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Sexual Orientation and Intimate Partner Violence Among Women Who Have Sex With Women

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Walden University
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Abstract

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MPH, Walden University, 2013

BS, Kaplan University, 2010

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Limited knowledge exists about sexual orientation and intimate partner violence among women who have sex with women. These women are at risk for adverse physical and mental health hygiene outcomes that may result from unhealthy lifestyles secondary to intimate partner violence. The purpose of this study was to examine the association between sexual orientation and intimate partner violence among women who have sex with women. The constructs of the biopsychosocial model guided the study and examination of the relationships among biological factors (sexual orientation), social contexts (support of family and friends and use of community services), and psychological influence (mental health status) on intimate partner violence among women who have sex with women. The study was a quantitative cross-sectional analysis of archived data from the 2010 National Intimate Partner and Sexual Violence Survey. Forward stepwise logistic regression indicated a statistically significant relationship between sexual orientation and intimate partner violence victimization ($p < .05$). Annual household income, race, family/proximal support, and support of community were significant predictors of intimate partner violence victimization. The social change implications of the study are that findings may inform design and implementation of policies, services, and interventions that target the diverse needs of female same-sex intimate partner violence victims.

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Dedication

This work is dedicated to those of us who are survivors and to all who have lost their lives because of intimate partner violence. In loving memory of my brother, Gregory Hayes Smith, Jr., may you continue to Rest in peace in Paradise until we meet again. I love and miss you dearly!

Acknowledgments

I first must acknowledge my Lord and Savior Jesus Christ, who gave me the strength and courage to persevere when others doubted my abilities to succeed in fulfilling my dreams. Abundant loss, sleepless nights, and feelings of absolute uncertainty characterized this journey. Without the love and support of family and friends, I never would have finalized this journey.

To my parents, Mr. and Mrs. Gregory Hayes Smith, Sr., and sisters, Tiffany Renee Lagerberg and La'Toya Renee Stoutmire, thank you for all of your support, endless love, and coping mechanism of laughter to get me through life's struggles and beyond. I want to give a special thanks to Dr. Mary Lou Gutierrez, my committee chair, who directed and supported me through this process.

I want to extend a very, very special thank you to my husband, Marcus L. Jackson, who has remained by my side and given me his everlasting support and enduring love. To my sons, Demarcus, Karter Myles, and Marley Noah Jackson, thank you for your unconditional love, patience, and infinite lessons in time management, motherhood, and bereavement/loss. Last but certainly not least, I want to acknowledge a dear friend and you know who you are. Thank you for supporting my decision to explore the effects of intimate partner violence among diverse populations. I pray that you find peace and solace in knowing that I will be forever appreciative for you.

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Section 1: Foundation of the Study and Literature Review

Introduction to the Study

The future physical and mental health of women who have sex with women is concerning due to the augmented rates of intimate partner violence (Koeppel & Bouffard, 2014; Walters, Chen, & Breiding, 2013). Same-sex intimate partner violence is a result of internalized minority stressors secondary to heterosexism (Baker, Buick, Kim, Moniz, & Nava, 2013; Brown, 2008; Duke & Davidson, 2009). Heterosexism promotes judicial prejudice and communities that lack culturally sensitive services. In turn, sexual minorities develop adverse coping mechanisms to deal with stigmatization and discrimination (Ard & Makadon, 2011; Baker et al., 2013; Carvalho, Lewis, Derlega, Winstead, & Viggiano, 2011; Duke & Davidson, 2009). In fact, they have higher rates of tobacco use, alcohol misuse, depression, and suicide (Gilbert & Sabin, 2008). These health behaviors are risk factors for intimate partner violence (Mason, Lewis, Gargurevich, & Kelley, 2016).

Sexual minorities are adversely affected by health disparities, which are a leading health indicator (Healthy People, 2017) and a result of disproportionate rates of poorer physical and mental health outcomes when compared to heterosexual dyads (Koeppel & Bouffard, 2014). Intimate partner violence is correlated with adverse mental and physical health outcomes (Koeppel & Bouffard, 2014; Walters et al., 2013). As a result, health care expenditures increase because of hospitalization, disability, or death (Centers for Disease Control and Prevention [CDC], 2003; Walters et al., 2013). Intimate partner violence research has targeted heterosexual dyads, and not much has addressed same-sex

dyads (Alhusen, Lucea, & Glass, 2010; Koeppel & Bouffard, 2014). The CDC's National Center for Injury Prevention and Control sponsors a national survey that examines experiences of sexual violence, stalking, and intimate partner violence among adult men and women in the United States (Walters et al., 2013). In addition to collecting data related to intimate partner violence experiences, demographics including sexual orientation and sexual behavior are also collected (Walters et al., 2013).

Sexual Orientation and Risk Factors

Women of all sexual orientations are disproportionately affected by increased rates of intimate partner violence (Carvalho et al., 2011; Daire, Carlson, Barden, & Jacobson, 2014; Walters et al., 2013). Intimate partner violence researchers customarily analyze data based on the binary gender concept of female and male (Koeppel & Bouffard, 2014). However, the United States is becoming more diverse in sexual orientation, sexual identity, and sexual behavior (Koeppel & Bouffard, 2014), resulting in a subpopulation that deviates from the heteronormative views of society. In fact, U.S. adults who identify as lesbian, gay, bisexual (LGB) or transgender account for 3.5% and 0.3% respectively of the population, thus representing an estimated 9 million lesbian, gay, bisexual, and transgender (LGBT) Americans (Gates, 2011; Gates & Newport, 2013). The U.S. LGBT population is approximately comparable to the population of New Jersey (Department of Commerce, 2016; Gates, 2011).

The current intimate partner violence rates among women based on sexual orientation (bisexual, heterosexual, or lesbian) are available for the year 2010 and have indicated an increasing trend when compared to men of all sexual orientations (Walters et

al., 2013). These data are representative of the population provided by National Intimate Partner and Sexual Violence Survey NISVS. The lifetime prevalence of intimate partner rape, physical violence, and stalking is 61% among bisexual women, 35% among heterosexual women, and 44% among lesbians (Calton, Cattaneo, & Gebhard, 2016; Walters et al., 2013). Also, 57% of bisexual women experience higher rates of absenteeism from work and increased episodes of posttraumatic stress compared to 28% of heterosexual women and 34% of lesbians (Walters et al., 2013).

The current study was significant because I examined how sexual orientation influenced intimate partner violence among female sexual minorities. Female sexual minorities comprise a heterogeneous population with deviations in sexual orientation, sexual behavior, and sexual attraction (Gates, 2011). For example, bisexual men and women represent 1.8% of U.S. Americans (Gates, 2011). They experience unique stressors (i.e., stigmatization and multiple marginalizations) because of their sexual identity and sexual behavior (Calton et al., 2016; Duke & Davidson, 2009), which places them at an increased risk of intimate partner violence (Duke & Davidson, 2009). The influence of sexual orientation based on bidimensional constructs (i.e., sexual behavior, sexual orientation, and sexual attraction) has not been studied extensively. However, several studies have addressed sexual orientation based on the one-dimensional construct of sexual behavior (Blosnich & Bossarte, 2009) or sexual identity (Dilley, Simmons, Boysun, Pizacani, & Stark, 2010; Messinger, 2011). Very few researchers have measured sexual orientation based on bidimensional or multidimensional constructs (Hellemans,

Loeys, Buysse, Dewaele, & De Smet, 2015; Koeppel & Bouffard, 2014; McCauley et al., 2015).

Intimate partner violence among sexual minorities has gained momentum considerably in the literature (Koeppel & Bouffard, 2014; McCauley et al., 2015). The LGBT community is steadily growing and gaining recognition as a subcommunity of the broader cultural community (Duke & Davidson, 2009; Hill, Woodson, Ferguson, & Parks, 2012). Registering sexual orientation as a protected category in the nondiscrimination clauses of every U.S. state may facilitate the elimination of heterosexism, resulting in decreased minority stressors that contribute to intimate partner violence. Identifying that same-sex intimate partner violence is a concern within communities may also facilitate implementation of policies and interventions that target female same-sex intimate partner violence victims. *Women who have sex with women, female sexual minorities,* and *female same-sex* are used interchangeably throughout the study.

Problem Statement

The problem is that intimate partner violence is an understudied public health concern among women who have sex with women (Ahmed, 2013; Eaton et al., 2008; McCauley et al., 2015; Rausch, 2016). Heise and Garcia-Moreno (2002) defined intimate partner violence as "behaviors by an intimate partner or ex-partner that causes physical, sexual, or psychological harm, including physical aggression, sexual coercion, psychological abuse, and controlling behaviors" (p. 89). Historically, men have used intimate partner violence as a disciplinary measure to exert dominance over their wives

(Baker et al., 2013). Men have escaped criminal persecution because intimate partner violence is considered a hetero-normative issue that occurs within heterosexual households and outside the jurisdiction of law (Baker et al., 2013). Moreover, terms such as sinister, unlawful, and pathological are used to describe same-sex relationships (Baker et al., 2013). However, in the 21st century, the U.S. Supreme Court decriminalized same-sex relationships, concluding that heterosexism was unconstitutional (Baker et al., 2013).

Intimate partner violence among women who have sex with women is an indiscernible problem within the scientific community (Duke & Davidson, 2009). I reviewed previous epidemiological studies that have been conducted worldwide (see Balsam & Szymanski, 2005; Bimbi, Palmadessa, & Parsons, 2007; Blosnich & Bossarte, 2009; Hellemans et al., 2015) to examine intimate partner violence among populations based on sexual orientation. Blosnich and Bossarte (2009) and Eaton et al. (2008) concluded that the prevalence rates of female same-sex intimate partner violence were comparable to the rates of opposite-sex and same-sex male dyads. However, other researchers found that the rates of female same-sex intimate partner violence were higher when compared to the rates of opposite-sex and male same-sex dyads (Balsam & Szymanski, 2005; Bimbi et al., 2007; Tjaden, Thoennes, & Allison, 1999). Researchers who conduct same-sex intimate partner violence research may use convenience samples that underestimate the exact rates of violence among same-sex dyads (Hellemans et al., 2015). The use of convenience samples prevents generalization of results and threatens external validity (Hellemans et al., 2015). For example, Bimbi et al. (2007) recruited individuals who attended the expos Gay Life Fall 2003 and the Gay Business Spring

2004 to participate in a study to identify the association of substance abuse and domestic violence among lesbians and gay men. Bimbi et al. found the results to be ecologically valid. However, external validity was a concern two-fold (Bimbi et al., 2007). Individuals declined to participate if they were not comfortable enough to attend gay and lesbian events publicly (Bimbi et al., 2007). Individuals also declined if they were reluctant to disclose domestic violence episodes in a public setting for fear of disclosure of sexual identity or retaliation by their attending partner (Bimbi et al., 2007).

Same-sex intimate partner violence researchers may underestimate prevalence rates due to inconsistent identifiers for sexual orientation, such as sexual behavior (Blosnich & Bossarte, 2009; McCauley et al., 2015) or sexual identity (Bimbi et al., 2007; Messinger, 2011). Blosnich and Bossarte (2009) used data from the 2005-2007 Behavioral Risk Factor Surveillance System Survey (BRFSS) to examine the prevalence rates of different forms of intimate partner violence among same-sex and opposite-sex dyads and whether these rates affected health outcomes. Using the sex of the perpetrator to identify sexual identity, the findings of the study indicated that intimate partner violence rates among same-sex dyads were comparable to the rates of opposite-sex dyads and health outcomes between same-sex and opposite-sex intimate partner violence victims did not differ (Blosnich & Bossarte, 2009). However, researchers who research same-sex minorities reported that female and male sexual minorities experience more indigent physical and mental health hygiene problems than heterosexuals (Koeppel & Bouffard, 2014). Bimbi et al. (2007) defined sexual orientation by sexual identity, while Blosnich and Bossarte relied on the sex of the perpetrator to identify same-sex couples.

Examining intimate partner violence outcomes based on a multidimensional construct for sexual orientation may help researchers understand whether the effects of intimate partner violence are comparable or dissimilar between female same-sex groups (Koeppel & Bouffard, 2014). Sexual identity, sexual attraction, and sexual behavior define sexual orientation, thus providing a better understanding of human sexuality (Hellemans et al., 2015; Koeppel & Bouffard, 2014). Koh and Ross (2006) conducted a study to examine mental health issues among women of different sexual orientations. Koh and Ross defined the independent variable, sexual orientation, by the respondent's answer to this self-identification question: "How do you define your sexual orientation?" (The four responses included the following: heterosexual/straight, bisexual, lesbian/gay/homosexual, and unsure). Most bisexual and lesbian respondents reported having sex with men and women, and most heterosexual respondents reported having sex with men (Koh & Ross, 2006). Koh and Rossperformed additional analyses to examine the relationship between sexual identity and sexual behavior: The results indicated that 8% of heterosexual respondents engaged in sexual activity with women only or both men and women. The results of the study conducted by Koh and Ross are significant because women who have sex with women may identify as bisexual, heterosexual, or lesbian, irrespective of their sexual behavior (Gorgos & Marrazzo, 2011; Milletich, Gumienny, Kelley, & D'Lima, 2014). Therefore, examining sexual orientation as a multidimensional construct that includes sexual identity, sexual behavior, and sexual attraction may facilitate a better understanding of the effects of intimate partner violence victimization (Hellemans et al., 2015; Koeppel & Bouffard, 2014).

According to Koeppel and Bouffard (2014), sexual orientation is an influential factor in intimate partner violence outcomes. Women sexual minorities have unique experiences and beliefs that place them at risk for intimate partner violence (Milletich et al., 2014). Bisexual women may experience stigmatization from the lesbian/gay or heterosexual communities for failing to identify as lesbian or heterosexual (Calton et al., 2016). Moreover, the lesbian/gay community may believe that bisexuals receive the heterosexual privilege, a phenomenon suggesting bisexuals receive the same privileges as heterosexuals (Duke & Davidson, 2009). Lesbians, however, may experience minority stress because of their sexual minority status (Carvalho et al., 2011; Rausch, 2016). These external and internal stressors place these women at risk for intimate partner violence victimization (CDC, 2017; Eaton et al., 2008). Failure to recognize the social and relational characteristics of each subpopulation of women sexual minorities may result in the implementation of one size fits all policies and interventions that discount the unique needs of each population. A review of the literature on intimate partner violence among women who have sex with women based on sexual orientation is limited and varied, thus presenting a gap in the literature that this research filled. In this research, I examined the association between sexual orientation and intimate partner violence among women who have sex with women based on the constructs of the biopsychosocial model.

Purpose of the Study

The purpose of this research was to examine the association between sexual orientation and intimate partner violence victimization among women who have sex with women. In this cross-sectional quantitative research, I studied the effects of sexual

orientation, race, income, support of family and friends, use of community services, and mental health status (i.e., independent variables) on predicting intimate partner violence (i.e., dependent variable) among women who have sex with women.

Statistical Analysis Strategy

Research Question 1

1. Is there an association between sexual orientation and intimate partner violence among women who have sex with women?

$H1_0$: There is no association between sexual orientation and intimate partner violence among women who have sex with women.

$H1_a$: There is an association between sexual orientation and intimate partner violence among women who have sex with women.

Statistical plan: Independent variables = sexual identity (3 groups), sexual behavior (2 groups); dependent variable = intimate partner violence (yes/no); statistical test: logistic regression.

Research Question 2

2. Is there an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for income and race?

$H2_0$: There is no association between sexual orientation and intimate partner violence among women who have sex with women when controlled for income and race.

$H2_a$: There is an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for income and race.

Statistical plan: Independent variables = sexual identity (3 groups), sexual behavior (2 groups), income (2 groups), and race (3 groups); dependent variable = intimate partner violence (yes/no); statistical test: logistic regression.

Research Question 3

3. Is there an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for social contexts?

$H3_0$: There is no association between sexual orientation and intimate partner violence among women who have sex with women when controlled for social contexts.

$H3_a$: There is an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for social contexts.

Statistical plan: Independent variables = sexual identity (3 groups), sexual behavior (2 groups), support of family and friends (Scale 0-3), use of community services (Scale 0-5); dependent variable = intimate partner violence (yes/no); statistical test = logistic regression.

Research Question 4

4. Is there an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for self-reported mental health status?

$H4_0$: There is no association between sexual orientation and intimate partner violence among women who have sex with women when controlled for self-reported mental health status.

$H4_a$: There is an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for self-reported mental health status.

Statistical plan: Independent variables = sexual identity (3 groups), sexual behavior (2 groups), self-reported mental health status (Scale 0-5); dependent variable = intimate partner violence (yes/no); statistical test = logistic regression.

Conceptual Framework

Engel and Romano developed the biopsychosocial model in 1977 to examine how biological factors, social contexts, and psychological factors influenced disease outcomes (McKenry, Julian, & Gavazzi, 1995). More recently, public health researchers have used the biopsychosocial model for understanding the interrelated, relationships between the biological, social, and psychological factors that influence domestic violence within heterosexual relationships (Borrell-Carrió, Suchman, & Epstein, 2004; McKenry et al., 1995; Smith & Nicassio, 1995). The constructs represented by this model provide significant opportunities to further research intimate partner violence among female sexual minorities. This model was significant to the current study because it addresses the interdependent biological, psychological, and social factors that contribute to same-sex intimate partner violence. The biopsychosocial model has three fundamental constructs: biological factors, social contexts, and psychological influences.

