CALIFORNIA STATE UNIVERSITY SAN MARCOS

PROJECT SIGNATURE PAGE

PROJECT SUBMITTED IN PARTIAL FULLFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE

MASTER OF SCIENCE

IN

NURSING

PROJECT TITLE: HPV Vaccination Rates in the Transgender Male Population

AUTHOR: Christine Lo, RN, BSN

DATE OF SUCCESSFUL DEFENSE: 4/30/19

THE PROJECT HAS BEEN ACCEPTED BY THE PROJECT COMMITTEE IN PARTIAL FULLFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING.

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|---|---|---|
| Geri Schmotzer | Geri Schmotzer | 5/7/19 |
| PROJECT COMMITTEE CHAIR | SIGNATURE | DATE |
| Vanessa Quiroz | | 5/7/19 |
| PROJECT COMMITTEE MEMBER | SIGNATURE | DATE |

# HPV Vaccination Rates in the Transgender Male Population

Christine Lo

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# Chapter One: Introduction

The transgender community is a growing and highly underserved community subject to healthcare disparities in the United States. The transgender male population (female to male) is at an increased risk for cervical cancer due to prevalent cancer risk factors, such as human immunodeficiency virus (HIV) infection and smoking; however, cervical cancer incidence and mortality data for the transgender male population are lacking (Burkhalter et al., 2014). The following chapters will discuss latest research on the issue and provide a background into the topic of cervical cancer and how it relates to the transgender male.

## Background

As the transgender population continues to grow, the need for more culturally sensitive care has become increasingly apparent (Lim, Brown, & Kim, 2014). There are an estimated 1.4 million adults, or 0.6% of adults identifying as transgender in the United States (Flores, Herman, Gates, & Brown, 2016).

The transgender male population has experienced a multitude of barriers in access to healthcare, such as being of lower income, having decreased access to health insurance, fear of discrimination or stigmatization by healthcare providers, and lack of access to culturally sensitive and knowledgeable healthcare providers. These barriers to healthcare access have contributed to members of the transgender community delaying or even avoiding healthcare (Burkhalter et al., 2014).

## Significance

Primary care providers, physicians and midlevel providers alike, have the ability to reach out to the transgender male population and assist them through education in self-care

practices and preventive care. The primary care provider is often the first-in-line for preventive care (Bodenheimer & Smith, 2013). More research studies are necessary to explore the associations between cervical cancer and the transgender male population. These studies will assist the advanced practice nurse practitioner in providing evidence-based and culturally competent care.

According to the Institute of Medicine (2011), there is a gross lack of research about and for the transgender population. Without this research there can be no improvements in outcomes, provider education, and intervention research that speaks to transgender-specific health needs and disparities (Institute of Medicine (US) Committee on Lesbian, Gay, Bisexual, and Transgender Health Issues and Research Gaps and Opportunities. [IOM], 2011).

**Problem Statement**

The transgender male population has higher rates of substance abuse, infection with HIV, mental health issues, unemployment, and barriers to accessing health care. Other recently published research has shown that lower rates of HPV vaccination are related to men who have sex with other men and transgender women (Gorbach et al., 2017). It is unknown whether or not transgender males have lower rates of HPV vaccination as compared to females.

**Purpose of the Research**

The purpose of this research study is to explore the relationship between transgender male persons and rates of HPV vaccinations. This study will begin to address the dearth of literature available that deals with the healthcare of the transgender male population.

**Research Question**

Does the transgender male population have lower rates of HPV vaccination compared to the female population?

**Hypothesis**

The hypothesis is that transgender males have lower vaccination rates than non-transgender females.

**Major Research Variables**

For this research study, the dependent variable is a positive answer to the question of whether the individual has received any or all doses of the HPV vaccine. The independent variable is the individual that identifies as a transgender male.

**Demographic Variables**

The demographic variables of age, ethnicity, gender, education, income, sexual orientation, HPV status, attitudes and knowledge regarding healthcare, medical insurance coverage, and condom use will be used to describe the participant sample.

**Theoretical Frameworks**

This research study will be guided by Gelberg-Andersen's (2000) Behavioral Model of Health Services Use for Vulnerable Populations. This model can be divided into two domains, the traditional and vulnerable. The vulnerable domains, which shall be utilized in this research study, focus on social structure and enabling resources (Gelberg, Andersen, & Leake, 2000).

This model will be discussed in further detail in Chapter Two.

**Importance of the Research**

According to the IOM's report, *The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding* (2011), there is increased need for research in the areas of outcomes disparities and the need for improvements to the care environment for transgender-specific healthcare. Research investigating the relationship between HPV vaccination rates and the transgender male population will help to spur further research to address health inequities and negative health outcomes experienced by the transgender population (Institute of Medicine (US) Committee on Lesbian, Gay, Bisexual, and Transgender Health Issues and Research Gaps and Opportunities. [IOM], 2011).

# Chapter Two: Literature Review

## Introduction

This chapter includes a review and critique of the current research literature surrounding the major variables in this study, specifically, transgender male and HPV vaccination. Research studies that incorporated the study of vulnerable populations are reviewed and the demographic variables are further defined and described.

## Literature Search Strategy

Databases used in the search for this literature include CINAHL, PubMed, and Google Scholar. Keywords employed in the searches included: transgender, female-to-male, HPV, HPV vaccination, screening, association, related to, incidence, prevalence, and higher. The search was limited to English, peer-reviewed articles published after 2000. The focus was to present those studies in the current literature that have direct bearing on the themes of HPV vaccination, the transgender male, and barriers in access to health care for the transgender male population. The literature search yielded 7 studies for review.

## Major Variables Defined

**HPV vaccine**. For the purposes of this study, the HPV vaccine will be defined as the 9-valent Human Papillomavirus (HPV) vaccine (9vHPV), the quadrivalent HPV vaccine (4vHPV), and the bivalent HPV vaccine (2vHPV). HPV vaccination is recommended for routine vaccination at 11-12 years of age per the Advisory Committee on Immunization Practices. It is also recommended for unvaccinated females from ages 13-26, and unvaccinated males aged 13-21 years. For men who have sex with men, and immunocompromised persons, the HPV vaccine is recommended through age 26 (Petrosky et al., 2015).

**Transgender Male**. For the purposes of this study, the transgender person "…is a person whose identity differs from the sex that was assigned at birth…A transgender man is someone with a male gender identity and a female birth assigned sex (Center of Excellence for Transgender Health, 2016, p. 15).

The majority of transgender males choose not to undergo complete sex reassignment surgery or may undergo total hysterectomy later in life. It is therefore common for the transgender male to have a cervix for a substantial portion of their lives; thus, cancers of reproductive organs, including the cervix, can still occur (Peitzmeier et al., 2014).

## Transgender Males and HPV Screening

In 2018, Spencer, Brewer, Trogdon, Wheeler, and Dusdetzina published a study assessing timely HPV vaccine initiation and follow-through among privately insured individuals. The retrospective review study examined data from the Truven Health Analytics MarketScan Commercial Claims and Encounters database from 2006-2014. The study included 1,332,217 both male and female individuals aged 9-26 years old who had initiated either the bivalent or quadrivalent HPV vaccine series, and whether or not they had received the 3 doses of HPV vaccine within 12 months of initiation. Results showed that vaccine dose receipt fell off over time in females, with a trend of 67% finishing the series in 2006 to 38% in 2014. In males, the fall off rate was from 36% finishing the series in 2011 to 33% in 2014 (Spencer, Brewer, Trogdon, Wheeler, & Dusdetzina, 2018). This study looked at individuals who were able to afford private insurance, which may stand to reason that there would be an even lower rate of HPV vaccination completion in individuals with greater barriers to healthcare access.

Jaffee, Shires, and Stroumsa (2016) studied the association between discrimination and health care utilization and delayed care in the transgender population. Multivariable logistic regression analysis was used to determine what factors predicted the likelihood of delayed health services amongst a sample of 3486 transgender participants who took part in the 2008 and 2009 National Transgender Discrimination Survey. The study showed that 30.8% of transgender participants delayed or did not seek needed health care due to discrimination, and that if transgender patients needed to teach their providers about transgender specific health care, they were significantly more likely to postpone care or not seek it at all (Jaffee, Shires, & Stroumsa, 2016).

Cruz (2014) conducted a cross-sectional study (N = 4,049) assessing access to care for transgender and gender non-conforming populations. A survey was made available in both online and paper forms to over 800 transgender-led or transgender-serving groups. The survey included questions relating to sex at birth, gender identity, and questions regarding the medical care experience. Participants answered what their level of being out was when seeking care, as well as what level of care they utilized most (doctor's office, emergency room, clinic, or not using a regular provider). Two logistic regression models were used for data analysis: a binary logistic regression model for the prediction of postponement of care, and a multinomial logistic regression model to predict reason behind postponement of care. Analysis of the data suggested that experience, identity, state of transition, and disclosure of transgender or gender nonconforming status were associated with postponement of care due to discrimination. The analyses also suggested that postponement associated with primary place of seeking care and health insurance were also associated with discrimination and affordability. The study results

highlighted the importance of combating discrimination and stigma at sites of biomedicine and health care provision in the effort to improve access to care for these populations (Cruz, 2014).

In their retrospective chart review of 5,232 patients, Peitzmeier, Khullar, Reisner, and Potter (2014) studied rates of Pap test usage amongst female-to-male (FTM) transgender patients (n = 350) as compared to female patients (n = 4, 882) at Fenway Health, an urban community health center. Data was analyzed using a multilevel logistic regression model, nesting patients within providers. Data analysis revealed that FTM patients were significantly less likely to be up-to-date on Pap tests (AOR=0.63, 95% CI=0.47, 0.85) compared to non-transgender women, "The proportion of FTM patients who were up-to-date was 9.2 percentage points lower compared to non-transgender female patients, and being transgender was an independent predictor associated with 37% lower odds of being up-to-date (Peitzmeier et al., 2014, p. 809)."

Even at a clinic such as Fenway Health, which specializes in caring for the LGBT community and where providers have expertise caring for LGBT populations, transgender patients were not achieving screening rates equivalent to those of non-transgender women. The researchers stated the need for a better understanding of the barriers to care in this patient population (Peitzmeier et al., 2014).

A 2018 study by Hutchinson, Boscoe, and Feingold sought to find which cancers disproportionately affected the transgender population in the state of New York. The researchers identified transgender patients between 1979 and 2016 in the New York State Cancer Registry. Patients were identified using reported sex, text search of the case abstract, and statewide hospitalization records. A total of 230 transgender, 125 males, 48 females, and 57 unknown sex patients were included in the study. The study concluded that transgender patients in New York had the highest proportional incidence ratio for Kaposi sarcoma, and that HIV and HPV related

cancers disproportionately affect the New York transgender population. Concerning HPV specifically, 80% of the transgender anal cases had an unknown HPV status, but 87.5% of anal and 75% of oral cavity and pharynx cases with known HPV status were HPV positive. The authors concluded that the transgender cancer population of New York differ greatly from the non-transgender New York state cancer population. The researchers stated that knowing what cancers occur disproportionately in this patient population can help health care providers improve screening and prevention strategies for transgender patients (Hutchinson, Boscoe, & Feingold, 2018).

In a 2015 study conducted by Reiter, McRee, Katz, and Paskett, the authors examined HPV vaccination among gay and bisexual men. Their study included a national sample of gay and bisexual men between the ages of 18-26 (n=428) who completed online surveys in 2013. Using multivariate logistic regression, they identified correlates of HPV vaccination. Their results showed that only 13% of the participants had received a dose of the HPV vaccination. The researchers found those who had received a recommendation for vaccination by their health care providers, 83% were vaccinated. The authors also found that when participants perceived greater barriers to receiving the HPV vaccine, vaccination rates were lower. Vaccination was also higher in participants who perceived positive social norms regarding vaccination or that worried more about getting HPV-related disease. The authors concluded that for gay and bisexual men in the United States, vaccine coverage was low (Reiter, McRee, Katz, & Paskett, 2015). With the transgender male population both experiencing or perceiving to experience greater barriers to vaccine access, it can be concluded that vaccination rates would be lower in the transgender male population as well.

In 2018 Gorbach, et al. conducted a study to assess HPV vaccination coverage and factors associated with vaccination in men who have sex with men (MSM) and transgender women (TGW) in 2 cities. From 2012-2014, 808 patients from 18-26 years old reported vaccination status in a self-administered computerized questionnaire. The data was gathered from 3 STD clinics in Los Angeles and Chicago. The associations with vaccination were assessed with bivariate and multivariable models and 95% confidence intervals. The results indicated few of the participants received 1 or more doses of the HPV vaccine, and even fewer reported receiving the full 3 doses. They researchers determined that the strongest predictor of vaccination was a recommendation by a health care provider. The authors concluded that HPV vaccination coverage was low among MSM and TGW patients and suggested that further efforts to reach this patient demographic are needed (Gorbach et al., 2017). The populations examined in this study share some similarities with the transgender male population, such as a higher likelihood of a lack of insurance, and decreased use of health care services. It is likely that the transgender male population will have similarly low coverages of HPV vaccination.

These studies indicate that decreased access to care, HPV screenings, and low vaccination rates in the transgender male population should be further researched to assess for rates of cervical cancer related to HPV. The findings from the mentioned studies add to the budding research of transgender health. However, additional research must be done to fully understand the health habits and outcomes of this population.

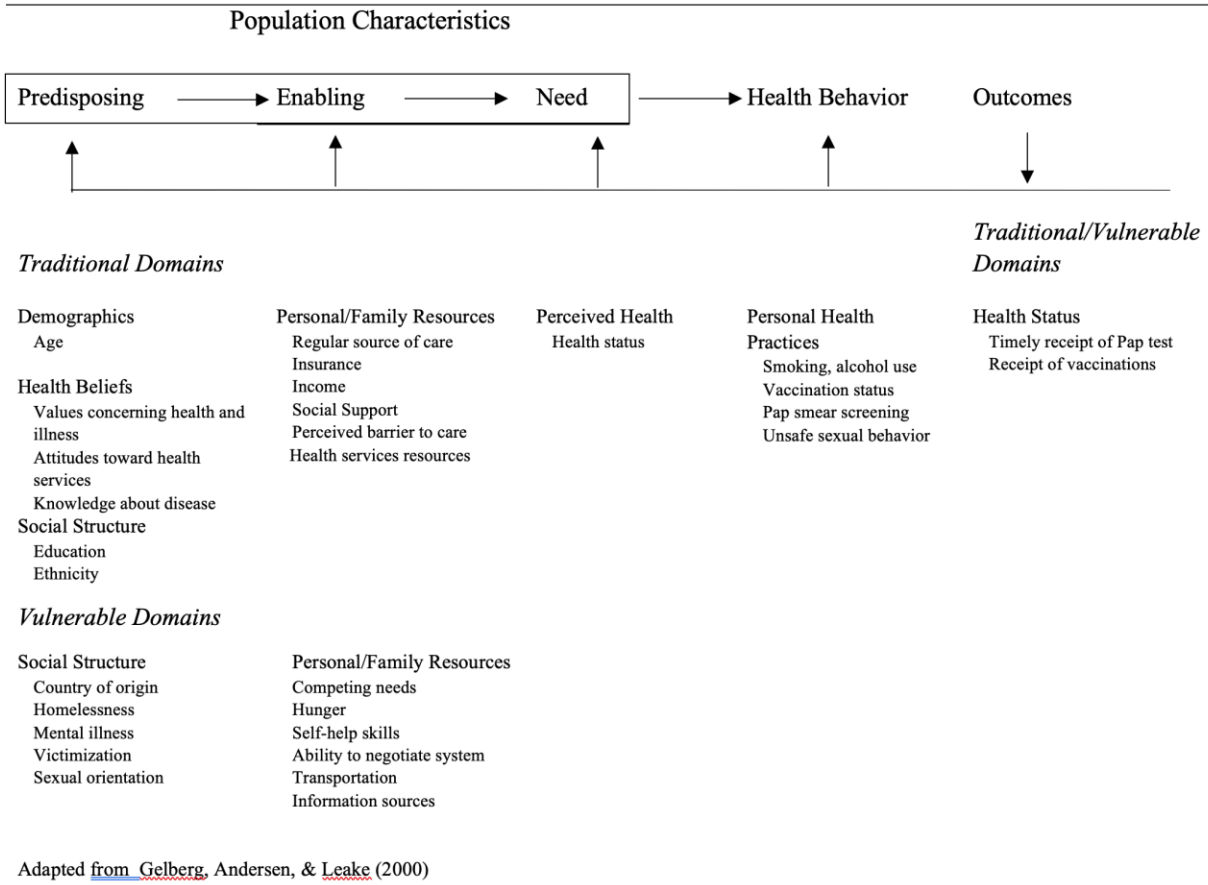
**Theoretical Framework**

This study is based on Gelberg-Andersen's (2000) Behavioral Model for Vulnerable Populations (BMVP). This model expands on the original 1960's Behavioral Model and includes domains that relate to the health-seeking behavior of vulnerable populations.

Vulnerable populations were listed as to include "minorities, undocumented immigrants; children and adolescents; mentally ill; chronically ill; disabled persons; the elderly and impoverished and homeless persons" (Gelberg, Andersen, & Leake, 2000, p. 1274). The BMVP considers the individual and the predisposing, enabling, and need factors that affect the individual's decision to seek health care.

Figure 1 illustrates Gelberg-Andersen's Behavioral Model for Vulnerable Populations.

Figure 1. The Behavioral Model for Vulnerable Populations




Adapted from Gelberg, Andersen, & Leake (2000)

## Summary

The review of the current literature has highlighted the numerous gaps in available data and research studies pertaining to the transgender male population. Although there has been an

increase in the number of studies published in the last five years pertaining to the transgender population, the overall numbers are still quite low. This research study will begin to address the disparity in research literature on the cervical cancer and the transgender male population.

# Chapter Three: Methodology

## Introduction

Evidence suggests that the transgender male population have higher cancer risk factors and increased barriers in access to healthcare, which may lead to increased rates of cervical, anal, oral, and pharynx cancers amongst the transgender male population due to decreased screening and vaccinations (Hutchinson et al., 2018). The following chapter will explain the methodology that was used for this study.

## Research Question

Does the transgender male population have lower rates of HPV vaccination compared to the female population?

## Hypothesis

The hypothesis is that transgender males have lower vaccination rates than non-transgender females.

## Research Design, Setting, and Population

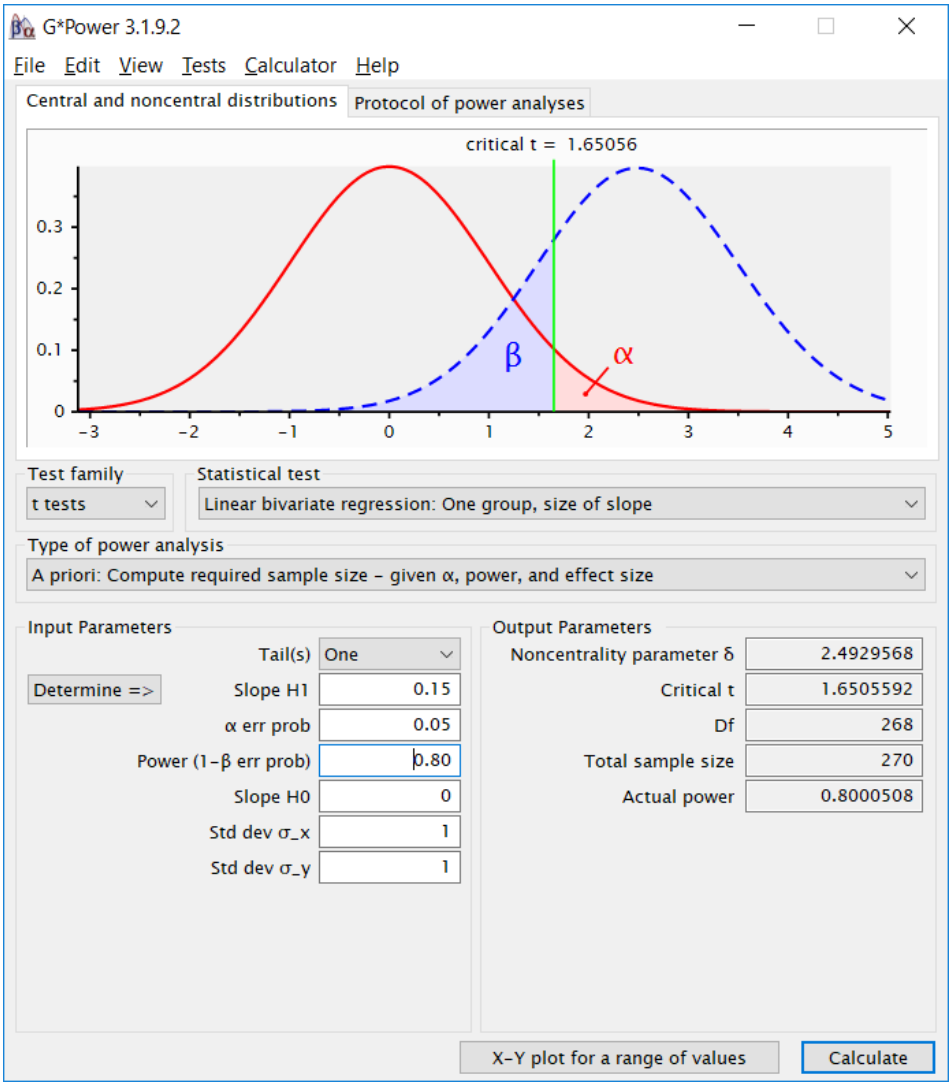
This project will be a two-year descriptive correlational study involving enrollment of 270 transgender men from 3 clinical facilities Los Angeles County providing STD care to LGBT populations between the ages of 18-26. A self-administered questionnaire assessing patient demographics and whether the HPV vaccine was received, as well as the number of doses will be provided for the participants to answer. Enrollment and completion of all study elements will be on the day of a clinic visit, without interruption of their scheduled appointment. A $20.00 gift

card will be provided upon completion of the survey to provide incentive for enrollment in the study.

Participants will be eligible if they meet the following criteria: age 18-26 years; assigned female sex at birth; identify as transgender male. Participants shall sign a consent form and will complete a questionnaire regarding demographic characteristics, HIV/STD status and testing history, knowledge and attitudes regarding HPV, and HPV vaccination status.

**Sample Size**

The sample size shall be n=270 with a power of .80, medium effect size of .35, and a significance level of .05.




## Data Collection Process

After approval by the institutional review boards at the participating institutions, survey data will be collected in Web-based Qualtrics. Each participant will be issued a unique ID code and no personal identifying information will be collected. Data will be transferred to and reformatted for IBM Statistical Package for the Social Sciences (SPSS). All data shall be stored on a password protected computer, or in a locked cabinet.

## Coding and Scoring

For the demographic variables, age will be collected with the person's actual age and scored as ratio level data. If necessary, it can be converted to ranges (21-30, 31-40…etc) and would then be considered ordinal data. Race will be subdivided into Hispanic/Latino, American Indian/Native American, Asian/Pacific Islander, Black/African American, White, and Other. Race will be considered nominal level data. Condom and medical insurance use will be scored as nominal data. Knowledge and attitudes regarding HPV shall be scored as ordinal data. Income and educational levels shall be scored as interval data.

The independent variable will be the transgender male and will be measured at the ratio level. The dependent variable, the HPV vaccination status will also be considered ratio level data.

### Data Analysis

All variables will be analyzed using IBM SPSS version 25. Descriptive analyses shall include univariate statistics such as frequencies, means, and standard deviations. Bivariate analyses will use t tests, Wilcoxon-Mann-Whitney tests, and $\chi^2$ tests to compare characteristics and behaviors.

All analyses will be significant at alpha .05 unless otherwise specified.

## Bias

Potential biases of the collected data may include: willingness to participate in the survey and population numbers for transgender males may not be accurate due to the unknown number of people who did not publicly identify as transgender. Also, similar characteristics

amongst participants willing to answer the survey may skew the data, resulting in a sampling bias. Research bias (experimenter bias) occurs when investigators performing the research may influence the results, in order to portray a certain outcome. (Polit & Beck, 2017, Chapter 8).

### Limitations

Results of the study may not be representative of other locations concerning HPV vaccination coverage. The data is also self-reported and dependent on the participant, over and under-reporting are possibilities.

## Ethical Considerations

All data will be reported in the aggregate; therefore, no individual level personally identifiable data will be used. No participants under the age of 18 will be included in the surveys, and no participants in the original surveys will considered part of an at-risk population, unable to give full and free consent.

## Summary

The results from this study have the potential to assist in the push for the increase of quantitative research studies to be conducted on the transgender male. This chapter has related the research methods and statistical tests that will be used to collect and analyze the data collected for this study. The data will be analyzed to explore the hypothesis that the transgender male population will have statistically rates of HPV vaccination than the non-transgender female population.

# Chapter 4: Grant Elements

In this chapter, the components of the grant proposition will be detailed. Information shall include the chosen grant, the budget and budget justification, a timeline of events, and a plan for dissemination.

## Final Grant Selection

The American Cancer Society, a nationwide health organization, is committed to eliminating cancer as a major health problem. Their Research Scholar Grant (RSG) supports projects across the cancer research continuum. The American Cancer Society's Cancer Control and Prevention Research Program accepts applicants that are in any career stage as long as their project involves health policy/health services research or achieving cancer health equity. The awards are for up to 4 years, with up to $165,000/year for direct costs and 20% allowable indirect costs. Annual application deadlines are April 5 and October 15 (American Cancer Society, 2019).

## Budget

Program Director/Principal Investigator (Lo, Christine):

| DETAILED BUDGET FOR INITIAL BUDGET PERIOD DIRECT COSTS ONLY | FROM | THROUGH |
|---|---|---|

| NAME | ROLE ON PROJECT | Cal. Months | Acad. Months | Summer Months | INST. BASE SALARY | SALARY REQUESTED | FRINGE BENEFITS | TOTAL |
|---|---|---|---|---|---|---|---|---|
| Christine Lo | PI | 24 | | | | $20,000 | | $20,000 |
| Geri Schmotzer, RN MPH, PhD, PHNA-BC | Chair Advisor | 24 | | | | $20,000 | | $20,000 |

| NAME | ROLE ON PROJECT | Cal. Months | Acad. Months | Summer Months | INST. BASE SALARY | SALARY REQUESTED | FRINGE BENEFITS | TOTAL |
|---|---|---|---|---|---|---|---|---|
| Research Assistant (TBD) | Research Assistant | 24 | | | | $10,000 | | $10,000 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | **SUBTOTALS** | | | $50,000 |

| | |
|---|---|
| CONSULTANT COSTS<br>Statistician | $4,000 |
| EQUIPMENT *(Itemize)*<br>Laptop computer, wireless printer, and back-up external hard drive | $1,200 |
| SUPPLIES *(Itemize by category)*<br>SPSS IBM 25.0 General office supplies (copy paper, pencils, pens, copier expenses, postage) | $2,570 |
| TRAVEL<br>Fuel costs for travel to and from research study site and Dissemination of study findings: National Transgender Health Summit | $1,180 |
| INPATIENT CARE COSTS | 0 |
| OUTPATIENT CARE COSTS | 0 |
| ALTERATIONS AND RENOVATIONS *(Itemize by category)* | 0 |
| OTHER EXPENSES *(Itemize by category)*<br>Gift card incentives for participants | $5,400 |
| CONSORTIUM/CONTRACTUAL COSTS / DIRECT COSTS | 0 |
| **SUBTOTAL DIRECT COSTS FOR INITIAL BUDGET PERIOD** *(Item 7a, Face Page)* | **$64,350** |
| CONSORTIUM/CONTRACTUAL COSTS / FACILITIES AND ADMINISTRATIVE COSTS | 0 |
| **TOTAL DIRECT COSTS FOR INITIAL BUDGET PERIOD** | **$64,350** |

| BUDGET FOR ENTIRE PROPOSED PROJECT PERIOD<br>DIRECT COSTS ONLY | | | | | |
|---|---|---|---|---|---|
| BUDGET CATEGORY TOTALS | INITIAL BUDGET PERIOD *(from Form Page 4)* | 2nd ADDITIONAL YEAR OF SUPPORT REQUESTED | 3rd ADDITIONAL YEAR OF SUPPORT REQUESTED | 4th ADDITIONAL YEAR OF SUPPORT REQUESTED | 5th ADDITIONAL YEAR OF SUPPORT REQUESTED |
| PERSONNEL: *Salary and fringe benefits. Applicant organization only*. | **$50,000** | | | | |
| CONSULTANT COSTS | **$4,000** | | | | |
| EQUIPMENT | **$1,200** | | | | |
| SUPPLIES | **$2,570** | | | | |
| TRAVEL | **$1,180** | | | | |
| INPATIENT CARE COSTS | **0** | | | | |
| OUTPATIENT CARE COSTS | **0** | | | | |
| ALTERATIONS AND RENOVATIONS | **0** | | | | |
| OTHER EXPENSES | **$5,400** | | | | |
| DIRECT CONSORTIUM/ CONTRACTUAL COSTS | **0** | | | | |
| **SUBTOTAL DIRECT COSTS** *(Sum = Item 8a, Face Page)* | | | | | |
| F&A CONSORTIUM/ CONTRACTUAL COSTS | **0** | | | | |
| **TOTAL DIRECT COSTS** | **$64,350** | | | | |
| **TOTAL DIRECT COSTS FOR ENTIRE PROPOSED PROJECT PERIOD** | | | | | **$64,350** |

**Budget Justification**

Christine Lo, MSNc, RN will act as primary investigator (PI). Christine has been a practicing registered nurse for 8 years, working in the acute care setting. She is currently enrolled in the Family Nurse Practitioner program and California State University of San Marcos. For her role as PI, Christine will recruit participants, collect data, analyse data, and act as general coordinator. She shall allot 30% of her time to the study, or 600 hours. With a fee of $33.33 per hour, $20,000 of the budget shall be allocated as compensation.

Dr. Geri Schmotzer, RN MPH, PhD, PHNA-BC will act as advisor for this study. Dr. Schmotzer is an Associate Professor at California State University San Marcos, School of Nursing and a nurse researcher. Dr. Schmotzer has a PhD in nursing and has previously collaborated with the Fred Hutchinson Cancer Research Center's Health Disparities Research Center. Her research experience includes subjects encompassing health disparities, access to care, and cancer

prevention and control. Dr. Schmotzer shall allot 10% of her time to the project, or 200 hours. With a fee of $100 per hour, $20,000 of the budget shall be allocated for her advisement.

Research Assistant, to be determined, will act as the primary in-field support for the PI. The research assistant shall be at minimum a bachelor's-prepared individual, with preferably a year or more of experience as a research assistant in underserved populations. Completion of the CITI training on the protection of human participants in research shall be required. The research assistant shall assist the PI in recruiting participants, will help to educate clinic staff regarding the study, and aid in the collection of consent and assent forms. The assistant shall aid in data collection and input. The assistant shall allot 25% of their time to the research project, totalling 300 hours at $30 per hour for a total of $9,000. $1,000 shall be reimbursed for gas and mileage.

Consultant: A to be determined statistician shall act as consultant and lead the initial coding and inputting of demographic data into SPSS, and in the final data analysis and interpretation. This shall be a masters-prepared statistician with experience in research studies and statistical analysis of data. The statistician shall spend 10% of their time on this project, approximately 50 hours at $40 per hour with a total of $4,000.

Equipment: A laptop ($1,000) shall be used to input, store, and analyze data. A wireless printer ($100) will be used to print consent and assent forms, and a backup hard drive ($100) will be used to ensure no loss of data. The equipment total shall be $1,200.
Supplies: SPSS IBM 25.0 software, which shall be used to input and analyze data, can be purchased for $1,200/year. For the duration of the project, a 2 year subscription shall be purchased, totalling $2,400. Office supplies purchased will include copy paper at $30/case for 5 cases totalling $150, and pens at $20/box with only one box being purchased. Total for supplies is $2,570.

Travel: Both the PI and research assistant shall be using private vehicles for travel to-and-from the research sites. 40 round trips to the sites at an expense of $4/gallon totals to approximately $350.

The findings of the study shall be presented at a national conference called the National Transgender Health Summit (NTHS). It is a 2-day conference hosted by the University of California San Francisco (UCSF) Center of Excellence for Transgender Health. The NTHS presents cutting-edge research and education sessions across many disciplines. The attending fee is $500 and provides lunch. Flight costs are $200 with $30 for public transportation. Per diem for food daily shall be $50 x 2 days = $100. Total travel costs for the conference are $830.

Other: Incentives in the form of Amazon gift cards shall be rewarded to encourage participation in the study. Each gift card shall have a monetary value of $20.00. With 270 study participants the total equals $5,400.

**Timeline**

The study shall take place over 24 months, beginning in August 21, 2019 and ending August 21, 2021. During that time, there shall be a total of 40 visits for 8 hours each, split between the PI and research assistant. During each of these clinic visits, qualifying participants will be taken to a private room and given 15-30 minutes to complete a questionnaire. Upon completion of the questionnaire, the $20 gift card shall be rewarded.

**Dissemination Plan**

**Conferences**. The findings of the study shall be presented at a national conference called the National Transgender Health Summit (NTHS). It is a 2-day conference hosted by the University of California San Francisco (UCSF) Center of Excellence for Transgender Health. The NTHS presents cutting-edge research and education sessions across many disciplines. This conference is the premiere national conference on transgender health and is ideal for the presentation of research pertaining to the transgender male population.

**Journals**. The results of this study shall be submitted to three journals including Transgender Health, the American Journal of Public Health (AJPH), and Sexually Transmitted Diseases (Journal of the American Sexually Transmitted Diseases Association).

Transgender Health is a peer-reviewed, open access journal that addresses the healthcare needs of the transgender population. It focuses on research necessary for healthcare equity, highlighting gaps in knowledge and research. Coverage includes best practices, disparities in treatment and barriers to care, health services research, cultural competency, mental health, sexually transmitted infections, and hormone therapy and surgery. Transgender Health has a readership of physicians, midlevel practitioners, social workers, psychologists, students and researchers of the health sciences (Transgender Health, 2018). Since this journal focuses on

topics that include the same population as the study participants, it will provide an appropriate platform for the findings of the study.

The American Journal of Public Health (AJPH), a publication of the American Public Health Association (APHA) is a peer-reviewed, public health journal. The AJPH covers topics concerning public health research, policy, practice, and education. Although not open access, its readership encompasses health care providers, social workers, researchers and policy makers, as well as students, residents, and fellows. This journal would be appropriate to publish the findings of this study due to its potential to impact public health policy and practice (The American Journal of Public Health, 2019).

Sexually Transmitted Diseases (STD), a journal of the American Sexually Transmitted Diseases Association, is a peer-reviewed journal which publishes papers on clinical, laboratory, immunological, epidemiological, behavioral, public health, and historical topics pertaining to sexually transmitted diseases. It is not open-access, however, publications within 12 months are freely accessible. Readership includes health care providers, researchers, and students. With a goal of publishing original articles on studies and developments of sexually transmitted diseases around the world, STD would serve as an appropriate platform for this study on HPV (Sexually Transmitted Diseases, 2019).

## References

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## Appendix A

## Eligibility Criteria Form

Date of Birth:

Sex at Birth: ☐ Male ☐ Female

Are you between the ages of 18-26?? ☐ Yes ☐ No

Do you identify as a transgender male? ☐ Yes ☐ No

## Appendix B

## Survey Form

Age:

Medical Insurance: ☐ Has medical insurance ☐ Does not have medical insurance

Highest Education Attained:

☐ Less than high school
☐ High school diploma
☐ Some college
☐ Bachelor's degree
☐ Graduate degree or higher

Yearly Income:

☐ Less than $15,000
☐ $15,000-$36,000
☐ $36,001-$50,000
☐ $50,001 and greater

Ethnicity:

☐ Asian/Pacific Islander
☐ Black or African American
☐ Hispanic or Latino
☐ Native American or American Indian
☐ White
☐ Other

Have you ever heard of HPV? HPV stands for Human Papillomavirus.

☐ Yes
☐ No

Have you ever been told by a health care provider that you had a human papillomavirus or HPV infection?

☐ Yes
☐ No

Did your health care provider recommend the HPV vaccine?

- Yes
- No

Did you know that HPV causes cervical cancer?

- Yes
- No

Do you think you can get HPV through sexual contact?

- Yes
- No

If you have received the HPV vaccination GARDASIL® or CERVARIX®, what age were you when receiving the first dose?

- 9-14 years of age
- 15+ years of age

How many doses of the HPV vaccine have you received?

- 1
- 2
- 3

If you have not received the HPV vaccine, would you be interested in getting it?

- Yes
- No

The cost of the vaccine may be about
$390-$500. Would you get the HPV vaccine if you had to pay this amount?

- Yes
- No

If you could get the HPV vaccine free or at a much lower cost would you get it?

- Yes
- No

Do you use condoms?

- Yes
- No

## Appendix C

## Consent to Participate in Research

Dear participant,

My name is Christine Lo and I am a graduate student of the family nurse practitioner program in the school of nursing at California State University San Marcos. You are invited to participate in a research study of HPV vaccination rates in the transgender male population. You were selected as a possible participant because you have met specific criteria needed to take part in this study. Please read this form carefully and ask any questions you may have before agreeing to be in the study. You must be between the ages of 18-26 to participate in the study.

**KEY INFORMATION ABOUT THIS RESEARCH STUDY:**

The following is a short summary of this study to help you decide whether to be a part of this study. Information that is more detailed is listed later on in this form.
The purpose of this study is to examine administration and completion rates of HPV vaccines in the transgender male population of Los Angeles County. You will be asked to complete a paper survey which should take approximately 30 minutes. This research study will span 24 months; however, your participation is only required for the duration of the initial clinic visit.

**STUDY PURPOSE:**

The purpose of this study is to increase knowledge of health habits of the transgender male population, as well as further the discussion on population traits which may affect health care access and uptake of the HPV vaccine in the transgender male population.

**NUMBER OF PARTICIPANTS:**

If you agree to participate, you will be one of 270 participants who will be participating in this research.

**PROCEDURES FOR THE STUDY:**

If you agree to be in the study, you will do the following:

- Be assigned an ID number
- Complete a survey which should take approximately 30 minutes in the clinic prior to or after your scheduled appointment time.

**RISKS AND INCONVENIENCES:**

There are minimal risks and inconveniences to participating in this study. These include:

- You may be uncomfortable answering the survey or interview questions.
- The time you spend participating in the study may be considered an inconvenience.
- There might be a risk of possible loss of confidentiality.

### SAFEGUARDS:

To minimize risks and inconveniences, the following measures will be taken:

- Participation is voluntary
- You can decline to answer any questions and can quite the study at any time.
- There will be no penalty to you whether or not you choose to participate.
- If any question causes you to feel distressed and you wish to speak to a counselor, the TransLifeline hotline is available 7AM to 1PM PST at 1-877-565-8860.

**CONFIDENTIALITY:**

Your responses will be anonymous. The participants are assigned ID numbers during the study and there is no master list with participants' personal information. The paper documentation will be transferred in a password protected device. The results will only be shared in aggregated form and your information will not be identifiable. After the analysis of the data, the paper documents will be shredded and incinerated.

The researcher will store any data collected in a password-protected computer and only the researcher will have access to the data. The data collected will be retained upon up to 3 years and digital files will be erased after the project is completed. The results of this study may be used in reports, presentations, or publications but your name will not be used.

**VOLUNTARY PARTICIPATION:**

Participation is voluntary. You may choose not to take part or may leave the study at any time. Your decision whether or not to participate in this study will not affect your current or future relations with the associated clinic.

**BENEFITS OF TAKING PART IN THE STUDY:**

The benefits of participating in this study are to obtain grants for studying HPV vaccination rates in the transgender male population. Your participation will help bring awareness of the health care needs of the transgender male community.

**PAYMENT OR INCENTIVE:**

You will receive an incentive for taking part in this study. A $20 Amazon gift card will be given after the completion of the survey.

**CONTACT INFORMATION:**

If you have questions about the study, please call the primary investigator at (510) 366-3860 or e-mail me at Lo064@cougars.csusm.edu. You will be given a copy of this form for your records. If you have any questions about your rights as a participant in this research or if you feel you have been placed at risk, you can contact the IRB Office at irb@csusm.edu or (760) 750-4029.

**PARTICIPANT'S CONSENT:**

By signing below, you are giving consent to participate in the study.

Name of the Participant:

Signature of the Participant:

Date: