN333923437](https://libez.lib.georgiasouthern.edu/login?url=https://search.ebscohost.com.libez.lib.georgiasouthern.edu/login.aspx?direct=true&db=edsbl&AN=RN333923437)
- Forney-Gorman, A., & Kozhimannil, K. (2016). Differences in Cervical Cancer Screening Between African-American Versus African-Born Black Women in the United States. *Journal Of Immigrant & Minority Health*, 18(6), 1371. doi:10.1007/s10903-015-0267-0
- Geber, H. (2013). Can Mentoring Decrease the Brain drain of Academics from Africa? *Procedia - Social and Behavioral Sciences*, 93, 215–220. <https://doi.org/10.1016/j.sbspro.2013.09.180>

Georgia Department of Public Health (2019). Vaccine for children program. Retrieved from

<https://dph.georgia.gov/vaccines-children-program>

Glanz, K., Rimer, B. K., & Viswanath, K. (2008). *Health behavior and health*

education: Theory, research, and practice (4th ed.). San Francisco, CA: Jossey-Bass.

Global Vaccine Alliance (2018). *Human papillomavirus vaccine support*. Retrieved from

<https://www.gavi.org/support/nvs/human-papillomavirus/>

Grandahl, M., Tydén, T., Gottvall, M., Westerling, R., & Oscarsson, M. (2015). Immigrant

women's experiences and views on the prevention of cervical cancer: a qualitative study. *Health*

Expectations: An International Journal Of Public Participation In Health Care And Health Policy,

18(3), 344-354. doi:10.1111/hex.12034

Hae-Ra, H., Youngshin, S., Miyong, K., Hedlin, H. K., Kyounghae, K., Hochang Ben, L., &

Roter, D. (2017). Breast and Cervical Cancer Screening Literacy Among Korean American

Women: A Community Health Worker–Led Intervention. *American Journal Of Public*

Health, 107(1), 159-165.

Hall, M.T., Simms, K.T., Lew, J., Smith, M.A., Brotherton, J. ML., Saville, M., Frazer, I., &

Canfell, K. (2018). The projected timeframe until cervical cancer elimination in Australia: a

modelling study. *The Lancet Public Health*. [https://doi.org/10.1016/S2468-2667\(18\)30183-X](https://doi.org/10.1016/S2468-2667(18)30183-X)

Howmuchisit.org (2018). *How much does a pap smear cost?* Retrieved from

<https://www.howmuchisit.org/pap-smear-test-cost/>

HPV Information Center (n.d.). *Ghana: Human Papillomavirus and related cancers, fact sheet*

2017. Retrieved from http://www.hpvcentre.net/statistics/reports/GHA_FS.pdf

- Ikubolajeh, L. B., & Thomas, K. J. A. (2012). The U.S. Diversity Visa Programme and the Transfer of Skills from Africa. *International Migration*, 50(2), 1–19.
<https://doi.org/10.1111/j.1468-2435.2011.00711.x>
- Imoagene, O. (2017). Affecting Lives: How Winning the US Diversity Visa Lottery Impacts DV Migrants Pre- and Post-Migration. *International Migration*, 55(6), 170–183.
<https://doi.org/10.1111/imig.12359>
- Kaba, A. J. (2011). The Status of Africa’s Emigration Brain Drain in the 21st Century. *Western Journal of Black Studies*, 35(3), 187. Retrieved from
<https://search.ebscohost.com/login.aspx?direct=true&db=aqh&AN=67021121>
- Kaiser Family Foundation (2018). *The HPV vaccine: Access and use in the U.S.* Retrieved from
<https://www.kff.org/womens-health-policy/fact-sheet/the-hpv-vaccine-access-and-use-in-the-u-s/>
- Katigbak, C., Devanter, N. V., Islam, N., & Trinh-Shevrin, C. (2015). Partners in health: a conceptual framework for the role of community health workers in facilitating patients' adoption of healthy behaviors. *The American Journal Of Public Health*, (5), 872.
- Martínez-Donate, A.P., Vera-Cala, L.M., Zhang, X., Vedro, R., Angulo, R., & Atkinson, T. (2013). Prevalence and Correlates of Breast and Cervical Cancer Screening Among a Midwest Community Sample of Low-Acculturated Latinas. *Journal of Health Care for the Poor and Underserved* 24(4), 1717-1738. doi:10.1353/hpu.2013.0165.
- Mayeaux Jr., E. J. (2005). Overcoming barriers to HPV vaccine acceptance. *Journal Of Family Practice*, 54s17-s22.
- Menard, J., Kobetz, E., Maldonado, J. C., Barton, B., Blanco, J., & Diem, J. (2010). Barriers to

- Cervical cancer screening among Haitian immigrant women in Little Haiti, Miami. *Journal Of Cancer Education: The Official Journal Of The American Association For Cancer Education*, 25(4), 602-608. doi:10.1007/s13187-010-0089-7
- Millennium Cities Initiative: Columbia University (n.d.). *Kumasi population data*. Retrieved from <http://mci.ei.columbia.edu/research-publications/population-data/kumasi-population-data/>
- Minimum-Wage.org (2018). *Georgia minimum wage for 2017, 2018*. Retrieved from <https://www.minimum-wage.org/georgia>
- Mupandawana, E. T., & Cross, R. (2016). Attitudes towards human papillomavirus vaccination among African parents in a city in the north of England: a qualitative study. *Reproductive Health*, 13, 1–12. <https://doi.org/10.1186/s12978-016-0209-x>
- Nartey, Y., Hill, P. C., Amo-Antwi, K., Nyarko, K. M., Yarney, J., & Cox, B. (2017). Cervical Cancer in the Greater Accra and Ashanti Regions of Ghana. *Journal Of Global Oncology*, 3(6), 782–790. <https://doi.org/10.1200/JGO.2016.005744>
- Nartey, Y., Hill, P., Amo-Antwi, K., Asmah, R., Nyarko, K., Yarney, J., & ... Cox, B. (2018). Recommendations for cervical cancer prevention and control in Ghana: public education and human papillomavirus vaccination. *Ghana Medical Journal*, 52(2), 94. doi:10.4314/gmj.v52i2.6
- Nguyen, A. B., Clark, T. T., & Belgrave, F. Z. (2014). Gender roles and acculturation: Relationships with cancer screening among Vietnamese American women. *Cultural Diversity And Ethnic Minority Psychology*, 20(1), 87-97. doi:10.1037/a0033474
- Nuss, H. J., Williams, D. L., Hayden, J., & Huard, C. R. (2012). Applying the Social

- Ecological Model to Evaluate a Demonstration Colorectal Cancer Screening Program in Louisiana. *Journal of Health Care for the Poor & Underserved*. 2012;23(3):1026-1035. doi:10.1353/hpu.2012.0120.
- Office of Disease Prevention and Health Promotion (2018). *Healthy People 2020: Access to health services*. Retrieved from <https://www.healthypeople.gov/2020/topics-objectives/topic/Access-to-Health-Services>
- Office of Minority Health (2018). *National Partnership for Action to end health disparities*. Retrieved from <https://minorityhealth.hhs.gov/npa/templates/content.aspx?lvl=1&lvlid=38&ID=358>
- Onyenwenyi, A. O. C., & Mchunu, G. G. (2018). Barriers to cervical cancer screening uptake among rural women in South West Nigeria: A qualitative study. *South African Journal of Obstetrics & Gynaecology*, 24(1), 22–26. <https://doi.org/10.7196/SAJOG.2018.v24i1.1290>
- Opoku, C. A., Browne, E. L., Spangenberg, K., Moyer, C., Kolbilla, D., & Gold, K. J. (2016). Perception and risk factors for cervical cancer among women in northern Ghana. *Ghana Medical Journal*, 50(2), 84. doi:10.4314/gmj.v50i2.6
- Sharma, M. (2017). *Theoretical foundations of health education and health promotion* (3rd ed.). Burlington, MA: Jones & Bartlett Learning.
- Sharmeen Shommu, N., Ahmed, S., Rumana, N., Barron, G. S., McBrien, K. A., & Chowdhury Turin, T. (2016). What is the scope of improving immigrant and ethnic minority healthcare using community navigators: A systematic scoping review. *International Journal For Equity In Health*, 151-12. doi:10.1186/s12939-016-0298-8

Shi, L. (2008). *Health services research methods* (2nd ed.). Clifton Park, NY: Delmar Cengage Learning.

Shui Hung Wong, & Yin Man Chow, A. (2017). An Exploratory Study on University Students' Perceptions of Posthumous Organ Donation Base on the Theory of Reasoned Action. *Omega: Journal of Death & Dying*, 75(3), 284–299. <https://doi.org/10.1177/0030222816633241>

Sofolahan-Oladeinde, Y., Iwelunmor, J., Tshiswaka, D. I., & Conserve, D. F. (2014). Acculturation and Its Influence on the Health Perceptions, Health Behaviors, and Health Outcomes of African Immigrants in the United States: A Review of the Literature. *Journal Of Race & Policy*, 10(1), 89-103.

Stewart, A. (2008). Childhood Vaccine and School Entry Laws: The Case of HPV Vaccine. *Public Health Reports*, 123(6), 801- 803. doi:10.1177%2F003335490812300617

Thomas, K. J. A. (2016). Highly Skilled Migration from Africa to the US: Exit Mechanisms, Demographic Determinants, and the Role of Socioeconomic Trends. *Population Research and Policy Review*, 35(6), 825–849. <https://doi.org/https://link.springer.com/journal/volumesAndIssues/11113>

The United States Department of Health and Human Services (HHS) (2017). Compilation of Patient Protection and Affordable Care Act. Retrieved from <https://www.hhs.gov/sites/default/files/ppacacon.pdf>

The World Bank Group (2018). *The World Bank in Ghana*. Retrieved from <http://www.worldbank.org/en/country/ghana>

Trochim, W. M., Donnelly, J.P., & Arora, K. (2016). *Research methods: The essential*

knowledge base (2nd ed.). New Delhi, India: Cengage Learning.

United States Census Bureau (n.d.). *Community facts: Atlanta city, Georgia*. Retrieved from

https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml

WageIndicator (2018). *Minimum Wages in Ghana with effect from 01-01-2018 to 31-12-2018*.

Retrieved from <https://mywage.org/ghana/salary/minimum-wages/>

White, M. C., & Wong, F. L. (2015). Preventing premature deaths from breast and cervical

cancer among underserved women in the United States: insights gained from a national cancer screening program. *Cancer Causes & Control*, 26(5), 805-809. doi:10.1007/s10552-015-0541-4

Williams, M. S. (2014). A qualitative assessment of the social cultural factors that influence

cervical cancer screening behaviors and the health communication preferences of women in Kumasi, Ghana. *Journal Of Cancer Education: The Official Journal Of The American Association For Cancer Education*, 29(3), 555-562. doi:10.1007/s13187-014-0611-4

Williams, M.S., & Amoateng, P. (2012). Knowledge and Beliefs about Cervical Cancer

Screening among Men in Kumasi, Ghana. *Ghana Medical Journal*, 46(3), 147. Retrieved from <https://libez.lib.georgiasouthern.edu/login?url=https://search-ebshost-com.libez.lib.georgiasouthern.edu/login.aspx?direct=true&db=edb&AN=88874479>

Wittet, S., Aylward, J., Cowal, S., Drope, J., Franca, E., Goltz, S., Kuo, T., Larson, H., Luciani,

S., Mugisha, E., Schocken, C., & Torode, J. (2017). Advocacy, communication, and partnerships: Mobilizing for effective, widespread cervical cancer prevention. *International Journal of Gynecology & Obstetrics*. 138, 57-62. doi:10.1002/ijgo.12189.

World Health Organization (2018). *Human papillomavirus (HPV) and cervical cancer*.

Retrieved from [www.who.int/en/news-room/fact-sheets/detail/human-papillomavirus-\(hpv\)-and-cervical-cancer](http://www.who.int/en/news-room/fact-sheets/detail/human-papillomavirus-(hpv)-and-cervical-cancer)

World Health Organization – International Agency for Research on Cancer (2018). Age

standardized (World) incidence and mortality rates, cervix uteri. Retrieved from

<http://gco.iarc.fr/today/data/factsheets/cancers/23-Cervix-Uteri-fact-sheet.pdf>

World Health Organization – International Agency for Research on Cancer (2019). *World cancer*

day 2017. Retrieved from <https://www.iarc.fr/featured-news/media-centre-iarc-news-wcd2017/>

APPENDIX

APPENDIX A: INSTITUTIONAL REVIEW BOARD APPROVAL LETTER (U.S.A.)

Georgia Southern University Office of Research Services & Sponsored Programs Institutional Review Board (IRB)	
Phone: 912-478-5465	Veazey Hall 3000
Fax: 912-478-0219	PO Box 3005 Statesboro, GA 30460
IRB@GeorgiaSouthern.edu	
To:	Palmer, Catherine; Afrifa-Gyowa, Evans; Kackwell, Angela; Apenteng, Bettey Oposa, Samuel; Lawrence, Raymond; Felix, Pascal; Williams, Brianna; Dennis, Miala; Fletcher, Tristan; Corral, Lady; Witteveen, Laura; Levey, Renee Tiddei, Rash; Lewis, Kaion
From:	Office of Research Services and Sponsored Programs
Initial Approval Date:	8/18/2018
Expiration Date:	7/31/2019
Subject:	Status of Application for Approval to Utilize Human Subjects in Research Full Board Review

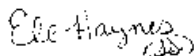
After a review of your proposed research project numbered **H18418**, and titled: "Improving Cervical Cancer Screening and HPV Vaccination Among Ghanaian Immigrant Women Living in the U.S. and Women Currently Living in Ghana: A Community-Based Participatory Research (CBPR) Approach," it appears that (1) the research subjects are at minimal risk, (2) appropriate safeguards are planned, and (3) the research activities involve only procedures which are allowable. You are authorized to enroll up to a maximum of ___ subjects.

Therefore, as authorized in the Federal Policy for the Protection of Human Subjects, I am pleased to notify you that the Institutional Review Board has approved your proposed research.

Description: The purpose of this study is to assess the attitudes and barriers toward cervical cancer screening and HPV vaccination among Ghanaian women.

If at the end of this approval period there have been no changes to the research protocol, you may request an extension of the approval period. In the interim, please provide the IRB with any information concerning any significant adverse event, whether or not it is believed to be related to the study, within five working days of the event. In addition, if a change or modification of the approved methodology becomes necessary, you must notify the IRB Coordinator prior to initiating any such changes or modifications. At that time, an amended application for IRB approval may be submitted. Upon completion of your data collection, you are required to complete a *Research Study Termination* form to notify the IRB Coordinator, so your file may be closed.

Sincerely,


Eleanor Haynes
Compliance Officer

APPENDIX B: AMENDMENT OF INSTITUTIONAL REVIEW BOARD APPROVAL LETTER TO INCLUDE PARTICIPANTS WHO SPOKE TWI (U.S.A.)

Georgia Southern University Office of Research Services & Sponsored Programs Institutional Review Board (IRB)		
Phone: 910-478-5465		Varney Hall 3000
Fax: 910-478-6719	IRB@GeorgiaSouthern.edu	PO Box 8005 Statesboro, GA 30460-8005

To: Catherine Therese Palmer
Dr. Pears Afriyie Oyasu

From: Office of Research Services and Sponsored Programs

Date: 10/22/2018

Subject: Protocol deviation resolution

You have submitted a deviation from your GSO IRB protocol H18418, Improving cervical cancer screening and HPV vaccination among Ghanaian immigrant women living in the U.S. and women currently living in Ghana: a Community-based Participatory Research (CBPR) approach.

The deviation consisted of the use of native speaking medical students from Kwame Nkrumah University of Science & Technology (KNUST) - School of Medical Sciences, the national English institution, to serve as interpreters for non-English speaking patients during the informed consent process and data collection, thereby excluding your sub-population from English speaking participants only to the greater patient population of native speakers. This alteration was not amended onto your GSO protocol, but was included in the application to the KNUST Ethics Board upon your arrival in Ghana. Upon final approval, the informed consent conduct, and protocol procedures, remained the same as those approved by the GSO IRB for this project.

While the error caused a deviation from the approved protocol, the risk to participants seems to have been minimized in the conduct of the study. The second half of the study will be conducted in the U.S. and, as agreed, will be resubmitted to the GSO IRB for approval before additional participants are enrolled.

Please contact me at the linkages at irb@georgiasouthern.edu if you have any questions or concerns.

Sincerely,



Dr. Denise R. Walker
Chair, GSO IRB

APPENDIX C: KOMFO ANOKYE TEACHING HOSPITAL (KATH) LETTER OF COOPERATION – GHANA



KWAME NKURUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI

COLLEGE OF HEALTH SCIENCES
School of Medical Sciences

OFFICE OF THE DEAN



Your Ref:

Our Ref: SMS/D/COLL.

Date: May 10, 2018

**Human Subjects –
Institutional Review Board
Georgia Southern University
P.O. Box 8005,
Statesboro, GA 30461**

To Whom It May Concern:

Dr. Evans Afriyie-Gyawu has requested permission to allow his students enrolled in the Study Abroad Program in Ghana to conduct studies at and through the Komfo Anokye Teaching Hospital (KATH) in Kumasi and the Kwame Nkrumah University of Science & Technology – School of Medical Sciences (KNUST-SMS). These studies (listed in the attached table) include administration of survey instruments, focus group discussions, and analyses of de-identified data at both KATH and KNUST-SMS in Kumasi, Ghana. I have been informed of the purposes of all the studies and the nature of the research protocols. My team (including 5 other physicians and 15 medical students) in Ghana and I have also been given an opportunity to ask questions of the researcher via Skype and the researcher and his students have also got the chance to ask questions.

I understand that the research team from GSU and my team here will collaboratively collect and/or use existing data (de-identified) or information from patients' health records. Also, study participants who meet the inclusion criteria will be administered a survey and/or focus group discussions with questions pertinent to each project. Additionally, I understand that these are cross-sectional studies (i.e., data collected at one specific point in time) and all efforts will be made to protect patient privacy and rights.

As the Dean of the School of Medical Sciences, I am authorized to grant institutional permission to the researcher for the collection of the above-mentioned datasets. Dr. Evans Afriyie-Gyawu and his students are also permitted to collect research data during office hours from 9:00 AM to 5:00 PM (with an hour lunch break) at our Research and Development Unit and all the pertinent departments of KATH. The researcher has agreed to comply with the host institution's regulatory procedure and Institutional Review Board protocols in conducting the research. In addition, he has agreed to the following restrictions: collaborate with the director of each of the Directorates from which data will be collected to publish any research findings, and provide a copy of all published articles to each directorate at the conclusion of the research.

If you have any questions, please contact me at the following number: +233 208 168 767.

Sincerely,

Prof. Daniel Ansong, MD, MPH

Dean, School of Medical Sciences



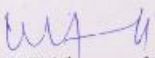
Kwame Nkrumah University of Science & Technology

Kumasi, Ashanti Region, Ghana

Office: +233 3221 94995; Cell: +233 2081 68767

DEAN
SCHOOL OF MEDICAL SCIENCES
COLLEGE OF HEALTH SCIENCES
KWAME NKURUMAH
UNIVERSITY OF SCIENCE & TECHNOLOGY
KUMASI, GHANA

APPENDIX D: CHRPE LETTER OF APPROVAL – GHANA

	<p>KWAME NKURUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY COLLEGE OF HEALTH SCIENCES</p> <hr style="border: 0.5px solid red;"/> <p>SCHOOL OF MEDICAL SCIENCES / KOMFO ANOKYE TEACHING HOSPITAL COMMITTEE ON HUMAN RESEARCH, PUBLICATION AND ETHICS</p>	
<p>Ref: CHRPE/AP/442/18</p> <p>Ms. Catherine T. Palmer Health Policy and Management Post Office Box 8015 Statesboro, GA USA</p> <p>Dear Madam,</p> <p>LETTER OF APPROVAL</p> <p><i>Protocol Title: "Improving Cervical Cancer Screening and HPV Vaccination among Ghanaian Immigrant Women Living in the U.S. and Women Currently Living in Ghana: A Community-Based Participatory Research (CBPR) Approach."</i></p> <p><i>Proposed Site: Hospitals and Community Health Centers, Accra and Kumasi.</i></p> <p><i>Sponsor: Principal Investigator.</i></p> <p>Your submission to the Committee on Human Research, Publications and Ethics on the above-named protocol refers.</p> <p>The Committee reviewed the following documents:</p> <ul style="list-style-type: none"> • A Completed CHRPE Application Form. • Participant Information Leaflet and Consent Form. • Research Protocol. <p>The Committee has considered the ethical merit of your submission and approved the protocol. The approval is for a fixed period of one year, beginning 24th July, 2018 to 23rd July, 2019 renewable thereafter. The Committee may however, suspend or withdraw ethical approval at any time if your study is found to contravene the approved protocol.</p> <p>Data gathered for the study should be used for the approved purposes only. Permission should be sought from the Committee if any amendment to the protocol or use, other than submitted, is made of your research data.</p> <p>The Committee should be notified of the actual start date of the project and would expect a report on your study, annually or at the close of the project, whichever one comes first. It should also be informed of any publication arising from the study.</p> <p>Yours faithfully,</p> <div style="text-align: center; margin-top: 20px;">  </div> <p>Osomfo Prof. Sir J. W. Acheampeng MD, FWACP Chairman</p>	<p>24th July, 2018.</p>	
<p>Room: / Block J, School of Medical Sciences, KNUST, University Post Office, Kumasi, Ghana Phone: +233 3270 63248 Mobile: +233 205453785 Email: chrpe.knustkath@gmail.com / chrpe@knust.edu.gh</p>		

APPENDIX E: SEMI-STRUCTURED INTERVIEW QUESTIONS



Improving cervical cancer screening and HPV vaccination rates among Ghanaians in Ghana, and Ghanaian immigrants living in Georgia, U.S.A.

Semi-structured Interview Questions

(FEMALES)

CERVICAL CANCER

1. Please describe to me what you know about cervical cancer.

Probes

- a. Please tell me what you know about the risk factors for cervical cancer.
- b. What are some things that you believe increase a woman's risk of developing cervical cancer?
- c. How serious do you believe the risk of developing cervical cancer is?
- d. What are some of the signs or symptoms of cervical cancer that you are aware of?
- e. Describe some of the treatment options for cervical cancer that you are aware of.
- f. Please tell me where you obtained your information about the disease.
 - i. What has your doctor/healthcare provider told you about cervical cancer, and the screening tests for it?
 - ii. What have you heard about cervical cancer through the media (TV, radio, internet)?
 - iii. What have you heard about cervical cancer from family and friends?

2. Please explain what you know about the Pap test/Pap smear.

Probes

- a. What experience have you had with the Pap test?
- b. What information have you received about the Pap test?
- c. Where did you get this information from?
 - i. Has any doctor/healthcare provider told you about the importance of having regular Pap tests done?
 - ii. Has anyone you know (family, friends, church members) ever discussed with you the importance of having regular Pap tests done? Please explain what they said.

- d. How important do you believe it is for women to have regular Pap tests done, for the prevention of cervical cancer?
- e. Please tell me about any healthcare facility that you're aware of that you could visit to have a Pap test done.
- f. What is your relationship status?
- g. If you are in a relationship what do you believe is your partner's opinion about you having a Pap test done?
- h. How would your partner's opinion about the Pap test affect your own decision of whether or not to get the Pap test done?

3. **Please describe your experience with cervical cancer among members of your community.**

Probes

- a. Do you know anyone who has been diagnosed with cervical cancer?
- b. If yes, please explain how knowing about their experience with cervical cancer affected you.

4. **What has been your experience with cancer screening for yourself or a family member?**

Probes

- a. Have you or any of your family members had any experience with any type of cancer screening?
- b. Please tell me more about that experience.
- c. What was the screening test, and for which type of cancer?
- d. Where did you or your family member get the information concerning the screening?
- e. Where did you or your family member get the screening done?

5. **What has been your experience with the Pap test (A Pap test is used to screen for cervical cancer)?**

Probes

- a. Have you ever had a Pap test done before?
 - i. If yes, can you tell me about the experience?
 - ii. What if anything, made the testing process easier for you?
 - iii. What if anything made the testing process harder for you?
- b. If you have not had a Pap test done, please explain any reason(s) why you haven't.
- c. What would be some of the reasons why you would or would not be willing to have a Pap test done?
- d. Can you describe the screening recommendation for cervical cancer?
- e. Have you been screened for cervical cancer as recommended?

- f. If not, what are some of the reasons why you haven't had regular Pap tests as recommended (every 3-5 years)?
 - g. What factors/conditions would make it easier for you to have regular Pap tests done?
6. **Tell me about your thoughts on the importance of the Pap test.**

Probes

- a. What are some possible benefits of having a Pap test that you can think of?
 - b. What are some possible disadvantages of having a Pap test that you can think of?
 - c. Would you be more willing to have a Pap test if your doctor/healthcare provider thought it was important?
 - d. Would you be more willing to have a Pap test if your family or friends thought it was important?
 - e. Please describe how likely it is that you will have a Pap test done this year, if you have not had one done in the last three years.
 - f. If a Pap test result is abnormal do you believe it's important to know early? Why or why not?
7. **As you may know, the Pap test involves a pelvic examination by a healthcare provider. How do you feel about a pelvic exam?**

Probes

- a. What are some of the reasons why you would not feel comfortable about a pelvic exam by your healthcare provider?
 - b. Please explain if you would skip having a Pap test done because it involves a pelvic exam, and why?
 - c. What can be done to increase your comfort level with having a pelvic exam?
8. **What can be done to make it easier for you to get the information you need on cervical cancer, and to get your Pap test done?**

Probes

- a. Please describe what kind of information about a Pap test would be helpful.
 - i. Risk factors and cause of cervical cancer?
 - ii. Type and location of services?
 - iii. Cervical cancer facts?
 - iv. Assistance with transportation to get a Pap test done?
 - v. Assistance with child care?
 - vi. Assistance with cost for testing?
 - vii. Time off from work/college to get test done?

9. **If you could learn more about Pap tests through a woman who is a community health worker, and receive assistance to make an appointment to visit your health center for a Pap test, do you believe this would be helpful? Why or Why not?**

Probes

- a. Would you feel more comfortable talking with a woman who is a community health worker from your area about Pap tests, than talking to your health care provider?
 - b. If yes, where are some potential meeting places you would recommend for the community health worker to talk with women about pap smears? (church, community health center, beauty shop, market)
10. **How do you think we can reach and motivate women in your community/family to get cervical cancer screening done?**

Probes

- a. Please explain if there are any community and cultural considerations you think would be important when planning to have a Pap test done.
- b. What are some potential barriers you believe women would face regarding Pap testing? (child care, transportation, cost, embarrassment with pelvic exams)
- c. What are some steps you think would be helpful in reducing these potential barriers?
- d. Do you think it would be easy or difficult for you to schedule an appointment to have a Pap test done?
- e. Please describe how easy you think it would be for you to have a Pap test done
- f. Please describe how difficult you think it would be for you to have a Pap test done

HUMAN PAPILLOMAVIRUS

HPV Vaccination

(Questions to be asked during the interviews for both MEN and WOMEN).

The Human Papillomavirus (HPV) is the main virus which cause cervical cancer. The HPV vaccine can reduce the risk of developing cervical cancer.

1. Please tell me about your experience or understanding about HPV and HPV vaccinations.

Probes

- a. Tell me about where you got this information from.
 - i. Please describe what you have heard about the HPV vaccine through the media (TV, radio, internet).
 - ii. Describe what your doctor/healthcare provider has told you about the importance of the HPV vaccine for the prevention of cervical cancer.
 - iii. Has anyone you know (family, friends, church members) ever discuss with you the importance of receiving the HPV vaccine? Please explain what you have heard.
- b. Have you ever had a HPV vaccine? Please tell me about your experience.

- c. If you've had the HPV vaccine, did you get all the recommended doses? If no, please explain why not.
- d. What would make you change your mind about receiving the HPV vaccine?
 - i. Would you be more willing to receive the HPV vaccine if your doctor/healthcare provider thought it was important, and recommended it?
 - ii. Would you be more willing to receive the HPV vaccine if your family or friends thought it was important?
- e. How important do you think it is for the HPV vaccine to be given to girls and boys, for the prevention of cervical cancer?

2. Community considerations

Please explain if there are any community and cultural considerations you think would be important when planning to have the HPV vaccine.

Probes

- a. What are some potential barriers you believe women could face if receiving a HPV vaccine? (child care, transportation, cost)
- b. Describe any steps you think would be helpful in reducing these potential barriers.
- c. Do you think it would be easy or difficult for you to schedule an appointment to receive a HPV vaccine?
- d. Please describe how easy you think it would be for you to receive a HPV vaccine
- e. Please describe how difficult you think it would be for you to receive a HPV vaccine.
- f. How much do you know about the connection between the HPV and cervical cancer?

3. HPV vaccine for children

1. **If you have children, have any of them received the HPV vaccine?**

Probes

- a. If yes, have they received all of the doses of the vaccines?
- b. Please explain why you decided to have them vaccinated.
- c. If no, what were the reasons which influenced your decision not to have your child/children vaccinated against HPV?
- d. Do you know of any child in your family or among your friends who have received the HPV vaccine?

2. **What can be done to make it easier for you to get the information you need on the HPV vaccine, and to get yourself or your children vaccinated?**

Probes

What kind of information would be helpful?

- a. Location of services?
- b. Assistance with transportation?
- c. Assistance with child care?
- d. Cost of the vaccine?

3. **How can we reach and motivate women like you to get the HPV vaccine for themselves and/or their children?**

Probes

- a. What are some of the community and cultural considerations about HPV vaccination for children and young women?

4. **If you could learn more about the HPV vaccine through a community health worker, and receive assistance to make an appointment to visit your health center for the HPV vaccine do you believe this would be helpful?**

Probes

- a. Would you feel more comfortable talking with a woman who is a community health worker from your area about the HPV vaccine, than your health care provider?
- b. If yes, where are some potential meeting places you would recommend for the community health worker to talk with women about the HPV vaccine?

(Additional questions specifically for MALES)

- a. Please describe what you know about cervical cancer and the screening tests (Pap test) for it.
- b. What is your understanding about the risk factors for cervical cancer?
- c. Please describe what you know about the treatment options for cervical cancer.
- d. Please tell me where you got your information about cervical cancer from.
 - i. Describe what you have heard about cervical cancer through the media (TV, radio, internet)?
- e. How serious do you believe the risk of women developing cervical cancer is?
- f. How do you feel about your partner/s or family members having Pap test done?
- g. Please explain what your understanding is about the HPV vaccine, for the prevention of cervical cancer.
- h. How important do you believe the HPV vaccine is for the prevention of cervical cancer?
- i. How do you feel about your partner or your children receiving the HPV vaccine?

APPENDIX F: CONSENT FORM FOR U.S. PARTICIPANTS

GEORGIA SOUTHERN UNIVERSITY: JPH College of Public Health - Health Policy & Management**CONSENT FORM (USA)****Research Investigators**

This project is being conducted by Catherine T. Palmer, doctoral student, (Principal Investigator or PI), under the guidance of Evans Afriyie-Gyawu (Co-PI). Dr. Evans Afriyie-Gyawu is an Associate Professor and Division Director of Environmental Health Sciences, Dept. of Epidemiology and Environmental Health Sciences, JPHCOPH at Georgia Southern University. Dr. Afriyie-Gyawu has guided multiple students to successfully complete all aspects of their research since his tenure with JPHCOPH.

What is this study about?

This study aims to: 1) assess the attitudes and barriers toward cervical cancer screening (pap testing/pap smear) and HPV vaccination among Ghanaian-born women living in the U.S., and those still living in their native country of Ghana, and 2) determine whether or not community partnerships using a community-based participatory research (CBPR) to involve peer navigators, could mitigate some of the identified barriers and improve cervical cancer screening among these women, and improve HPV vaccination rates for their children. Through this project we are trying to answer the following research questions:

1. What are the attitudes and barriers to cervical cancer screening (Pap smear) and HPV vaccination in the prevention of cervical cancer of Ghanaian immigrant women living in the U.S., and women still living in their country of birth (Ghana)?
2. Do women readily have access to cervical cancer screening and HPV vaccination? (including cost, transportation, convenience and other social determinants of health?)
3. Would community partnership through peer navigators and collaboration with prominent community members improve screening and vaccination rates in this population?

What will participants do?

If you volunteer to serve as a study participant, you will be asked to participate in an interview. The interview will gather your opinions and attitudes related to Pap smear, and HPV vaccination. The interview discussions will be audio recorded, to allow us to revisit our discussion to ensure accuracy of your answers and make the research comprehensive. This is a confidential discussion in that I will not report your names or who said what. Your names will NOT be included in the final report about this meeting.

What are the discomforts and risks of participating in this study?

The risk for participating in this research may include emotional discomfort and embarrassment as you will be dealing with sensitive issues. If you are uncomfortable talking about pap smears, you do not have to participate. Risks associated with participating in this study are no greater than what is encountered by participants while accessing routine reproductive health services for themselves, and immunization services for their children. Your participation is completely voluntary; you can stop at any time, and you are not obligated to complete the interview. You can also choose not to answer certain questions during the interview. No counseling services are being provided during or after this interview.

Statement of Confidentiality

Findings may be published and/or presented at Georgia Southern University and scientific conferences in the United States. Personal information obtained from you will be treated as confidential. No names will be recorded, instead a sample ID will be used. The interview will be audio recorded, but no one will hear the recordings except the researchers. After the study, the interview recordings and written transcripts of recordings will remain on GSU campus for a minimum of 3 years following completion of the study. The study will be considered complete when all data analyses are done. All materials, including electronic documents, will be stored on a secure storage device not connected to the internet, and will only be accessible to the investigators. The data will be kept at this location for 3 years upon completion of the project. After 3 years, the information (without names) could be used in future research and will remain in a secure location.

What are the benefits of participating in this study?

Your participation in this study will help to inform policy development targeted at improving pap smears and HPV vaccination rates in Ghana, and in the United States. This study will be beneficial in developing more efficient programs for pap smears and HPV vaccination in both countries, for cervical cancer prevention.

What are your rights and the rights of the researchers?

If you choose to participate in this study, please understand that it is completely voluntary. You can choose not to answer certain questions during the discussion, and there's no penalty for not participating in the study. It is your right to choose to participate or not, and you may choose to discontinue or withdraw your participation at any time should you become uncomfortable during the study. The PI of this research reserves the right to discontinue your participation if your participation will disrupt the progress of the study.

Right to ask Questions:

Participants have the right to ask questions and have those questions answered. If you have any questions please feel free to contact Catherine Palmer, RN at 770-355-5929, Dr. Evans Afriyie-Gyawu at 912-47-2292 or Georgia Southern University's Office of Research Services and Sponsored Programs at (912) 478-5465.

Duration of interview, and Compensation:

The length of each interview will be approximately 60-90 minutes. In compensation for your time for participating in this study, \$15 USD will be offered to every participant who completes the interview.

Penalty:

There is no penalty for deciding not to participate in the study; you may withdraw any time without penalty or retribution. Compensation will only be offered to those participants who complete the interview process.

Assent Statements

You can withdraw consent to participate in this research at any time by contacting the PI. Signing below indicates that you have read the above information and agreed to participate in this research. You must be 18 years of age or older to consent to participate in this study. If you consent to participate in this study and to the terms above, please sign your name and indicate the date below. You will be given a copy of this consent form to keep for your records. This project has been reviewed and approved by the GSU Institutional Review Board under tracking number H18418.

Do you have any concerns or questions about the research? Please circle one. Yes or No

Participant Signature

Date

I, the undersigned, verify that the above informed consent procedure has been followed.

Investigator Signature

Date

APPENDIX G: CONSENT FORM FOR GHANAIAN PARTICIPANTS

GEORGIA SOUTHERN UNIVERSITY: JPH College of Public Health - Health Policy & Management**CONSENT FORM (GHANA)****Research Investigators**

This project is being conducted by Catherine T. Palmer (Principal Investigator or PI), under the guidance of Evans Afriyie-Gyawu (Co-PI), and other student co-investigators. Dr. Evans Afriyie-Gyawu is an Associate Professor and Division Director of Environmental Health Sciences, Dept. of Epidemiology and Environmental Health Sciences, JPHCOPH at Georgia Southern University. Dr. Afriyie-Gyawu has guided multiple students to successfully complete all aspects of their research since his tenure with JPHCOPH.

What is this study about?

This study aims to: 1) assess the attitudes and barriers toward cervical cancer screening (pap testing/pap smear) and HPV vaccination among foreign-born women living in the U.S., and those still living in their native country of Ghana, and 2) determine whether or not community partnerships using a community-based participatory research (CBPR) to involve peer navigators, could mitigate some of the identified barriers and improve cervical cancer screening among these women, and improve HPV vaccination rates for their children. Through this project we are trying to answer the following research questions:

1. What are the attitudes and barriers to cervical cancer screening (Pap smear) and HPV vaccination in the prevention of cervical cancer of Ghanaian immigrant women living in the U.S., and women still living in their country of birth (Ghana)?
2. Do women readily have access to cervical cancer screening and HPV vaccination? (including cost, transportation, convenience and other social determinants of health?)
3. Would community partnership through peer navigators and collaboration with prominent community members improve screening and vaccination rates in this population?

What will participants do?

If you volunteer to serve as a study participant, you will be asked to participate in an interview. The interview will gather your opinions and attitudes related to Pap smear, and HPV vaccination. The interview discussions will be audio recorded, to allow us to revisit our discussion to ensure accuracy of your answers and make the research comprehensive. This is a confidential discussion in that I will not report your names or who said what. Your names will NOT be included in the final report about this meeting.

What are the discomforts and risks of participating in this study?

The risk for participating in this research may include emotional discomfort and embarrassment as you will be dealing with sensitive issues. If you are uncomfortable talking about pap smears, you do not have to participate. Risks associated with participating in this study are no greater than what is encountered by participants while accessing routine reproductive health services for themselves, and immunization services for their children. Your participation is completely voluntary; you can stop at any time, and you are not obligated to complete the interview. You can also choose not to answer certain questions during the interview. No counseling services are being provided during or after this interview.

Statement of Confidentiality

Findings may be published and/or presented at Georgia Southern University and scientific conferences in the United States. Personal information obtained from you will be treated as confidential. No names will be recorded, instead a sample ID will be used. The interview will be audio recorded, but no one will hear the recordings except the researchers. After the study, the interview recordings and written transcripts of recordings will remain on GSU campus for a minimum of 3 years following completion of the study. The study will be considered complete when all data analyses are done. All materials, including electronic documents, will be stored on a secure storage device not connected to the internet, and will only be accessible to the investigators. The data will be kept at this location for 3 years upon completion of the project. After 3 years, the information (without names) could be used in future research and will remain in a secure location.

What are the benefits of participating in this study?

Your participation in this study will help to inform policy development targeted at improving pap smears and HPV vaccination rates in Ghana, and in the United States. This study will be beneficial in developing more efficient programs for pap smears and HPV vaccination in both countries, for cervical cancer prevention.

What are your rights and the rights of the researchers?

If you choose to participate in this study, please understand that it is completely voluntary. You can choose not to answer certain questions during the discussion, and there's no penalty for not participating in the study. It is your right to choose to participate or not, and you may choose to discontinue or withdraw your participation at any time should you become uncomfortable during the study. The PI of this research reserves the right to discontinue your participation if your participation will disrupt the progress of the study.

Right to ask Questions:

Participants have the right to ask questions and have those questions answered. If you have any questions or concerns, please feel free to contact Dr. Evans Afriyie-Gyawu at 020-148-9155 or Georgia Southern University's Office of Research Services and Sponsored Programs at (912) 478-5465.

Duration of interview, and Compensation:

The length of each interview will be approximately 60-90 minutes. In compensation for your time for participating in this study, 20 Ghana Cedis will be offered to every participant who completes the interview.

Penalty:

There is no penalty for deciding not to participate in the study; you may withdraw any time without penalty or retribution. Compensation will only be offered to those participants who complete the interview process.

Assent Statements

You can withdraw consent to participate in this research at any time by contacting the PI. Signing below indicates that you have read the above information and agreed to participate in this research. You must be 18 years of age or older to consent to participate in this study. If you consent to participate in this study and to the terms above, please sign your name and indicate the date below. You will be given a copy of this consent form to keep for your records. This project has been reviewed and approved by the GSU Institutional Review Board under tracking number H18418.

Do you have any concerns or questions about the research? Please circle one. Yes or No

Participant Signature

Date

I, the undersigned, verify that the above informed consent procedure has been followed.

Investigator Signature

Date

APPENDIX H: ADDITIONAL CONSENT FORM (GHANA)

Participant Information Leaflet and Consent Form

This leaflet must be given to all prospective participants to enable them know enough about the research before deciding to or not to participate

Title of Research:

Improving cervical cancer screening and HPV vaccination among Ghanaian immigrant women living in the U.S. and women currently living in Ghana; a Community-based Participatory Research (CBPR) approach.

Name(s) and affiliation(s) of researcher(s):

1. Evans Afriyie-Gyawu, PhD. of Georgia Southern University, Angela Blackwell of Georgia Southern University, Pascal Felix of Georgia Southern University, Brianna Williams of Georgia Southern University, Miatta Dennis of Georgia Southern University, Tristan Fletcher of Georgia Southern University, Lacey Cooper of Georgia Southern University, Laura Witteveen of Georgia Southern University, Reese Tierney of Georgia Southern University, Rakhi Trivedi of Georgia Southern University and Karon Lewis of Georgia Southern University.

Background (Please explain simply and briefly what the study is about):

HPV related cervical cancer is a serious public health concern among African nations. Ghana has a population of over 8 million women 15 years and older, who are at risk for developing cervical cancer. In a Ghanaian 2017 report, cervical cancer was ranked the most common occurring female cancer, and the second leading cause of cancer death among women 15 to 44 years (Ghana: Human Papillomavirus and related cancers, Fact Sheet, 2017; Nartey et al., 2017). Of the approximately 3,000 women diagnosed with cervical cancer, at least half will die from the disease in Ghana. Among both Ghanaian males and females approximately 10% of 15 year olds have sexual intercourse, with the median age being 18 years old for the first sexual encounter (Ghana: Human Papillomavirus and related cancers, Fact Sheet, 2017). Although Ghana has a public health program to screen women between the targeted ages of 25-64 years, in 2003 only 2.8% of this group was screened at the recommended interval of every three years. The highest screening rate of 4.0% was among women 30-39 years (Ghana: Human Papillomavirus and related cancers, Fact Sheet, 2017). With routine screening rates this low for a disease that is preventable with affordable public health measures such as pap testing and vaccination, community partnerships could be the missing link in closing some of this gap. Data is currently unavailable about cervical cancer rates among Ghanaian immigrant women to the U.S., or the actual burden of the disease in Ghana.

Purpose(s) of research:

We are trying to gain an understanding about the cultural beliefs, attitudes and existing barriers toward cervical cancer screening and the importance of HPV vaccination among Ghanaian women. We are also interested in assessing the significance, if any, of male involvement in the decision-making process for pap smear (women) and HPV vaccination among Ghanaian women and their children. Additionally, we anticipate examining, if any, the influence of community partnerships through peer navigation in reducing

these potential barriers and increasing screening rates for these women and vaccination rates for themselves (if < 26 years and still eligible), and their children. The findings of the study are expected to inform policy development targeted at improving access to cervical cancer screening and HPV vaccination among Ghanaian women and their children. Through this project we are trying to answer the following research questions:

1. What are the attitudes and barriers to cervical cancer screening (pap smear) and HPV vaccination in the prevention of cervical cancer of Ghanaian immigrant women living in the U.S., and women still living in their country of birth (Ghana)?
2. Do women readily have access to cervical cancer screening and HPV vaccination? (including cost, transportation, convenience and other social determinants of health?)
3. Would community partnership through peer navigators and collaboration with prominent community members improve screening and vaccination rates in this population?

Procedure of the research, what shall be required of each participant and approximate total number of participants that would be involved in the research:

If you volunteer to serve as a study participant, you will be asked to participate in an interview. The interview will gather your opinions and attitudes related to pap smear, and HPV vaccination. The interview discussions will be audio recorded, to allow us to revisit our discussion to ensure accuracy of your answers and make the research comprehensive. This is a confidential discussion in that I will not report your names or who said what. Your privacy is important to us and all recorded sessions will be stored on a secure device. Your names will NOT be included in the final report about this meeting. If you do not wish to have your interview session audio recorded you will not be allowed to participate in the study.

Risk(s):

Participants may potentially experience psychological discomfort, emotional distress or embarrassment regarding their views toward pap smears, cervical cancer prevention and HPV vaccination during the study. Anyone expressing or reporting discomfort will be reminded their participation is completely voluntary and that they are not obliged to complete the interview. They will be reminded they can stop at any time during the study and they can choose not to answer certain questions during the interview. In addition, in order to manage these unforeseeable risks all student researchers will be notified of the process of contacting Dr. Ansong for any participant reporting emotional disturbance from the interview process.

Dr. Ansong has made arrangements with the Research and Development Unit Director to refer affected participants to certified counselors at KATH for counseling services. These support personnel will be able to accept and manage these referrals. If a participant outside of the hospital setting experiences these emotional disturbances the interview will be stopped immediately and they will be assisted to receive counseling services through Dr. Ansong as described above.

Benefit(s):

Your participation in this study will help to inform policy development targeted at improving pap smears and HPV vaccination rates in Ghana, and in the United States. This study will be beneficial in developing

more efficient programs for pap smears and HPV vaccination in both countries, for cervical cancer prevention.

Confidentiality:

Personal information obtained from you will be treated as confidential. No names will be recorded, instead a sample ID will be used, which will be a unique number assigned to each participant. The interview will be audio recorded, but no one will hear the recordings except the researchers. After the study, the interview recordings and written transcripts of recordings will remain on GSU campus for a minimum of 3 years following completion of the study. The study will be considered complete when all data analyses are done. All materials, including electronic documents, will be stored on a secure storage device not connected to the internet, and will only be accessible to the investigators. The data will be kept at this location for 3 years upon completion of the project. After 3 years, the information (without names) could be used in future research and will remain in a secure location. Findings may be published and/or presented at Georgia Southern University and scientific conferences in the United States

Voluntariness:

Your participation is voluntary and you can decide to stop the interview at any time. You will still be eligible to receive the incentive being offered. If you are receiving any hospital services your participation is not a part of your medical care and participation is not required for you to receive hospital care and services. If you decide not to participate your decision will in no way influence the quality of the care that you will receive from the hospital.

Alternatives to participation:

If you choose not to participate this will not affect your ability to access health services at the locations where the study is being conducted.

Withdrawal from the research:

Participants can choose to withdraw from the research at anytime without having to explain yourself. You may also choose not to answer any question you find uncomfortable or private.

Consequence of Withdrawal:

There will be no consequence, loss of benefit or care to you if you choose to withdraw from the study. Please note however, that some of the information that may have been obtained from you without identifiers (name etc), before you chose to withdraw, may have been modified or used in analysis reports and publications. These cannot be removed anymore. We do promise to make good faith effort to comply with your wishes as much as practicable.)

Costs/Compensation:

For your time and inconvenience we will compensate you with 20 Ghana Cedis to show our appreciation for your participation. This incentive will be offered to all participants who are interviewed.

Contacts:

Participants have the right to ask questions and have those questions answered. If you have any questions or concerns, please feel free to contact Dr. Evans Afriyie-Gyawu at 020-148-9155 or Georgia Southern University's Office of Research Services and Sponsored Programs at (912) 478-5465.

Further, if you have any concern about the conduct of this study, your welfare or your rights as a research participant, you may contact:

**The Office of the Chairman
Committee on Human Research and Publication Ethics
Kumasi
Tel: 03220 63248 or 020 5453785**

Reference

HPV Information Center (n.d.). *Ghana: Human Papillomavirus and related cancers, fact sheet 2017*. Retrieved from http://www.hpvcentre.net/statistics/reports/GHA_FS.pdf

CONSENT FORM

Statement of person obtaining informed consent:

I have fully explained this research to _____ and have given sufficient information about the study, including that on procedures, risks and benefits, to enable the prospective participant make an informed decision to or not to participate.

DATE: _____ NAME: _____

Statement of person giving consent:

I have read the information on this study/research or have had it translated into a language I understand. I have also talked it over with the interviewer to my satisfaction.

I understand that my participation is voluntary (not compulsory).

I know enough about the purpose, methods, risks and benefits of the research study to decide that I want to take part in it.

I understand that I may freely stop being part of this study at any time without having to explain myself.

I have received a copy of this information leaflet and consent form to keep for myself.

NAME: _____

DATE: _____ SIGNATURE/THUMB PRINT: _____

Statement of person witnessing consent (Process for Non-Literate Participants):

I _____ (Name of Witness) certify that information given to
_____ (Name of Participant), in the local language, is a true reflection
of what I have read from the study Participant Information Leaflet, attached.

WITNESS' SIGNATURE (maintain if participant is non-literate): _____

MOTHER'S SIGNATURE (maintain if participant is under 18 years): _____

MOTHER'S NAME: _____

FATHER'S SIGNATURE (maintain if participant is under 18 years): _____

FATHER'S NAME: _____

APPENDIX I: LETTER OF COOPERATION FROM GHANAIAN CHURCH IN GEORGIA – U.S.A.

Pastor Emmanuel Lartey
Wesley Ghana Methodist Church, Atlanta,
5555 Oakbrook Parkway
Norcross, GA 30093
elarthey@emory.edu

January 21, 2019

Catherine Palmer, RN, MPH
Principal Investigator
Georgia Southern University
P. O. Box 8015
cp06295@georgiasouthern.edu

RE: Research Study “Improving cervical cancer screening and HPV vaccination rates among Ghanaian residents, and Ghanaian immigrants living in Georgia, U.S.A.”

Dear Ms. Palmer,

I am writing to inform you of our intended support for your research study as mentioned, to be conducted among members of my congregation. We are committed to the improvement and wellbeing of our congregants, and therefore grant you permission to distribute your recruitment flyers on our church property, and conduct approximately thirty interviews among our members.

We understand that participation is completely voluntary, and respondents will sign an informed consent prior to each interview session as they see fit. The interviews are expected to be completed within the next four to six months, and you may schedule interview sessions on the church property or at another location of a respondent's choosing. We look forward to learning from the findings of your report in the future.

Sincerely,

Dr. Emmanuel Lartey
Senior Pastor

APPENDIX J: NVIVO CODE GUIDE

NVIVO 12 CODE GUIDE

RESEARCH QUESTIONS	MAIN THEME	THEMATIC CODING	SELECTIVE CODING
1. What are the attitudes and barriers of Ghanaian immigrant women and men living in the U.S., and those living in Ghana to cervical cancer screening (Pap smear) and HPV vaccination in the prevention of cervical cancer?	A. ATTITUDES	Awareness and Knowledge of cervical cancer and Pap smear and HPV vaccination Awareness and Knowledge of HPV vaccination	Perceived significance of cervical cancer Perceived importance of screening and vaccination Perceived risk and susceptibility to cervical cancer Experience with cancer or cancer screening Benefits of early detection Beliefs about screening and HPV vaccination Knowledge of the connection between HPV and cervical cancer Information source Cues for screening and or vaccination
	B. BARRIERS	Lack of knowledge Lack of Insurance	Lack of knowledge about cervical cancer and HPV vaccination among the participants.

		<p>Cost</p> <p>Cultural beliefs about preventive care</p> <p>Fear</p> <p>Embarrassment</p>	<p>Cost of Pap test and/or HPV vaccination with/without health insurance</p> <p>Inability to afford preventive care</p> <p>Indifference or perceived lack of importance of preventive care</p> <p>Belief that if a person doesn't feel sick, or have no symptoms, then they are healthy</p>
<p>2. What are the socio-economic and cultural factors that influence access to, and utilization or uptake of cervical cancer screening and HPV vaccination?</p>	<p>A. SOCIOECONOMIC FACTORS</p> <p>B. CULTURAL FACTORS</p>	<p>Socioeconomic factors influencing access to and utilization of community services</p> <p>Cultural norms influencing access and availability of community resources</p>	<p>Influence of family and friends in seeking cervical cancer prevention services</p> <p>Influence of healthcare providers on individuals' motivation to seek cervical cancer prevention services</p> <p>Taboo regarding discussing female reproductive health</p> <p>Views on cause and risk factors of cervical cancer</p> <p>Availability/access to transportation, health insurance, healthcare facilities</p>
<p>3. What effect does immigration have on Ghanaian women and men now living in the</p>	<p>ACCULTURATION and LENGTH OF RESIDENCY in the U.S.</p>	<p>Does immigration increase knowledge about preventive care?</p>	<p>Access to health education through healthcare providers</p>

<p>United States regarding their attitudes, beliefs, and knowledge about cervical cancer screening and HPV vaccination?</p>		<p>Does immigration and/or length of stay affect perceptions about the importance of Pap smear and HPV vaccination?</p>	<p>Access to health insurance/free screening and vaccination.</p> <p>Incentives offered by health insurance companies for screening</p>
<p>4. Would community collaborations with organizations such as churches, school officials, or small business owners improve screening and vaccination rates in these populations?</p>	<p>COMMUNITY COLLABORATIONS</p>	<p>Churches</p> <p>Schools</p> <p>Beauty Parlors</p> <p>Small business owners</p>	<p>Church attendance</p> <p>Acceptance of screening if endorsed by religious leaders</p> <p>Community health workers</p>