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Factors that Affect HIV Care and Cross-sex Hormone Therapy Among Transgender  
Women

by

Glenda Nillo Baguso

DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

Nursing

in the

GRADUATE DIVISION

of the

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by  
Glenda Nillo Baguso

## Dedication

I dedicate this dissertation to the transgender community, especially to transgender women living with HIV who persist in spite of injustice and oppression. The strength of transwomen and the trans community is immeasurable and inspiring.

This is in remembrance of my grandmother, Lorenza who passed away during the last few months of writing this dissertation.

The world was blessed to have you walk this earth for 99 years, 9 months and 3 days. You have taught me to be strong, to persevere and to be independent. Rest with God, Mommy!

## Acknowledgments

Thanks to my parents, Evelyn and Segundo Baguso for your support and love. You have instilled the belief in me that formal education, achieving one's goals and always looking something up when I don't know the answer was a way to be successful. You were right.

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I want to thank Erin Wilson, DrPH for your encouragement—and especially for inviting me to a protest outside of City Hall regarding the disparities and safety of the transgender community—you taught me that there's *more* to this than just research. Glenn-Milo Santos, DrPH, your knowledge and willingness to provide guidance at any time and with simple instructions has been invaluable to me. Thank you both for the commitment, mentorship and dedication.

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## Abstract

Transgender women (transwomen) experience innumerable challenges and disparities fixed in social inequities. Transwomen are people who identify as female, but were assigned the sex of male at birth. The high prevalence of HIV among transwomen is further complicated by transwomen's low engagement to HIV care. The purpose of this dissertation is to examine clinical and social factors associated with HIV care among transwomen living with HIV. Guiding this dissertation is the intersectionality framework, which employs a multidimensional view of the various roles that transwomen embody. Three studies are presented in this dissertation. A literature review explored past studies in which stigma, discrimination or transphobia impacts a transwomen's decision to engage in or not engage in HIV care. The remaining studies utilize secondary data that recruited 318 transwomen in San Francisco using respondent driven sampling. A subset of 123 transwomen was included in two original studies. One study is exploratory and included variables informed by the literature review. This study analyzes factors that were associated with the transwomen in San Francisco that did not access HIV care, was not currently on antiretroviral therapy (ART) and was not virally suppressed or had an unknown viral load. The final study looked at the role of cross-sex hormone therapy (HRT) among transwomen living with HIV and for any associations with transwomen's HRT. The literature review found 9 studies that transwomen's HIV care continuum—a sequential step-by step treatment model—was affected by stigmatization and discrimination at every step. The second study found that the experience of multiple discrimination (gender and race) was associated with detectable or unknown viral load. Hormone use was found to be associated with not being on ART. Unstable housing was

associated with detectable viral load. The third study found that transwomen living with HIV who stated that their gender identity was validated by relationships had lower odds of not using HRT. Modifying the HIV care continuum to include treatment of the social and economic challenges as well as inclusion of trans-specific health care may positively impact the engagement of transwomen in their HIV care continuum.

## Table of Contents

Chapter 1: Introduction.....	1
Problem Statement.....	1
Background.....	3
Intersectionality Framework.....	4
Purpose and Aims.....	6
References.....	10
Chapter 2: Impact of Stigmatization and Discrimination on the HIV Care Continuum in Transwomen: A Literature Review.....	16
Abstract.....	17
Summary Box.....	19
Introduction.....	20
Aims.....	23
Methods.....	24
Results.....	25
Discussion.....	29
Conclusions.....	31
Relevance to Clinical Practice.....	32
References.....	34
Chapter 3: Associations to HIV Care Among Transgender Women Living with HIV.....	46
Abstract.....	47
Introduction.....	48
Methods.....	50



Results.....	53
Discussion.....	55
Conclusion .....	57
References.....	59
Chapter 4: The Role of Gender Affirmation and Cross-Sex Hormone Therapy: Differences Among Transwomen Living with HIV .....	72
Abstract.....	73
Introduction.....	74
Methods.....	76
Results.....	78
Discussion.....	80
References.....	82
Chapter 5: Conclusion/Implications .....	90
Summary of Research.....	90
Contributions to literature .....	94
Future Research .....	96
Implications for practice .....	97
References.....	99

## List of Tables

## Chapter 2:

Table 1: Overview of Studies with Impact of Stigma and Discrimination on HIV Care Continuum on Structural, Social and Individual Levels.....	40
Table 2: Summary of Cross-sectional Studies.....	41
Table 3: Summary of Qualitative Studies .....	43

## Chapter 3:

Table 1. Socio-demographics and HIV continuum outcomes with RDS weighted estimates for transwomen living with HIV in San Francisco, 2016-2017 (n=123) .....	64
Table 2. Descriptive RDS-weighted estimates of race of transwomen living with HIV and not in HIV care, not on ART with a detectable or unknown viral load in San Francisco, 2016-2017 (n=123).....	66
Table 3. Bivariate analysis: RDS-weighted estimates of transwomen living with HIV who are not in HIV Care, no on ART with a detectable or unknown Viral Load in San Francisco, 2016-2017 (n=123) .....	67
Table 4. Multivariate analysis: RDS-weighted estimates of transwomen living with HIV not in HIV care in San Francisco, 2016-2017 (n=123) .....	69
Table 5. Multivariate analysis: RDS-weighted estimates of transwomen living with HIV not on ART in San Francisco, 2016-2017 (n=123) .....	69
Table 6. Multinomial and multivariate analysis: RDS-weighted estimates of transwomen living with HIV with Detectable and Unknown Viral Load in San Francisco, 2016-2017 (n=123).....	70

## Chapter 4:

Table 1: Sociodemographic and clinical characteristics of transwomen living with HIV and current hormone use, San Francisco, 2016-2017 (n=123).....	86
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Table 2: Bivariate & Multivariable RDS-weighted logistic regression: Current Hormone use of transwomen living with HIV, San Francisco 2016-2017 (n=123).....	88
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List of Figures

Chapter 2:

Figure 1: PRISMA Flow diagram of included Stigma, Discrimination and Transphobia articles among transgender women.....45

Chapter 3:

Figure 1: Transgender HIV care continuum .....71

## **Chapter 1: Introduction**

### **Problem Statement**

A significant reduction in new HIV infection has been reported worldwide and in the United States among adults and children (CDC, 2017; UNAIDS, 2013). However, the Lesbian Gay Bisexual Transgender (LGBT) community did not see a decrease in HIV infections (CDC, 2017). Transgender is an umbrella term used primarily to distinguish people whose gender identity differ from the one assigned at birth. For the purpose of this dissertation, transgender women (transwomen) were assigned natal sex of male and identify as female or outside of the binary gender system. Existing literature support that transwomen are at high risk for HIV (Baral et al., 2014). In the United States, Herbst, Jacobs, Finlayson, and McKleroy (2008) reported that 27.7% of transwomen tested positive for HIV. Past studies focus on HIV prevention and high-risk behaviors, but few studies focus on the current state of the HIV care in transwomen living with HIV. In an effort to further elucidate the current context of transwomen living with HIV, this dissertation focuses on factors that affect HIV care among transwomen.

The high incidence of HIV among transwomen highlights the importance of HIV care and the HIV care continuum. The HIV care continuum—also known as the HIV treatment continuum or cascade—is a step-by-step model of treatment for those living with HIV (Gardener, McLees, Steiner, del Rio & Burman, 2011). Past studies have found suboptimal utilization of HIV care among transwomen. Transwomen report that given limited resources such as money, time and transportation issues, hormones were given the first priority over their HIV care (Sevelius et al., 2014a; Wilson Arayasirikul & Johnson, 2014). In addition, transwomen fear potential side effects that may hinder the

effectiveness of hormone therapy, despite lack of evidence (Melendez & Pinto, 2009; Sevelius, Patouhas, Keatley & Johnson, 2014a). These qualitative reports are supported by studies that transwomen had lower antiretroviral therapy (ART) utilization compared to non-transgender people (Melendez et al., 2006). Adherence to ART is lower in transwomen living with HIV than non-transgender males or non-transgender females (Gay et al., 2014; Mizuno, Frazier, Huang & Skarbinski, 2015; Sevelius, Carrico & Johnson, 2010). The results from a study investigating the correlates of adherence to ART and viral loads found positive associations with age, alcohol abstinence, hormone therapy adherence and adherence to ART (Sevelius, Saberi & Johnson, 2014b). Other studies report that some transwomen had difficulty integrating HIV medication regimens into their daily routines which may contribute to lower medication adherence (Melendez & Pinto, 2009; Sevelius et al., 2014a).

In San Francisco, 33% of transwomen living with HIV were not linked to HIV care within 3 months (Santos et al., 2013). Although more than half of transwomen were on ART, only 44% were virologically suppressed. Compared to men who have sex with men (MSM) in New York City, transwomen had higher odds of delayed HIV care and of not being virally suppressed within a year of HIV diagnosis (Wiewel, Torian, Merchant, Braunstein, & Shepard, 2015). Studies have found that transwomen of color have a higher prevalence of HIV than transwomen who are White, highlighting the racial disparities within an already marginalized group (Herbst et al., 2008). This dissertation aims to answer the broad question, what factors are associated with HIV care among transwomen?

## **Background**

Transgender people encounter many psychosocial issues along with structural and socio-economic barriers. The use of a binary gender identification system in medical records, institutional surveillance forms and national databases pose structural barriers that lead to a lack of representation of the transgender population in research and health care (Roberts & Fantz, 2014). Fear of losing family or social support, lack of health care provider education, stigmatization and discrimination in many settings including the health care system are potential barriers that precede and follow health disparities (Loza, Beltan & Mangadu, 2017; Lerner & Robles; 2017)

Transgender people are four times more likely than the general population to live in poverty, be uninsured, be unable to afford care and are less likely to obtain prevention care (Grant et al., 2011; Loza et al., 2017). Transwomen also experience harassment, violence or abuse (Kattari & Hasche, 2016). Past studies found the experience of abuse, enacted stigma or violence was a correlate of HIV risk behaviors, depressive symptoms, substance use and suicide attempts (Nuttbrock et al., 2014; Testa et al., 2012).

The vulnerability to HIV is heightened by the experience of stigma and discrimination, loss of family and social support, low levels of competent health care, loss of job and economic opportunities, and unstable housing experienced by transwomen (Fletcher, Kisler, & Reback, 2014; Logie, James, Tharao, & Loutfy., 2011, Sevelius et al., 2014a; Remien et al., 2014; Wilson et al., 2014). As a result of job loss and limited employment opportunities, the ensuing economic challenges may contribute to transwomen seeking alternative sources of money such as engaging in sex work (Sausa, Keatley, & Operario, 2007).

Of transwomen living with HIV, some studies have demonstrated disparities in health outcomes, chronic illnesses, substance use, mental health and violence due to stigma (Logie et al., 2011; Melendez et al., 2006; Mizuno et al., 2015; Reisner, White, Bradford, & Mimiaga, 2014; Santos et al., 2014; Sevelius et al., 2014a). Stigma experienced at an institutional, community or individual level leads to psychosocial issues of depression, suicidal ideation and other mental health issues (Bockting, Miner, Swinburne-Romine, Hamilton, & Coleman, 2013; Jefferson, Neilands & Sevelius, 2014; Logie et al., 2011). Given the effects of stigmatization and discrimination on health outcomes, there is a need for studies that examine the effects of discrimination on transwomen and their HIV care.

The need to explore transwomen living with HIV is important to increase engagement and retention to HIV care. The three studies in this dissertation focuses on transwomen living with HIV, in order to gather more information on engagement to the HIV care, ART adherence and virological suppression and the broader spectrum of the HIV care continuum.

### **Intersectionality Framework**

The black feminist movement begets the roots of intersectionality theory. Intersectionality theory provides a framework to explore the intersections of transwomen living with HIV and the effects that stigma and discrimination may have on HIV care. Bowleg (2012) champions the use of intersectionality as a theoretical framework to “elucidate and address health disparities across a diverse array of intersections” (p.1270). An individual’s race, gender, sexual orientation, socioeconomic status or career/job can stigmatize a person and influence one’s experience. Intersectionality framework is able to



account for the multiple roles that transwomen must manage. These roles intersect and create opportunities and challenges.

The theory guides us to start with the lived experience of transwomen living with HIV and the exploration of their multiple identities. The identities of transgender, woman, racial minority and positive HIV status are considered simultaneously occurring and cannot be separated. At the intersections of these interlocking identities of transwomen living with HIV, health disparities and inequalities are found, such as stigma, high prevalence of HIV and low engagement to HIV care.

The identities that transwomen manage are explored through multiple levels: individual, community and structural. Therefore, health disparities occur at all levels. At the individual level, the experience of internalized stigma increases high-risk behaviors such as condomless anal sex (Sugano, Nemoto, & Operario, 2006). At a social or community level, transwomen who experience discrimination or perceived stigma are also associated with high risk behaviors such as substance use and condomless receptive anal intercourse as well as economic factors such as loss of job leading to sex work for alternate sources of income (Arayasirikul, Wilson, & Raymond, 2017; Sausa et al., 2007). Structural factors such as housing policies with specific requirements that favor the really 'sick' from asymptomatic people living with HIV may negatively impact engagement to HIV care (Remien et al., 2015).

By exploring disparities and inequalities at all levels, intersectionality theory stimulates questions regarding the relationship of privilege, domination, and oppression. It is the relationship of domination and oppression that can produce health disparities and either privilege transwomen living with HIV or oppress them. The intersectional lens

focuses on structural or social determinants that contribute to conditions in which transwomen living with HIV would either engage or not engage in HIV care.

By applying intersectionality theory to transwomen living with HIV, research studies, health policies and health interventions can be better informed. Intersectionality theory is aware of within group differences. Therefore, all transwomen are not the same. Transwomen of color are particularly at higher risk for HIV than white transwomen and health promotion messages can be tailored specifically for certain subsets of transwomen living with HIV (Herbst et al., 2008). The use of intersectionality provides a richer understanding of transwomen living with HIV and also advocates for social changes to eliminate inequities and inequalities.

### **Purpose and Aims**

Given the paucity of research on transwomen living with HIV and their HIV care, three studies were conducted and are included in this dissertation in order to contribute to the scarce literature on transwomen living with HIV. The purpose of this dissertation is to examine the impact of clinical factors and social determinants of HIV care among transwomen living with HIV. The goal is to highlight the needs of transwomen living with HIV and the possible factors that impact their decision to engage or not engage in HIV care.

This dissertation is organized in five chapters with the focus on transwomen living with HIV and the HIV care continuum. Three studies are included in this dissertation. The second chapter is a literature review that explores the impact of stigma, discrimination and transphobia on the HIV care continuum among transwomen living with HIV in past studies. The third chapter aims to understand what factors are associated

with the HIV care continuum, specifically access to care, ART utilization and undetectable viral load among transwomen living with HIV in San Francisco. The fourth chapter looks at the relationship between cross-sex hormone use, HIV care and ART use among transwomen living with HIV and describes demographic factors of transwomen living with HIV on hormones. The final chapter is the discussion and conclusion of this dissertation.

Chapter two is the first study, a literature review that explores past studies focused on the effects of stigmatization and discrimination on the HIV care continuum. Three quantitative studies and six qualitative studies were included in this literature review. From the perspective of the intersectionality framework, these studies were reviewed and synthesized to explore how stigmatization, discrimination and transphobia impact transwomen's choice to engage or not engage in care.

This review of stigma, discrimination and transphobia on transwomen's HIV care informed the second study in chapter three. This study is a secondary analysis using the Transwomen Empowered to Advance Community Health (TEACH 3) data from the San Francisco Department of Public Health. Chapter three reviews the 90-90-90 initiative by the Joint United Nations Programme on HIV/AIDS (UNAIDS) which has three targets to meet by 2020: 90% will know their HIV status, 90% will be on ART and of those that are taking ART, 90% will be virally suppressed. As the goal year approaches, this study explores the profile of transwomen in San Francisco that are *not* engaged in care, are *not* currently taking ART and are *not* virally suppressed. The study sample was recruited using respondent driven sampling (RDS). Variables included in this study were justified from literature found in study one. Data were analyzed using population estimates that

were calculated with RDS weights. Guided by the intersectionality framework, gender identity, race and education (a proxy for class) were retained in the multivariate models regardless of the bivariate analysis outcomes.

Finally, the fourth chapter is a study that examines the use of cross-sex hormones and its role among transwomen living with HIV. Cross-sex hormone therapy is used to induce feminizing changes. A majority of transwomen in TEACH 3 was currently on hormones. Intersectionality posits that disparities are at the intersection of different roles and can exist between groups and within groups. This study uses data from transwomen living with HIV, recruited through the use of respondent driven sampling. This study explores the characteristics of transwomen living with HIV who take hormones and those who do not take hormones. Data were analyzed using population estimates with RDS weights.

Transwomen are understudied. Intersectionality guides these studies and closely weaves the three studies to one another. The literature review provides a review of past studies of which this dissertation is built upon. Embedded within the review is the perspective of intersectionality that transwomen experience disparities on multiple levels. These past studies inform the second study included in this dissertation regarding the factors that potentially affect the HIV care continuum. The primary groups of gender, race and class are central to intersectionality and these factors are controlled for in the data analysis of the second study (Bowleg, 2012). The third study further explores transwomen living with HIV and acknowledges another tenet of intersectionality—that disparities or differences also occur within the group of transwomen living with HIV. Addressing the characteristics of transwomen living with HIV is needed to gain a broader

understanding of how to decrease HIV acquisition and improve health outcomes.

Attention to the HIV care continuum in transwomen living with HIV is important in decreasing the impact of HIV in public health.

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Chapter 2: Impact of Stigmatization and Discrimination on the HIV Care Continuum in  
Transwomen: A Literature Review

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## ABSTRACT

**AIMS AND OBJECTIVES:** This paper reviews and synthesizes selected research studies on stigmatization, discrimination, and transphobia and discusses how these social phenomena contributes to conditions in which transwomen either engage or do not engage in the HIV care continuum.

**BACKGROUND:** Transwomen are vulnerable to HIV globally. Using the intersectionality framework, transwomen have multiple social roles (gender, HIV status, economic status, and race-ethnicity). With different roles, transwomen experience multiple forms of stigmatization, multiple types of discrimination, and transphobia. Little is known about how these experiences impact transwomen's HIV care continuum.

**DESIGN:** Literature review.

**METHODS:** This review was conducted using the PubMed<sup>®</sup>, Cumulative Index to Nursing and Allied Health Literature (CINAHL<sup>®</sup>), LGBT Life<sup>™</sup>, and PsychINFO<sup>®</sup> databases for a literature search. Selected studies focused on the effects of stigmatization, discrimination, or transphobia on transwomen's HIV care continuum.

**RESULTS:** Nine studies were selected for this review. All studies substantiated the conclusion that stigmatization, discrimination, and transphobia negatively impacted transwomen's HIV care. These effects were felt on institutional, interpersonal, and individual levels.

**CONCLUSIONS:** In order to engage transwomen in HIV care, policymakers, administrators and providers must work with the community of transwomen to develop and implement effective interventions for ameliorating the effects of stigmatization and ultimately preventing the occurrence of stigmatization in health care contexts. To better

inform the design of such interventions, further research is needed to explore the effects of multiple stigmas on transwomen. The use of the intersectionality framework provides a richer understanding of the lives of transwomen.

**RELEVANCE TO CLINICAL PRACTICE:** Nurses can provide cultural training for themselves and other providers. Nurses can also create an environment that facilitates transwomen's engagement in HIV testing and HIV care. Changes can also be made at an institutional level where policies are placed to decrease stigma directed at transwomen.

**KEYWORDS:** *gender, HIV, care, discrimination, patient-centered care*

**SUMMARY BOX:**

What does this paper contribute to the wider global clinical community?

- This paper explores the intersectionality theory as a framework for providing patient-centered care to transwomen.
- This paper identifies the effects of stigmatization, discrimination, and transphobia on the transwomen's HIV care continuum.
- This paper highlights the need for nurses and their health care institutions to provide a trans-friendly environment by providing trans cultural sensitivity training and creating policies conducive to optimal clinical experience for transwomen.

## Impact of Stigmatization and Discrimination on the HIV Care Continuum in Transwomen: A Literature Review

### **INTRODUCTION**

Transgender women (transwomen) in the United States and worldwide are particularly vulnerable to HIV (Baral et al., 2013; Herbst, Jacobs, Finlayson, & McKleroy, 2008). In America, the prevalence of HIV is also exacerbated by racial disparities, in which transwomen of color, particularly Black or Hispanic transwomen have higher rates of HIV than White transwomen (Herbst et al., 2008; Mizuno, Frazier, Huang, & Skarbinski, 2015). This racial disparity is also noted in studies evaluating high risk behaviors among transwomen, with transwomen of color reporting higher levels of condomless receptive anal sex, sex work and substance use (Arayasirikul, Wilson & Raymond, 2017; Nuttbrock & Hwahng, 2016; Larney, Mathers, Poteat, Kamarulzaman, & Degenhardt, 2015). Similarly, sex work, unprotected anal sex and substance use are high among transwomen in Brazil (*travesties*) and Bangkok (*kathoey*) (Grinsztejn et al., 2017; Nemoto et al., 2012).

### **Stigmatization and discrimination**

Risk behaviors alone cannot account for transwomen's high HIV prevalence, globally and in the United States. Transwomen face stigma, transphobia, violence, and discrimination that lead to suboptimal health care, job loss, and marginalized housing (Fletcher, Kisler, & Reback, 2014; Kosenko, 2011; Machtinger, Haberer, Wilson, & Weiss, 2012). Stigmatization has also been linked to poor adherence to medication, drug use, unprotected sex, and depression (Sayles, Ryan, Silver, Sarkisian, & Cunningham, 2007; Sugano, Nemoto, & Operario, 2006; Vanable, Carey, Blair, & Littlewood, 2006;



Wolitski, Pals, Kidder, Courtney-Quirk, & Holtgrave, 2009). Suicide has also been associated with transphobia (Testa et al, 2012). These determinants of health must be addressed in order to gain a broader understanding of how to decrease HIV acquisition and improve health outcomes. Link and Phelan (2001) re-conceptualized stigmatization and added the context of power situations and the components of labeling, negative stereotypes, separation of those stigmatized, and discrimination.

For the purposes of this review, *stigmatization* is defined as the social dynamic process of negatively labeling and stereotyping an individual or group of people; the term *stigma* refers to the labels and stereotypes themselves. *Merriam Webster Dictionaries* define *transphobia* as “irrational fear of, aversion to, or discrimination against transgender or transsexual people” (“transphobia,” 2016). An essay by Bettcher defines transphobia as “any negative attitudes (hate, contempt, disapproval) directed toward trans people because of their being trans” (2014, p. 249). *Discrimination* is simply defined as unfair action but sociological views on discrimination place emphasis on dominance and oppression (Parker & Aggleton, 2003).

### **Intersectionality theory**

The intersectionality theory provides a theoretical foundation to explore the impact of stigmatization and discrimination on the HIV care continuum of transwomen living with HIV. Intersectionality theory, informed from the experiences of Black women in the United States promotes exploration of the relationship between social privilege and oppression with regard to groups with power and groups without power (Crenshaw, 1991). The tents of intersectionality are ideal in understanding the challenges that transwomen encounter on a daily basis. Transwomen living with HIV embody

multiple identities (transgender, race, socio-economic status and HIV status) that occur simultaneously and intersect on all levels. Intersectionality posits that these identities occur simultaneously and not independent of one another, intersecting on multiple levels: individual, community and institutional/structural levels (Hughto, Reisner, & Pachankis, 2015; Logie, James, Tharao, & Loutfy, 2012). Intersectionality theory describes a process in which the health care of an individual or a community, such as transwomen living with HIV can be explored through multidimensional views (Davy, 2011).

In application to stigmatization as experienced by transwomen living with HIV, the theory calls attention to and elucidates the dynamic relationships between this group's multiple stigmas—stigmas based on gender, race, sexual orientation, HIV status, and other sociodemographic factors. Accordingly, while most stigmatization research on transwomen has thus far focused on the HIV stigma, intersectionality theory advocates that an accurate understanding of HIV-related stigmas requires that all layers of stigma—such as those based on gender, race, or class—and the stigmatization process must be fully explored.

At least one study, by Logie et al. (2012), was conducted with the recognition that a transwoman's identities (as “transgender,” “woman,” “racial minority,” and “HIV status”) must be viewed as operating simultaneously and interactively. This study reported that women and transwomen living with HIV described their social identities in the context of racism, HIV status, and gender discrimination. Health disparities and inequalities were generated at the intersection of these identities.

## **HIV care continuum**

The HIV care continuum—also known as the HIV treatment continuum or cascade—is a step-by-step model of treatment for those living with HIV (Gardener, McLees, Steiner, del Rio, & Burman, 2011). The care continuum consists of multiple milestones: HIV testing, diagnosis, linkage, engagement and retention to HIV care, access to antiretroviral therapy (ART) and adherence to ART. The goal and final step of the HIV care continuum is viral suppression.

Studies of transwomen have reported sub-optimal utilization of HIV care. For example, Santos et al. (2013) found that in San Francisco, 33% of transwomen living with HIV were not linked to HIV care within 3 months of diagnosis of HIV. Moreover, although more than half of these transwomen were receiving ART, only 44% were virologically suppressed. In a New York City study that compared transwomen with men who have sex with men, transwomen were found to have longer delays in initiating HIV care and a higher probability of not being virally suppressed within one year of HIV diagnosis (Wiewel, Torian, Merchant, Braunstein, & Shepard, 2015). Given the importance of the HIV care continuum to decreasing the prevalence of HIV, the effects of HIV stigma, discrimination and transphobia on transwomen and the HIV care continuum needs to be fully explored.

## **AIMS**

The aims of this paper are to (a) review and synthesize existing literature on stigma–stigmatization, discrimination and transphobia and (b) explore how these factors contribute to conditions in which transwomen either engage or do not engage in the HIV

care continuum. These aims will be addressed from the perspective of intersectionality theory. This paper also discusses implications for practice and future research.

## **METHODS**

The PubMed<sup>®</sup>, Cumulative Index to Nursing and Allied Health Literature (CINAHL<sup>®</sup>), LGBT Life<sup>™</sup>, and PsychINFO<sup>®</sup> databases were searched for articles used in this literature review. This review included articles published in English in peer-reviewed journals. The search used combinations of the keywords: *transgender*, *MTF*, *transsexual*, *HIV*, *stigma*, *discrimination*, *transphobia*, and *transphobic*. Articles were excluded if they conflated genders and sexual orientation within the study sample. Therefore, study samples which included sexual minorities such as lesbians, gay men, or bisexual people were excluded. Two qualitative studies focused on providers and transgender people and were included in this review. Other articles were excluded if they did not focus on HIV care or did not address stigma–stigmatization, discrimination, or transphobia and their effects on the HIV care continuum.

The initial database searches yielded 557 articles. Removal of duplicate articles and screening of titles and abstracts left 76 articles for full-text review. Of those articles, ten studies were considered appropriate for this review: six qualitative studies and four quantitative studies. Figure 1 refers to the PRISMA flow diagram of this process (Moher, Liberati, Tetzlaff, Altman, & The PRISMA Group; 2009). Using the framework of intersectionality, Table 1 exhibits the ten studies in terms of various steps of the HIV care continuum and the inclusion of stigma–stigmatization, discrimination, and transphobia. Also, in order to facilitate a more comprehensive understanding of stigma–stigmatization, the table includes the different levels—individual, social/interpersonal, and structural—

institutional—on which stigma and stigmatization operate (Bowleg, 2012; Hughto, et al., 2015; McCall, 2005).

In order to synthesize key findings in an iterative process, the selected studies were read, and data were extracted. The studies' quality was assessed using the Mixed Methods Appraisal Tool (MMAT; Pluye, et al., 2011). The relevant key findings extracted from the nine studies are presented in Table 2 and Table 3.

## **RESULTS**

Three themes were identified from the findings relevant to how stigma—stigmatization, discrimination, and transphobia contribute to transwomen's decision to engage or not engage in the HIV care continuum: individual factors, social or community level factors, and institutional level factors. All studies included in this literature review met 75%–100% of the four criteria of the MMAT. All of the studies were peer-reviewed and published in English; all of the studies included transwomen or their providers in the countries of Brazil (Pinheiro Junior, et al., 2016), Jamaica (Logie, et al., 2016), Lebanon (Kaplan, et al., 2015), and the United States (Lurie, 2005; Palazzolo, et al., 2016; Poteat, German, Kerrigan, 2013; Sevelius, Patouhas, Keatley, 2014a; Sevelius, Saberi, Johnson, 2014b; Wilson, Arayasirikul, & Johnson, 2014). Two studies focused on providers (Lurie, 2005; Poteat et al., 2013).

### **Institutional–Structural Factors**

Seven of the nine selected studies mentioned institutional–structural level factors that contributed to the contextual influences of stigma–stigmatization, discrimination, and transphobia on transwomen's engagement or lack of engagement in the HIV care continuum. The majority of studies (6) revealed institution-level factors at the first stage

of the HIV care continuum, HIV testing. Some Latina transgender women reported that HIV testing and prevention services were stigmatizing and did not include primary care (Palazzolo et al., 2016). Moreover, HIV-related stigmatization continued to adversely affect decisions about testing and health care-seeking behavior. For example, transphobic experiences at the time of HIV diagnosis may have delayed initiation of HIV care (Sevelius et al., 2014a). Stereotyping practices—such as referring transwomen to sex worker services and drug substances services without acknowledgment from client of needing those services—can increase transwomen’s distrust of the HIV care system and the agency (Wilson et al., 2014). Some transwomen delayed HIV care because the agencies that they initially accessed were not trans friendly (e.g., agencies primarily serving men who have sex with men; Sevelius et al., 2014a). Among Brazilian transwomen, distrust in the confidentiality of HIV testing decreased their likelihood of receiving HIV testing (Pinheiro Junior, et al., 2016). Some transwomen avoided HIV care out of concern regarding HIV care clinics’ potential non-maintenance of patient confidentiality (Sevelius et al., 2014a; Wilson et al., 2014).

*Structural barriers.* HIV-related providers observed staff resistance to offering transgender care in their clinics (Lurie, 2005). Although one clinic was designated as an LGBT (lesbian, gay, bisexual and transgender) clinic, providers reported that the agency was not amenable to inclusion of transgender people out of fear (transphobia). Providers’ lack of training and knowledge regarding trans health may contribute to (a) clinic staff’s resistance to providing care and (b) transwomen’s reluctance to initiate or adhere to HIV care. (Lurie, 2005; Poteat et al., 2013; Wilson et al., 2014). Other structural factors can contribute to lack of engagement and retention to care. Lack of transportation and safety

concerns because of discrimination, stigmatization, and transphobia are some reasons transwomen living with HIV may not go to HIV-related appointments (Wilson et al., 2014). Documentation status of transwomen may be also a barrier to HIV-related care (Palazzolo et al., 2016).

*Facilitators.* Research has reported several facilitators of engagement and retention in HIV care. One facilitator of engagement to HIV care was the provision of trans-related health services and auxiliary services not related to that of HIV services and prevention such as housing or career services (Sevelius et al., 2014a; Wilson et al., 2014). Agencies that provided hormone therapy, gift certificates, physical meeting space, and other services had increased patient engagement in and adherence to HIV care. Transwomen expressed the need for holistic care such as holistic primary care (Palazzolo et al., 2016). Logie et al. (2016) found that transwomen's having a health care provider (according to self-report) was positively associated with HIV testing; also, for every 1-unit increase in an HIV-related stigma scale, the likelihood of HIV testing decreased by 4%.

### **Social- or Community-Level Factors**

Stigma–stigmatization, discrimination, and transphobia on a social or interpersonal level affect transwomen's decisions to engage or not engage in the HIV care continuum (six studies). Providers may themselves be transphobic, leading to resistance in treating transwomen (Lurie, 2015; Poteat et al., 2013). On an interpersonal level, one provider expressed possible discrimination through stereotyping of a patient (Poteat, et al., 2013). This provider questioned their own action of providing more

testing to transgender patients than to heterosexual patients; possibly arising from the provider's stereotypic view of trans people's having high-risk behaviors.

Social support contributes to whether transwomen engage in care (Kaplan et al., 2015; Sevelius et al., 2014a; Wilson et al., 2014). Pinheiro Junior (2016) found that self-reported discrimination among Brazilian transwomen contributed to resistance to HIV testing. Transwomen in Lebanon feared social stigmatization resulting from an HIV diagnosis—particularly as such stigmatization would impact familial support (Kaplan et al., 2015). Furthermore, in the United States fear of rejection and loss of social support were barriers to engagement in and adherence to HIV care (Sevelius et al., 2014a; Wilson et al., 2014). In turn, having social support at time of diagnosis encouraged transwomen to engage in care (Sevelius et al., 2014a). Furthermore, some transwomen with an HIV diagnosis feared rejection by potential sex partners (Sevelius et al., 2014a). Although loss of social support from family and peers were driving factors in whether transwomen engaged in care, peer distrust was also a concern. Some transwomen were concerned that peers—such as HIV counselors who were part of the transgender community—might reveal their results to others in the trans community (Sevelius et al., 2014a). Being seen at an HIV care agency by their peers may contribute to HIV-stigma and ridiculing (Wilson et al., 2014).

### **Individual-Level Factors**

Three of the selected studies discussed individual level factors that lead to conditions in which transwomen would either engage or not engage in the HIV care continuum. To cope with transphobia or their HIV diagnosis, some transwomen in focus groups discussed the individual level problems such as mental health and substance use



within their community (Sevelius et al., 2014a). These individual level problems were barriers to their engagement to the HIV care continuum. The only study that focused on the engagement and adherence to ART medications and viral suppression found that for transwomen who experienced stress from transphobic situations, stress was negatively associated with ART adherence and having an undetectable viral load (Sevelius et al., 2014b). In Jamaica, a 1-unit increase of perceived HIV-related stigma decreased the likelihood of HIV testing by 4% among transwomen; a 1-unit increase in perceived transgender stigma score increased the likelihood of being HIV positive by 26.5% (Logie et al., 2016).

## **DISCUSSION**

In summary, this review identified nine studies which support that stigma, discrimination, and transphobia negatively contributed to conditions in which transwomen would or would not engage in the HIV care continuum. No one studies explored the impact of stigma–stigmatization, discrimination, and/or transphobia across the various phases, and aspects of the HIV care continuum.

### **HIV testing**

Most of the selected studies focused on how stigmatization contributed conditions that negatively affected transwomen’s decision to engage in HIV testing at an institutional and social level. Herbst et al. (2008) reported a difference between the percentage of those who self-reported (11.8%) their HIV diagnosis and the percentage of those who tested positive (27.7%)—indicating that many trans people are not aware of their HIV diagnosis. The role of stigma–stigmatization, discrimination, and transphobia may contribute to the reason that many transwomen are not aware of their HIV diagnosis.

As the gateway to the HIV care continuum, HIV testing is important for identifying and engaging transwomen in HIV care.

### **Adherence to HIV care**

Few institutional- and social level studies have examined the effects of stigmatization on transwomen's adherence to HIV care. Fear of stigmatization and discrimination were concerns that some transwomen in this literature review reported as reasons for delaying care and missing appointments for HIV care appointments. Furthermore, only one study focused on how the individual level factor of stress from transphobic experiences negatively impacted ART adherence and viral suppression. Sevelius et al. (2010) have reported that, in comparison with other genders, transwomen are less adherent to ART and have higher viral loads. Taken together, these findings indicate that community-wide reduction in transwomen's' viral load requires continued monitoring and a decrease of stigmatization, discrimination and transphobia.

### **Intersectionality**

By applying intersectionality theory to research on transwomen living with HIV, researchers, health policy makers, and clinicians who design and implement interventions can be better informed. One tenet of intersectionality is that inequities and inequalities occur within groups, across multiple groups, and at intersections of the multiple levels. Among racial-ethnic groups, transwomen of color have a much higher risk for HIV than do White transwomen. Accordingly, health promotion messages should be tailored to be congruent with the specific cultures of the transwomen living with HIV who will be the recipients of those messages (Herbst et al., 2008). Among Jamaican transwomen, the finding that HIV stigmatization *decreased* the likelihood of participation in HIV testing

but transgender stigmatization *increased* the likelihood of transwomen's being HIV positive further underscores how different social identities are interlocked and negatively affect the health of transwomen (Logie et al., 2016). In the United States, documentation status is an additional role that can lead to stigmatization that deters from engaging in the HIV care continuum (Palazzolo et al., 2016). Within-group differences are found in several studies. Some transwomen mentioned their fear of HIV stigmatization by other transwomen (Sevelius et al., 2014a; Wilson et al., 2014). The understanding of within-group stigmatization can potentially inform interventions and improve health outcomes. A review of the possible synergistic effects of multiple interacting stigmas among transwomen is not currently possible due to a dearth of knowledge of this phenomenon. However, because transwomen experience multiple stigmas in relation to their gender, race, and HIV status, this phenomenon must be brought to the forefront of research to explore the possible impact on transwomen's health. The use of intersectionality theory to view the impact of multiple stigmas (HIV stigma, transgender stigma and race-based stigma) provides a richer understanding of transwomen living with HIV globally and is useful for advocating social changes to eliminate inequities and inequalities.

## **CONCLUSIONS**

This review shows that the experience of stigmatization and discrimination toward transwomen living with HIV negatively influences HIV testing behaviors, engagement and retention in HIV care, HIV treatment, and viral suppression. Suitable stigmatization reduction interventions are needed in order to increase participation in the HIV care continuum and thereby reduce transwomen's viral load. Reducing stigmatization and engaging in every step of the HIV care continuum can improve health

outcomes and contribute to reducing the incidence of HIV among transwomen. This review found that most research on stigmatization and discrimination as barriers to the HIV care continuum among transwomen was qualitative; researchers have conducted very few quantitative investigations. Quantitative studies are needed to develop and evaluate transwomen's intervention programs to ameliorate the adverse effects of stigmatization and discrimination. More research is also needed to inform future policies and legislation to reflect an agenda that will help eliminate the structural/institutional stigmatization and discrimination on the basis of social status, gender, race, or illness.

### **RELEVANCE TO CLINICAL PRACTICE**

This review has several clinical implications that can increase transwomen's initiation of and engagement in HIV care. Intersectionality theory provides a multidimensional view of transwomen's health care needs and incorporates the tenets of patient-centered care. Creating an environment that supports recognition of the unique needs of transwomen—such as trans-specific health care and gender affirming practices—are within the capacity of nursing care practices. Nurses can create opportunities for culturally sensitive training that would include not only transgender sensitivity training but also training based on transwomen's ethnicity. By incorporating the tenets of intersectionality into nursing care, nurses are can ameliorate the clinical practice given to transwomen. Apart from the interpersonal level, nurses and providers are able to make structural changes in their facility or clinic that will decrease stigmatization and provide a welcoming environment for transwomen. Together, nurses and transwomen can explore the various social roles experienced by transwomen and

how these experiences impact transwomen's decisions to engage or not engage in the HIV care continuum.

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Table 1

*Overview of Studies with Impact of Stigma and Discrimination on HIV Care Continuum on Structural, Social and Individual Levels*

Source	Stigma	Discrimination	Trans phobia	Testing	Diagnosis	Engage HIV Care	Retention HIV Care	Engage ART	Retention ART	Viral Suppression
Kaplan et al., 2015	X				b					
Logie et al., 2016	X	X		a						
Lurie, 2005*		X	X	a		ab				
Palazzolo et al., 2016	X			a						
Pinheiro Junior et al., 2016		X		ab						
Poteat et al., 2013*	X			a						
Sevelius et al., 2014a	X		X	ab	bc	ab				
Sevelius et al., 2014b			X						c	c
Wilson et al., 2014	X	X	X				ab			

a. Structural/Institutional level

b. Social/Interpersonal level

c. Individual level

\* Provider focused

Table 2

*Summary of Cross-sectional Studies*

Author	Sample & Setting	Recruitment and data collection	Relevant Variables and Measures	Relevant findings of association between stigma, discrimination and transphobia and HIV care	Score
Logie et al., 2016	N=137 transwomen Setting: Jamaica at location of participant's choice (home, park etc.)	Recruitment: purposive, non-random sampling—Snowball sampling Data collection: surveys	Outcome variable HIV testing behavior: <i>I have had an HIV test in my lifetime.</i> • yes • no Independent variable <u>Perceived HIV stigma</u> <i>Steward et al. 10-item</i> • higher score indicating higher perceived stigma <u>Revised Homophobic Scale</u> <i>Diaz et al. Perceived &amp; Enacted stigma</i> • All items revised to reflect homosexuality to transgender	<ul style="list-style-type: none"> <li>Univariate analyses: poverty, living in Ocho Rios compared to Kingston, perceived HIV risk, depression, forced sex, physical abuse, perceived transgender stigma, and having health care provider associated with increased odds of having HIV test.</li> <li>Multiple partners, drug use, getting drunk and having sex, HIV stigma associated with decreased odds of HIV test</li> <li>Multivariate analyses: HIV testing associated with perceived HIV risk, drug use and depression, getting drunk or high prior to sex, forced sex, physical abuse, perceived transgender stigma, HIV related stigma, incarceration history for being transgender, having a healthcare provider</li> <li>One unit increase in HIV-related stigma decreased likelihood of HIV testing by 4%</li> </ul>	75% one criteria not met
Pinheiro Junior et al., 2016	N=304 transwomen Setting: Brazil at the non-governmental organization, ATRAC	Recruitment: respondent driven sampling (RDS) Data collection: surveys	Outcome variable <u>Lifetime HIV testing:</u> • yes • no Independent variable <u>Anti-transwomen discrimination (self-report)</u> • yes • no	<ul style="list-style-type: none"> <li>Univariate analyses: Young (&lt;18 yrs.), single, no religious affiliation, less than minimum wage, reported discrimination or do not believe in the confidentiality of testing significant for no HIV test.</li> <li>Multivariate analyses: Young people less likely to test than older, illicit drug use during sex and self-report discrimination reduce likelihood of HIV testing.</li> </ul>	100% all criteria met

Author	Sample & Setting	Recruitment and data collection	Relevant Variables and Measures	Relevant findings of association between stigma, discrimination and transphobia and HIV care	Score
Sevelius et al., 2014b	N= 59 Transwomen	Recruitment: Convenience sample of transgender women recruited using combination of street outreach, venue-based sampling and snowball sampling	<p>Outcome variables</p> <p><u>ART adherence</u></p> <p><i>Rate your ability to take all your medications as prescribed.</i></p> <ul style="list-style-type: none"> <li>6-point Likert scale [100% adherent to very poor (0% adherent)]</li> <li>Dichotomized into Excellent (100%) vs less than excellent</li> </ul> <p><u>Viral load</u></p> <p><i>Self-reported HIV viral load</i></p> <ul style="list-style-type: none"> <li>Dichotomized into detectable/undetectable</li> </ul> <p>Independent variable</p> <p><u>Experience of Transphobia Scale</u></p> <p><i>11 items assess stress from experience of violence, harassment and discrimination due to gender</i></p> <ul style="list-style-type: none"> <li>5-point Likert scale [ not at all stressful to extremely stressful]</li> <li>Higher scores reflect greater stress</li> </ul>	<ul style="list-style-type: none"> <li>In bivariate models, being in a relationship and lower stress appraisal of transphobic experiences were associated with undetectable viral load.</li> <li>In multivariate model, lower stress appraisal of transphobic experiences was associated with undetectable viral load.</li> </ul>	75% one criteria not met

Table 3

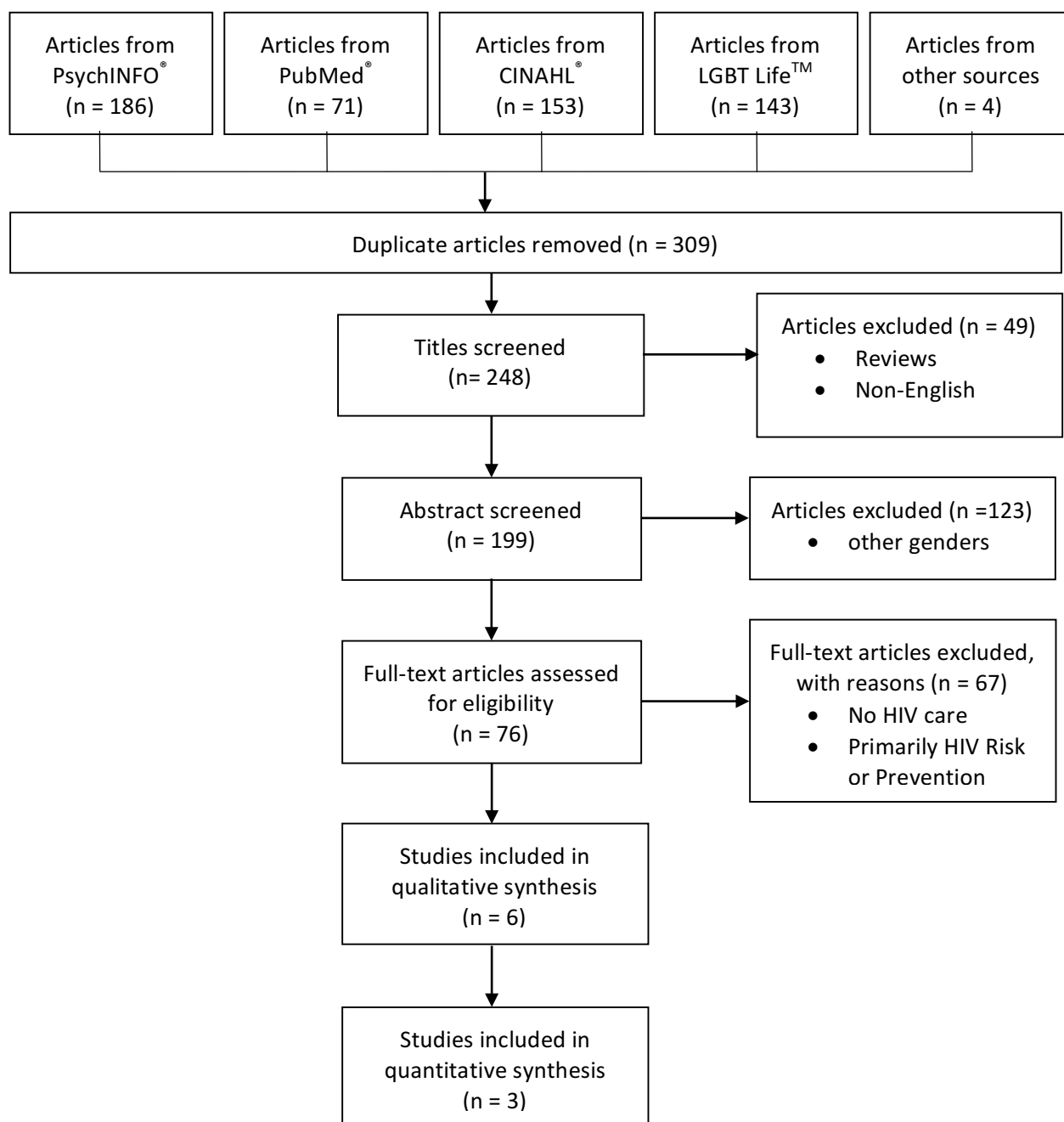
*Summary of Qualitative Studies*

Author	Sample	Design Approach	Recruitment and data collection	Relevant findings of association between stigma, discrimination and transphobia and HIV care	Score
Kaplan et al., 2015	N= 10 transgender women  Setting: Lebanon in community based organization and participant home	Qualitative Grounded theory	Recruitment: Referrals from community based organization  Data collection: interviews	<ul style="list-style-type: none"> <li>“I am very afraid of the social stigma that being HIV positive would cause.” This statement referred to how a diagnosis would harm family relations— “My dad would die of a heart attack. My mom, when she knew about my last sexual intercourse, she said to me that if you get any disease, I would let you go and forget about you.” However, despite this stigma, some participants have inconsistent condom use.</li> </ul>	100% all criteria met
Lurie, 2005	N= 13 providers of HIV-related care 1 MD 1 RN 3 NP 4 Case managers 2 pharmacists 1 pharm tech	Qualitative	Recruitment: Convenience recruitment from the New England AIDS Education Center’s annual meeting and through other contact information through the agency  Data collection: interviews	<ul style="list-style-type: none"> <li>As HIV-related providers, there were noted resistance to including transgendered people in their agencies, although it is identified as an LGBT agency—some state resistance is fear based.</li> <li>One states that HIV counseling and testing can be addressed, but trans-health services such as hormone therapy cannot be provided.</li> <li>Individual staff were also resistant accepting transgender clients</li> </ul>	75% One criteria not met
Palazzolo et al., 2016	N= 8 Latina transgender women -6 undocumented 1-unknown 1-U.S. citizen	Qualitative Thematic analysis	Recruitment: Ad on the Facebook page and in clinic  Data collection: in-depth life history interviews	<ul style="list-style-type: none"> <li>Fear that receiving HIV testing and prevention services stigmatized them and provided substandard care by not attending to holistic health</li> <li>Documentation status be barrier to HIV care</li> </ul>	75% One criteria not met

Author	Sample	Design Approach	Recruitment and data collection	Relevant findings of association between stigma, discrimination and transphobia and HIV care	Score
Poteat et al., 2013	N= 25 transmen 30 transwomen 12 providers	Qualitative Grounded theory	Recruitment: purposive sampling  Data collection: In depth interviews & field notes	<ul style="list-style-type: none"> <li>Provider states that there is discrimination on their part in assuming trans patient has multiple partners. Possible that they test trans more than gay or hetero sexual patients. Possible that they assume trans behavior are riskier.</li> </ul>	100% all criteria met
Sevelius et al., 2014a	N= 38 20 interview 5 focus groups  Gender: All Transgender women	Qualitative Approach not stated	Recruitment: Purposive sampled based on HIV status from cross-sectional survey of transgender women in the SF Area; snowball sampling and street based recruitment used  Data collection: Focus groups and interviews in English or Spanish	<ul style="list-style-type: none"> <li>Participants reported when they were first diagnosed they avoided seeking medical care due to past negative experiences and transphobia.</li> <li>HIV-related stigma affects decisions about testing and care-seeking behavior</li> <li>Reduction of concerns regarding HIV-related stigma over time</li> </ul>	100% all criteria met
Wilson et al., 2014	N=10  Gender: All transgender women	Qualitative Thematic content analysis approach	Recruitment: Recruited through referrals from community-based organizations that serve transgender women living with HIV.  Data collection: interviews and field notes	<ul style="list-style-type: none"> <li>Gender stigma: HIV-positive transwomen feel vulnerable to violence and humiliation when traveling or taking public transportation thus feeling reluctant to travel to HIV care appointments</li> <li>Peer distrust: HIV-related stigma from peers impacted access to social services and HIV care</li> <li>Institutional distrust: negative experiences with HIV care due to HIV stigma and discrimination limited participation to HIV care</li> </ul>	100% all criteria met



Figure 1: PRISMA Flow Diagram of included Stigma, Discrimination and Transphobia articles among transgender women



### Chapter 3: Associations to HIV Care Among Transgender Women Living with HIV

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## ABSTRACT

### INTRODUCTION

Transgender women (transwomen) are disproportionately affected by HIV. Yet they are underrepresented in HIV care continuum research. This study explores the socio-demographic factors associated with those not engaged in HIV care.

### METHODS

Secondary analysis was conducted on self-reported data collected from Transwomen Empowered to Advance Community Health study in San Francisco 2016. Respondent driven sampling and Giles SS weights were used for analysis. Bivariate and multivariate logistic regressions evaluated associations between socio-demographics factors and HIV care.

### RESULTS

Population estimates of Black or Hispanic transwomen was 69.2%. Fourteen percent did not access HIV care, 13% were not currently on antiretroviral therapy (ART) and 36% had a detectable or unknown viral load. Hormone use was found to have lower odds of not being on ART than those who did not use hormones ( $p=.043$ ). Unstable housing had a significant association with detectable viral load ( $p=.039$ ). Experiencing both gender and race discrimination was associated with detectable viral load ( $p=.009$ ) and unknown viral load ( $p=.031$ ).

### CONCLUSIONS

Future research needs to focus on social determinants of health in transwomen in order to increase access to HIV care.

Key words: Transgender women, HIV, engagement to care, ART, viral load

## Introduction

In the United States, there has been an 18% decline in the incidence of HIV from 2008-2014 [1]. However, populations in the Lesbian, Gay, Bisexual and Transgender Community (LGBT) have not benefited from the decline in HIV infections. Transgender women (transwomen) identifies as a gender different from the male gender assigned at birth. Transwomen carry a high burden of HIV. The odds of transwomen being infected with HIV were 49 times higher than that of other adults of reproductive ages in 15 countries [2]. In the United States, approximately 1.3% of the HIV infected population identify as transgender [3]. Recent HIV prevalence among transwomen in the US is 22% with some studies reporting as high as 27.7% [3,4]. Transwomen in San Francisco have an HIV prevalence of 36% [5]. San Francisco transwomen living with HIV have lower rates of survival, possession of insurance, and linkage to care than all other genders [5].

Recognizing the need for an effective HIV treatment, the Joint United Nations Programme on HIV/AIDS (UNAIDS) launched three target goals. The 90-90-90 initiative is a treatment target in which 90% of HIV positive people would be diagnosed, 90% would receive antiretroviral therapy (ART) and 90% would be virally suppressed by 2020 [6]. In order to achieve the 90-90-90 target, prioritizing key populations such as transwomen is needed to end the AIDS epidemic [6]. The 90-90-90 initiative use the treatment model— the HIV care continuum as the anchor for their goals. HIV testing and diagnosis initiates the HIV care continuum. The uptake and adherence of antiretroviral therapy (ART) ensures that viral suppression can be achieved [7].

Attention to the HIV care continuum among transwomen living with HIV is important to decrease the impact of HIV in public health. The HIV care continuum's steps have been found to be associated with a decrease in HIV transmission rates [8]. The success of HIV treatment among transwomen depends in large part to engagement and retention to the HIV care continuum: diagnosis, linkage to HIV care, ART use and viral suppression [7]. Lower viral load decreases chances of transmission of HIV to partners [8]. This highlights the need to be aware of your viral load. Few studies investigate transwomen's engagement to the HIV care continuum.

The intersectional framework argues that race, class, gender and other identities intersect in individuals, create areas of oppression and privilege in which disparities exist

[9,10]. Intersectional framework posits that these identities occur simultaneously and are not independent of each other. Therefore, transwomen of color living with HIV simultaneously carry the identities of transgender, woman, person of color and HIV status. These identities and the disparities that occur may impact health [11].

Homeless or marginally housed people living with HIV report that food insecurity affected adherence to ART which in turn lowered CD4 counts and increased viral load [12]. Compared to both non-transgender male and non-transgender women living with HIV, transwomen had significantly higher percentages of homelessness [3].

Transwomen living with HIV and homeless or marginally housed had higher risk behaviors such as drug use, illegal hormone injections and HIV risk behaviors [13]. No studies have looked into food insecurity among transgender women. Examples of structural barriers to medical care and HIV care were a binary gender identification system in medical records, lack of provider knowledge, gender and HIV stigma and discrimination and lack of gender affirmations [14-17]. Transwomen were less adherent to ART and had lower rates of viral suppression than other genders [3]. Correlates of ART adherence was found to be lower stress due to transphobic experiences, importance of gender affirmation and adherence to cross-sex hormone therapy [18]. Some transwomen reported that cross-sex hormone therapy was a priority over their HIV care due to limited resources such as money, time and transportation issues [16,19-21]. African American transwomen reported that gender based stigma negatively impacted regular HIV care visits and adherence to their medications [21]. Discrimination factors have also been associated with suboptimal health care, job loss, and marginalized housing [13,16,17, 22]. Recent trauma among transwomen has been found to be associated with ART failure and HIV risk behaviors [23].

The studies above suggest that there are multiple factors that influence transwomen's HIV care continuum (engagement to care, ART utilization and viral load). Healthcare should be inclusive and holistic for transwomen. The HIV care continuum can be adjusted to include social services that includes employment, housing and career services. Mental health services and substance use treatment must be a part of the HIV care continuum. Trans health care services that increase provider knowledge of trans health, fertility options, and transition related services may increase engagement and

retention in the HIV care continuum. Furthermore, auxiliary services such as support groups, faith based groups or a community center to foster community growth and social interaction may facilitate and improve the HIV care continuum. Having a tailored transgender HIV care continuum may be necessary to decrease the impact of HIV on the transgender community and increase the chances of an undetectable viral load (Figure 1).

The aim of this secondary analysis was to understand what factors are associated with the HIV care continuum, specifically access to care, ART utilization and undetectable viral load among transwomen living with HIV in San Francisco. San Francisco is a city with resources for the transgender community, therefore, identifying those who are in care would be less beneficial than a profile of transwomen who are not engaged in HIV care. Thus, this analysis examines the 10-10-10 of the USAID initiative in San Francisco focusing on transwomen who are not engaged in HIV care, not currently on ART and has a detectable or unknown viral load. As this study includes only HIV positive transwomen, transwomen not accessed to care replaces the 90-90-90 target of diagnosis. This paper is a practical analysis that furthers our understanding of transwomen living with HIV. Demographic, clinical and discrimination factors are explored.

## **Methods**

### **Study Sample and Recruitment Process**

We conducted a secondary analysis of HIV behavioral surveillance data collected from June 2016 to March 2017 through the Transwomen Empowered to Advance Community Health (TEACH 3) study in San Francisco. Respondent driven sampling (RDS) was used to recruit self-identified transwomen. In order to reduce chances that the initial participants or “seeds” influenced the results, 15 seeds with diverse backgrounds (e.g., in terms of race, education, HIV status) were selected. The seeds were asked to recruit up to 10 participants from their social networks who met the aforementioned eligibility criteria for the study. This recruitment process continued until equilibrium was reached. Diagnostic plots (e.g., convergence and bottleneck) were used to assess seed dependence. The study sample had long recruitment chains (mean recruitment chain=6; range-1-15) and reached stability with 318 transwomen. The present analysis focused on a subset of 123 transwomen (38.7%) who lab-tested as positive for HIV.

Prior to enrollment, all potential participants were screened for eligibility. To be eligible for study participation, all participants in this study had to be 18 years of age or older, live in San Francisco, and self-identify as transwomen using two questions regarding assigned sex at birth (“What sex were you assigned at birth?”) and current gender identity (“What is your gender identity?”). After participants provided verbal informed consent for study procedures, interviewers administered surveys with a handheld computer. All participants received \$50.00 for completing the survey. No financial incentive was given for HIV testing. For every successful recruit enrolled into the study, the participant recruiter received \$10.00 up to a maximum of five recruits. The Committee on Human Research at the University of California, San Francisco approved the study.

### **Measurements**

**HIV testing.** Regardless of self-reported HIV status, the INSTI® HIV-1/HIV-2 Rapid Antibody Test was offered to all participants, but not required. For those who self-reported positive and were confirmed HIV-positive with the rapid antibody test, no second test was conducted. Positive rapid antibody test results for those who did not know their status were confirmed using Determine™ HIV-1/2 Ag/AB Rapid test.

**Sociodemographic factors.** The following demographic factors and social characteristics were collected in the survey: age, gender identity (female, transgender female, androgynous, genderqueer, questioning or additional gender), race (Asian, Black, Native American, Native Hawaiian or Pacific Islander, White, Latino/a or Other), education (never attended school, grades 1-8, grades 9-11, completed high school, completed GED, AA degree, Technical degree, some college, Bachelor’s degree or any postgraduate studies), born in the US (yes or no), housing status (marginalized or stable), living as female fulltime (yes or no), and current hormone use (yes or no). In the current analysis, transgender female, androgynous, genderqueer, questioning or additional gender were collapsed under the umbrella term of “transgender” and were compared to those who identified as “female”. Race was re-coded as Black, Hispanic, and other. Education was re-coded as less than a high school degree, high school or equivalent degree and more than high school education.

**Alcohol and substance use.** Following the National HIV Behavioral Surveillance [24], the TEACH3 survey assessed alcohol and substance use. For the present analysis, substance use in the past 12 months (e.g., “Did you use any substances in the past 12 months?”) was dichotomized (yes or no). Alcohol use (e.g., “On a typical day when you drank alcohol in the past 12 months, how many drinks did you have?”) was dichotomized based on criteria from the National Institute of Drug Abuse [25]: one episode of heavy drinking (>4 drinks in one sitting) was considered high-risk for alcohol abuse and other disorders, while 4 drinks or less was considered low-risk.

**Experiences of Discrimination Scale.** The Experiences of Discrimination Scale (EOD) was used to measure discrimination in the following settings: school, hiring, work, getting housing, medical care, store, financial, public and police [26]. The EOD scale was modified with an additional question which asked about discrimination “while staying in a shelter, SRO, or residential treatment”. For each of the aforementioned settings, the 10-item EOD asked “Have you ever experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior because of your gender identity or presentation, or race ethnicity or color?” Participants could respond with “Yes” or “No”. Each question verifying setting-based discrimination was followed by a question clarifying if the experienced discrimination was related to a) gender identity, b) race, or c) both. These choices were independent of one another. Situation scores for gender identity, race and both gender identity and race were skewed and therefore dichotomized (yes or no) as in past studies [27]. Cronbach’s alpha was 0.76 for the present study.

**Outcome variables.** Outcome variables for this analysis assessed whether participants *did not access HIV care, was not currently on anti-retroviral therapy (ART)* or had a *detectable or unknown viral load*:

- Not accessed HIV care—this outcome focused on transwomen who were not currently seeing a health care provider for HIV care
- Not currently on ART—this outcome focused on transwomen who were not currently taking HIV medicines
- Detectable or unknown viral load—this outcome focused on transwomen whose viral load was detectable (> 50 copies/ml) or unknown.



Not accessed HIV care access and not currently on ART were assessed as a binary variable (yes or no). Viral load was self-reported and categorized as undetectable, detectable or unknown. Outcomes for logistic regressions were coded in such a way that those currently in care and currently on ART were the reference group. Viral load reference group were the undetectable participants.

### **Data Analysis**

Data analyses were conducted using the software RDS Analyst [28] and Stata 15 (StataCorp. 2017, College Station: TX). Transwomen in San Francisco are estimated to be at 3000 [29]. Of this population, 1/3 (978 to 1500) is estimated to fall into the lower socioeconomic status [30]. The high sample fraction (approximately 30%) suggest that this sample is over-representative of the transwomen with lower 1/3 socioeconomic status. Given the high sample fraction, Giles SS weights were deemed appropriate and were computed using RDS Analyst [31]. Further analysis was conducted in Stata 15 (StataCorp. 2017, College Station: TX) using RDS-weighted logistic regression.

Directed acyclic graphs were used to identify exposure-outcome relationships. Descriptive statistics summarized the demographic data on transwomen living with HIV in this sample. We conducted bivariable analysis using RDS-weighted logistic regression tests to evaluate associations between demographics, substance use, discrimination and whether participants were not accessing HIV care or not taking ART. RDS-weighted multinomial logistic regression was used to assess possible associations between the aforementioned exposures and whether participants had detectable or unknown viral loads. Due to the exploratory nature of this study, our multivariable analyses had a two-step process to model building. 1) We had a priori covariates that were retained in all models: gender identity, race, education and unstable housing. 2) We used a model-building algorithm to select covariates with  $p < .25$  in bivariable analysis [32]. Given the findings from previous studies about unstable housing and HIV care, this variable was retained in all models [11,12,16].

## **Results**

### *Participant Demographics*

Of the 123 transwomen with lab-tested HIV positive results, 118 participants self-reported HIV-positive status which lab tests confirmed and 5 transwomen self-reported

negative or unknown but lab-tested positive. Demographics of the 123 transwomen living with HIV are shown (Table 1). Transwomen in this sample were 23-71 years old. Population estimated mean age was 44.9 years. A majority of transwomen living with HIV were Black/African American transwomen or Hispanic/Latina transwomen (69.2%) and self-reported as transgender (65.2%). Population estimates are given with race expanded to African Americans, Hispanics, Whites, Asians, Pacific Islanders, Native Americans and multiple races for transwomen not in HIV care, not on ART and with a detectable or unknown viral load (Table 2). Approximately 36% of transwomen had less than a high school education. Most participants were born in the US (73.0%) and lived in unstable housing (70.3%).

Less than 5% of transwomen typically had greater than 4 alcoholic drinks in one sitting and 51.6% reported using substances in the past year. A majority of participants reported gender identity discrimination in one or more settings only (66.9%) and both (gender and race) discrimination in one or more settings (72.7%). Only 14.9% reported race discrimination only in one or more settings.

*Not Accessed HIV Care, Not Currently on ART, Detectable/Unknown Viral Load*

Approximately 18 transwomen in this sample were not engaged in HIV care, 24 were not currently on ART, 21 reported a detectable viral load, and 23 self-reported unknown viral load. Sample data and RDS-weighted prevalence estimates are reported in Table 1.

*Not Accessed HIV Care.* Table 3 presented bivariable analysis with RDS-weighted prevalence of those who did not access HIV care. In bivariable analyses, transwomen who reported both gender and racial discrimination in one or more setting had 6.3 times the odds of not accessing care than those who did not report both gender and racial discrimination (95%: 1.37-28.70;  $p=.018$ ). After performing the model building algorithm, age, gender identity, race, education, unstable housing, race discrimination only and both (gender and race) discrimination were added to the final model for those who did not access HIV care. Although not significant, multivariate logistic regression found that transwomen who had a high school diploma or equivalent had lower adjusted odds of not accessing HIV care than those who did not have a

diploma (aOR:.11; 95% CI: .01-.99,  $p=.049$ ). No significant associations were found (Table 4).

*Not Currently on ART.* In table 3, the bivariable analysis is presented for those currently not on ART. Transwomen who experienced both gender and race discrimination had 5.5 times higher odds of not being on ART than those who do not report both discriminations (95% CI: 1.38 – 21.53;  $p=.016$ ). Model building criteria informed a final multivariable model that included gender identity, race, education, unstable housing, current hormone use, substance use, race discrimination only and both gender and race discrimination. Transwomen who currently used hormones had lower adjusted odds of not taking ART than those not on hormones (aOR: .31; 95%CI: .10-.96,  $p=.043$ ). (Table 5.)

*Detectable/Unknown Viral Load.* No significant bivariable findings are reported. Housing instability and both (gender and race) discrimination were included in the final model as the  $p$  value was  $<.25$ . Gender, race and education were retained in the model.

The adjusted relative risk of a detectable viral load compared to undetectable viral load is expected to increase 5.6 times in participants who identify as females compared to transgender (95% CI: 1.17– 26.57;  $p=.032$ ). For those with unstable housing, the adjusted relative risk for detectable viral load compared to undetectable viral load is expected to increase by a factor of 8.61 (95%CI: 1.11 – 66.69;  $p=.039$ ). Similarly, the relative risk of being detectable compared to undetectable of those who experience both gender and racial discrimination increased by a factor of 12.2 (95% CI: 1.90-78.37;  $p=.009$ ) holding all other variables constant. There is a 6.29 times higher risk of having an unknown viral load for transwomen who experienced both (gender and race) discrimination (95% CI: 1.19 – 33.21;  $p=.031$ ). (Table 6)

## Discussion

Cross-sex hormone therapy is protective of ART use among transwomen. Unstable housing and both (gender and race) discrimination are notable barriers to ART usage and an undetectable viral load. Our findings on HIV care engagement and treatment use are consistent with other research suggesting inadequate treatment and care for transwomen [15,18]. In order to meet the 90-90-90 initiative, improvements to increase engagement to HIV care and treatment are needed.

Discrimination factors have a significant impact on the HIV care continuum. Transwomen had significantly more odds of not being on ART, and to have detectable or unknown viral load than those who did not experience both discriminations. Experience of discrimination have been found to impact the HIV care continuum among transwomen living with HIV [11, 18-21]. Eliminating discrimination among transwomen can significantly improve engagement to HIV care and treatment. Gender-based stigma was found to negatively impact HIV testing in Jamaica [33]. Experiencing discrimination has been reported to delay HIV testing among transwomen in Brazil [34]. Lower stress appraisal of transphobic experiences was associated with undetectable viral load [15].

The effects of race based discrimination only, gender based discrimination only and both (gender and race) discrimination on the HIV care continuum among transwomen has not been investigated. Intersectional framework addresses that gender and race cannot be independent of each other [9,10]. We found that both (gender and race) discrimination increases risk of an undetectable or unknown viral load. Gender and race discrimination separately did not have significant association with HIV care. This is consistent with the intersectional framework that gender and race should be seen on multiple axis rather than mutually exclusive.

We also found associations that those who identify as female had greater risk of having a detectable viral load status. This finding needs further exploration. Identifying as female rather than transwoman, androgenous, genderqueer or third gender indicates living in a binary gender system [35-35]. A recent study found that people who are recognized as transgender is significantly associated with discrimination [37]. Given that some people who are recognized as transgender experience discrimination, identifying within the binary system would be hypothesized as protective. As this area continues to develop, and the vocabulary of gender identity changes, future studies are needed that address the fluidity of gender and its effect on HIV care [36].

Current hormone use was found to be positively associated with ART use, contrary to prior studies that have found that transwomen prioritize their hormone use over ART [17-19]. The prioritization of HRT over ART may have been mitigated by community clinics in San Francisco offering trans health care and HIV care to decrease stigma and increase engagement in HIV care [17-18].

Our findings support past studies showing that transwomen with marginalized or unstable housing increases the risk of a detectable viral load [12,13]. Unstable housing increased odds of having a detectable viral load among transwomen. Further exploration of the effects of adequate housing among transwomen living with HIV can better inform a treatment plan that may encourage engagement and retention to their HIV care.

This study had several limitations. Wide confidence intervals may be the product of a small sample size. Associations may be missed because the sample size was not large enough to detect significance. Furthermore, this is an exploratory study. The model building relied on apriori hypothesis and significance at a bivariable level of  $p < .25$ . This may have limited our ability to find population associations. Transferring RDS data from RDS-Analysts to Stata limits the ability to control for bias and decreases ability to be representative of the population [38]. The study's cross-sectional design precludes determination of causality between the indicators we examined and barrier to HIV treatment and care. Sampling is limited to the lower socio-economic status of transwomen living with HIV in San Francisco and cannot be generalizable to all San Francisco transwomen or to any other transwomen living in other geographic areas. Self-reported findings may be influenced by participant's desire to provide socially "desirable" responses or by a participant's forgetfulness or inaccurate recall. Despite these limitations, this analysis is the first of its kind to look at the outcomes with these indicators and can inform future studies with larger sample.

### **Conclusion**

Efforts to engage and retain transwomen living with HIV into care are much needed as this population has been neglected in HIV care continuum research. Decreasing the transgender community's viral load can potentially decrease the risk of transmission of HIV, improve health outcomes of transpeople living with HIV and end the HIV epidemic. Our study identified important socio-economic factors impacting the HIV care continuum. These data point to the need for research and interventions to ensure high quality HIV care and viral load testing for transwomen living with HIV. The intersectional lens that guided this study is useful in identifying how transwomen's social identities overlap and occur simultaneously. The exploration of the co-occurring gender and racial discrimination and the effect on transwomen's health can contribute to the

understanding of why transwomen living with HIV chooses to engage or not engage in their HIV care. In order for the 90-90-90 treatment goals to be met, the effects of multiple discrimination must be mitigated. As transwomen are recognized as a key population, it is also important to keep in mind that differences occur within the transgender umbrella, highlighting the need to tailor the HIV care continuum to each transgender individual.

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**Table 1. Socio-demographics and HIV continuum outcomes with RDS weighted estimates for transwomen living with HIV in San Francisco, 2016-2017 (n=123)**

Demographics	Sample	Population estimate
	(N) %	% (95% CI)
	Mean ± SD	
Age (23-71 yrs)	45.2±10.5	44.89 (42.2 -47.6)
<b>Gender</b>		
Transgender	82 (66.7%)	65.2% (54.1–76.3)
Female	41 (33.3%)	34.8 % (23.7–45.9)
<b>Race/ethnicity</b>		
African American	(43) 35.0%	29.2 % (18.3–40.3)
Latina/Hispanic	(46) 37.4%	40.8% (27.6–53.9)
Other (White, Asians, Pacific Islanders, Native Americans, multiple)	(34) 27.6%	30.0 % (18.8–41.2)
<b>Education</b>		
No high school diploma	(42) 34.2%	35.9% (24.0 – 47.7)
HS Diploma/GED	(45) 36.6%	40.2% (29.1 – 51.5)
Some college/ Degree	(36) 29.3%	23.9% (15.4 – 32.4)
<b>Born in the US</b>		
No	(34) 27.6%	27.0% (16.1–37.9)
Yes	(89) 72.4%	73.0% (61.4–84.6)
<b>Housing status</b>		
Stable housing	(44) 35.8%	29.7% (20.5 – 38.4)
Unstable housing	(79) 64.2%	70.3% (61.6 – 79.5)
<b>Living as female fulltime</b>		
No	(83) 67.5%	66.9% (55.8 – 77.8)
Yes	(40) 32.5%	33.1% (22.2 – 44.2)
<b>Currently on Hormones</b>		
No	(36) 29.3%	35.4% (24.5 – 46.5)
Yes	(87) 70.7%	64.6% (53.6 – 75.5)
<b>Alcohol Use ( &gt;4 drinks in a sitting)</b>		
No	(112) 91.1%	95.4% (93.1–97.8)
Yes	(11) 8.9%	4.6% (2.2–6.9)
<b>Substance Use</b>		
No	(56) 45.5%	48.4% (36.5 – 60.6)
Yes	(67) 54.5%	51.6% (39.4 – 63.5)

<b>Demographics</b>	<b>Sample</b>	<b>Population estimate</b>
	<b>(N) %</b>	<b>% (95% CI)</b>
<b>Gender Identity Discrimination</b>		
No situations	(34) 27.6%	33.2% (20.9 – 45.4)
One or more situations	(89) 72.4%	66.9% (54.6 – 79.1)
<b>Race Discrimination</b>		
No situations	(100) 81.3%	85.1% (77.9 – 92.4)
One or more situations	(23) 18.7%	14.9% (7.6 - .22.1)
<b>Gender Identity &amp; Race Discrimination</b>		
No situations	(35) 28.5%	27.3% (17.1 – 37.7)
One or more situations	(88) 71.5%	72.7% (62.3- 82.9)
<b>Did not accessed HIV Care</b>		
No	(105) 85.4%	85.7% (76.8 – 94.4)
Yes	(18) 14.6%	14.3% (5.6 – 23.2)
<b>Is not currently on ART</b>		
No	(99) 80.5%	87.0% (81.6-92.4)
Yes	(24) 19.5%	13.0% (7.6-18.4)
<b>Viral load</b>		
Undetectable	(79) 64.2%	64.3% (51.9 – 76.8)
Detectable	(21) 17.1%	22.2% (9.0 – 35.2)
Unknown	(23) 18.7%	13.5% (7.5 – 19.5)

**Table 2. Descriptive RDS-weighted estimates of race of transwomen living with HIV and not in HIV care, not on ART with a detectable or unknown viral load in San Francisco, 2016-2017 (n=123)**

	Not in HIV care	Not on ART	Viral Load	
			Detectable Viral load	Unknown Viral Load
African American	17.85%	20.26%	11.15%	19.76%
Hispanic/Latina	17.71%	7.26%	25.00%	6.00%
White	0%	0%	16.60%	19.75%
Asian	27.22%	27.83%	10.15%	31.35%
Native Hawaiian or Pacific Islander	0%	0%	100.00%	0%
Multiple Races	2.52%	8.39%	39.54%	8.50%

**Table 3. Bivariate analysis: RDS-weighted estimates of transwomen living with HIV who are not in HIV Care<sup>1</sup>, not on ART<sup>1</sup> with a detectable or unknown Viral Load<sup>2</sup> in San Francisco, 2016-2017 (n=123)**

	Not in HIV care Reference group= In care	Not on ART Reference group= On ART	Detectable and Unknown Viral Load Reference group=undetectable	
Demographics	OR (95%CI)	OR (95%CI)	RRR (95%CI)	
			Detectable viral load	
			Unknown viral load	
Age (23-71yrs)	<b>.96 (.91 – 1.01)</b>	.97 (.92 – 1.03)	1.02 (.94 – 1.10)	.97 (.91 – 1.04)
Gender-female identity	1.02 (.22 – 4.62)	1.61 (.53 – 4.94)	2.62 (.58 – 11.78)	1.48 (.47 – 4.70)
Race/ethnicity				
Other	-	-	-	-
Black	3.06 (.51 – 18.21)	2.36 (.53 – 10.45)	.30 (.06 – 1.49)	.99 (.24 – 4.06)
Hispanic	3.12 (.40 – 24.54)	.90 (.19 – 4.23)	.61 (.11 – 3.53)	.42 (.11 – 1.59)
Education				
< high school	-	-	-	-
Hs Diploma	.15 (.02 – 1.05)	.70 (.20 – 2.49)	.93 (.15 – 5.80)	.91 (.23 – 3.53)
>high school	.94 (.17 – 5.32)	2.20 (.60 – 8.12)	.95 (.17 – 5.27)	1.52 (.38 – 6.02)
Born in US (yes)	1.69(.36 – 8.01)	1.26(.34 – 4.61)	1.19 (.15 – 9.19)	.83 (.25 – 2.71)
Unstable housing (yes)	1.36 (.29 – 6.35)	1.55 (.46 – 5.19)	<b>6.42 (1.27 – 32.48)</b>	<b>1.20 (.38 – 3.76)</b>
Fulltime female (yes)	1.11 (.24 – 5.07)	1.76 (.57 – 5.43)	2.99 (.66 – 13.50)	1.69 (.53 – 5.40)

Demographics	Not in HIV care Reference group= In care	Not on ART Reference group= On ART	Detectable and Unknown Viral Load Reference group=undetectable	
	OR (95%CI)	OR (95%CI)	RRR (95%CI)	RRR (95%CI)
Hormone Use (yes)	1.42 (.32 – 6.36)	<b>.46 (.15 – 1.41)</b>	.72 (.15 – 3.50)	.46 (.14 -1.51)
Alcohol Use in past 12 mo (yes)	.97 (.16 – 5.83)	1.87 (.42 – 8.22)	.58 (.06 – 5.64)	1.58 (.34 – 7.25)
Substance Use in past 12 mo (yes)	2.43(.54– 10.99)	<b>2.31 (.74 – 7.27)</b>	1.70 (.35 – 8.34)	1.19 (.38 – 3.77)
Gender discrimination (yes)	.42 (.08 – 2.19)	1.31 (.35 – 4.83)	1.11 (.19 – 6.45)	.92 (.25 – 3.46)
Race discrimination (yes)	<b>2.72 (.56– 13.14)</b>	<b>2.21 (.63 – .77)</b>	.450 (.10 – 2.52)	1.75 (.49 – 6.26)
Gender & Race discrimination (yes)	<b>6.28(1.37 – 28.70), p=.018</b>	<b>5.46 (1.38 – 21.53), p=.016</b>	<b>4.57 (.79 – 26.37)</b>	<b>3.44 (.99 – 11.92)</b>

<sup>1</sup>Bivariable analysis based on population survey data (RDS-weights) using logistic regression

<sup>2</sup> Multinomial analysis based on population survey data (RDS-weights) using logistic regression

**Bolded values:** Included in multivariable analysis:  $p < .25$

*P only reported if significant ( $p < .05$ )*



**Table 4. Multivariate analysis: RDS-weighted estimates of transwomen living with HIV not in HIV care in San Francisco, 2016-2017 (n=123)**

	<b>Adjusted Odds Ratio</b>	<b>Lower 95% CI</b>	<b>Upper 95% CI</b>	<b>p value</b>
Age	.95	.88	1.02	.151
Gender Identity	1.46	.36	5.89	.591
Race				
<i>Other</i>	-	-	-	-
<i>Black</i>	2.01	.30	13.52	.468
<i>Hispanic</i>	1.68	.22	12.75	.613
Education				
< high school	-	-	-	-
Hs Diploma	.11	.01	.99	.049
>high school	.91	.19	4.36	.908
Unstable housing	1.17	.30	4.63	.823
Race discrimination	1.46	.38	5.59	.581
Gender & Race discrimination	5.13	.84	31.18	.075

\*Variables: *Gender Identity, Race-ethnicity, education, unstable housing (retained)*

**Bolded values:** Statistically significant ( $p < 0.05$ )

**Table 5. Multivariate analysis: RDS-weighted estimates of transwomen living with HIV not on ART in San Francisco, 2016-2017 (n=123)**

	<b>Adjusted Odds Ratio</b>	<b>Lower 95% CI</b>	<b>Upper 95% CI</b>	<b>p value</b>
Gender Identity	2.02	.65	6.30	.224
Race				
<i>Other</i>	-	-	-	-
<i>Black</i>	1.99	.41	9.73	.393
<i>Hispanic</i>	.63	.10	3.93	.618
Education				
< high school	-	-	-	-
Hs Diploma	.39	.10	1.55	.179
>high school	1.96	.52	7.42	.318
Unstable housing	1.12	.32	3.97	.851
Currently on Hormones	<b>.31</b>	<b>.10</b>	<b>.96</b>	<b>.043</b>
Substance Use	2.33	.52	10.60	.269
Race discrimination	1.26	.26	6.05	.775
Gender & Race discrimination	6.37	.84	48.59	.074

\* Variables: *Gender Identity, Race-ethnicity education, unstable housing (retained)*

**Bolded values:** Statistically significant ( $p < 0.05$ )

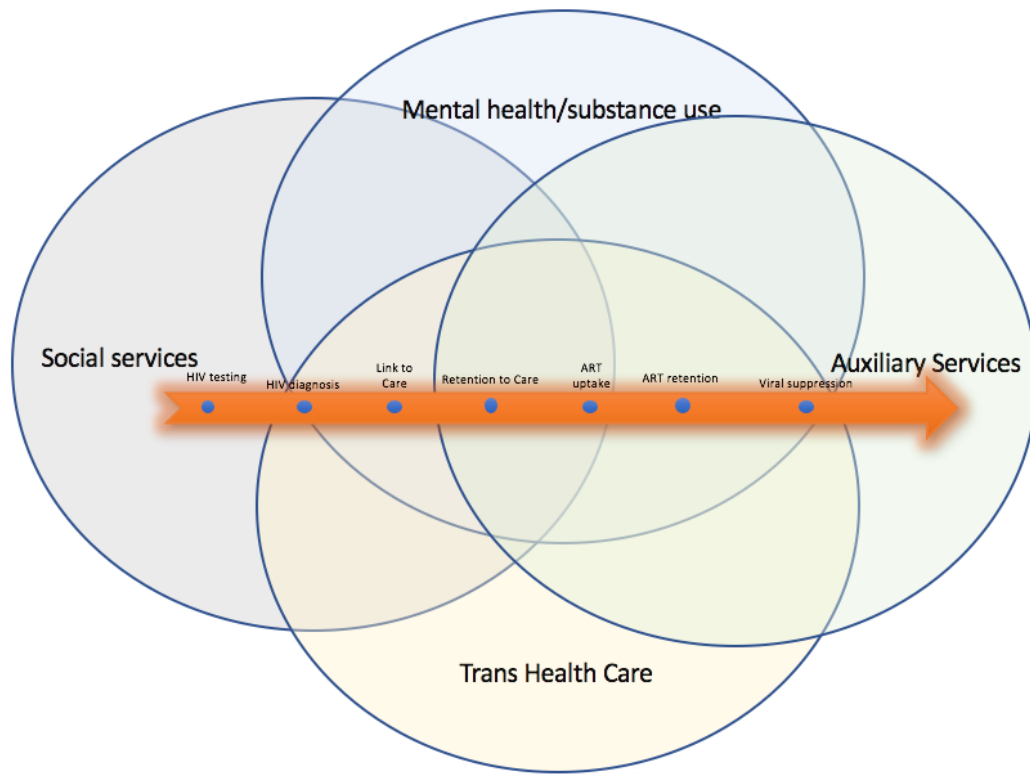
**Table 6. Multinomial and multivariate analysis: RDS-weighted estimates of transwomen living with HIV with Detectable and Unknown Viral Load in San Francisco, 2016-2017 (n=123)**

Viral Load Detectable	Adjusted RRR	Lower 95% CI	Upper 95% CI	<i>p value</i>
Gender Identity	<b>5.57</b>	<b>1.17</b>	<b>26.57</b>	<b>.032</b>
Race				
<i>Other</i>	-	-	-	-
<i>Black</i>	.14	.02	1.03	.054
<i>Hispanic</i>	.34	.06	2.03	.233
Education				
< high school	-	-	-	-
Hs Diploma	1.07	.21	5.39	.937
>high school	.80	.17	3.86	.782
Unstable housing	<b>8.61</b>	<b>1.11</b>	<b>66.69</b>	<b>.039</b>
Gender & Race discrimination	<b>12.20</b>	<b>1.90</b>	<b>78.37</b>	<b>.009</b>
Viral Load Unknown	Adjusted RRR	Lower 95% CI	Upper 95% CI	<i>p value</i>
Gender Identity	1.80	.54	5.98	.332
Race				
<i>Other</i>	-	-	-	-
<i>Black</i>	.56	.12	2.69	.470
<i>Hispanic</i>	.25	.05	1.31	.101
Education				
< high school	-	-	-	-
Hs Diploma	.73	.19	2.80	.647
>high school	1.03	.26	4.16	.962
Unstable housing	1.13	.35	3.65	.842
Gender & Race discrimination	<b>6.29</b>	<b>1.19</b>	<b>33.21</b>	<b>.031</b>

\* Variables: *Gender Identity, Race-ethnicity, education (retained)*

**Bolded values:** Statistically significant ( $p < 0.05$ )

**Figure 1. Transgender HIV care continuum**



Chapter 4: The Role of Gender Affirmation and Cross-Sex Hormone Therapy:  
Differences Among Transwomen Living with HIV

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### **Abstract**

The most utilized medical gender affirming therapy among transgender women (transwomen) is cross-sex hormone therapy (HRT). The purpose of this study is to describe demographic factors of HRT and its correlates. Respondent driven sampling (RDS) was used to recruit transwomen. Crude data and RDS-weights are used for descriptive statistics. Bivariable and multivariable analysis utilizes logistic regression with RDS-weights. Transwomen living with HIV used hormones (70.7%). Results found that transwomen with felt validation of gender identity through relationships had lower odds of HRT, controlling for gender, race, education, gender discrimination, importance of passing as female for safety and current HIV meds. Psychological gender affirmation through relationship may have a protective effect on HRT.

## Introduction

Transgender women (transwomen), those whose natal sex differs from their gender identity have a high prevalence of cross-sex hormone use.<sup>1-3</sup> The use of cross-sex hormone therapy (HRT) among transwomen initiates a cascade of feminizing physical changes that involves the use of either one or a combination of estrogen, antiandrogens and progesterone.<sup>4</sup> The hormones induce breast development, facial hair reduction and redistribution of weight, allocating fat to the hips and thighs.<sup>4</sup>

Hormone use has been associated with identifying as female, sex work, lower anxiety, higher self-esteem, and quality of life.<sup>5-7</sup> Additionally, transition-related medical therapy (hormones, breast augmentation and genital surgery) may be protective against suicidal ideation, substance use or other mental health issues.<sup>7</sup> However, several reviews found that studies on HRT and other medical therapies provided low quality evidence that medical therapies improved gender dysphoria, psychological functioning, comorbidities and quality of life.<sup>8-9</sup>

Gender affirmation is the process which one is recognized or validated as their chosen gender identity.<sup>10-11</sup> This process includes psychological (validation of gender identity or resistance of internalized stigma); social affirmation (preferred pronoun and name); medical affirmation (HRT, sexual reassignment surgery) or legal affirmation (legal name change).<sup>11</sup> The desired feminine physical changes that occur from HRT in transwomen allows some transwomen to live within the binary gender system.<sup>10</sup> The use of gender–normative coping strategies such as *passing as female* may help decrease the stress from transphobia or discrimination.<sup>12</sup> Benefits of gender affirmation, or the validation of gender identity have been associated with acceptance of self and life,

perceived stress and negatively associated with depression, anxiety and suicidal ideation among Black transwomen.<sup>13</sup> The nuances of psychological, social, medical or legal gender affirmation has yet to be explored.

Transwomen face suboptimal health care, lack of employment and unstable marginalized housing.<sup>2,7,14-15</sup> These social determinants of health, based in gender and racial stigma and discrimination may account for the high-risk behaviors of sex work and condomless anal sex.<sup>6,14</sup> Stigma and discrimination have been found to lead to delay or avoidance of medical care and HIV care among transwomen.<sup>16</sup> Transwomen of color also face disparities compared to their White counterparts in greater odds of having a medical diagnosis as well as a diagnosis of HIV.<sup>15</sup>

A recent review found that the odds of a transwoman to be HIV positive was 49 times higher than in other genders of reproductive age.<sup>17</sup> Transwomen living with HIV has reported prioritizing HRT over antiretroviral therapy (ART) due to the need of gender affirmation and the fear of HIV stigma.<sup>16,18</sup> Adherence to HRT has been associated with adherence to ART.<sup>19</sup> These findings suggest that providing HRT and HIV services together would improve HIV care.

Further understanding of the role of HRT among transwomen living with HIV may improve trans-specific care and improve the utilization of ART and adherence. The purpose of this study was 1) to describe demographic factors of transwomen living with HIV on hormones and 2) to determine the correlates of HRT among transwomen living with HIV.

## Methods

### Recruitment

This secondary analysis was conducted on HIV behavioral surveillance data collected from 2016-2017 in San Francisco through the Transwomen Empowered to Advance Community Health (TEACH 3). Respondent driven sampling (RDS) was used to recruit 318 transwomen. In order to reduce chances of the initial seeds influencing the results, initial seeds (n=15) were diverse in background (i.e., race, education and HIV status). Seeds were asked to recruit up to 10 transwomen from their social network. Convergence and bottleneck plots assessed for seed dependence. The recruits were able to recruit up to 10 participants. This process was continued until equilibrium was reached (recruitment chain mean= 6; range=1 to 15). All participants were eligible if they self-reported transwoman, lived in San Francisco and was 18 years and older. After interviewers provided verbal informed consent, handheld computers were used to complete surveys. Participants received \$50 for participation in this study and \$10.00 for each eligible participant recruited. This study was approved by the Committee on Human Research at the University of California, San Francisco. A subset of transwomen living with HIV was analyzed (n=123).

### Data Analysis

The population of transwomen in San Francisco is estimated to be 3000.<sup>20</sup> Approximately a third of the population (978 to 1500) was estimated to be in the lower SES category.<sup>21</sup> Giles SS weights were appropriate to use given the high sample fraction. The software RDS Analyst Tool<sup>22</sup> and Stata 15 (StataCorp. 2017, College Station: TX) conducted the analysis. Descriptive statistics (crude and RDS), bivariate and



multivariable analysis using RDS-weighted logistic regressions are reported. Covariates were chosen if bivariate analysis yielded a  $p < .25$ .<sup>23</sup> The final model controlled for gender identity, race and education.

### **Measurements**

All measures collected from the survey were self-reported. The outcome for this analysis is current hormone use, which was assessed by asking transwomen if they were currently taking hormones to enhance their gender presentation (yes or no).

**Sociodemographic and risk variables.** Demographics for this analysis were age (continuous), gender identity (transwomen or female), race (other, Black, Hispanic) and education (high school or less or more than high school). Due to the small number of Asians/Pacific Islander and White transwomen, we collapsed these races into *Other* category. Born in the United States and unstable housing were reported as binary variables (yes or no). Sex work is defined as reporting income from sex work, have a sex work occupation or doing sex work with any of their past partners in the past 6 months (yes or no). Binge drinking is defined as  $>4$  drinks (yes or no). Substance use in the past 12 months is dichotomized (yes or no). More detail on substance use is categorized as none, only single type of drug use in the past 12 months or multiple type of drug use in the past 12 months.

**Discrimination.** This modified 10-item Experience of Discrimination scale asked “Have you ever experienced discrimination, been prevented from doing something, or been hassled or made inferior because of your gender identity or presentation or race ethnicity or color?” in the following setting: school, hiring, work, getting housing, medical care, store or restaurant, getting loans or credit, in public settings and police or

court. An additional setting of discrimination at a shelter, SRO or residential treatment was added to the survey. A second question follows each setting clarifying if this discrimination was related to 1) gender identity 2) race or 3) both gender identity and race. We dichotomized each setting score for gender identity, race or both gender and race discrimination respectively as yes or no.<sup>24</sup>

**Gender Affirming variables.** Gender affirmation is assessed by asking four questions that were dichotomized as yes or no: 1) Living fulltime as female 2) Passing as female is important for safety 3) Validation of gender identity from sexual advances 4) Validation of gender identity from relationships.

**HIV Care.** In order to assess for relationships between hormone use and HIV care, three variables were included in this analysis. Currently in HIV care and current HIV medications are dichotomized as yes or no. Viral load is self-reported as undetectable or detectable or unknown.

**HIV testing.** All participants, regardless of self-reported HIV status, were offered a non-mandatory INSTI® HIV-1/HIV-2 Rapid Antibody Test. Those who self-reported positive and was confirmed with a rapid antibody test did not have a second test. Those who self-reported negative or unknown and confirmed positive with rapid antibody test was confirmed with Determine™ HIV-1/2 Ag/AB Rapid test.

## **Results**

### *Participant Characteristics*

Of the 123 transwomen living with HIV, 87 transwomen (70.7%) were currently on hormones, one reported they were not taking prescribed hormones. A majority of transwomen living with HIV (51.2%) had ever taken non-prescribed hormones.

Transwomen identified as transgender (66.7%) rather than female, Black (35.0%) or Hispanic (37.4%).

Only 14.6% of transwomen reported having had more than 4 drinks in one setting in the past 12 months but 54.5% reported using substances. A majority of transwomen report gender discrimination only (72.4%), and only 23 transwomen report race discrimination only (18.7%). Transwomen (71.5%) self-reported discrimination based on gender and race together.

#### *Gender Affirming Variables*

Of the gender affirming variables, 32.5% transwomen living with HIV also lived fulltime as female. Eighty-two percent of transwomen living with HIV self-reported that it was important to pass as female for safety. Of the transwomen living with HIV who received validation of their gender, 31.7% received it from sexual advances and 35.8% received it from relationships. Crude and RDS-weighted data is presented in Table 1, with a cross-tab of current hormone use and socio-demographic, gender affirming and discrimination variables.

#### *Bivariate Analysis & Multivariable Analysis*

Table 2 presents bivariate and multivariable analysis, reported as RDS-weighted odds ratio. In bivariate analysis, transwomen living with HIV who received validation from relationships are at lower odds of current hormone use [RDS-weighted OR: .20 [.068-.574,  $p=.004$ ].

The final model for the multivariable logistic regression was: gender discrimination, passing as female for safety, validation from relationships and current HIV medications, controlling for gender identification, race and education. Validation of

gender identity from relationships was significant at  $p=.004$  [RDS-weighted OR: .22[.079-.608] controlling for all other variables.

### **Discussion**

This study examines demographic factors that were associated with hormone use among transgender women living with HIV. Transwomen living with HIV who states that being in a relationship validates or confirms gender identity had lower odds of current hormone use than those who does not find validation of gender identity in relationships. This finding was also found when controlled for gender identity, race, gender discrimination, passing as female important for safety and current HIV medication.

Gender affirmation is a process that validates gender identity through multiple avenues: psychological; social affirmation; medical affirmation or legal affirmation.<sup>11</sup> The most used medical gender affirming therapy is HRT, and felt validation is a psychological gender affirmation. Findings suggest that psychological gender affirmation may buffer the need for medical gender affirmation.

A past study on Black transwomen assessed gender affirming factors considered to be social, medical and legal based.<sup>13</sup> Authors found that social and legal factors were associated with resilience, acceptance of life, and mental health outcomes. No associations with resilience, acceptance of life, perceived stress and mental health outcomes was found for medical gender affirming therapies. This finding must be further explored in order to further understand how gender affirming therapies such as HRT and validation from relationships can impact the health of transwomen living with HIV.

Although ART and HRT has been associated in past studies, this study did not

provide significant evidence of association. The link between HRT and ART may be a product of adherence of medications in general.<sup>19</sup> Given the importance of ART adherence to decreasing viral load and the likelihood of transmitting HIV, further studies need to address HRT and HIV medications.

This study has several limitations. Due to the small number of participants, associations between HRT, ART or any other variables may be too small to observe. This can account for the wide confidence intervals. Furthermore, the magnitude of the association between relationship validation and not currently using hormones can be over-estimated due to the small sample size. Given that RDS-weighted data looked at the lower third of the population in San Francisco, generalizability is limited to the lower socioeconomic class of transwomen living in San Francisco.

### **Conclusion**

Hormone use among transwomen is widely used for medical gender affirmation. Differentiating between the psychological, medical, legal and social gender affirmation and further research of ART and HRT may increase understanding and inform clinical practice of transwomen living with HIV.

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**Table 1: Sociodemographic and clinical characteristics of transwomen living with HIV and current hormone use, San Francisco, 2016-2017 (n=123)**

	Current hormone use			<i>RDS- weighted %</i> (95%CI)
	Crude n (%)			
	No (n=36)	Yes (n=87)	Total	
Age (mean/SE)	44.6 (1.9)	45.5 (1.1)	-	-
Identify as:				
Transwomen	29 (80.6)	53 (60.9)	82 (66.7)	65.2 (54.1-76.3)
Female	7 (19.4)	34 (39.1)	41 (33.3)	34.8 (23.7-45.9)
Race				
Other	8 (22.2)	26 (29.9)	34 (27.6)	30.0 (18.8-41.2)
Black	11 (30.6)	32 (36.8)	43 (35.0)	29.2 (18.3-40.3)
Hispanic	17 (47.2)	29 (33.3)	46 (37.4)	40.8 (27.6-53.9)
Education > high school (yes)	6 (16.7)	30 (34.5)	36 (29.3)	23.8 (16.0-31.5)
Born in the US (yes)	23 (63.9)	66 (75.9)	89 (72.4)	73.0 (61.4-84.6)
Unstable housing (yes)	28 (77.8)	51 (58.6)	79 (64.2)	70.3 (61.6-79.5)
Sex work	29 (80.6)	68 (78.2)	97 (78.9)	82.7 (75.9-89.4)
Binge drinking (>4) (yes)	8 (22.2)	10 (11.5)	18 (14.6)	11.5 (5.3-17.8)
Substance use in past 12 mo (yes)	22 (61.1)	45 (51.7)	67 (54.5)	51.6 (39.4-63.5)
Substance use past 12 mo				
• None	14 (38.9)	42 (48.3)	56 (45.5)	48.5 (35.3-61.6)
• Single drug use	8 (22.2)	20 (23.0)	28 (22.8)	21.6 (11.5-31.7)
• Multiple drug use	14 (38.9)	25 (28.7)	39 (31.7)	30.0 (17.1-42.8)
Gender Discrimination (yes)	27 (75.0)	62 (71.3)	89 (72.4)	66.9 (54.6-79.1)
Race Discrimination (yes)	5 (13.9)	18 (20.7)	23 (18.7)	14.9 (7.6-22.1)
Both Gender & Race Discrimination (yes)	24 (66.7)	64 (73.6)	88 (71.5)	72.7 (62.3-82.9)
Living fulltime as female (yes)	6 (16.7)	34 (39.1)	40 (32.5)	33.1 (22.2-44.2)
Passing as female for safety (yes)	30 (83.3)	71 (81.6)	101 (82.1)	81.5 (71.6-91.2)
Validation from sexual advances (yes)	12 (33.3)	27 (31.0)	39 (31.7)	25.1 (16.9-33.9)
Validation from relationship (yes)	20 (55.6)	24 (27.6)	44 (35.8)	35.5 (25.5-45.6)
Current HIV care (yes)	30 (83.3)	75 (86.2)	105 (85.4)	85.7 (77.8-93.8)
Current HIV medications (yes)	26 (72.2)	73 (83.9)	99 (80.5)	87.1 (81.6-92.5)

	<b>Current hormone use</b>			<b><i>RDS- weighted</i></b> <b>%</b> <b>(95%CI)</b>
	<b>Crude n (%)</b>			
	<b>No (n=36)</b>	<b>Yes (n=87)</b>	<b>Total</b>	
Viral load				
Undetectable	22 (61.1)	57 (65.52)	79 (64.2)	64.3 (51.9-76.8)
Detectable	6 (16.7)	15 (17.2)	21 (17.1)	22.2 (9.0-35.2)
Unknown	8 (22.2)	15 (17.2)	23 (18.7)	13.5 (7.5-19.5)

**Table 2: Bivariate & Multivariable analysis: RDS-weighted estimates of transwomen living with HIV on hormones, San Francisco 2016-2017 (n=123)**

	<i>Bivariate Analysis</i>		<i>Multivariable Analysis</i>	
	RDS-weighted OR [95% CI]	<i>p</i>	RDS-weighted OR [95% CI]	<i>p</i>
Age (mean/SE)	.99[.942-1.047]	.791	ns	-
Identify as:			1.06[.334-3.331]	.926
Transwomen	-	-	-	-
Female	.96[.289-3.201]	.948	-	-
Race			-	-
Other	-	-	-	-
Black	.75[.201-2.804]	.668	.89[.196-4.054]	.881
Hispanic	.40[.103-1.560]	.185	.89[.239-3.331]	.864
Education > high school	2.98[.898-9.901]	.074	3.5[.919-13.670]	.066
Born in the US (yes)	1.96[.590-6.482]	.270	ns	-
Unstable housing (yes)	.51[.156-1.637]	.253	ns	-
Sex work	.85[.256-2.794]	.782	ns	-
Binge drinking (>4) (yes)	.71[.182-2.774]	.621	ns	-
Substance use in past 12 mo (yes)	.83[.275-2.514]	.742	ns	-
Substance use past 12 mo			ns	-
None	-	-	-	-
Single drug use	.80[.192-3.313]	.753	-	-
Multiple drug use	.86[.240-2.943]	.805	-	-
Gender Discrimination (yes)	.45[.141-1.461]	<b>.184</b>	.40[.114-1.383]	.145
Race Discrimination (yes)	1.5[.404-5.728]	.533	ns	-
Both Gender & Race Discrimination (yes)	1.43[.470-4.356]	.526	ns	-
Living fulltime as female (yes)	1.19[.330-4.303]	.787	ns	-
Passing as female for safety (yes)	.29[.079-1.047]	<b>.059</b>	.41[.115-1.474]	.171
Validation from sexual advances (yes)	1.0[.359-3.015]	.942	ns	-
Validation from relationship (yes)	.20[.068-.574]	<b>.003</b>	<b>.22[.079-.608]</b>	<b>.004</b>

	<i>Bivariate Analysis</i>		<i>Multivariable Analysis</i>	
	RDS-weighted OR [95% CI]	<i>p</i>	RDS-weighted OR [95% CI]	<i>p</i>
Current HIV care (yes)	.70[.157-3.161]	.645	ns	-
Current HIV medications (yes)	2.2[.711-6.629]	<b>.172</b>	3.9[.802-19.159]	.091
Viral load			ns	-
Undetectable	-	-	-	-
Detectable	.72[.148-3.497]	.680	-	-
Unknown	.46[.143-1.506]	.199	-	-

**Bold: *p* value <.25 included in model controlling for gender identity, race and education**

## Chapter 5: Conclusion/Implications

Transwomen experiences multiple barriers to their health and their health care, that involve psychosocial issues, socio-economic factors and institutional or structural level policies. These barriers are germane to the high prevalence of HIV among transwomen. The intersectionality framework, applied in this dissertation has addressed these barriers at the individual experience, the community experience and the institutional or macro experience. Past studies have focused on the risk of HIV among transwomen (Arayasirikul, Wilson & Raymond, 2017; Fletcher, Kisler & Reback, 2014; Sugano, Nemoto & Operario, 2006). The recent increase of studies on transgender people within the last few years, have increased our understanding of the significant challenges that the transgender community face. However, there are still gaps in knowledge that needs to be addressed.

The three studies in this dissertation addressed the need for more studies on the experiences of transwomen who are living with HIV, and the barriers to their HIV care. The three papers attempt to answer the broad question of what factors are associated with HIV care among transwomen. Although each study differs, these three studies focused only on transwomen living with HIV. Given that transwomen are understudied and little is known, each study presents factors that affect transwomen living with HIV.

### **Summary of Research**

The purpose of this dissertation was to find and examine clinical factors and social determinants that may affect the decision of transwomen living with HIV to engage or not engage in their HIV care. This overarching purpose weaves these three studies together. The findings of the three studies are presented below:

*Impact of Stigmatization and Discrimination on the HIV Care Continuum in Transwomen: A Mixed-Study Review*

The purpose of the first paper was to review and synthesize existing literature on stigmatization, discrimination and transphobia and to explore how these factors contribute to conditions that will affect a transwomen's decision to engage or not engage in care. There were nine studies that were reviewed for this literature review. This review of the literature found that stigmatization and discrimination experienced on a personal, community and institutional levels were factors that affected HIV testing, adherence to HIV care, and viral load among transwomen living with HIV. However, there were no studies that reviewed the impact of stigmatization and discrimination across all aspects of the HIV care continuum.

Stigmatization and discrimination occurred due to race, gender identity and HIV status. Intersectionality provides the understanding that transwomen are not separate identities, but rather more than part of their identities as a transwoman, as a racial minority, as a person living with HIV. There is a lack of understanding of the effect of simultaneously occurring stigmatization and discrimination. The paucity in studies regarding these multiple stigmatization and discrimination among transwomen are a gap in our understanding of this phenomenon. Addressing the HIV care continuum in its entirety as well as the multidimensional identities of transwomen would be beneficial in gathering a better understanding of the experience of transwomen living with HIV.

Several opportunities are noted. Most of the studies reviewed (6 studies) were qualitative with only three cross-sectional studies. The need for further quantitative analysis may address the magnitude and the direction of relationships that are

qualitatively reported. This review found only two studies that focused on providers. To fully understand the effect of stigmatization and discrimination among transwomen, studies focused on providers can provide the basis for suitable interventions regarding stigma reduction and decrease of discriminatory acts, both personal and structural.

*Associations to HIV Care Among Transgender Women Living with HIV*

The secondary analysis of the second study was conducted in order to address factors that were associated with three milestones of the HIV care continuum, access to care, ART utilization and undetectable viral load. It was found that the transwomen who experience both gender and racial discrimination had suboptimal utilization of the HIV care continuum, such as not currently taking ART and not having an undetectable viral load. Furthermore, hormone use was associated with currently being on ART and unstable housing was associated with detectable viral load.

This study included gender discrimination, racial discrimination and both gender and racial discrimination. The finding that both (gender and racial) discrimination versus gender and racial discrimination separately impacted ART use and viral load are important in further understanding the multi-dimensional effect of stigmatization and discrimination.

This study had several limitations. Although this study attempted to control for biases by RDS sampling, it was noted that transwomen recruited are estimated to be the lower 1/3 of the socioeconomic status of all transwomen in San Francisco. This limits generalizability of the study to all transwomen. Furthermore, this cross-sectional analysis was self-reported and did not contribute to our understanding of causal factors.



These findings and limitations offer more opportunities. A recruitment of the upper 2/3 of the socioeconomic status among transwomen would be beneficial in understanding the within group differences among transwomen. The difficulty in finding transwomen who meet these criteria may prove challenging, but innovative and creative recruitment methods may engage them in studies. Also, studies that address the multiple levels of stigmatization and discrimination will allow for a more nuanced intervention in stigma reduction. As this field of multiple stigmas develop statistically and methodologically, transwomen living with HIV would benefit from developing strategies that would simultaneously decrease multiple types of stigma and discrimination.

*The Role of Gender Affirmation and Cross-Sex Hormone Therapy: Differences Among Transwomen Living with HIV*

The third study in this dissertation addressed the association found in study 2, regarding current hormone use and ART. Cross-sex hormone therapy (HRT) use has been reported as a priority over ART utilization for some transwomen (Sevelius et al., 2014). Yet little is known about the transwomen living with HIV and the use of hormones. This study described demographic factors of transwomen living with HIV on hormones and addressed correlates of HRT.

This study found that hormone use was significantly associated with stating that relationships validates or confirms their gender identity. Gender affirmation occurs in several ways: psychological, social, medical and legal. The study found that there were lower odds of being on hormones for those who stated relationship validates their gender identity.

The study did not find a significant association between HRT and ART. This may be due to the small sample size. Also, the validation from relationships of their gender identity may also effect ART utilization. This was not addressed in this study. Given the importance of ART adherence to decreasing viral load and the likelihood of transmitting HIV, further studies need to address HRT and HIV medications.

This study uses the sample from study 2, which also includes the same limitations. The sample in these studies are estimated to be from the bottom third of the socioeconomic status among transwomen in San Francisco. Therefore, this sample is not representative of all transwomen living in San Francisco, limiting generalizability. The small sample size may hide any associations between ART utilization and HRT.

### **Contributions to Literature**

These three papers contribute to the dearth of knowledge of the transgender community. Factors that may affect the HIV care of transwomen are explored in the three studies. The literature review found that stigma and discrimination does affect the HIV care continuum at every level. The second study found associations that hormone use was associated with ART use and unstable housing was associated with viral load. The experience of discrimination based on gender and race together rather than separately was significantly associated with not being on ART utilization and a detectable or unknown viral load. The final study looked at the correlates of HRT and found that although ART was not significantly associated with HRT when controlling for other variables, stating that your gender identity is validated by your relationships may buffer the need for medical gender affirmation such as HRT.

**Multiple discriminations.** The finding that multiple layers of discrimination (gender and race) were significantly associated with current HIV medications and viral load contributes to the research-naïve field of multiple stigmas and discrimination. Although this field is challenged by methodology and statistics, intersectionality framework states that the identities one embodies are not separate and equal, but happening simultaneously. Therefore, the findings in this study gives further evidence that the field of multiple stigmas and discrimination and their impact on health should further be explored.

**Intersectionality.** These studies also contribute to the literature on intersectionality. Although intersectionality and stigmatization of women and transwomen has initially been explored (Logie, James, Tharao, Loutfy, 2011), further studies are needed. Understanding the experiences of transwomen living with HIV begins by the acknowledgment that the social identities intersect and are occurring at the same time. The understanding of intersectionality may lead to a developed research question that includes the vocabulary of power and the privilege and oppression of each group. Although not specifically addressed in the third study, the intersectional lens was used in understanding that within group differences exist and that all transwomen are not the same. Using the intersectionality framework for research and for clinical practice can help tailor the HIV care continuum to each transwoman's individual needs.

**Respondent Driven Sampling (RDS).** The use of RDS to recruit transwomen is an innovative practice. Locating and engaging transwomen in research and HIV care can be challenging (Reback, Ferlito, Kisler, & Fletcher, 2015). Although RDS has some limitations, the innovation of locating through social network has contributed to multiple

studies and the inclusion of multiple participants in the studies (Arayasirikul et al., 2017; Grinsztejn et al., 2017). The second and third study used the same database that used RDS to recruit transwomen. These studies were analyzed using RDS-weights in order to estimate population size data.

### **Future Research**

Although these three studies contribute to the literature, there are still more questions and issues that need to be addressed with transwomen living with HIV. The understanding of stigma and discrimination across the HIV care continuum may benefit from a longitudinal study. The different expressions of stigma and discrimination (for example, gender discrimination, racial discrimination and HIV stigma) may be fluid across time among transwomen. The importance of one stigma or discrimination may fall into the background as the other discrimination or stigma takes the foreground. Also, the effect of the combination of stigmas and discrimination may prove to differ from a single stigma or discrimination experienced.

The exploration of other factors such as housing on HIV risk in transwomen has been discussed in previous studies (Fletcher et al., 2014). Research developed to understand the effect of housing instability on the health of transwomen living with HIV may inform future interventions. Although this dissertation did not include food insecurity, another area of interest is to examine how transwomen living with HIV are impacted by food and housing insecurity.

The third study did not find an association with ART utilization and HRT, it is important to study how HIV care and gender affirming services interact. Multiple studies suggest that integrating HIV care and gender affirming services such as HRT would be

beneficial for transwomen (Sevelius et al., 2014; Reisner, Radix & Deutsch, 2016; Reisner et al., 2017). Studying the feasibility of integrating these services in the United States and the effect it may have on HIV care may inform best practices for treatment of transwomen living with HIV.

### **Implications for practice**

The finding that gender and race discrimination together impacts ART utilization and viral load suggests the need to decrease pathways that may be stigmatizing. Having a community clinic that offers all care to transwomen can eliminate the stigma of an HIV clinic, as the clinic will be known for providing trans-specific health care as well as HIV care. The integration of gender affirming care and HIV care may eliminate certain situations in which stigma and discrimination may occur. Providers who practice at this clinic will be trained in gender affirming care and HIV care, thereby eliminating lack of provider knowledge of transgender care. Clinic staff will be knowledgeable of gender affirming care.

The finding that those who state relationships validate their gender identity can also inform interventions that increase engagement to HIV care. Partners or close significant others may prove to be more valuable in initiating care strategies that may include medical gender affirming therapy such as HRT as well as HIV care. The various avenues of seeking gender affirmation may provide opportunities in which to give quality health care to transwomen and quality HIV care.

The findings in this dissertation highlight the unique needs of transwomen living with HIV. The findings suggest that the medical model of the HIV care continuum must be adapted for transwomen living with HIV. Although HIV testing, the uptake of ART

and an undetectable viral load are important milestones to achieving better health outcomes and to decrease odds of transmitting HIV, the findings suggest that there are other factors that challenge the success of the HIV care continuum. The practice of an HIV *care* continuum needs to be tailored for the transwomen and needs to be a *caring* model rather than a medical model. Tailoring the HIV care continuum to the needs of a transwomen, such as stable housing, gender affirming environment and competent quality health care, for both trans-specific and HIV care, may provide the necessary formula to increasing engagement into HIV care and reaching decreasing viral load.

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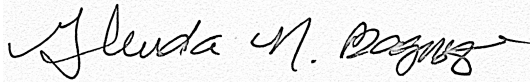


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\_\_\_\_\_ Date \_\_\_\_8/17/17\_\_\_\_