Biological Factors

Biological refers to the physical, physiological, chemical, or neurological factors that affect the function and behavior of individuals (McKenry et al., 1995; Smith &

Nicassio, 1995). According to Swaab and Garcia- Falgueras (2009), sexual orientation is determined in utero and is influenced by chemical reactions that occur within the brain. Sexual orientation affects mental health, which leads to behaviors that place women at risk for intimate partner violence victimization (Carvalho et al., 2011; Koh & Ross, 2006). Sexual identity and sexual behavior addressed the biological factor.

Social Contexts

Social institutions and structures influence social behavior (McKenry et al., 1995). For example, families with minimal social support networks and isolated from their communities are more likely to experience intimate partner violence victimization (McKenry et al., 1995). Duke and Davidson (2009) suggested that same-sex communities are a smaller, intimate part of the bigger, heterosexual community. The composition of same-sex communities makes it difficult for victims to divulge intimate partner violence to their friends for fear of abandonment and bringing shame to the community (Duke & Davidson, 2009). As a result, many same-sex intimate partner victims may remain isolated in abusive relationships for fear of discrimination, inadequate judicial support, or limited access to domestic violence programs and shelters (Ard & Makadon, 2011; Carvalho et al., 2011; Duke & Davidson, 2009). Social support networks and use of community servicesaddressed social contexts.

Psychological Influences

Physiological refers to physical and mental health factors that affect an individual's quality of life and health (McKenry et al., 1995; Smith & Nicassio, 1995). Koh and Ross (2006) found that sexual orientation and the degree to which one is "out"

impacts mental health outcomes. Poor mental health outcomes are a result of episodes of isolation, depression, and self-medication measures secondary to internalizing society's stigmatization (Koeppel & Bouffard, 2014). Mental health status addressed psychological influence.

Nature of the Study

The nature of the current study was a quantitative cross-sectional study design to examine the association between sexual orientation and intimate partner violence victimization among women who have sex with women. The approach of the study was a secondary analysis of existing data from the 2010 NISVS, which contained information on lifetime and 12-month intimate partner violence experiences, perpetrator demographics, and respondent demographics, including sexual orientation and sexual behavior. Using a national random-digit-dial telephone method, researchers administered the survey to U.S. adult men and women from January to December 2010. The NISVS contains the necessary variables to answer the proposed research questions of the current study. It is also the most current and nationally representative dataset available.

The biopsychosocial model guided the study. The constructs of the model include biological factors, social contexts, and psychological influences. The independent variables included biological factors (sexual orientation), social contexts (support of family and friends and use of community resources), psychological influence (self-reported mental health status), and demographic variables (income and race).

Literature Review

Literature Search Strategy

I used the matrix method to review, organize, extract, and prepare this literature review. The steps included a paper trail, documents section, review matrix, and synthesis (see Garrard, 2016). In the first step, a record of lists and notes were initiated to keep track of the search (i.e., keywords, sources, and electronic databases). The second step included selecting original articles for additional review. I reviewed abstracts and scanned entire articles to determine their relevance to the current study. Next, I organized the articles by relevancy and chronological order. The last step included synthesizing the literature and writing the literature review.

I conducted an exhaustive search of the literature before writing the literature of Section 1, using the keywords *women who have sex with women, lesbian, sexual minorities, LGB, intimate partner violence,* and *biopsychosocial model.* A full article search was conducted using databases Academic Search Complete, Expanded Academic ASAP, ProQuest Central, SAGE, and Science Direct. I collected relevant articles from peer-reviewed journals, journal articles, and government-reviewed websites. Abstracts were reviewed to determine relevancy to the topic, and selected articles that met inclusion requirements were reviewed in their entirety and saved to a file folder.

Epidemiology of Same-Sex Intimate Partner Violence

Intimate partner violence is a prevalent social health problem among both heterosexual and nonheterosexual dyads (Carvalho et al., 2011; Daire et al., 2014). Black et al. (2011) estimated that 37% and 28% of women and men respectively experienced

some form of intimate partner violence in their lifetime. These results estimated that 4.8 million women and 2.8 million men experienced intimate partner violence victimization annually (Jacobson, Daire, & Abel, 2015). Increased rates of intimate partner violence disproportionately affect women of all sexual orientations (Walters et al., 2013). For example, the lifetime prevalence of rape, physical violence, and stalking by an intimate partner was between 35% and 61% among women of all sexual orientations, compared to 26% and 37% among their male counterparts (Walters et al., 2013).

According to Jacobson et al. (2015b), same-sex intimate partner violence victimization among LGBTQ individuals occurred at greater rates when compared to heterosexual dyads. Using the 2005-2007 BRFSS data, Blosnich and Bossarte (2009) examined the prevalence rates of different forms of intimate partner violence between same-sex and opposite-sex dyads and whether these rates affected health outcomes. The study population consisted of a national sample of 7,998 respondents who endorsed being victims of intimate partner violence (Blosnich & Bossarte, 2009). Sex of the perpetrator identified same-sex couples (Blosnich & Bossarte, 2009). The results indicated that 87% of female same-sex intimate partner victims experienced verbal abuse, 89% experienced physical abuse, and 52% experienced sexual abuse (Blosnich & Bossarte, 2009). These rates were comparable to those reported in heterosexual and male same-sex dyads (Blosnich & Bossarte, 2009). Health outcomes between same-sex and opposite-sex intimate partner violence victims did not differ (Blosnich & Bossarte, 2009). Blosnich and Bossarte found no difference in health care outcomes between heterosexual and nonheterosexual dyads. However, Koeppel and Bouffard (2014) suggested that sexual

minorities experienced more indigent physical and mental health hygiene issues than heterosexuals. For example, sexual minorities are disproportionately affected by augmented rates of tobacco use, alcohol use, depression, and suicide (Gilbert & Sabin, 2008), all of which influence intimate partner violence outcomes (Mason et al., 2016).

Many members of the LGB community believe female same-sex intimate partner relationships are the "ideal egalitarian relationship" (Duke & Davidson, 2009). In fact, female same-sex intimate partner violence is often dismissed due to societal myths that women are innately nonviolent (Basow & Thompson, 2012) and incapable of harming each other (Duke & Davidson, 2009). Milletich et al. (2014) examined the use of the disempowerment theory to explain predictors of female same-sex intimate partner violence perpetration. The disempowerment theory, based on family, the individual, and relationship constructs, suggests that undeserving individuals are more likely to engage in intimate partner victimization (Milletich et al., 2014). Using LGBTQ friendly venues and vehicles, Milletich et al. recruited 209 women to participate in the study. Of the participants, 55.5% identified as lesbian, 30.6% as bisexual, and 13.9% as heterosexual (Milletich et al., 2014). Using an ordinary least-square regressionmodel, Milletich et al. estimated the effects of education, sexual identity, internalized homophobia, dominance/accommodation, fusion (involvement within one's same-sex relationship), and history of intimate partner violence on partner violence perpetration. The results were statistically significant, F (11, 197) = 5.34, $p < .001$, R^2=.23. Milletich et al. concluded that women who identified as heterosexual perpetrated considerably more partner violence in the previous year than women who identified as lesbian. Moreover,

heterosexual women who have sex with women experienced higher levels of internalized homophobia secondary to fusion (Milletich et al., 2014). The results of this study were significant by two-fold: (a) Women were capable of perpetrating violence, (b) and there was no association between internalized homophobia and frequency of intimate partner violence perpetration (Milletich et al., 2014).

Same-sex physical intimate partner violence may be bidirectional, resulting in both parties using violence in the relationship (Frankland & Brown, 2013). In the relevant but the dated study of 272 female sexual minorities, 10% reported intimate partner violence victimization, 7% reported perpetration, and 31% reported both (Balsam & Szymanski, 2005a). In a recent study consisting of 67 lesbians who endorsed same-sex intimate partner violence, 25% reported intimate partner violence victimization, 9% reported perpetration, and 9% reported both victimization and perpetration (Carvalho et al., 2011). These studies support the work of researchers who have suggested that same-sex intimate partner violence is bidirectional, resulting in same-sex mutual violence (see Frankland & Brown, 2013).

Reciprocal violence in female same-sex relationships may result in a protective factor (Frankland & Brown, 2013). Female sexual minorities who have experienced psychological aggression (PA) victimization are more likely to perpetrate physical violence against their same-sex partner (Milletich et al., 2014). For example, perpetrators may use threats of disclosure of sexual orientation as a mechanism of exerting power and coercive control over their same-sex partner (Calton et al., 2016; Frankland & Brown, 2014). As a defense mechanism, PA victims may resort to physical aggression

perpetration as a means of self-defense (Milletich et al., 2014), thus supporting researchers' hypothesis that female same-sex intimate partner violence is mutual (Jacobson, Daire, Abel, & Lambie, 2015b). This reciprocation of intimate partner abuse may result in an overrepresentation of the mutual battering phenomenon (Jacobson et al., 2015b; Pepper & Sand, 2015). Gender may be an influential factor. However, sexual orientation, social contexts, and psychological influences are other factors that may contribute to same-sex intimate partner violence.

Biopsychosocial Model and Intimate Partner Violence

The biopsychosocial model may be applied to examine the association between sexual orientation and intimate partner violence among women who have sex with women (McKenry et al., 1995). Intimate partner violence among women who have sex with women may be understood by applying the biopsychosocial perspective, which appreciates the interdependence between biological, psychological, and social influences (McKenry et al., 1995). The model consists of three significant constructs: biological factors, social factors, and psychological influences.

Biological factors are physical, physiological, chemical and neurological influences that may affect function and human behavior (McKenry et al., 1995). *Social contexts* refer to the social institutions and structures that may affect social behavior (McKenry et al., 1995). Examples of social contexts include family, friends, and use of community services. *Psychological influences* include physical and mental health factors that influence one's quality of life and health (McKenry et al., 1995; Smith & Nicassio, 1995).

The biopsychosocial model was relevant to the current study because it incorporates three concepts that contribute to domestic violence (McKenry et al., 1995). McKenry et al. (1995) suggested that examining the three perspectives of the biopsychosocial model may facilitate a better understanding of domestic violence. The constructs identified by this model presents a significant opportunity to further behavioral research around female same-sex intimate partner violence.

The current study's implications for positive social change may include design and implementation of policies, services, and interventions that target the diverse needs of female same-sex intimate partner violence victims. The current study was conducted to examine sexual orientation as a biological factor to provide a better understanding of human sexuality and its impact on same-sex intimate partner violence outcomes. In the remainder of this section, I present studies that used constructs consistent with the biopsychosocial model to examine violence within intimate relationships.

McKenry et al. (1995) conducted a study to support the need for a biopsychosocial approach to understanding male domestic violence. The researchers concluded that the model provided flexibility in understanding domestic violence perpetrated by men (McKenry et al., 1995). Nurius and Macy (2010) examined the differences in biopsychosocial profiles among battered women. They concluded that assessing and understanding multiple biopsychosocial determinants was beneficial in addressing intimate partner violence victimization among women (Nurius & Macy, 2010).

One fundamental construct of the biopsychosocial model is biological factors. Alcohol is a chemical substance that has been associated with aggression (McKenry et al., 1995). It plays a significant role in female same-sex intimate partner violence secondary to relationship adjustment (Kelley, Lewis, & Mason, 2015) and sexual minority stress (Koeppel & Bouffard, 2014). Kelley et al. (2015) conducted a study to examine the association between relationship adjustment and discrepant alcohol use among 819 lesbians and their same-sex partners. The results of the survey indicated that partner's discrepant alcohol use and poorer relationship adjustment were associated (Kelly et al., 2015). Relationship adjustment was inversely associated with partner PA (Kelly et al., 2015). For example, higher PA resulted in poorer relationship adjustment (Kelley et al., 2015). Alcohol is a depressant that influences one's cognitive abilities to effectively reason and rationalize (Mason et al., 2016). The inability to reason and rationalize leads to lower behavioral inhibitions (Mason et al., 2016) and poor relationship adjustment (Kelley et al., 2015). However, poor relationship adjustment may also result from minority stress because of sexual minority status (Koeppel & Bouffard, 2014).

Sexual minority stress is a gateway determinant to intimate partner violence secondary to discrimination, depression, and alcohol/substance use (Carvalho et al., 2011; Koeppel & Bouffard, 2014). According to Koeppel and Bouffard (2014), the National Violence against Women Survey (NVAWS) data disclosed that sexual minority status was associated with intimate partner violence. Of the 7,216 females who participated in the survey, 78 identified as nonheterosexual (Koeppel & Bouffard, 2014). Koeppel and

Bouffard explored the health effects of intimate partner violence between heterosexual and nonheterosexual participants. The results of the bivariate analysis indicated that sexual orientation was associated with physical and sexual intimate partner violence victimization, $X^2 = 36.207$, $p > .01$ (Koeppel & Bouffard, 2014). Alcohol use was higher in nonheterosexual victims than in heterosexual nonvictims, $\beta = 0.019$, $p < .01$ (Koeppel & Bouffard, 2014). Nonheterosexual victims were twice and thrice as likely to have health issues and engage in drug use respectively when compared to heterosexual nonvictims. Alcohol use, secondary to internalized heterosexism /homophobia (Duke & Davidson, 2009), and sexual orientation (Koeppel & Bouffard, 2014) were biological constructs that placed women who have sex with women at risk for intimate partner violence. In fact, Bimbi et al. (2008) concluded that alcohol use was associated with physical and nonphysical domestic violence among lesbians. These results indicated that sexual minority stress because of sexual orientation influences female same-sex intimate partner violence (Brown, 2008; Koeppel & Bouffard, 2014).

Sexual Orientation

Sexual orientation (Koeppel & Bouffard, 2014) is a biological factor (Swaab & Garcia-Falgueras, 2009) that places women who have sex with women at risk for intimate partner violence. Sexual orientation is determined in early development and may be inconsistent with gender assignment at birth (Swaab & Garcia-Falgueras, 2009). The developing brain coupled with genetics and sex hormones influence one's sexual orientation (Swaab & Garcia- Falgueras, 2009). Rahman (2005) theorized that women who identify as lesbians were overexposed to prenatal androgens, resulting in more

masculinity. While Swaab & Garcia-Falgueras (2009) argue that sexual orientation is determined before birth, Rahman argues that sexual orientation is more complicated than consciously choosing to challenge the heterosexual standard.

Mitchell and Dezarn (2014) argue that social tolerance and civil rights of sexual minorities in the U.S. would be tolerable if a genetic factor influenced sexual orientation. A study conducted by Mitchell and Darzarn (2014) concluded that sexual orientation from genetics (M = 65.8, SD = 24.6, n = 93) was more tolerable among participants than selected environmental factors (M = 74.8, SD = 27.0, n = 63) or factors of choice (M = 77.3, SD = 25.8, n = 67). Whether sexual orientation is influenced in utero, by the environment, or by selected choice, it is insignificant regarding civil rights and liberties afforded to heterosexual citizens (Mitchell & Darzarn, 2014).

Sexual orientation is a complex, multidimensional construct defined by sexual identity, attraction, and behavior (Koeppel & Bouffard, 2014). Hellemans et al. (2015) used this construct to compare prevalence rates of intimate partner violence of respondents randomly selected from the Belgian National Register from February 2011 to January 2012. Of the 1,690 respondents, 7% identified as non-heterosexual (Hellemans et al., 2015). Respondents were categorized as non-heterosexual if they identified as LGB, experienced more same-sex fantasies or attraction, or endorsed having just as many same-sex as opposite-sex partners. (Hellemans et al., 2015). The results indicated that prevalence rates of intimate partner violence among non-heterosexuals were comparable to the rates of intimate partner violence among heterosexuals (Hellemans et al., 2015). Same-sex violence rates may be underestimated because intimate partner violence rates

among bisexual women are erroneously integrated with heterosexual domestic abuse statistics (Duke & Davidson, 2008). Integrating sub-samples of gay and bisexuals for analysis also disguised the perpetrator's sex for bisexual participants, which were the only individuals for which the sex of the perpetrator was not evident (Messinger, 2011). Hellemans et al. identified that the theoretical frameworks used in heterosexual intimate partner violence research could not explain same-sex intimate partner violence because the perpetrator's gender in same-sex intimate partner violence cannot determine their role. For example, societal myths state only men are perpetrators, and only women are victims (Banks & Fedewa, 2012). As a result, female same-sex intimate partner violence is nonexistent because society believes women are incapable of harming one another (Duke & Davidson, 2009) and this form of violence challenges traditional gender roles (Messinger, 2011). Female same-sex relationships are egalitarian; therefore, theoretical frameworks of power and control may not adequately account for the complicated multifactorial explanations of female same-sex intimate partner violence (see Hellemans et al. 2015).

Sexual orientation influences intimate partner violence outcomes (Koeppel & Bouffard, 2014). Messinger (2011) conducted a study to examine intimate partner violence among LGB participants. Using the subsection "Violence and threats of violence against women and men in the United States, 1994-1996" of the NVAWS, Messinger (2011) surveyed 7,257 women and 6, 925 men 18 years and over representing all 50 states and the District of Columbia. When compared to men, women were more likely to experience physical and sexual intimate partner violence (Messinger, 2011). LGB women

were more likely to experience sexual intimate partner victimization (β = -0.52) when compared to heterosexual men (β = -4.7), gay/bisexual men (β = -1.89), and heterosexual women (β = -1.48). Messinger concluded that sexual identity was statistically associated with intimate partner violence and that gay women perpetrated more intimate partner violence than heterosexual men.

Dilley et al. (2010) utilized the sexual identity construct of the BRFSS 2003-2006 to identify health disparities of LGB sexual minorities compared with their heterosexual counterparts. The study population consisted of 561 bisexual women, 47, 505 heterosexual women, and 589 lesbians (Dilley et al., 2010). Sexual orientation was measured by respondent's answer to this self-identification question: "Do you consider yourself (a) heterosexual or straight, (b) homosexual, gay, or lesbian, (c) bisexual, or (d) something else" (Dilley et al., 2010). Dilley et al. concluded that lesbians and bisexual women had significantly increased odds of being overweight, having poorer physical and mental health, and indulging in heavy alcohol and tobacco use when compared to heterosexual women (Dilley et al., 2010). On the contrary, Blosnich and Bossarte (2009) found no significant differences in health outcomes between non-heterosexual and heterosexual dyads. The results of these two studies differ because sexual orientation was either measured by sexual identity (Dilley et al., 2010) or sexual behavior (Blosnich & Bossarte, 2009). Koeppel and Bouffard (2014) recommend measuring sexual orientation by sexual identity, behavior, and attraction to gather a better understanding of human sexuality.

Another facet of sexual orientation is sexual behavior (Koeppel & Bouffard, 2014). McCauley et al. (2015) surveyed 3,455 female participants on their intimate partner violence experiences, sexual risk, and reproductive health seeking based on sexual behavior. McCauley et al. divided women into groups based on their sexual behavior. Women who have sex with women and men (WSWM) included women who endorsed having sex with equal numbers of men and women or mostly men (McCauley et al., 2015). Women who have sex with men only (WSM) included women who endorsed sexual activity with men only (McCauley et al., 2015). The reference group included WSM and reported no history of intimate partner violence (McCauley et al., 2015). WSWM with a history of intimate partner violence experienced the highest adjusted odds of lifetime sexually transmitted infection diagnosis when compared to WSWM with no history of intimate partner violence, WSM with a history of intimate partner violence, and the reference group (McCauley et al., 2015). The results indicated that WSWM experienced more physical and sexual intimate partner violence and engaged in riskier sexual behaviors than WSM (McCauley et al., 2015). Sexual behavior, not sexual identity measured sexual orientation; therefore, the findings of this study were not applicable by sexual identity (McCauley et al., 2015).

Women who have sex with women comprise a unique subpopulation individually influenced by a combination of interdependent biological, social, communal, and societal factors (CDC, 2016). Bisexual women experience unique stressors from the heterosexual and gay communities (Calton et al., 2016), multiple marginalizations (Duke & Davidson, 2000), and limited support (Pyra et al., 2014). Furthermore, heterosexual privilege, a

theory suggesting bisexuals receive the same privileges as heterosexuals, contributes to stigmatization by the lesbian/gay community (Duke & Davidson, 2009). Lesbians, however, may experience internalized homophobia because of their sexual minority status (Lewis, Mason, Winstead, & Kelley, 2016; Rausch, 2016). Women who have sex with women may also identify as bisexual, heterosexual, or lesbian (Gorgos & Marrazzo, 2011; Milletich et al., 2014). Therefore, evidence-based research applying a bi-dimensional construct of sexual orientation (sexual identity and sexual behavior) may provide a better understanding of human sexuality and its influence on health disparities and female same-sex intimate partner violence victimization (Dilley et al., 2010).

Social Contexts

Heterosexism promotes judicial prejudice and lack of community resources that target same-sex intimate partner violence victims (Ard & Makadon, 2011; Baker, et al., 2013; Carvalho et al., 2011; Duke & Davidson, 2009). Some U.S. jurisdictions may discriminate against sexual minorities by denying employment, housing, and other civil rights (Baker et al., 2013). In fact, female same-sex intimate partner violence victims experience discriminatory systems that limit the issuance of restraining orders or prosecution (Eaton et al., 2008). Russell et al. (2015) conducted a study to examine participants' knowledge and beliefs about protective orders and domestic abuse. Participants represented 409 women and 231 men from a small northeastern university, of which 3% identified as gay, bisexual, or questioning (Russell et al., 2015). Russell et al. found that assaults toward heterosexual victims were more likely to be considered abuse (M = 6.04, SD = 1.49, 95% CI [5.79, 6.27]) when compared to assaults toward

same-sex intimate partner violence victims (*M* = 5.54, *SD* = 1.79, 95% CI [5.28, 5.77]).Intimate partner violence where the perpetrator was maleand the victim was female was more likely considered abuse when compared to all other relationship conditions (Russell et al., 2015). The issuance of a protective order in a heterosexual relationship was also undoubtedly considered abuse (Russell et al., 2015). The premise of gender stereotype theory is that individuals have perceptions about the victim and perpetrator in cases of abuse (Russell et al., 2015), resulting in biased perceptions in determining abuse among same-sex dyads (Duke & Davidson, 2009). As a result, same-sex intimate partner violence victims may not disclose abuse for fear of stigma, discrimination, heterosexism (Banks & Fedewa, 2012), and lack of consistent legal and protective order statutes across the United States (Calton et al., 2016).

In several U.S. states, protective order statutes are vague regarding the inclusion of LGBT victims (Calton et al., 2016). Local law enforcement agencies, authorities, and courtroom judges interpret the law, which is open to personal bias, varying decisions, and unclear policies (Calton et al., 2016). Guadalupe-Diaz and Yglesias (2013) utilized preexisting data collected by the Red Door Project in Central Florida to conduct a study to examine the community's perceptions and reactions to domestic laws. An individual who identified as non-heterosexual or LGBTQ and answered four questions regarding Florida law was included in the analysis (Guadalupe- Diaz & Yglesias, 2013). Guadalupe- Diaz & Yglesias also included five additional questions about state and local law enforcement to assess the perceptions of law enforcement.The results indicated that respondents had negative perceptions of domestic violence law protections and rights

regarding same-sex relationships (bar = 10, *SD* = 3.4) (Guadalupe- Diaz & Yglesias, 2013). The results also indicated that racial minorities had significantly more negative perceptions of domestic violence laws about same-sex relationships by -1.6 on the scale of 4 to 24 ($p < .001$) (Guadalupe- Diaz & Yglesias, 2013). When compared with Whites, non-Whites had a stronger negative perception of law enforcement ($p < 0.05$) (Guadalupe- Diaz & Yglesias, 2013). These negative perceptions of law enforcement secondary to heterosexism inhibited sexual minorities from reporting violence to law enforcement officials (Baker et al., 2013; Guadalupe- Diaz, 2013). Fear of reporting resulted in helplessness and isolation in abusive relationships (Ard & Makadon, 2011; Calton et al., 2016; Eaton et al., 2008; Guadalupe- Diaz, 2013).

Researchers conceptualized the impact of heterosexism on women who have sex with women by a concept known as minority stress (Brown, 2008). Minority stress affects lesbians two-fold because of their social status as women and as a sexual minority (Brown, 2008). Racially minority lesbians experience minority stress three-fold because of their race, gender, and sexual orientation (Brown, 2008). Utilizing data from the Virginia Anti-Violence Project (VAVP), Guadalupe-Diaz (2013) conducted a study to examine help-seeking differences of LGBQ victims of violence based on race, economic class, and gender. The VAVP was a community-based participatory survey that allowed community members, who were residents of Virginia and identified as a sexual minority, to define and develop measures (Guadalupe-Diaz, 2013). Of the 993 participants, 79% identified as white and 28% as a lesbian (Guadalupe-Diaz, 2013). Guadalupe-Diaz concluded that Whites were more likely to seek help when compared to non-

Whites.Race, class, and gender identity did not predict whether a victim would report intimate partner violence victimization to law enforcement officials (Guadalupe-Diaz, 2013). Nondisclosure of same-sex intimate partner violence resulted from systematic inequalities and culturally incompetent institutions (see Calton et al., 2016) secondary to heterosexism and enhanced by minority stress (see Baker et al., 2013; Brown, 2008; Balsam & Symanski, 2005a; Duke & Davidson, 2009).

Poor social support (Black et al., 2011; Kamimura, Parekh, & Olson, 2013) may be the fundamental determinant of adverse physical and mental health outcomes among female same-sex intimate partner violence victims (Black et al., 2011). Rosenthal and Starks (2015) surveyed 480 participants to examine ecological systems theory on the association between relationship stigma and relationship outcomes among interracial and same-sex dyads. Categorizing participants by gender, 52.7% identified as women, 46.7% as men, and 0.6% as transgender or another gender identity. By sexual identity, 47.3% identified as heterosexual, 29.4% as gay/lesbian, 9% as bisexual, and 3.5% as another sexual identity (Rosenthal & Starks, 2015). The controlling factors of stigma may be understood by ecological systems theory, which suggests that multiple interdependent environments (i.e., proximal and distal) influence and contribute different consequences to individuals' lives (see Rosenthal & Starks, 2015). According to Rosenthal and Starks,individuals in same-sex relationships experienced increased stigma from their family (-0.49, SE = 0.09, 95% CI [-0.71, -0.28], $p < .001$) and the public (-0.54, SE = 0.08, 95% CI [-0.73, -0.36], $p = <. 001$) when compared to individuals in interracial relationships (Rosenthal & Starks, 2015). Lower relationship commitment was associated

with stigma from their family and the public (Rosenthal & Starks, 2015). Moreover, decreased sexual communication was associated with stigma from the public (Rosenthal & Starks, 2015). However, stigma from their friends had the largest impact on relationship outcomes including overall dissatisfaction with the relationship, lower commitment, decreased passion, decreased sexual communication, and increased intimate partner violence victimization (Rosenthal & Starks, 2015). In fact, intimate partner violence victims rely on friends more as a common source of informal support (Calton et al., 2016; McConnell, Birkett, & Mustanski, 2016; Syalska & Edwards, 2015); therefore, friends may positively or negatively influence relationship outcomes (Rosenthal & Starks, 2015).

According to Duke and Davidson (2009), lesbian intimate partner violence victims reported that help from friends was unaccommodating and insufficient (Richardson, Armstrong, Hines, & Reed, 2015). Because same-sex couples typically share friends, intimate partner violence threatens mutual friendships (Basow & Thompson, 2012; Duke & Davidson, 2009). Several researchers who have conducted same-sex intimate partner violence research reported that PA was the most frequent form of intimate partner violence among female sexual minorities (Bimbi et al., 2008; Craft, Serovich, McKenry, & Lim, 2008; Jacobson et al., 2015a; Sorenson & Thompson, 2009). In the absence of visible injuries, friends may question the legalities of abuse or downplay it as the inability to solve relationship problems (Duke & Davidson, 2009). Moreover, female sexual minorities may not recognize psychological or emotional trauma experiences as legitimate abuse (Duke & Davidson, 2009), thusresulting in

underreporting and underestimations in prevalence rates of female same-sex intimate partner violence (Carvalho et al., 2011).

Ecological systems theory suggests that five interdependent environments, which include microsystem, mesosystem, exosystem, macrosystem, and chronosystem, influence human development (Rausch, 2016; Rosenthal & Starks, 2015). Familial support networks are protective factors (Syalska & Edwards, 2015) that negatively or positively influence regular reporting of female same-sex intimate partner violence (Rausch, 2016). Rausch (2016) conducted a study to examine ecological systems theory on the relationship between same-sex partnership acceptance and adult intimate partner violence experiences. Rausch administered a survey incorporating the Adverse Childhood Experiences Questionnaire, the Abusive Behavior Inventory, and demographic questions to 91 women (92% who identified as cisgender and 7.7% as other). Rausch concluded that presence of childhood abuse, $r = .328$, $p < .01$, was positively correlated with the perception that the lesbian and queer communities were unaccepting of help-seeking for victims of intimate partner violence, $r = .297$, $p < .01$ (Rausch, 2016). Although insignificant, 41% of respondents felt unaccepted by family, 59% by their schools, and 72% by society (Rausch, 2016). Supportive familial networks and community resources that target LGB intimate partner violence victims may reduce institutionalized heterosexism (see Hill et al., 2012; Syalska & Edwards, 2015) and increase disclosure of same-sex intimate partner violence victimization (see Syalska & Edwards, 2015).

LGB members view their communities as the broader cultural community (Duke & Davidson, 2009), the smaller gay community, and the even smaller lesbian sub-

communities (Hill et al., 2012). Female same-sex victims may not disclose episodes of intimate partner violence to either community for various reasons. For instance, the broader cultural community may lack the resources to provide culturally sensitive information to female same-sex intimate partner violence victims (Basow & Thompson, 2012; Duke & Davidson, 2009; Hill et al., 2012). Second, the smaller gay community may experience greater shame and stigma two-fold because of marginalization (Hill et al., 2012) and the theory of mutual battering (Duke & Davidson, 2009). Lastly, the even smaller lesbian community may lack awareness or ignore the problem (Duke & Davidson, 2009; Turell & Herrman, 2008). Although legal resources, medical assistance, alternative housing, and mental health services may be readily available to female-same sex intimate partner violence victims, these resources are underutilized for fear of internalized homophobia (Turell & Herrman, 2008) or institutionalized heterosexism (Duke & Davidson, 2009). According to Turell and Hermann (2008), female same-sex intimate partner violence victims did not access community services because they supported anonymity within the LGBTQ community. Moreover, the LGBTQ community conceals female same-sex intimate partner violence (Murray & Mobley, 2009) to avoid further heterosexism from the broader societal community (Alhusen et al., 2010; Turell and Herrman, 2008).

Alhusen et al. (2010) conducted a study to identify the risk and protective factors and explore female same-sex responses to same-sex intimate partner violence victimization and perpetration. Alhusen et al. recruited 47 sexual minority women living in Oregon via LGBTQ friendly venues and vehicles to participate in focus groups or

individual interviews. Alhusen et al. concluded that internalized/externalized heterosexism was present when accessing social services and justice systems.For example, shelters and advocacy resources catered to female victims of male perpetrators and did not comprehensively incorporate sexual minorities (Alhusen et al., 2010). Moreover, the LGBTQ communities' unwillingness to acknowledge female same-sex intimate partner violence further supported the hetero-normative view that intimate partner violence only occurred among heterosexual dyads (Alhusen et al., 2010; Murray & Mobley, 2009). Recognizing that female same-sex intimate partner violence is a serious public health concern may prompt health care, the criminal justice system, and social service systems to advocate for and provide culturally sensitive and competent services that target the unique needs of same-sex intimate partner violence victims. This recognition from the smaller LGBTQ and larger societal communities may ensure same-sex victims acquire opportunities to support and promote their independence while working to prevent intimate partner violence within their communities.

Psychological Influences

Minority stress is correlated with adverse mental health hygiene outcomes (e.g., emotional coping, social isolation, negative cognitive inhibitions, depression, and psychological distress) that place sexual minorities at an increased risk of intimate partner violence victimization (Mason et al., 2016). Carvalho et al. (2011) utilized LGBTQ-friendly vehicles to recruit participants to examine the relationship between sexual minority stressors and intimate partner violence victimization/perpetration. Carvalho et al. recruited 581 gay men and lesbians via announcements in local gay/lesbian

newspapers and gay/lesbian Internet list servers (Carvalho et al., 2011). Questionnaires that included the outness (the state of being out about one's sexuality) inventory, internalized homophobia scale, and stigma-consciousness scale were distributed to individuals who consented to participate (Carvalho et al., 2011). Carvalho et al. concluded that intimate partner violence victimization was statistically significant, $F(3,560) = 5.82$. $p < .001$, $\mu^2 = .03$. Elevated levels of stigma consciousness were positively correlated with same-sex intimate partner violence (Carvalho et al., 2011). However, internalized homophobia and intimate partner violence were not associated (Carvalho et al., 2011).

In a dated, yet relevant study, internalized homophobia was associated with physical/sexual partner violence victimization, but not with perpetration (Balsam & Szymanski, 2005). Balsam and Szymanski (2005) surveyed 272 lesbian and bisexual women recruited through LGBTQ friendly venues/vehicles and the snowball technique. The purpose of the study was to examine the minority stress theory on the impact of minority stress variables on female same-sex relationships (Balsam & Szymanski, 2005). Balsam and Symanski hypothesized that a more "butch" identity would correlate to more intimate partner violence perpetration and a more "femme" identity would correlate to more intimate partner violence victimization. The results indicated that higher internalized homophobia was associated with increased perpetration, $\beta = .19$, $p < .05$, and more victimization, $\beta = .21$, $p < .05$ (Balsam & Szymanski, 2005). Internalized homophobia was also inversely correlated with relationship quality; higher internalized homophobia resulted in lower relationship quality, $\beta = -25$, $p < .01$ (Balsam &

Szymanski, 2005a). Balsam & Szymanski concluded that being more femme or more butch was not associated with increased intimate partner violence victimization or perpetration However, increased minority stress because of lower relationship quality placed women at risk of same-sex intimate partner violence victimization (Balsam & Szymanski, 2005a; Brown, 2008; Carvalho et al., 2011).

Increased minority stress may influence female same-sex intimate partner violence outcomes (Balsam & Szymanski, 2005; Brown, 2008; Carvalho et al., 2011). However, the quantity of minority stressors is concerning (Hill et al., 2012; Reuter, Newcomb, Whitton, & Mustanski, 2017). According to Hill et al. (2012), African American lesbians are at an increased risk of intimate partner violence because of the combinations of oppression such as racism, sexism, and heterosexism. Reuter et al. (2017) conducted a study to examine the minority stress framework on the health consequences of LGBT intimate partner violence by recruiting 172 ethnically diverse young adults using LGBTQ venues and vehicles. The authors theorized that the greater the number of minority stressors, the greater the risks of intimate partner violence victimization and perpetration (Reuter et al., 2017). The breakdown of participants by gender identity included 36% males, 53.5% females, 5.2% male-to-female transgender, and 4% female-to-male transgender (Reuter et al., 2017). By sexual orientation, 29% participants identified as lesbian, 29.7% as gay, 32.6% as bisexual, and 7.6% as questioning (Reuter et al., 2017). Reuter et al. concluded that verbal intimate partner violence victims were more likely to identify as female or male-to-female transgender ($x^2 = 10.13$, $p = .017$) and African American ($x^2 = 10.74$, $p = .013$) when compared to male

and female-to-male sexual identities and other racial groups (Reuter et al., 2017). Physical intimate partner violence victims were more likely to identify as female or male-to-female transgender ($x^2 = 12.48$, $p = .006$), African American ($x^2 = 10.29$, $p = .016$), and lesbian ($x^2 = 8.36$, $p = .039$) when compared to other sexual identities and racial groups (Reuter et al., 2017). The greater the number of minority stressors (Brown, 2008; Milletich et al., 2014; Reuter et al., 2017), the greater the risks of intimate partner violence victimization (Reuter et al., 2017).

The intersection of dueling identities may lead to psychological distress, which predisposes women to same-sex intimate partner violence (Hill et al., 2012; Jacobsen & Wright, 2014). In fact, sexual minority stress correlates with psychological distress and substance use (Mason et al., 2016). Jacobsen and Wright (2014) conducted a phenomenological qualitative study to examine same-sex sexuality and reconciliation of religious identity among 23 women who identified as sexual minorities and had a religious affiliation to the Mormon community. Jacobsen and Wright concluded that participants struggled with conflicting identities due to minority stress associated with their sexuality and religious beliefs The intersection of dueling identities also led to psychological distress and risk of intimate partner violence victimization (Hill et al., 2012; Jacobsen & Wright, 2014). Gender, race, and sexual minority status did not cause intimate partner violence (Hill et al., 2012). Instead, the dueling intersection of various forms of oppression influence minority stress and contribute to intimate partner violence among women who have sex with women (Mason et al., 2016).

Association Between Biopsychosocial Model Constructs and Female Same-Sex Intimate Partner Violence

The studies reviewed for this section examined a combination of independent variables on female same-sex intimate partner violence victimization. The relationship between sexual orientation, social contexts, and psychological influences was unsubstantiated. Researchers have utilized a one-dimensional approach, which included sexual behavior, identity, or attraction, to measure human sexuality (Gattis, Sacco, & Cunningham- Williams, 2012). Incorporating a bi-dimensional construct of sexual orientation coupled with social contexts and psychological influences may facilitate a better understanding of human sexuality and behaviors that place women at risk for same-sex intimate partner violence victimization.

Pyra et al. (2014) conducted a study using data from the Women Interagency HIV Study to understand the relationship between sexual minority status and violence. The sexual identity sample included 103 self- identified lesbians, 173 self-identified bisexuals, and 1,813 self-identified heterosexuals (Pyra et al., 2014). The sexual behavior sample included 1,743 women. Pyra et al. found that bisexual women and women who have sex with men and women were more likely to report transactional sex, two or more sexual partners, and substance use (Pyra et al., 2014). When compared to heterosexual women, bisexual women had an increased odds ratio of 50% ($p = 0.01$) for intimate partner violence and 77% ($p < 0.001$) for physical violence (Pyra et al., 2014). Women who have sex with men and women had an increased odds ratio of 50% ($p = 0.01$) for intimate partner violence and 124% ($p < 0.001$) for physical violence when compared to

women who have sex with men only behaviorally (Pyra et al., 2014). Women who have sex with women had a decreased odds ratio of 58% ($p = 0.01$) for physical violence when compared to women who have sex with men only (Pyra et al., 2014). Pyra et al. concluded that risk factors and reactions to violence vary based on sexual behavior and identity among the various subpopulations of women who have sex with women. These variations can inform prevention and intervention efforts (see Gattis et al., 2012) to reduce health disparities (Dilley et al., 2010) among female same-sex intimate partner violence victims.

According to Lewis et al. (2016), lesbian identity correlated with increased odds of hazardous drinking. Alcohol use is a risk factor for and coping mechanism of intimate partner violence among young lesbians (Lewis et al., 2016; Pyra et al., 2014). Lewis et al. (2016) recruited 1,048 lesbians via several LGBTQ friendly venues and vehicles to participate in a survey to examine the association between sexual minority stressors and intimate partner violence. Heterosexism contributed to greater internalized homophobia and perpetrator anger (Lewis et al., 2016). The perpetrator's internalized homophobia positively correlated to anger and alcohol problems (Lewis et al., (2016). Increased internalized homophobia was associated with increased anger and alcohol problems (Lewis et al., 2016). Lewis et al. (2016) concluded that increased anger secondary to perpetrator's alcohol use and problems contributed to intimate partner violence.

Internalized homophobia has been positively associated with decreased self-esteem, feelings of helplessness, and adverse coping behaviors (McKenry et al., 2006). In fact, internalized homophobia may contribute to nondisclosure of sexual orientation, thus

preventing access to external support, financial resources, and alternative housing options (Carvalho et al., 2011). Moreover, lack of community support and resources that target non-heterosexual intimate partner violence victims may result from heterosexism (Brown, 2008; Duke & Davidson, 2008).

Ford et al. (2012) surveyed agencies and community members to plan and conduct a baseline assessment to understand how agencies and programs addressed LGBT intimate partner violence. More than half of the non-LGBT affiliates reported having services that targeted same-sex intimate partner violence victims (Ford, Slavin, Hilton, & Holt, 2012). The available services consisted of referrals to the Los Angeles LGBT community center (Ford et al., 2012). However, most non-LGBT affiliates believed they were inadequately prepared to address same-sex intimate partner violence (Ford et al., 2012). Culture sensitivity training materials relevant to the LGBT population, alternative housing for LGBTs, and LGBT-specific legal resources may facilitate efforts to address same-sex intimate partner violence (see Ford et al., 2012). Los Angeles has the second largest LGB population among U.S. metropolitan areas and includes sexual orientation as a protected category within its nondiscrimination clause (Ford et al., 2012). However, a protected category that includes sexual orientation is not recognized nationwide (Ford et al., 2012). For example, Montana and South Carolina's protective order statutes recognize heterosexual abuse, not same-sex abuse (Calton et al., 2016). Fourteen U.S. states and two Canadian cities denied 55% of protective orders requested by LGBT victims (Calton et al., 2016). Kansas and Nevada judges may require LGBT victims to provide evidence of cohabitation at the time of abuse to receive protection

from the court (see Calton et al., 2016). These requirements and inconsistencies discourage LGBT victims from reporting abuse, resulting in helplessness and isolation in abusive relationships (see Ard & Makadon, 2011; Calton et al., 2016; Eaton et al., 2008).

The Gap in Literature on Sexual Orientation and Intimate Partner Violence

The current study was conducted to examine the relationship between sexual orientation and intimate partner violence victimization among women who have sex with women within the United States. The literature review indicated that the relationship between these constructs was inconclusive. For example, several studies concluded that sexual behavior (see Blosnich & Bossarte, 2009; McCauley et al., 2015) or sexual identity (see Dilley et al., 2010) influenced intimate partner violence victimization. Guadalupe-Diaz (2013) and Rosenthal and Starks (2015) determined that gender, race, or sexual orientation did not independently cause intimate partner violence, nor did these characteristics determine whether a victim would disclose or seek assistance for victimization However, Rueter et al. (2017) indicated that the dueling intersection of gender, race, and sexual identity significantly influenced intimate partner violence secondary to increased minority stressors. Pyra et al. (2014) determined that female same-sex identity was significant to intimate partner violence for other reasons such as substance use and adverse sexual behaviors. Otherresearchers signified the importance of measuring sexual orientation as a multidimensional construct that included sexual identity, sexual behavior, and sexual attraction (Koeppel & Bouffard, 2014; Hellemans et al., 2015).

Definition of Terms

Intimate partner violence: Defined by Heise and Garcia-Moreno (2002)as "Behaviors by an intimate partner or ex-partner that causes physical, sexual, or psychological harm, including physical aggression, sexual coercion, psychological abuse, and controlling behaviors" (p.89).

Lesbian: A sexual minority female homosexual who experiences romantic love or sexual attraction to other females (CDC, 2017).

LGBT: sexual minorities who identify collectively as lesbian, gay, bisexual, or transgender (CDC, 2014)

Outness: The state of being out about one's sexuality (Carvalho et al., 2012).

Sexual minorities: Refers to individuals whose sexual identity, sexual orientation, or sexual behaviors differ from the heteronormative view (Centers for Educational Justice & Community Engagement, 2016).

Women who have sex with women: women who have sex with women regardless of their sexual identity, that is lesbian, bisexual, gay, heterosexual, or questioning (Gorgos & Marrazzo, 2011; Milletich et al., 2014)

Assumptions

The development of the NISVS and the original data collections underwent a thorough and rigorous process. I assumed secondary analysis of existing NISVS data were reliable, measurable, and valid.

Scope and Delimitations

The current study was conducted to address the effects of sexual orientation, social factors, and psychological influences on intimate partner violence victimization among women who have sex with women in the U.S. and District of Columbia. Secondary analysis of existing NISVS data was conducted to observe trends in female same-sex intimate partner violence based on sexual orientation, income, race, support networks and use of community resources, and self-reported mental health status. Because many researchers who conduct same-sex intimate partner violence research have relied on convenience samples or recruitment from individuals attending or participating in LGBTQ friendly venues and vehicles, the use of a national data set produced findings from the sample that were generalized to the entire population.The delimitation of the current study was the age of the data set. Using variables within the NISVS, the biological factor sexual orientation (defined by sexual identity and sexual behavior), social contexts (i.e., support of family and friends and use of community services), and psychological influences (self-reported mental health status) conceptualized the biopsychosocial model. A diligent search of other databases did not reveal a more recent dataset with variables capable of answering the proposed research questions.

Significance

The purpose of the current study was to examine the association between sexual orientation and intimate partner violence victimization among women who have sex with women. This research was unique because it addressed the under-studied area of sexual orientation and intimate partner violence among women who have sex with women. The

implications of social change may include informing the implementation of policies and culturally competent interventions that address the unique and diverse needs of subpopulations of female same-sex intimate partner violence victims. Public health professionals may develop culturally specific health education materials and programs to educate academia, the medical community, and the public on female same-sex intimate partner violence victimization. The myth that female same-sex relationships are the "ideal egalitarian relationship" or "Lesbian Utopia" contributes to the antiquated societal misconceptions that support heterosexism and make it difficult for women who have sex with women to report intimate partner violence victimization (see Duke & Davidson, 2009). Understanding the association between sexual orientation and intimate partner violence among women who have sex with women may initiate further discussions and additional research into this public health problem.

Summary and Conclusions

Section 1 discussed the foundation of the study and the literature review. The section began with the introduction of the study, followed by a presentation of the literature review that examined sexual orientation, social contexts, and psychological influences that leverage intimate partner violence victimization among women who have sex with women. Most of this section examined sexual orientation as an independent variable, where some studies measured sexual orientation by sexual identity, some by sexual behavior, and others by sexual identity, sexual behavior, and sexual attraction. The constructs of the biopsychosocial model guided the study. Sexual orientation (defined by sexual identity and sexual behavior) as a biological factor, support of family and friends

and use of community services as social contexts, self-reported mental health services as psychological influences, income, and race operationalized the independent variables.

The results of the literature review indicated inconclusive findings between the association of sexual orientation and intimate partner violence among female sexual minorities. The researchers reported varying prevalence rates of same-sex intimate partner violence, and findings were inconclusive based on the definition and measurement of sexual orientation. The findings of several studies indicated that intimate partner violence resulted from heterosexism secondary to minority stressors. Several researchers relied on various theoretical frameworks of guiding, ecological systems, power, control, dominance, and gender (masculinity versus femininity) to understand same-sex intimate partner violence. Although researchers have used these theoretical frameworks to increase their knowledge of female same-sex intimate partner violence, prevalence rates continue to rise, indicating the need for additional research into other risk factors. Perhaps, examining female same-sex intimate partner violence using a model that incorporates biology may provide a better understanding of the relationship between sexual orientation and intimate partner violence among women who have sex with women. Comparing the findings of the current study to the findings of other studies may determine the similarities, differences, and gaps that remain unresolved. Section 2 presents the quantitative cross-sectional design and rationale, sample and setting, and statistical analyses.

Section 2: Research Design and Data Collection

Introduction

The purpose of this cross-sectional quantitative study was to examine the association between sexual orientation and intimate partner violence victimization among women who have sex with women. Intimate partner violence affects female sexual minorities at disproportionate rates. Public health practitioners, health educators, and policymakers may collaborate and use research data to bring awareness to heterosexism and its effects on same-sex intimate partner violence outcomes. Section 2 addresses the quantitative cross-sectional research design and rationale to answer the research questions. In this section I also discuss the sample, setting, and statistical analyses.

Research Design and Rationale

In this quantitative cross-sectional study, I examined the association between sexual orientation and intimate partner violence among women who have sex with women. The independent variables of the study were sexual orientation (measured by sexual behavior and sexual identity), race, income, social contexts (measured by the support of family and friends, use of community services) and psychological influence measured by self-reported mental health status. The dependent variable was intimate partner violence victimization. The literature has suggested that some relationships exist among the various constructs of sexual orientation, social contexts, and psychological influences. However, there were no data available to support the relationship between the bidimensional construct of sexual orientation (sexual identity and sexual behavior), social

contexts, and psychological influences that place women at risk for same-sex intimate partner violence victimization.

A quantitative cross-sectional study is an observational study that involves investigating research questions by analyzing data collected from a population at one specific point in time (Creswell, 2009). The quantitative cross-sectional study design was appropriate for the current study because it supported examining the association between sexual orientation and intimate partner violence victimization among women who have sex with women using a national survey. The research design coupled with analysis of archived national survey data provided a quantitative description of trends that may assist in drawing inferences about additional risk factors that contribute to female same-sex intimate partner violence victimization (Creswell, 2009). The current study was conducted to determine whether sexual orientation, income, race, social contexts, and psychological factors influenced intimate partner violence among women who have sex with women. The research questions addressed the nature of the relationship between sexual orientation and intimate partner violence among women who have sex with women. The hypotheses stated that sexual orientation, income, race, social contexts, and psychological influences influenced intimate partner violence victimization among women who have sex with women.

Methodology

Target Population

The target population was adult women who represented all 50 states and the District of Columbia. I used existing data from the 2010 NISVS collected from January

22, 2010 to December 31, 2010 for analysis. The target population consisted of 10,447 women who completed or impartially completed the survey.

Sampling and Sampling Procedures

No participants were recruited for the current study because data analyses were based on archived NISVS data. The NISVS is a large, nationally archived Inter-University Consortium for Political and Social Research (ICPSR) data set available to academic institutions and research organizations for research and statistical purposes. Data repository and access regulations imposed by the law guided the process to request the appropriate variables to complete the current study (ICPSR, 2017).

The NISVS is an ongoing surveillance system that collects information related to experiences of intimate partner violence, sexual violence, and stalking among adult men and women living in the United States (Walters et al., 2013). Variables of interest within the NISVS are intimate partner violence-related variables including PA, coercive control and entrapment (CCE), physical violence (PV), respondent demographics (gender, race, and income), sexual identity, and sexual behavior.

The sampling frame from the data set consisted of 9,970 women and intimate partner violence-related variables that met inclusion criteria relevant to the current study. The NISVS is a national digit-dial telephone survey that uses a dual-frame sampling strategy that includes landline and cell phone numbers (Black et al., 2011; Walters et al., 2013). Researchers sampled 201,881 telephone numbers: Of these, 31% were excluded because they were a business or were inoperative, 53% were unknown eligibility, and 15% were eligible. The 31, 241 eligible households resulted in 18,049 telephone

interviews. However, the total consisted of 16,507 (9,086 women and 7,421 men) completed and 1,542 (884 women and 658 men) incompleted interviews (Black et al., 2011; Walters et al., 2013). Population and prevalence estimates were based on completed interviews (Walters et al., 2013). Weighted analyses (i.e., stratified sampling, weighting for unequal sample selection probabilities, and nonresponse adjustments) were taken into consideration (Walters et al., 2013). The weighted response rate ranged from 27.5% to 33.6%, and the weighted cooperation rate was 81.3%. The sample population was appropriate for the current study based on identified gaps in the literature review.

Sample Population and Size

The sample was drawn from the nationally quantitative archived 2010 NISVS dataset of 9,086 women. Sufficient sample size depends on the power, effect size, and significance level (Cohen 1988; McHugh, 2009). Moreover, the alpha [α] level, effect size, and sample size affect the power in the study (Cohen, 1988). For the present study, women who endorsed sexual behavior with men only or both men and women were included in the study population. Women who endorsed sexual behavior with men only were excluded from the present study.

The sample size was calculated using G*Power. To strengthen the statistical power and obtain a reasonable sample size (McHugh, 2009), I chose a margin of error of 5%, a confidence interval (CI) of 95%, and a medium effect size of 0.3. The calculated minimum sample size for the current study was 220 women.

Instrumentation and Operationalization of Constructs

The NISVS is a national surveillance system developed in 2010 by an expert panel of practitioners, advocates, subject matter experts, and federal agencies organized by the CDC (Black et al., 2011; Walters et al., 2013). The survey includes behavior-specific questions related to PA (five items), CCE (12 items), reproductive or sexual health dominance (two items), PV (11 items), sexual violence (21 items), and stalking (seven items; Walters et al., 2013). Secondary analysis of existing NISVS data was appropriate for the current study because it contained information on variables related to the problem of study. Table 1 describes the biopsychosocial model constructs and corresponding study measures.

Table 1

Biopsychosocial Model Constructs and Corresponding Study Measures

Biopsychosocial model constructs	Variable	Survey question
Biological factors	Sexual orientation (sexual identity and sexual behavior)	IP1a. Do you consider yourself to be? IP1. During your lifetime, have you had sex with only men, only women, or both men and women?
Social contexts	Proximal support (friends and family)	FU5. Did you talk to a friend, family member or romantic partner?
	Distal support (use of community services including medical care, housing services, community services, victim's advocate services, or legal services)	FU6. Did you ever need any of the following services because of any of the things that any of these people did? FU6b. Were you able to get the services that you needed when {initials} did this/these things? FU6c. Why were you not able to get the assistance that you needed when {initials} did this/these things?
Psychological influence	Mental health (self-reported mental health status)	H9. Would you say that in general, your mental health is?

Note. The questions from the table were adapted from the National Intimate Partner and Sexual Violence Survey (NISVS): General population Survey Raw Data, 2010.

Validity and Reliability of the Instrument

The NISVS was developed in 2010 after a pilot methods study to address the gaps in the NVAWS (Black et al., 2011). A panel of experts organized by the CDC discussed the findings of the pilot and recommendations on the design of the NISVS (Black et al., 2011). Face and content validity were assessed on the NISVS's introductions and essential questions to determine if the questions were appropriate and the respondents understood the text (Black et al., 2011). The results of the cognitive testing indicated that intimate partner violence victims who experienced multiple forms of violence from one

perpetrator would have difficulty identifying which type of violence caused the adverse outcome.

The relative standard error measured every estimate for reliability (Black et al., 2011; Walters et al., 2013). Arelative standard error more significant than 30% corresponded to an unreliable estimate and was excluded from analyses (Black et al., 2011; Walters et al., 2013). Case count estimates with a numerator < 20 were also excluded from analyses (Black et al., 2011; Walter et al., 2013). Walters et al. (2013) compared two sexual orientation groups using a two-tailed *t* test ($\alpha = .05$) when both prevalence rates met reliability criteria: The result was recorded statistically significant when $p < 0.5$ (Walters et al., 2013). The overall weighted response and cooperation rates of the NISVS were 27.5% to 33.6% and 81.3% respectively. The results of the pilot study, design recommendations from the expert panel, and cognitive testing informed the development of the NISVS, which supports the validity and reliability of the instrument (Black et al., 2011; Walters et al., 2013).

Operational Measures

Table 2 represents a description of the items that were adapted from the NISVS and the operational measures of the dependent variable. An intimate partner or ex-partner that caused physical or psychological harm, including physical aggression, psychological abuse, and controlling behaviors, defined intimate partner violence (Heise & Garcia-Moreno, 2002). Experiences with PV, PA, and CCE measured the dependent variable. Women that scored higher than or equal to one in any listed category were identified as having experienced intimate partner violence victimization. For example, a woman who

reported one romantic or sexual partner made threats to slap her (i.e., PV) and zero partners committed acts of violence categories PA or CCEwas coded as one (i.e., yes) for intimate partner violence victimization. Table 2 describes the measures of the dependent variable.

Table 2

Operational Measures for Dependent Variable

Intimate partner violence constructs and corresponding NISVS questions	NISVS question(s)	Response categories
Physical violence (PV1 to PV12)	How many of your sexual partners have ever made threats to physically harm you; slap, push, or shove you; hit you with a fist or something hard; kick or hurt you by pulling your hair; slam you against something; forced you to engage in sexual activity; tried to hurt you by choking or suffocating you; or beat, burned or used a knife or gun on you?	$\geq$ 1 = yes 0 = no
Psychological aggression (PA1 to PA5)	How many of your romantic or sexual partners have ever acted very angry towards you in a way that seemed dangerous; told you that you were a loser, a failure, or not good enough; called you names like ugly, fat, crazy or stupid; insulted, humiliated, or made fun of you in front of others; or told you that NO one else would want you?	$\geq$ 1 = yes 0 = no
Coercive control and entrapment (CCE1 to CCE14)	How many of your romantic or sexual partners have ever tried to keep you from seeing or talking to your family or friends; made decisions for you that should have been yours to make, kept track of you by demanding to know where you were or where you were going; threatened to hurt himself, herself, pet, or someone you love; hurt someone you love; threatened to take your children away; kept you from leaving the house; destroyed something that was important to you; said things like "if I can't have you, no one can"; or refused to wear a condom when you wanted them to?	$\geq$ 1 = yes 0 = no

Note. These questions were adapted and used with permission from the developers of the National Intimate Partner and Sexual Violence Survey (NISVS): General population Survey Raw Data, 2010.

Table 3 represents a description of the items that were adapted from the NISVS and the operational measures of the independent variables. The independent variables are three sexual identity groups, four proximal support networks, five distal support networks, and five self-reported mental health categories. For example, a female

respondent who identified as heterosexual, had sex with women only, did not talk to family, friends, or a romantic partner, needed victims' advocate services only, and reported her mental health as fair had an odds of intimate partner violence calculated as 0+1+4. Sexual identity and sexual behavior measured sexual orientation. Table 3 describes the measures of the independent variables.

Table 3

Operational Measures for Independent Variables

Variables	Survey question	Response categories	Variable type
		Biological factors	
Sexual identity	IP1a. Do you consider yourself to be?	1=Heterosexual/Straight 2=Lesbian 3=Bisexual	Nominal 3 Groups
Sexual behavior	IP1. During your lifetime, have you had sex with only men, only women, or both men and women?	1=Women only 2=Both men and women	Nominal 2 Groups
		Socioeconomic/Demographic variables	
Income	RC7. What was the total income from ALL household members before taxes)?	1= Less than $25,000 2= $\geq$ $25,000	Ordinal
Race/Ethnicity	R8. What is your race?	1=White/Caucasian 2=Black/ African American 3=Other	Nominal
		Social contexts	
Support of family and friends	FU5. Which people did you talk to {type, i.e., the police} about?	Did you talk to a friend, a family member, a romantic partner or law enforcement? Friend Family Member Romantic or sexual partner Police	Ordinal (0-4)
Community support	FU6. Did you ever need any of the following services because of any of the things that any of these people did?	Medical care? Housing services? Community services? Victim's advocate services?	Ordinal (0-4)
		Physiological influence	
Mental health	H9. Would you say that in general, your mental health is?	1=Excellent 2=Very good 3=Good 4=Fair 5=Poor	Ordinal

Note. These questions were adapted and used with permission from the developers of the National Intimate Partner and Sexual Violence Survey (NISVS): General population Survey Raw Data, 2010.

Statistical Analysis Plan

Data were obtained from questions of the 2010 NISVS that focused on sexual orientation, sexual behavior, support of family, friends, and community, mental health, income, and race. Descriptive analyses described the foundational basis of the data in the study. The Statistical Package for Social Science (SPSS) Version 24 was used for statistical analyses of the existing data set. I performed a Pearson correlation analysis to examine the socioeconomic and demographic characteristics of the study population (i.e., women who endorsed sexual behavior with women) and the population excluded from the study because they endorsed sexual behavior with men only.

The independent variables for the current study were sexual orientation (sexual identity and sexual behavior), income, race, support networks (family, friends, and use of community resources), and mental health status. The dependent variable for the current study was intimate partner violence victimization. Logistic functions show the probability p of one variable being affected by another variable, $p = P(a + bx)$ (Hosmer, Lemeshow, & Sturdivant, 2013). The logistic equation states $z = b_0 + b_1x_1 + b_2 x_2 \ldots + b_k x_k$ and so on. Z represents the odds of the dependent variable (intimate partner violence); b_0 represents the constant; x represents the independent variables (sexual orientation, income, race, support of family, friends, and use of community resources, and mental health status); k represents the number of independent variables, and b represents the slope or coefficient (Hosmer et al., 2013).

Logistic Regression Analyses and the Odds Ratio

For the current study, I used logistic regression to determine the likelihood of

intimate partner violence victimization based on sexual orientation, income, race, support of family and friends, use of community resources, and mental health status. The odds ratio examined the odds of intimate partner violence given respondents' sexual orientation, support of family and friends, use of community resources, and mental health status. The odds ratio is a measure of effect size that was used to measure the strength of the association (Cohen, 1998). Cohen (1998) defines the Pearson correlation r effect size as small (0.10), medium (0.30), or large (0.50). An odds ratio significantly different from 1 indicated that a respondent's sexual orientation, support of family and friends, use of community resources, mental health status, race, or income predicted intimate partner violence victimization (McHugh, 2009). The likelihood ratio test measured significance (*p*-value) or the probability that the observed values of the independent variable predicted the observed values of the dependent variables (McHugh, 2009). A *p*-value less than .05 indicated that the observed result is statistically significant, resulting in rejection of the null hypothesis.

Research Questions and Hypotheses

The research questions and hypotheses were developed from the literature review in areas of sexual orientation, intimate partner violence, and the biopsychosocial model constructs. As previously stated, the purpose of the current study was to examine the association between sexual orientation and intimate partner violence victimization among women who have sex with women.

Research Question 1

1. Is there an association between sexual orientation and intimate partner violence among women who have sex with women?

H 1_0: There is no association between sexual orientation and intimate partner violence among women who have sex with women.

H 1_a: There is an association between sexual orientation and intimate partner violence among women who have sex with women.

Statistical plan.

- Independent variables= sexual identity (1 = bisexual, 2 = heterosexual, 3 = lesbian) and sexual behavior (1 = women only, 2 = both men and women)
- Dependent variable= intimate partner violence (binary 1 = yes, 0 = no)
- Statistical test=logistic regression
- Level of precision ($\alpha = .05$)
- Power (Beta [β] = .20) the same as 80% power

Research Question 2

2. Is there an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for income and race?

H 2_o: There is no association between sexual orientation and intimate partner violence among women who have sex with women when controlled for income and race.

H 2_a: There is an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for income and race.

Statistical plan.

- Independent variables= sexual identity (1 = bisexual, 2 = heterosexual, 3 = lesbian); sexual behavior (1 = women only, 2 = both men and women); Income (1 = less than $25,000, 2 = ≥ $25,000); and race (1 = White/ Caucasian, 2 = Black/ African American, 3 = Other)
- Dependent variable= Intimate partner violence (binary 1 = yes, 0 = no)
- Statistical test= logistic regression
- Level of precision ($\alpha = .05$)
- Power ($\beta = .20$) the same as 80% power

Research Question 3

3. Is there an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for social contexts?

H 3_o: There is no association between sexual orientation and intimate partner violence among women who have sex with women when controlled for social contexts.

H 3_a: There is an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for social contexts.

Statistical plan.

- Independent variables= sexual identity (1 = bisexual, 2 = heterosexual, 3 = lesbian); sexual behavior (1 = women only, 2 = both men and women); support of family and friends (Scale 0-4); use of community services (Scale 0-4)
- Dependent variable= intimate partner violence (binary 1 = yes, 0 = no)
- Statistical test= logistic regression

- Level of precision (α = .05)
- Power (β = .20) the same as 80% power

Research Question 4

4. Is there an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for self-reported mental health status?

H 4_o: There is no association between sexual orientation and intimate partner violence among women who have sex with women when controlled for self-reported mental health status.

H 4_a: There is an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for self-reported mental health status.

Statistical plan.

- Independent variables= sexual identity (1 = bisexual, 2 = heterosexual, 3 = lesbian); sexual behavior (1 = women only, 2 = both men and women); self-reported mental health status (1 = excellent, 2 = very good, 3 = good, 4 = fair, 5 = poor)
- Dependent variable= intimate partner violence (binary 1 = yes, 0 = no);
- Statistical test= logistic regression
- Level of precision (α = .05)
- Power (β = .20) the same as 80% power

Threats to External Validity

The NISVS was administered using a dual-frame sampling strategy that included landline and cell phone numbers (Black et al., 2011; Walters et al., 2013). The sampling frame automatically excluded individuals who did not have access to a landline or cellular phone. The results of the current study were generalized to women who have access to a landline or cellular phones.

Threats to Internal Validity

The National Center for Injury Prevention and Control of the CDC has strict guidelines to conduct NISVS interviews and affirm data quality. NISVS uses weighted analyses (i.e., stratified sampling, weighting for unequal sample selection probabilities and non-response adjustments) to assure representativeness of the sample and reduce errors.

NISVS represents 18,049 interviews collected from U.S. adult men and women living in the 50 states and the District of Columbia from January to December 2010. Statistical analyses were based on 9,970 interviews of women. Missing data were managed by performing multiple imputation techniques to ensure missing cases did not present an issue for statistical analyses.

Ethical Procedures

Permission to conduct the current study was obtained from the Walden University Institutional Review Board (Walden IRB Approval Number: 12-11-17-0276906). A separate application procedure to obtain the restricted data from ICPSR (Request Number: 28380). included submission of investigator and research staff information,

research description, data selection, data format, Confidentiality Data Security Plan, and Restricted Data Use Agreement requiring signatures from the principal investigator and Walden's Institutional Representative. The nature of these data prohibits release to students. Therefore, the faculty chair/advisor is the investigator and the student serves as the co-investigator.

Summary

Section 2 explained the research design and rationale, research methodology, the survey instrument, primary data collection, statistical analysis plan, threats to external and internal validity, protection of human participants, and ethical concerns. The purpose of the study, research questions, and hypotheses were reiterated. The sampling frame and tools to select the study population were described, with particular emphasis on defining the study population, operationalizing the dependent and independent variables, and data management procedures. Section 3 provides an objective review of the results and findings of the data collected for the current study.

Section 3: Presentation of the Results and Findings

Introduction

The purpose of this quantitative study was to examine the association between sexual orientation and intimate partner violence victimization among women who have sex with women. After data sampling and management, logistic regression analysis was performed to examine the association between sexual orientation and intimate partner violence victimization among women who have sex with women. To accomplish the purpose of the current study, four key research questions were examined: (a) whether there was an association between sexual orientation and intimate partner violence victimization among women who have sex with women and whether this relationship continued after controlling for (b) income and race, (c) social contexts, and (d) self-reported mental health status.

Section 3 includes a description of the data collection process, period for collection of NISVS data, a review of the sampling methods, recruitment of documented cases, and identified discrepancies using existing data. In this section, I also describe the descriptive statistics to include frequencies, percentages, and measures of central tendency and inferential statistical analysis.

Nonresponse Analyses

Data sampling and analyses were conducted from April 1 to May 31, 2018. There were 10,447 women participants for the 2010 NISVS. Of these participants, 4,644 women reported sexual orientation, which represents 44.5% of participants. However, the study sample consisted of 618 participants who endorsed having sex with women

only or both men and women (13.3% of the participants who reported their sexual behavior). I summarized and compared sexual behavior, sexual identity, main demographic, and socioeconomic characteristics of women participants in Tables 4 and 5.

Table 4

Sexual Identity of Adult Women in the 2010 NISVS

Women who have sex with women	Yes (n = 618)		No (n = 4026)	
	Frequency	Percent	Frequency	Percent
Heterosexual/Straight	333	53.9	4012	99.7
Gay/Lesbian	113	18.3	-	-
Bisexual	172	27.8	14	0.3
Total	618		4026	

Table 5

Socioeconomic and Demographic Characteristics of Adult Women in the 2010 NISVS

Women who have sex with women	Yes (n = 618) %	No (n = 4026) %
Education		
< High school	6.1	6.5
High school graduate	21.5	23.0
Technical, vocational, or some college	34.5	31.9
4-year college degree	21.5	23.4
Postgraduate degree	16.3	15.1
Annual household income		
<$25,000	35.8	28.1
≥ $25,000	64.2	71.9
Race		
White/Caucasian	84.1	85.9
Black/African American	11.5	8.3
Other	4.4	5.8

To analyze categorical data, I conducted a Chi-Square Test of Independence to test for homogeneity of binomial proportions and the Cramer's *V* statistic to measure the effect size. The results of the Chi-square test of independence indicated a significant association between disclosure of sexual behavior and the following: sexual identity (x^2 (2) = 1866.5, $p < 0.5$), race (x^2 (2) = 8.6, $p < 0.5$), and annual household income (x^2 (1) =14.6, $p < 0.5$). However, there was not a significant association between disclosure of sexual behavior and level of education (x^2 (4) = 3.04, $p = .6$). Women participants who disclosed their sexual behavior were significantly different from women participants who did not disclose their sexual behavior. The strength of the association between disclosure of sexual behavior and sexual identity was strong ($V_{\text{sexual identity}} = .63$). However, the strength of the relationships between disclosure of sexual behavior and race, level of education, and annual household income was weak ($V_{\text{race}} = .043$; $V_{\text{education}} = .026$; $V_{\text{annual household income}} = .058$).

Missing Values Analyses

Missing data is an issue when performing analyses of existing data. Therefore, I performed a missing data analyses to determine if missing values would affect descriptive and inferential analyses. Of the variables included in the analyses, 14 of the 46 included variables had complete data, annual household income and race had up to 23% and 0.5% missing values respectively, and the eight community and family support variables each had 11% missing data. Concerning the dependent variable, 30 of the intimate partner violence variables had less than 1% missing data, while one, which addressed threats to take children away, had 39.6% missing values. Although 34.8% of all variables had

missing data, 23.8% of cases had at least one missing value. I analyzed the missing data and found a pattern within the family/proximal and community support variables and the intimate partner violence variable that addressed threats to take children away, which may introduce bias in missing data. I further examined the missing data and found that the missing values within the intimate partner violence variable were a result of an unanswered question (243 cases) or participants refusal to respond (two cases). In this instance, I recoded these 245 cases as 0, the equivalent of no in the analysis. A new income variable was derived to consist of eight mutually exclusive categories to maintain an adequate analytic sample. The missing values within the race variable were excluded from descriptive and inferential analyses due to its level of measurement, thus resulting in a final analytical sample size of 596.

Descriptive Analysis

The following analyses used the weighting methodology recommended by the CDC (Walters et al., 2013). The weighted data for women who disclosed their sexual identity and engaged in sexual behavior with women in 2010 was 1,075 adult women. Bisexual women represented 48%, compared to heterosexual and lesbians (31% and 21%). Most women were White (82.9%), with technical, vocational, or some college (33.7%) and an annual household income $\geq$ \$25K (63.6%)

The following analyses describe the study population (n = 596). All participants were women. Among them, most identified as heterosexual and engaged in sexual behavior with only women or both men and women (n = 291). The majority were educated beyond high school (73.2%) and reported a household income $\geq$ \$25K (64.1%).

I summarize the main demographic and socioeconomic characteristics of the study sample in Table 6.

Table 6

Summary of Demographic and Socioeconomic Characteristics of Study Sample (n = 596)

Characteristic	*n*	Weighted frequencies	Weighted percentages
Sexual orientation			
Heterosexual/Straight	322	333	31.0
Gay/Lesbian	106	226	21.0
Bisexual	168	516	48.0
Sexual behavior			
Women only	66	112	10.4
Both men and women	530	963	89.6
Education			
Less than high school	36	70	6.5
High school graduate	124	236	22.0
Technical, vocational, or some college	205	363	33.8
4-year college degree	131	236	22.0
Postgraduate degree	100	170	15.8
Annual household Income			
< $25,000	214	378	36.3
≥ $25,000	382	664	63.7
Race			
White/Caucasian	502	883	82.5
Black/African American	67	134	12.5
Another race	27	53	5.0

Descriptive Analysis for Intimate Partner Violence Victimization

The dependent variable in the current study was intimate partner violence victimization, a computed variable containing the three categories PV, PA, and CCE. I used questions PV1 to PV12, PA1 to PA5, and CCE1 to CCE14 of the NISVS to measure intimate partner violence victimization. For each question, women reported the number of persons (up to 15) who committed specific acts of violence against them. Women could report a maximum of 15 perpetrators on each (31-total) question, thus totaling 465 perpetrators. Women with a score ≥ 1 were categorized as having experienced intimate partner violence victimization. Likewise, women who scored zero after computation were categorized as having no experience with intimate partner violence victimization.

After categorizing the responses, I summarized the results of questions PV1 to PV12, PA1 to PA5, and CCE1 to CCE14 in Table 7. The most prevalent form of violence within each subcategory of intimate partner violence reported among women who have sex with women was kept track of you (47.1%) for CCE, acted angry in a dangerous way (48.8%) for PA, and pushed or shoved you (50.6%) for PV. Alternatively, the less frequently reported experiences of intimate partner violence among these women were have hurt a loved one (10%) for CCE and burned you on purpose (3%) for PV.

Table 7

Weighted Distribution of Intimate Partner Violence by Number of Partners and Type of Violence

How many of your romantic, sexual partners have ever	*n*	None*	≥ 1*
Coercive Control and Entrapment CCE			
-Tried to keep you from seeing or talking to your family or friends?	596	63.6	36.4
-Made decisions for you that should have been yours to make, such as the clothes you wear, things you eat, or the friends you have?	595	65.9	34.2
-Kept track of you by demanding to know where you were and what you were doing?	592	52.1	47.9
-Threatened to hurt himself or herself or commit suicide when he or she was upset with you?	596	65.7	34.3
-Threatened to hurt a pet or threatened to take a pet away from you?	595	88.0	12.0
-Threatened to hurt someone you love?	595	88.8	11.2
-Hurt someone you love?	596	90.9	9.1
-Threatened to take your children away from you?	359	75.0	25.0
-Kept you from leaving the house when you wanted to go?	595	68.6	31.4
-Kept you from having money for your use?	596	83.9	16.1
-Destroyed something that was important to you?	594	69.5	30.5
-Said things like "If I cannot have you, then no one can"?	595	76.7	23.3
-"Tried to get you pregnant when you did not want to become pregnant"?	593	87.7	12.3
-Refused to use a condom when you wanted them to use one?	592	86.6	13.4
Psychological Aggression PA			
-Acted very angry towards you in a way that seemed dangerous?	594	51.8	48.2
-Told you that you were a loser, a failure, or not good enough?	593	61.2	38.9
-Called you names like ugly, fat, crazy, or stupid?	591	53.2	49.9
-Insulted, humiliated, or made fun of you in front of others?	590	55.7	44.4
-Told you that NO one else would want you?	594	72.9	27.1
Physical Violence PV			
-Made threats to harm you physically?	595	63.8	36.2
-Slapped you?	596	62.7	37.4
-Pushed or shoved you?	596	51.1	49.0
-Hit you with a fist or something hard?	596	71.3	28.7
-Kicked you?	596	83.4	16.6
-Hurt you by pulling your hair?	594	77.5	22.6
-Slammed you against something?	595	64.8	35.2
-Forced you to engage in sexual activity?	593	77.2	22.9
-Tried to hurt you by choking or suffocating you?	595	81.0	18.9
-Beaten you?	595	79.5	20.5
-Burned you on purpose?	596	97.2	2.8
-Used a knife or gun on you?	596	87.8	12.2

Note. *Weighted percentage.

I computed total scores for CCE, PA, and PV on each study participant to assess intimate partner violence victimization. I defined intimate partner violence victimization as CCE + PA + CCE $\geq$ 1. I computed intimate partner violence victimization on the total sample size (n = 596). Of these, 75.5% experienced CCE victimization, 69% experienced PA, and 60.3% experienced PV (weighted percentages). I summarize the results of intimate partner violence victimization in Table 8.

Table 8

Distribution of Intimate Partner Violence Victimization (n = 596)

Intimate partner violence victimization	*n*	Weighted frequency	Weighted percentage
Yes	542	986	91.7
No	54	89	8.3

Descriptive Analysis for Sexual Orientation

The independent variable in the current study was sexual orientation, measured by sexual identity and sexual behavior. Women who have sex with women sexually identified as heterosexual (54%), lesbian (17.8%), or bisexual (28.2%). In Table 9, I summarize sexual orientation of the study sample.

Table 9

Sexual Orientation of the Study Sample (n = 596)

Sexual orientation	Un-weighted *(n)*	Weighted frequency	Weighted percentage
Bisexual	168	516	48.0
Heterosexual	322	333	31.0
Lesbian	106	226	21.0

Research Questions and Hypothesis

Research Question 1

The first research examined the association between sexual orientation and intimate partner violence among women who have sex with women. The hypotheses were:

$H\ 1_0$: There is no association between sexual orientation and intimate partner violence among women who have sex with women.

$H\ 1_a$: There is an association between sexual orientation and intimate partner violence among women who have sex with women.

Statistical Analyses for Research Question 1

I used logistic regression to test the hypotheses proposed for research question 1. Also, I used a stepwise forward method to obtain the best-fit model based on the probability of the likelihood ratio statistic. Logistic regression allowed me to control multiple covariates concurrently; therefore, I used this approach to test the remaining hypotheses proposed by research questions 2, 3, and 4.

The final logistic regression model was not statistically significant ($X^2 = 5.279$, $p = .071$). However, the Hosmer-Lemeshow Test was statistically significant ($X^2 = .000$, $p = 1.0$), indicating a good fit model. The percent of variance explained by the model was 1.1% (Nagelkerke $R^2 = .011$). Women who identified as heterosexual were .564 times less likely to be victims of intimate partner violence when compared to their bisexual counterparts (Table 10). In the case of women who identified as lesbian, the adjusted *POR* was not statistically significant (a*POR* = .704, $p = .234$). Although the association

between identifying as lesbian and intimate partner violence was not significant, the overall model reflected an association between sexual orientation and intimate partner violence. Therefore, I rejected the null hypothesis.

Table 10

Logistic Regression and Intimate Partner Violence Victimization by Sexual Orientation

Variable	β*(SE)*	*W(p)*	Adjusted *POR*	95% CI
Constant	2.684 (.180)	222.442 ($p < .05$)	14.636	
Sexual orientation				
Bisexual (Ref)			1.00	
Heterosexual	-.573 (.252)	.5174 ($p < .05$)	.564	[.344, .924]
Lesbian	-.351 (.295)	1.415 ($p = .234$)	.704	[.394, 1.255]

Research Question 2

The second research question examined the association between sexual orientation and intimate partner violence among women who have sex with women while controlling for income and race. The hypotheses were:

H 2_o: There is no association between sexual orientation and intimate partner violence among women who have sex with women when controlled for income and race.

H 2_a: There is an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for income and race.

Statistical Analyses for Research Question 2

To test the hypotheses proposed by research question 2, I performed a stepwise forward method. The final logistic regression model was statistically significant (X^2 =

20.188, $p < 0.05$) and correctly classified 92.2% of individuals. The percent of variance explained by the model was 4.6% (Nagelkerke $R^2 = .046$). While controlling for income and race, women who identified as heterosexual were .434 times less likely to be victims of intimate partner violence when compared to bisexual women (Table 11). However, in the case of women who identified as lesbian, the adjusted *POR* was not statistically significant (a*POR* = .634, $p = .154$). Low income and being African American were statistically significant predictors of intimate partner violence victimization ($p < .05$). Although the association between identifying as lesbian and intimate partner violence was insignificant, the overall model reflected an association between sexual orientation and intimate partner violence. Therefore, I rejected the null hypothesis.

Table 11

Logistic Regression and Intimate Partner Violence Victimization by Sexual Orientation While Controlling for Income and Race

Variable	β*(SE)*	*W(p)*	Adjusted *POR*	95% CI
Constant	3.173 (.631)	25.303 ($p < .05$)	23.878	
Sexual orientation				
Bisexual (Ref)			1.00	
Heterosexual	-.834 (.269)	9.618 ($p < .05$)	.434	[.256, .736]
Lesbian	-.456 (.321)	2.028 ($p = 1.54$)	.634	[.338, 1.187]
Annual household income	-.677 (.276	5.849 ($p < .05$)	.513	[.299, .881]
Race				
White/Caucasian(Ref)			1.00	
Black/African American	.940 (.414)	5.157 ($p < .05$)	2.560	[1.137, 5.762]
Other races	.643 (.514)	1.563 ($p = 2.11$)	1.903	[.694, 5.215]

Research Question 3

The third research question examined the association between sexual orientation and intimate partner violence among women who have sex with women while controlling for social contexts. The hypotheses were:

H 3_o: There is no association between sexual orientation and intimate partner violence among women who have sex with women when controlled for social contexts.

H 3_a: There is an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for social contexts.

Statistical Analyses for Research Question 3

For the third stepwise forward logistic regression model, social contexts consisting of family/proximal and community support were added to the model. The model correctly classified 91.7% of individuals. All variables were retained in the model based on the significance level of the Wald statistic. The final logistic regression model was statistically significant ($X^2 = 62.514$, $p < .05$). The percent of variance explained by the model was 13% (Nagelkerke $R^2 = .130$). After controlling for social contexts, women who identified as heterosexual were .558 times less likely to be victims of intimate partner violence when compared to their bisexual counterparts. The adjusted *POR* was statistically insignificant for women who identified as lesbian (a*POR* = .939, $p = .835$). However, family/proximal, use of community services and intimate partner violence victimization were positively correlated. Women with more family/proximal (a*POR* = 1.424, $p < .05$) and community (a*POR* = 8.863, $p < .05$) support were at an increased risk of intimate partner violence victimization. Therefore, family/proximal and community support were statistically significant predictors of intimate partner violence victimization. In Table 12, I summarize the results of logistic regression and intimate partner violence victimization by sexual orientation while controlling for social contexts

Table 12

Logistic Regression and Intimate Partner Violence Victimization by Sexual Orientation While Controlling for Social Contexts

Variable	β*(SE)*	*W(p)*	Adjusted *POR*	95% CI
Constant	1.749 (.233)	56.213 ($p < .05$)	5.751	
Sexual orientation				
Bisexual (Ref)			1.00	
Heterosexual	-.583 (.259)	5.076 ($p < .05$)	.558	[.336, .927]
Lesbian	-.063 (.302)	.043 ($p = .835$)	.939	[.519, 1.698]
Family/Proximal support	.353 (.095)	13.699 ($p < .05$)	1.424	[1.181, 1.717]
Community support	2.182 (.697)	9.808 ($p < .05$)	8.863	[2.262, 34.724]

Although the association between identifying as lesbian and intimate partner violence was insignificant after controlling for social contexts, the overall model evidenced an association between sexual orientation and intimate partner violence among women who have sex with women. Therefore, I rejected the null hypothesis.

Research Question 4

The fourth research question examined the association between sexual orientation and intimate partner violence among women who have sex with women while controlling for self-reported mental health status.

H 4_o: There is no association between sexual orientation and intimate partner violence among women who have sex with women when controlled for self-reported mental health status.

$H\ 4_a$: There is an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for self-reported mental health status.

Statistical Analyses for Research Question 4

The fourth stepwise logistic regression model tested the hypotheses proposed by research question 4 and included self-reported mental health status. The model correctly classified 91.7% of individuals, and all variables were retained in the model based on the significance level of the Wald statistic. The final logistic regression model was statistically significant ($X^2 = 8.625$, $p < .05$). The percent of variance explained by the model was 1.8% (Nagelkerke $R^2 = .018$). After controlling for self-reported mental health status, women who identified as heterosexual were .575 times less likely to be victims of intimate partner violence when compared to their bisexual counterparts (Table 13). Mental health was not a significant predictor of intimate partner violence (a*POR* = 1.208, $p = .07$).

Table 13

Logistic Regression and Intimate Partner Violence Victimization by Sexual Orientation While Controlling for Self-reported Mental Health Status

Variable	β*(SE)*	*W(p)*	Adjusted *POR*	95% CI
Constant	2.198(.314)	48.939 ($p < .05$)	9.010	
Sexual orientation				
Bisexual (Ref)			1.00	
Heterosexual	-.553 (.253)	4.798 ($p < .05$)	.575	[.350, .943]
Lesbian	-.263 (.299)	.769 ($p = .38$)	.769	[.428, 1.383]
General mental health	.189 (.314)	3.277 ($p = .07$)	1.208	[.985, 1.481]

While the adjusted *POR* was not statistically significant for women who identified as lesbian (a*POR* = .769, $p = .380$), the analysis evidenced an association between sexual orientation and intimate partner violence among women who have sex with women after controlling for self-reported mental health status. Therefore, I rejected the null hypothesis.

After testing the hypotheses proposed by research questions one to four, I used stepwise logistic regression to assess the association between sexual orientation and intimate partner violence after controlling for income, race, social contexts, and self-reported mental health status. The model correctly classified 92.2% of individuals. All variables were retained in the model based on the significance level of the Wald statistic. The final logistic regression model was statistically significant ($X^2 = 76.659$, $p < 0.05$). The percent of variance explained by the model was 17.5% (Nagelkerke $R^2 = .175$). After

controlling for income, race, social contexts, and self-reported mental health status, women who identified as heterosexual were .462 times less likely to be victims of intimate partner violence when compared to their bisexual counterparts (Table 14). However, the adjusted *POR* was insignificant for women who identified as lesbian (a*POR* = .933, $p = .836$). Family and community support were positively associated with an increased risk of intimate partner violence victimization. Women with more family (a*POR* = 1.501, $p < .05$) and community (a*POR* = 8.264, $p < .05$) support were at an increased risk of intimate partner violence victimization. Low income was also a significant predictor of intimate partner violence ($p < .05$). Moreover, women of other races were .233 times less likely to be victims of intimate partner violence when compared to White/Caucasian women. However as previously determined, mental health was not a significant predictor of intimate partner violence victimization (a*POR* = 1.144, $p = 2.52$). The association between sexual orientation and intimate partner violence was statistically significant after controlling for income, race, social contexts, and self-reported mental health status.

Table 14

Summary Model- Sexual Orientation and Intimate Partner Violence While Controlling for Income, Race, Social Contexts, and Self-Reported Mental Health Status

Variable	β*(SE)*	*W(p)*	Adjusted *POR*	95% CI
Constant	2.864(.660)	18.827 ($p < .05$)	17.538	
Sexual orientation				
Bisexual (Ref)			1.00	
Heterosexual	-.772 (.280)	7.599 ($p < .05$)	.462	[.267, .800]
Lesbian	-.069 (.335)	.043 ($p = .836$)	.933	[.484, 1.800]
Annual household income	-.720 (.293)	6.031 ($p < .05$)	.487	[.247, .865]
General mental health	.134 (.117)	1.311 ($p = .252$)	1.144	[.909, 1.439
Family/Proximal support	.406 (.102)	15.917 ($p < .05$)	1.501	[1.229, 1.832]
Community support	2.112 (.695)	9.234 ($p < .05$)	8.264	[2.116, 32.267]
Race				
White/Caucasian			1.00	
Black/African American	-.391 (.380)	1.056 ($p = .304$)	.677	[.321, 1.426]
Other races	-1.499 (.453)	10.945 ($p < .05$)	.233	[.092, .543]

Summary and Transition

In 2010, approximately 3.5% of U.S. adults identified as lesbian, gay, or bisexual and 0.3% as transgendered, roughly equivalent to the population of New Jersey (i.e., 9 million) (Department of Commerce, 2016; Gates, 2011; Gates & Newport, 2013). Of individuals who identify as LGB, 1.8% sexually identify as bisexual compared to 1.7% who identify as lesbian or gay (Gates, 2011). Approximately 8.2% of Americans also

admitted to engaging in same-sex sexual behavior, while 11% acknowledged some form of same-sex sexual attraction (Gates, 2011). The primary purpose of the current study was to examine the association between sexual orientation and intimate partner violence among women who have sex with women. To test the hypotheses proposed by the research questions, I conducted bivariate and logistic regression analyses.

The results of the current study indicated a statistically significant association between sexual orientation and intimate partner violence, even after controlling for income, race, social contexts, and self-reported mental health status. Bisexual women had 43-57% increased odds of being victims of intimate partner violence when compared to their heterosexual counterparts. Family/proximal and community support were positively associated with intimate partner violence victimization: Women who had increased family/proximal or community support had an increased odds of 50% and 700% respectively of being victims of intimate partner violence. While controlling for race, intimate partner violence victimization decreased by 75% for women of other races. Women with an annual household income $\geq$ \$25K had a 50% decreased odds of intimate partner violence victimization. On the contrary, the association between women who identified as lesbian and intimate partner violence victimization was insignificant.

In Section 4, I discussed the results in further detail. I compared the results with the results of other published studies. I also discussed the limitations of the current study while identifying and offering recommendations for future research and implications for social change.

Section 4: Application to Professional Practice and Implications for Social Change

Introduction

The purpose of this cross-sectional quantitative study was to examine the association between sexual orientation and intimate partner violence among women who have sex with women and identify the social contexts and psychological influences that affected this association. To assess these associations, I conducted secondary analyses of existing 2010 NISVS data using bivariate and logistic regression analyses. Heterosexual women who engaged in sexual behavior with women represented 31%, lesbians represented 21%, and bisexual women represented 48% of the study sample. The prevalence of intimate partner violence among women who have sex with women was 91.7%, which was higher than the prevalence of intimate partner violence among women who have sex with men only (67.1%). The most prevalent form of intimate partner violence among women was PA, with women who have sex with women experiencing more PA when compared to women who have sex with men only (67.2% versus 39.8% respectively; Bimbi et al., 2008; Craft et al., 2008; Jacobson et al., 2015a; Sorenson & Thompson, 2009; Walters et al., 2013). Bisexual women were more likely to be victims of intimate partner violence when compared to their heterosexual counterparts. The results of the logistic regression analyses indicated that there was an association between sexual orientation and intimate partner violence while controlling for income, race, social contexts, and psychological influences.

Interpretation of Findings

According to Carlson et al. (2014), intimate partner violence disproportionately affects women of all sexual orientations. Moreover, the lifetime prevalence of intimate partner rape, physical violence, and stalking for lesbian and bisexual women was 43.8% and 61.1% respectively, compared to 35% for heterosexual women (Calton et al., 2016, Walters et al., 2013). The results of the current study indicated that there was a statistically significant association between identifying as bisexual and intimate partner violence victimization. However, the association between lesbians and intimate partner violence victimization was insignificant. Several epidemiological studies report inconsistencies in prevalence rates of female same-sex intimate partner violence. Bossarte and Blosnich (2009) and Eaton et al. (2008) concluded that prevalence rates of female same-sex intimate partner violence were comparable to the rates of opposite-sex and male same-sex dyads. On the contrary, several additional researchers concluded that the prevalence rates of female same-sex intimate partner violence were higher than the rates reported for opposite- sex and male same-sex dyads (Balsam & Szymanski, 2005a; Bimbi et al., 2007; Tjaden et al., 1999). In fact Rueter et al. (2017) concluded that physical intimate partner violence victims were more likely female, African American, and lesbian when compared to other sexual identities and racial groups ($p < .05$). The results of the current study varied in comparison to other studies when controlling for income, race, general mental health status, and social contexts.

Income and race were significant predictors of intimate partner violence. According to the U.S. Department of Health and Human Services (2010), the poverty

guideline for the 48 contiguous states and the District of Columbia for 2010 was $25,790 for a family of five. The results of the current study indicated that an annual household income ≤ $25K was associated with a 50% increased odds of intimate partner violence victimization among women. In a dated, yet relevant survey conducted by Bachman and Saltzman (1995), the researchers found that women with incomes ≤ $25,000 were twice more likely than women with higher incomes to experience abuse. Although the survey was dated, several more recent studies have suggested that economic stress leads to tobacco use and alcohol use and misuse (Ard & Makadon, 2011; Baker et al., 2013; Carvalho et al., 2011; Duke & Davidson, 2009; Gilbert & Sabin, 2008). These adverse coping mechanisms are risk factors for intimate partner violence victimization (Mason et al., 2016). Moreover, the CDC (2017) recognized low income as an individual, relationship, and community risk factor for intimate partner violence.

Regarding race, the results of the current study suggested that African American women were 150% more likely to be victims of intimate partner violence. The results of the current study were further substantiated by studies conducted by St. Vil, Sabri, Nwokolo, Alexander, and Campbell (2017) and Arias (2003). Moreover, St. Vil et al. also reported that intimate partner violence victimization increased for African American women living in low-income communities. Reuter et al. (2017) concluded that physical intimate partner violence victims were more likely to be female, African American, and lesbian when compared to other sexual identities and racial groups ($p < .05$). According to Hill et al. (2012), African American women experience greater odds of intimate due to the intersection of dueling forms of oppression such as racism, sexism, and heterosexism.

The higher the number of minority stressors, (Brown, 2008; Milletich et al., 2014; Reuter et al., 2017), the higher the risks of becoming a victim of intimate partner violence (Reuter et al., 2017).

Intimate partner violence and mental health are bidirectional (CDC, 2017; Koeppel & Bouffard, 2014; Koh & Ross, 2006). Intimate partner violence is positively associated with adverse mental health hygiene and physical health outcomes (Koeppel & Bouffard, 2014; Walters et al., 2013). Decreased mental health hygiene is an individual risk factor for intimate partner violence (CDC, 2017). According to Koeppel and Bouffard (2014), sexual minorities experienced more indigent physical and mental health hygiene problems than heterosexuals. In the current study, however, I found the association between general mental health and intimate partner violence to be insignificant. Sexual orientation affects mental health secondary to stigmatization and heterosexism, thereby leading to the acquisition of behaviors that place female sexual minorities at risk for intimate partner violence victimization (Carvalho et al., 2011; Koh & Ross, 2006).

An unexpected result of the current study was the positive association between family/proximal and community support and intimate partner violence victimization. Women with increased family/proximal or community support had increased odds of 50% and 700% respectively of intimate partner violence victimization, findings inconsistent with previous investigations. Previous studies indicated that inadequate social support contributed to stress and social isolation (Rosenthal & Starks, 2015) secondary to decreased mental health (Black et al., 2011; Kamimura et al., 2013), which

is a known individual risk factor for intimate partner violence victimization (CDC, 2017). On the contrary, Rosenthal and Starks (2015) concluded that relationship stigma from friends had the most substantial impact on relationship outcomes (i.e., relationship dissatisfaction, decreased commitment, passion, and sexual communication, and increased intimate partner violence). Because intimate partner violence victims rely on friends for informal social support (Calton et al., 2016; McConnell et al., 2016; Syalska & Edwards, 2015), friends may positively or negatively influence relationship outcomes (Rosenthal & Starks, 2015). Moreover, lesbian intimate partner violence victims reported that help from friends was inadequate and unhelpful (Richardson et al., 2015). Women with strong social support networks and assimilated into their communities were less likely to experience intimate partner violence victimization (McKenry et al., 1995). However, several researchers suggested that increased family/proximal or community support contributed to increased odds of intimate partner violence victimization (Calton et al., 2016; Richardson et al., 2015; Rosenthal & Starks, 2015), results consistent with the findings of the current study.

Limitations of Study

Conducting research based on sexual orientation presents several methodological limitations. For example, Blosnich and Bossarte (2009) measured sexual orientation by using sexual behavior, whereas Dilley et al. (2010) and Messinger (2010) measured sexual orientation based on sexual identity. For the current study, sexual identity and sexual behavior measured sexual orientation. Women who endorsed sexual behavior with women were included in the study and grouped placed on their sexual identity. In fact,

Hellemans et al. (2015) suggested that human sexuality was best understood in the context of sexual identity, sexual attraction, and sexual behavior. The use of different constructs to measure sexual orientation threatens external validity, making it difficult to compare findings across studies.

The second limitation deals with intimate partner violence victimization and perpetration. For the current study, I focused on intimate partner violence victimization, and sex of the perpetrator was not reported. Although the population included women who have sex with women, this sexual behavior was not indicative of who (male or female) was perpetrating the violence. The results of the current study indicated that there was a statistically significant association between identifying as bisexual and intimate partner violence victimization. Approximately 47% and 28% respectively of bisexual and heterosexual women reported intimate partner violence victimization and endorsed sexual behavior with men and women, thus disguising the perpetrator's sex (Banks & Fedewa, 2012). If women only victimize women, rates of female same-sex intimate partner violence victimization may be overestimated. Likewise, believing that men only victimize heterosexual or bisexual women may underestimate the rates of intimate partner violence among women who have sex with women.

The third limitation of the current study is the methodological design. I used a cross-sectional design, which involved analyzing data collected from a population at one specific point in time; therefore, a temporal relationship was unattainable (see Creswell, 2009). Cross-sectional data limits understanding of sexual orientation and its implications for how to define and measure it (Solarz, 1999).

Recommendations for Action and Additional Research

Few studies address intimate partner violence victimization among women who have sex with women. Researchers should not only focus on intimate partner violence victimization in the future but they should also focus on perpetration among women who have sex with women. Sexual behavior does not explain relationships and can deviate significantly from sexual identity. To ensure accurate prevalence rates of female same-sex intimate partner violence, researchers should focus on the sex of perpetrator and his or her relationship to the victim in future studies.

According to the American Psychological Association (2008), sexual orientation is best defined by an individual's fulfilling romantic relationships. Sexual behavior of women who have sex with women may not necessarily define one's romantic relationship as satisfying or fulfilling. Sexual orientation is complex and varies in definition across studies. Sexual orientation may change over time, ranging along a continuum of exclusive or not exclusive same-sex or opposite- sex attraction. According to Solarz (1999), inconsistent definitions for sexual orientation prevent comparison of findings across studies. The use of small samples (i.e., LGBTQ friendly venues) also prevents generalization of findings (Solarz, 1999). Therefore, researchers who conduct studies based on sexual orientation in the future should consider best ways to define and measure sexual orientation. Moreover, researchers may also consider longitudinal methodological study designs to understand human sexual development, sexual orientation, human sexuality, and their effects on same-sex intimate partner violence outcomes.

Implications for Professional Practice and Social Change

Intimate partner violence is an emerging public health concern among women who have sex with women. The current study concluded that the prevalence rate of intimate partner violence among women who have sex with women was 91.7%, compared to intimate partner violence among women who have sex with men only (67.1%). The findings of the current study may garner support from public health stakeholders and local and federal governments to design and implement programs that address intimate partner violence among all women, regardless of sexual behavior or sexual identity.

Conclusion

For the current study, I examined the association between sexual orientation and intimate partner violence victimization. Women who have sex with women are disproportionately affected by increased rates of intimate partner violence as evidenced by the prevalence rates of the current study. The results of the current sudy indicated a statistically significant association between sexual orientation (i.e., identifying as bisexual) and intimate partner violence victimization. Family/proximal support, community support, annual household income, and race were also statistically significant predictors of intimate partner violence victimization. Findings of this study suggests that stakeholders must understand female same-sex behaviors and orientation, income, race, family and community support, and general mental health to implemenent policies, services, and interventions aimed at addressing intimate partner violence victimization among women who have sex with women.

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Appendix A: ICPSR Restricted Data Use Agreement

National Archive of Criminal Justice Data (NACJD)
Agreement for the Use of Confidential Data through the
ICPSR Data Access Request System (IDARS)

Restricted Data Use Agreement

I. Definitions

A. "Investigator" is the person primarily responsible for analysis and other use of Confidential Data obtained through this Agreement.

B. "Research Staff" are all persons at the Investigator's institution, excluding the Investigator, who will have access to Confidential Data obtained through this Agreement. Research Staff include project staff or students conducting dissertation or thesis research.

C. "Institution" is the university or research institution at which the Investigator will conduct research using Confidential Data obtained through this Agreement.

D. "Representative of the Institution" is a person authorized to enter into contractual agreements on behalf of Investigator's Institution.

E. "Confidential Data" consist of identifiable private information, linkable to a specific individual either directly or indirectly, for which the individual (whether a person or organization) has the expectation that the information will not be released in a manner that allows public identification of the individual or causes some harm to the individual.

F. "Private Person" means any individual (including an individual acting in his official capacity) and any private (i.e., non-government) partnership, corporation, association, organization, or entity (or any combination thereof), including family, household, school, neighborhood, health service, or institution.

G. "ICPSR" is the Inter-university Consortium of Political and Social Research.

H. "ICPSR Data Access Request System" ("IDARS") is the web-based application system for data contracts at ICPSR. It is hereafter referred to as IDARS.

I. "Data Security Plan" is a component of the Agreement which specifies permissible computer configurations for use of Confidential Data through Investigator responses to a series of questions, and records what the Investigator commits to do in order to keep Confidential Data Secure.

J. "Deductive Disclosure" is the discerning of an individual's identity or confidential information through the use of known characteristics of that individual. Disclosure risk is present if an unacceptably narrow estimation of an individual's confidential information is possible or if determining the exact attributes of the individual is possible with a high level of confidence.

K. "Derivative" is a file or statistics derived from the Confidential Data that poses disclosure risk to any Private Person in the Confidential Data obtained through this Agreement. Derivatives include copies of the Confidential Data received from NACJD/ICPSR, subsets of the Confidential Data, and analysis results that do not conform to the guidelines in Section VI.H.

II. Description of Disclosure Risk

Deductive disclosure of an individual's identity from research data is a major concern of federal agencies, researchers, and Institutioanl Review Boards. If a person is known to have participated in ANY survey or study or whose information is known to be included in a database from which the Confidential Data were obtained, then a combination of his or her personal characteristics may allow someone to determine which record corresponds to that individual. Investigators and Institutions who receive any portion of Confidential Data are obligated to protect the individual's confidential information from deductive disclosure risk by strictly adhering to the obligations set forth in this Agreement and otherwise taking precautions to protect the Confidential Data from non-authorized use.

III. Requirements of Investigator

A. Investigators must meet the following criteria:

1. Have a PhD or other terminal degree; and

2. Hold a faculty appointment or research position at Institution.

B. The Investigator assumes the responsibility of completing the online restricted data access application and required documents, reports, and amendments.

C. The Investigator agrees to responsibly manage and use Confidential Data and implement all Confidential Data security procedures per the Data Security Plan.

IV. Requirements of Institution

The Institution must meet the following criteria:

A. Be an institution of higher education, a research organization, a research arm of a government agency, or a nongovernmental, not for profit agency.

B. Have a demonstrated record of using Confidential Data according to commonly accepted standards of research ethics and applicable statutory requirements.

V. Obligations of ICPSR

In consideration of the promises made in Section VI of the Agreement, NACJD/ICPSR agrees to:

A. Provide the Confidential Data requested by the Investigator in the Confidential Data Order within a reasonable time of execution of this Agreement by appropriate NACJD/ICPSR officials and to make the Confidential Data available to Investigator electronically via download or removable media.

B. Provide electronic documentation of the origins, form, and general content of the Confidential Data sent to the Investigator, in the same time period and manner as the Confidential Data.

ICPSR makes no representations nor extends any warranties of any kind, either expressed or implied. There are no express or implied warranties of merchantability or fitness for a particular purpose, or that the use of the Confidential Data will not infringe any patent, copyright, trademark, or other proprietary rights. Unless prohibited by law, Investigator and Institution assume all liability for claims for damages against them by third parties that may arise from the use or disclosure of the Confidential Data.

VI. Obligations of Investigator, Research Staff, and Institution

Confidential Data provided under this Agreement shall be held by the Investigator, Research Staff, and Institution in strictest confidence and can be disclosed only in compliance with the terms of this Agreement. In consideration of the promises in Section V of this Agreement, and for use of Confidential Data from NACJD/ICPSR, the Investigator, Research Staff, and Institution agree:

A. That the Confidential Data will be used solely for research or statistical purposes relative to the research project identified on the Application for Obtaining Confidential Data accompanying this Agreement, and for no other purpose whatsoever without the prior consent of NACJD/ICPSR. Further, no attempt will be made to identify private person(s) will be published or otherwise distributed, and Confidential Data will be protected against deductive disclosure risk by strictly adhering to the obligations set forth in this Agreement and otherwise taking precautions to protect the Confidential Data from non-authorized use.

B. To supply NACJD/ICPSR with a completed IDARS online Application for Confidential Data that will include the following:

1. Completed Investigator Information and Research Description

2. Signed Agreement which includes signature of Investigator and also the signature from a Representative of your Institution. **This signature must be obtained from an individual who has the authority to represent your organization in agreements of this sort, such as a vice president, provost, or similar official.** (Note: Department Chair or Office of Grants and Contracts are not acceptable unless specific written delegation of authority exists).

3. Data Security Plan

4. Confidential Data Order Summary specifying which files and documentation are requested

5. Pledges of Confidentiality for the Investigator and each Research Staff Member

6. A copy of a document signed by the Institution's Institutional Review Board (IRB) approving or exempting the research project

7. Privacy Certificate signed by the Investigator and Institution's Institutional Review Board (for NIJ-sponsored research only)

C. To comply fully with the approved Data Security Plan at all times relevant to this Agreement.

D. That no persons other than those identified in this Agreement or in subsequent amendments to this Agreement, as Investigator or Research Staff and who have executed this Agreement, be permitted access to the contents of Confidential Data files or any files derived from Confidential Data files.

E. That no persons other than those identified in this Agreement or in subsequent amendments to this Agreement, as Investigator or Research Staff and who have executed this Agreement, be given the login name and/or password for access to the contents of Confidential Data files or any files derived from Confidential Data files.

F. That within one (1) business day of becoming aware of any unauthorized access, use, or disclosure of Confidential Data, or access, use, or disclosure of Confidential Data that is inconsistent with the terms and conditions of this Agreement, the unauthorized or inconsistent access, use, or disclosure of Confidential Data will be reported in writing to NACJD/ICPSR.

G. That, unless prior specific approval is received from NACJD/ICSPR, no attempt under any circumstances will be made to link the Confidential Data to any individual,

whether living or deceased, or with any other dataset, including other datasets provided by NACJD/ICPSR.

H. To avoid inadvertent disclosure of private persons by being knowledgable about what factors constitute disclosure risk and by using disclosure risk guidelines, such as but not limited to, the following guidelines in the release of statistics or other content derived from the Confidential Data.

1. No release of a sample unique for which only one record in the Confidential Data obtained through sampling (e.g., not a census) provides a certain combination of values from key variables. For example, in no table should all cases in any row or column be found in a single cell.

2. No release of a sample rare for which only a small number of records (e.g., 3, 5, or 10 depending on sample characteristics) in the Confidential Data provide a certain combination of values from key variables. For example, in no instance should the cell frequency of a cross-tabulation, a total for a row or column of a cross-tabulation, or a quantity figure be fewer than the appropriate threshold as determined from the sample characteristics. In general, assess empty cells and full cells for disclosure risk stemming from sampled records of a defined group reporting the same characteristics.

3. No release of a population unique for which only one record in the Confidential Data that represents the entire population (e.g., from a census) provides a certain combination of values from key variables. For example, in no table should all cases in any row or column be found in a single cell.

4. No release of the statistic if the total, mean, or average is based on fewer cases than the appropriate threshold as determined from the sample characteristics.

5. No release of the statistic if the contribution of a few observations dominates the estimate of a particular cell. For example, in no instance should the quantity figures be released if one case contributes more than 60 percent of the quantity amount.

6. No release of data that permits disclosure when used in combination with other known data. For example, unique values or counts below the appropriate threshold for key variables in the Confidential Data that are continuous and link to other data from ICPSR or elsewhere.

7. No release of minimum and maximum values of identifiable characteristics (e.g., income, age, household size, etc.) or reporting of values in the "tails," e.g., the 5^{th} or 95^{th} percentile, from a variable(s) representing highly skewed populations.

8. Release only weighted results if specified in the data documentation.

9. No release of ANOVAs and regression equations when the analytic model that includes categorical covariates is saturated or nearly saturated. In general, variables in analytic models should conform to disclosure rules for descriptive statistics (e.g., see #7 above) and appropriate weights should be applied.In no instance should data on an identifiable case, or any of the kinds of data listed in preceding items 1-9, be derivable through subtraction or other calculation from the combination of tables released.

10. In no instance should data on an identifiable case, or any of the kinds of data listed in preceding items 1-9, be derivable through subtraction or other calculation from the combination of tables released.

11. No release of sample population information or characteristics in greater detail than released or published by the researchers who collected the Confidential Data. This includes but is not limited to publication of maps.

12. No release of anecdotal information about a specific private person(s) or case study without prior approval.

13. The above guidelines also apply to charts as they are graphical representations of cross-tabulations. In addition, graphical outputs (e.g., scatterplots, box plots, plots of residuals) should adhere to the above guidelines.

I. That if the identity of any private person should be discovered, then:

1. No use will be made of this knowledge;

2. NACJD/ICPSR will be advised of this incident within five (5) business days of discovery of the incident;

3. The information that would identify the private person will be safeguarded or destroyed as requested by NACJD/ICPSR; and

4. No one else will be informed of the discovered identity.

J. Unless other provisions have been made with NACJD/ICPSR, all originals and copies of the Confidential Data, on whatever media, shall be destroyed on or before completion of this Agreement or within 5 days of written request from ICPSR. Investigator will complete and notarize an Affidavit of Destruction, attesting to the destruction of the Confidential Data. Investigators requiring the Confidential Data beyond the completion of this Agreement should submit a request for continuation three months prior to the end date of the Agreement. This obligation of destruction shall not apply to Investigator's scholarly work based upon or that incorporates the Confidential Data.

K. To ensure that the Confidential Data are managed and used only in compliance with the terms and conditions of this Agreement and with all applicable statutes and regulations. Noncompliance with this Agreement by any Research Staff hereto shall be deemed noncompliance and a breach by Investigator and Institution for purposes of section VII below.

L. To notify NACJD/ICPSR of a change in institutional affiliation of the Investigator. Notification must be in writing and must be received by NACJD/ICPSR at least six (6) weeks prior to Investigator's last day of employment with Institution. Investigator's separation from Institution terminates this Agreement. Investigator may reapply for access to Confidential Data as an employee of the new institution. Re-application requires:

1. Execution of a new Agreement for the Use of Confidential Data by both the Investigator and the proposed new institution;

2. Execution of any Pledges of Confidentiality by Research Staff at the proposed new institution;

3. Preparation and approval of a new Data Security Plan; and

4. Evidence of approval or exemption by the proposed new Institution's IRB.

These materials must be approved by NACJD/ICPSR before Confidential Data or any derivatives or analyses may be stored or accessed at the new institution. Investigator must also, prior to the date of relocation, destroy all electronic and paper files containing Confidential Data or derivatives or analyses thereof at the original Institution. This obligation of destruction shall not apply to Investigator's scholarly work based upon or that incorporates the Confidential Data.

M. That if the Investigator who is changing institutions is unable to establish and gain approval for the new institution, Investigator will contact NACJD/ICPSR to arrange the return to NACJD/ICPSR for storage of all electronic and paper Confidential Data and any derivatives or analyses. Upon approval of the new IDARS online application, NACJD/ICPSR will return these stored files to the Investigator. The Investigator will assume all costs associated with the shipping and storage of these Confidential Data and any derivatives or analyses. Although the Confidential Data and any derivatives or analyses will be stored in a secure location, NACJD/ICPSR staff assumes no responsibility for these items.

N. That any books, articles, conference papers, theses, dissertations, reports, or other publications that employed the Confidential Data or other resources provided by NACJD/ICPSR reference the bibliographic citation provided by NACJD/ICPSR in the study description.

O. That use of the Confidential Data will be consistent with the Institution's policies regarding scientific integrity and human subjects research.

P. To respond fully and in writing within ten (10) working days after receipt of any written inquiry from NACJD/ICPSR regarding compliance with this Agreement.

VII. Violations of this Agreement

A. The Institution will treat allegations by NACJD/ICPSR or other parties of violations of this Agreement as allegations of violations of its policies and procedures on scientific integrity and misconduct. If the allegations are confirmed, the Institution will treat the violations as it would violations of the explicit terms of its policies on scientific integrity and misconduct.

B. In the event Investigator or Institution breaches any provision of this Agreement, they shall be jointly and severally responsible to promptly cure the breach and mitigate any damages. Investigator and Institution hereby acknowledge that any breach of the confidentiality provisions herein may result in irreparable harm to NACJD/ICPSR not adequately compensable by money damages. Investigator and Institution hereby acknowledge the possibility of injunctive relief in the event of breach, in addition to money damages. In addition, NACJD/ICPSR may:

1. Terminate this Agreement upon notice and require return of the Confidential Data and any derivatives thereof;

2. Deny Investigator future access to Confidential Data; and/or

3. Report the inappropriate use or disclosure to the appropriate federal and private agencies or foundations that fund scientific and public policy research.

C. Institution agrees, to the extent permitted under the law, to indemnify, defend, and hold harmless The University of Michigan, NACJD/ICPSR, and the sources of Confidential Data from any or all claims and losses accruing to any person, organization, or other legal entity as a result of Investigator's, Research Staff's, and/or Institution's acts, omissions, or breaches of this Agreement.

VIII. Confidentiality

This Agreement is consistent with the requirements of the United States Code -- 31 USC Section 3729 et seq. (The False Claims Act), and 42 USC Section 3789g(a), which authorizes the Department of Justice to collect confidential data while mandating strict protections -- and the Code of Federal Regulations -- 28 CFR 22 (Confidentiality and Transfer of Confidential Data), 28 CFR 46 (Department of Justice version of the Common Rule), as well as 62 F.R. 35044 (June 27, 1997) (The Federal Confidentiality Order).

The Institution is considered to be a contractor or cooperating agency of NACJD/ICPSR; as such, the Institution, the Investigator, and Research Staff are authorized to protect the privacy of the individuals who are the subjects of the Confidential Data by withholding their identifying characteristics from all persons not connected with the conduct of the Investigator's research project. "Identifying characteristics" are considered to include those data defined as confidential under the terms of this Agreement

IX. Incorporation by Reference

All parties agree that the following documents are incorporated into this Agreement by reference:

A. The application information entered in the online data access request system.

B. A copy of the Institution's IRB approval or exemption of the Research Project

C. The Data Security Plan proposed by the Investigator and approved by NACJD/ICPSR

X. Miscellaneous

A. All notices, contractual correspondence, and return of data under this Agreement on behalf of the Investigator shall be made in writing and delivered to the address below:

National Archive of Criminal Justice Data
ICPSR
P.O. Box 1248
Ann Arbor, MI 48106-1248
nacjd@icpsr.umich.edu

B. This agreement shall be effective for 24 months from execution.

C. The respective rights and obligations of NACJD/ICPSR and Investigator, Research Staff, and Institution pursuant to this Agreement shall survive termination of the Agreement.

D. This Agreement may be amended or modified only by the mutual written consent of the authorized representatives of NACJD/ICPSR and Investigator and Institution. Investigator's research project, Data Security Plan, or Research Staff may be amended or modified only by submitting such amendments or modifications to the IDARS and receiving approval from the authorized representatives of NACJD/ICPSR. This Agreement may be extended only by submitting an extension request to the IDARS and receiving approval from the authorized representatives of NACJD/ICPSR. Investigator and Institution agree to amend this Agreement to the extent necessary for NACJD/ICPSR to comply with the requirements of any applicable regulatory authority.

E. The persons signing this Agreement have the right and authority to execute this Agreement, and no further approvals are necessary to create a binding agreement.

F. The obligations of Investigator, Research Staff, and Institution set forth within this Agreement may not be assigned or otherwise transferred without the express written consent of NACJD/ICPSR.

Appendix B: ICPSR Privacy Certificate

Privacy Certificate

Grantee[1], Mary Lou Gutierrez, PhD, certifies that data *identifiable to a private person*[2] will not be used or revealed, except as authorized in 28 CFR Part 22, Sections 22.21 & 22.22.

Brief Description of Project (required by 28 CFR §22.23(b):

The purpose of this study is to examine the role of sexual orientation, support of family and friends, use of community services, and mental health status on intimate partner violence among women who have sex with women.
RQ1: Is there an association between sexual orientation and intimate partner violence among women who have sex with women?
RQ2: Is there an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for social contexts?
RQ3: Is there an association between sexual orientation and intimate partner violence among women who have sex with women when controlled for self-reported mental health status?

Grantee certifies that any private person from whom identifiable information is collected or obtained shall be notified, in accordance with 28 CFR §22.27, that such data will only be used or revealed for research or statistical purposes and that compliance with the request for information is not mandatory and participation in the project maybe terminated at any time. In addition, grantee certifies that where findings in a project cannot, by virtue of sample size or uniqueness of subject, be expected to totally conceal the identity of an individual, such individual shall be so advised.

Procedures to notify subjects that such data will only be used or revealed for research or statistical purposes and that compliance with the request for information is not mandatory and participation in the project maybe terminated at any time as required by 28 CFR §22.23(b)(4):

The project for which I am requesting data is for research purposes only. IRB approval will be attached to this Privacy Certificate.

If notification of subjects is to be waived, pursuant to 28 CFR §22.27(c), please provide a justification:

security of identifiable data and to preserve the confidentiality of the personally identifiable information.

Procedures to insure the physical and administrative security of data, as required by 28 CFR §22.25(b), including, if applicable, a description of those procedures used to secure a name index :

Encryption software for directories containing secure data, a password protected private laptop, and a locked secure location only accessible by the PI of this study will ensure administrative and physical security of data.

Procedures for the final disposition of data, as required by 28 CFR §22.25:

Data will be destroyed completely by a secure erasure program with an affidavit of destruction completed and returned to NACJD

Name and title of individual authorized to determine the final disposition of data:

~~Shanna R. Smith~~, ~~DrPH~~ (c), ~~MPH~~, ~~BS~~, ~~LPN~~ SRS 2/14/18

Mary Lou Gutierrez PhD

Grantee certifies that copies of all questionnaires, informed consent forms and informed consent procedures designed for use in the project are attached to this Privacy Certificate.

Grantee certifies that project findings and reports prepared for dissemination will not contain information which can reasonably be expected to be identifiable to a private person, except as authorized by 28 CFR §22.22.

Grantee certifies that the procedures described above are correct and shall be carried out.

Grantee certifies that the project will be conducted in accordance with all the requirements of the Omnibus Crime Control and Safe Streets Act of 1968 as amended and the regulations contained in 28 CFR Part 22.

Grantee certifies that NIJ shall be notified of any material change in any of the information provided in this Privacy Certificate.

Signature (s):

Mary Lou Gutierrez (Principal Investigator)

_____ (Principal Investigator)

Laura Knight-Lynn (Institutional Representative)

Date:_____

Notes: