2016

HIV RISKS, INTIMATE PARTNER VIOLENCE (IPV), AND DEPRESSION AMONG A SAMPLE OF WOMEN WHO HAVE SEX WITH MEN AND WOMEN (WSMW)

Krystal S. Frieson
University of Kentucky

STUDENT AGREEMENT:

I represent that my capstone and abstract are my original work. Proper attribution has been given to all outside sources. I understand that I am solely responsible for obtaining any needed copyright permissions. I have obtained needed written permission statement(s) from the owner(s) of each third-party copyrighted matter to be included in my work, allowing electronic distribution (if such use is not permitted by the fair use doctrine) which will be submitted to UKnowledge as Additional File.

I hereby grant to The University of Kentucky and its agents the irrevocable, non-exclusive, and royalty-free license to archive and make accessible my work in whole or in part in all forms of media, now or hereafter known. I agree that the document mentioned above may be made available immediately for worldwide access unless an embargo applies.

I retain all other ownership rights to the copyright of my work. I also retain the right to use in future works (such as articles or books) all or part of my work. I understand that I am free to register the copyright to my work.

REVIEW, APPROVAL AND ACCEPTANCE

The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Director of Graduate Studies (DGS), on behalf of the program; we verify that this is the final, approved version of the student's capstone including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

Krystal S. Frieson, Student

Corrine Williams, ScD, MS, Committee Chair

Corrine Williams, ScD, MS, Director of Graduate Studies

HIV RISKS, INTIMATE PARTNER VIOLENCE (IPV), AND DEPRESSION AMONG A SAMPLE OF WOMEN WHO HAVE SEX WITH MEN AND WOMEN (WSMW)

CAPSTONE PROJECT PAPER

A paper submitted in partial fulfillment of

the requirements for the degree of

Master of Public Health

in the

University of Kentucky College of Public Health

By

Krystal S. Frieson, PhD
Cedartown, Georgia

Lexington, Kentucky
July 1, 2016

Committee Members

Corrine Williams, ScD, MS, Chair

Katherine Eddens, PhD, Committee Member

Angela Carman, DrPH, Committee Member

Abstract

Objective: The purpose of this study is to examine the associations between interpersonal partner violence (IPV), HIV risks, and depression among a sample of adolescent females who have sex with men and women.

Methods: A cross-sectional study was conducted using data from the Youth Risk Behavior Surveillance System (YRBSS). YRBSS data was obtained from representative samples of students in grades 9-12. The study sample was comprised of adolescent and young women who self-identified as having sex with men and women (WSMW)(N=526). The primary exposure was sexual behavior (having sexual intercourse with both male and female partners). The primary outcomes were intimate partner violence, HIV-related risks (i.e., being sexually active, early sexual debut, multiple sexual partners, sex while under the influence of alcohol and/or drugs, sex without a condom). Depression was examined as a moderator. Chi-square analysis was used to examine these categorical variables.

Results: An association between IPV, HIV-related risks, and depression for adolescent and young WSMW was detected. The study revealed significant relationships between IPV and sexual activity, early sexual debut, being currently sexually active, using alcohol and/or drugs before sex, and no use of condoms during sex. Depression appeared to be associated with IPV and some HIV-related risk behavior, such as, sexual activity, sexual debut, and use of alcohol and/or drugs at last act of sexual intercourse.

Conclusion: Considering the association between IPV, HIV-related risks, and depression, interventions that encourage sensitive and appropriate care to adolescent and young WSMW youth within schools, health service systems, and community agencies is essential.

Key Words: bisexual or bi-attractional youth, intimate partner violence, depression, HIV

Introduction

More research is needed to understand the health disparities faced by adolescent and teen sexual minority females. These sexual minority women (SMW), whether defined by sexual behaviors (i.e. sexual activity with same-sex or with both sexes) and/or sexual identity (e.g. gay, lesbian, or bisexual/bi-attractional), are at increased risk of certain health issues such as substance use[1], mental health disorders[2-3], and violence[4]. Recent research suggests there are clinically significant differences between the various subgroups of SMW, especially women who have sex with men and women (WSMW)[5]. Compared to their sexual minority peers, WSMW may face greater health threats for intimate partner violence (IPV), human immunodeficiency virus (HIV), and depression. As these issues begin to garner more attention, more information is needed in order to fully understand the relationship between these variables.

IPV, HIV, and depression are significant health problems for WSMW. Violence against women continues to be one of the major public health issues around the world. National data estimates that approximately 35% women worldwide have experienced some form of physical and/or sexual violence within their lifetime.[6] More surprisingly is that some national studies estimate that at least 70 percent of women have experienced physical and/or sexual violence at the hands of an intimate partner.[6] In the United States, more than 1 in 3 women have experienced stalking, physical violence, and/or rape by an intimate partner within their lifetime[7]. The statistics are direr for adolescent populations. IPV usually begins during the time of adolescence and early adulthood and includes physical, sexual, and emotional abuse.[35] One report that included information from 81 countries estimated a lifetime prevalence of IPV at 29.4% for girls between the ages 15-

19 years old.[6] Research indicates that exposure to violence increases the risks for many adolescents to become catapulted along a trajectory of lifelong violence as either victims or perpetrators. Youth that were victims of violence during high school are at increased risk of victimization in college.[36] Twenty-two percent of adult female survivors of IPV first experienced some form of IPV between the ages of 11 and 17.[7] Among adolescent girls, rates of gender-based violence are high.[35] Much of this prior intimate partner violence (IPV) research on women has primarily focused on heterosexual relationships but more recent considerations have been given to the IPV experiences of SMW. It has been hypothesized that sexual minority identities that are made public to others results in gay, lesbian, and bisexual persons becoming targets for maltreatment and victimization due to stigma, discrimination, and antigay bias[9-11]. This latest research indicates that women who identify as bisexual and WSMW are at greater risk of IPV compared to women that identify as heterosexual or women who have sex with men (WSM) only[3]. The 2010 National Intimate Partner and Sexual Violence Survey[12] reported that lifetime prevalence for bisexual women who experienced physical violence, rape, and/or stalking by an intimate partner and indicated at least one negative consequence of experiencing these forms of violent behaviors was significantly higher compared to lesbians and heterosexual women. Although IPV does occur in same sex adolescent relationships, research exploring its prevalence, as well as the stratification across the categories of sexual minority women (i.e. WSMW) is still sparse. Previous research examining victims of IPV suggests that there is a link between victimization and higher risks of physical, reproductive, and mental health consequences[7,13]. Violence has also been linked to increased risks for HIV[8].

HIV continues to be one of the leading killers of women worldwide, including SMW. One in four people living with HIV in the United States are women and they comprised approximately 19% of the estimated 44,073 newly diagnosed cases of HIV in 2014.[14] One in five of these new HIV cases were among youth aged 13 to 24. [14] The majority of these females contracted HIV through heterosexual contact but HIV can be transmitted through any act that allows for the exchange of certain bodily fluids between a seropositive and a seronegative partner. It is often incorrectly assumed that sexual minority women, such as women who have sex with women (WSW) and WSMW, are without risk of contracting HIV. Early HIV research debunked this inaccuracy and reported that WSW and WSMW were at high risk of HIV transmission because of sex with high-risk male partners and low rates of condom use.[15] Current research supports that WSW and WSMW may encounter increased HIV risks also due to elevated rates of sexually transmitted infections (STI), more lifetime sexual partners, unprotected sex with opposite-sex partners, intravenous drug use (IDU), and transactional sex.[16-18]. Research specific to WSMW has alluded to STI risks differences being a product of the intersectionality between sexual identity, sexual behaviors, and exposure to victimization. For gay and bisexual high school students, HIV risks exposure have resulted from engagement in substance use and risky sexual behaviors due to being victims of bullying, feelings of isolation, a lack of support, and experiencing mental distress.[39]

Mental health disparities and substance use among sexual minority groups are well documented in the research literature. [1,2,3,5,19,20,21] Meyer's minority stress model posits that the stigma and discrimination experienced by sexual minority groups is associated with excess stress that contributes to higher rates of mental health

disorders.[22,23] One systematic review of LGB persons between 1966 and 2005 revealed they are at higher risks of mental health disorders, deliberate self-harm, and suicide compared to heterosexual persons.[24] Similarly, LGB youth indicate significantly higher rates of mental health problems compared to their heterosexual peers.[40,41] Bisexual men and women have been found to be at increased odds for experiencing mood and anxiety disorders.[21] More specifically, significant mental health disparities for depression, anxiety, suicidal ideation and attempts have been observed in lesbians and bisexual women when compared to their heterosexual peers.[21,25-26] One study of bisexual women and WSMW demonstrated higher odds of depressive symptoms compared to heterosexual women and WSM.[4] Another study demonstrated that bisexual women reported more anxiety, depression, and thoughts of suicide than lesbians.[2] Research examining the mental health outcomes of bisexual youth indicate similar results. Compared to adolescent heterosexual females, adolescent bisexual and questioning females endorsed significantly higher scores for depression, anxiety, and traumatic distress.[37] Evidence continues to support the notion that WSMW are associated with increased risks for mood and anxiety disorders.

While all females may experience certain health risks, meaningful differences in these risks for SMW are often obscured because of a tendency in research to combine the subgroups of sexual minorities for analytic reasons, such as the desire to increase sample size and statistical power. Grouping lesbian, gay, bisexual, and transgender (LGBT) persons into a catchall LGBT parametric can obscure potential differences between these groups and lead to biased and inaccurate results[27-30]. Even the term sexual minority has received criticisms of being too broad and leading to erroneous generalizations about a

diverse and heterogeneous population[18]. This aforementioned technique has especially been applied and used in research involving SMW (i.e. lesbians, bisexuals/bi-attractionals, WSW, and WSMW). Existing literature and current research indicates there are some undeniable differences in the health risks and health disparities of WSMW, therefore further attention and much exploration is needed that specifically examines this subgroup of women. Research devoted to understanding the needs of adolescent WSMW is paramount to understanding the health needs of WSMW. This information can lead to the development of interventions aimed at decreasing rates of violence and victimization, reducing the HIV-related risks, and increasing mental health engagement in adolescent and young WSMW.

The purpose of this study is to determine the rates of HIV-related risk behaviors, acts of intimate partner violence, and reported episodes of depression within a national sample of adolescent and young WSMW in high school. Additionally this study hopes to explore the relationship between HIV-related risk behaviors, IPV, and depression. It is hypothesized that depression will serve as a potential moderator within the relationship between IPV and HIV-related risk behaviors.

Methods

Participants

This research project utilized a secondary data analysis study of 1,320 female youth from the Youth Risk Behavior Surveillance System (YRBSS). The Youth Risk Behavioral Survey (YRBS) data is comprised of representative samples of students in grades 9-12 within the United States and uses multiple data sources that included school-

based surveys from national, state, tribal, territorial, and large urban districts conducted by the Centers for Disease Control and Prevention (CDC), and /or education and health agencies. The collections of these surveys began in 1991 and continue to be collected biennially. The YRBS measures six categories of health-risk behaviors among youth and young adults that include behaviors related to unintentional injuries and violence; sexual behaviors that result in unintended pregnancy, sexually transmitted infections (STI), or HIV; tobacco use; alcohol and other drug use; physical inactivity; and unhealthy dietary behaviors. A more descriptive characterization of this large sample and the subsample used for this study follows.

YRBSS database. In order to obtain a nationally representative sample of students in grades 9-12 in 2013, the data was collected using a three-stage, cluster sample design. The sampling frame included regular public and private schools within the 50 states of the U.S. and the District of Columbia (DC). The first sampling frame consisted of 1,276 primary sampling units (PSUs) that were comprised of counties, subareas of large counties, or groups of smaller adjacent counties. These 1,276 PSUs were divided into 16 strata based upon their metropolitan statistical area (MSA) status and the percentages of Black and Hispanic students in the PSUs. From the original 1,276 PSUs, 54 of those were sampled. The second sampling frame included 193 schools with any grades 9-12. The third sampling frame involved random sampling of each grade from 9-12, selecting one to two classrooms from either a required subject (i.e., math or English) or during a particular period of the day (i.e., homeroom or 2nd Period). All students in each of the sampled classrooms were eligible to participate with parental permission.

Students who were unwilling to participate were not replaced in the sample. Eligible participants completed the paper and pencil survey on the assigned day.

Present study sample. This analysis focused on a subsample from the 2013 YRBSS data set. From the 193 sampled schools, 148 participated. Of the total 15,480 students sampled, 13,633 students completed surveys, 50 of them did not pass quality control data inspection resulting in 13,593 usable surveys. Because of the large file sizes of the datasets, they were split into four groups: (1) national data; (2) states with names beginning with A through M; (3) states with names beginning with N through Z; and (4) district data. The YRBS Combined Datasets User's Guide[41] does not recommend combining state and district data therefore; this subsample contains data from states only. From the 50 states, only 14 of the states in the sample included sexual minority questions. Of these 14 states, only 11 states (Connecticut, Hawaii, Illinois, Maine, Michigan, North Carolina, New Hampshire, New Jersey, New Mexico, Rhode Island, and Wisconsin) included questions on sexual identity and sexual contact. This subsample was comprised of 1,320 participants who self-identified as female and engaged in sexual intercourse with both females and males.

Measures

Intimate partner violence. Answers provided by respondents regarding violence committed by their dating partners or persons they were going out with were selected to create the predictor variable for IPV. YRBS participants were asked to report the frequency of acts of intimate partner violence experienced within a 12-month period. From the survey, participants were asked, "During the past 12 months, how many times

did someone you were dating or going out with physically hurt you on purpose? (Count such things as being hit, slammed into something, or injured with an object or weapon.)" and "During the past 12 months, how many times did someone you were dating or going out with force you to do sexual things that you did not want to do? (Count such things as kissing, touching, or being physically forced to have sexual intercourse.)" Answer choices to these aforementioned questions were as follows: A. I did not date or go out with anyone during the past 12 months; B. 0 times; C. 1 time; D. 2 or 3 times; E. 4 or 5 times; and F. 6 or more times. Participants that selected answer choices 'A' or 'B' were recorded as not having experienced any IPV. All other answer choices (C-F) were considered to have experienced IPV. IPV was transformed into a dichotomous variable after responses were classified as dichotomous factors with "Yes = 1 and No = 0" to represent having experienced either type of IPV or not having experienced IPV, respectively.

HIV-related risk behaviors. The intersectionality between sexual identity and sexual behaviors is often a key factor explored within health disparity research, but for the purpose of this study only self-identified sexual behavior was selected as the variable of interest. The YRBS included several questions created to examine the types of sexual behaviors known to contribute to unintended pregnancy and STIs, including HIV. Six of these questions were selected to create the outcome variable for HIV-related risk behaviors. These questions provided information about sexual activity, age of sexual debut, total number of lifetime sexual partners, total number of sexual partners within the past three months, sexual activity while under the influence of alcohol and/or drugs, and the use of condoms at last act of sexual activity. The item intended to assess for sexual

activity was, “Have you ever had sexual intercourse?” Answer choices provided were “A. Yes or B. No”. The item intended to assess age at which participants began having sex was, “How old were you when you had sexual intercourse for the first time?” Answer choices provided were “A. I have never had sexual intercourse, B. Less than 12 years old, C. 12 years old, D. 13 years old, E. 14 years old, F. 15 years old, G. 16 years old, or H. 17 years or more years older”. The item intended to assess participants’ total number of lifetime sex partners was, “During your life, how many people have you had sexual intercourse?” Answer choices provided were “A. I have never had sexual intercourse, B. 1 person, C. 2 people, D. 3 people, E. 4 people, F. 5 people, or G. 6 people or more. The item intended to assess total number of sex partners within the past three months was, “During the past 3 months, how many people did you have sexual intercourse?” Answer choices provided were “A. I have never had sexual intercourse, B. I have had sexual intercourse, but not in the during the past 3 months, C. 1 person, D. 2 people, E. 3 people, F. 4 people, G. 5 people, or H. 6 people or more. The item intended to assess whether drugs and/or alcohol were used prior to the last act of sexual intercourse was, “Did you drink alcohol or use drugs before you had sexual intercourse the last time?” Answer choices provided were “A. I have never had sexual intercourse, B. Yes, or C. No.” The final item selected to determine HIV-related risk behavior was, “The last time you had sexual intercourse, did you or your partner use a condom?” Answer choices provided were “A. I have never had sexual intercourse, B. Yes, or C. No.” Any participant that did not select “I have never had sexual intercourse, I have had sexual intercourse, but not during the past three months, or No” for any of the HIV-related risk behavior questions was re-classified as positive engagement in HIV-related risk behaviors. The HIV-related

risk behaviors variable was transformed into a dichotomous factors with "Yes = 1 and No = 0" representing reported engagement in HIV-related risk behavior or no reported engagement in HIV-related risk behavior, respectively.

Depression. Participants' responses about symptoms of depression were selected to create the moderating variable for depression. YRBS participants were asked to report the presence of feelings of sadness and hopelessness within a 12-month period. From the survey, participants were asked, "During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?" Answer choices provided were "A. Yes or B. No". The depression variable was transformed into a dichotomous factors with "Yes = 1 and No = 0" representing reported depression or no report of depression, respectively.

Statistical Analyses

A Chi-square analysis was used to examine categorical variables. All statistical analyses were computed using the Statistical Package for the Social Sciences [(SPSS), Version 22][42] software to examine and manipulate the data in order to determine if any statistically significant results were present. The data were analyzed in order to provide descriptive statistics such as percentages and frequencies. The Chi-square analysis was selected as the method of analysis because the variables were categorical, the sampling of participants was simple random sampling, and the expected frequency count was at least five in each cell of the contingency table. Respondents with missing data from any of the variables of interests were excluded from analysis, which resulted in a sample size of 526 participants.

Results

This section presents the results of all data analyses conducted to determine any associations between IPV, HIV-related risk behaviors, and depression. Table 1.1 presents demographic data and descriptive statistics from the sample of 526 female students who reported having sex with females and males. A majority of these adolescent and young WSMW were 17 years of age (27.8%) and racially identified as white or Caucasian (44.1%). All of the participants in this sample reported having sexual contact with both females and males and many of these adolescent and young WSMW self-identified as bisexual (48.3%) or heterosexual (30.4%). According to Table 1.2, 38.0% of this sample reported experiencing some form of IPV. A majority of the sample (77.0%) reported having had sex before, although only 57.4% of the adolescent and young WSMW endorsed being currently sexually active as indicated by having sex partners within the past three months. Only 25.5% of the sample had engaged in having sex by age 13 or younger and 32.7% of the participants had four or more sexual partners in their lifetimes. Drugs and/or alcohol were used before last reported act of sexual intercourse in 22.8% of the sample. Condom use was endorsed by 56.1% of these adolescent and young WSMW. More than half of the participants (62.2%) reported having depression.

Table 1.3 examines the relationships between IPV and HIV-related risk behaviors. Through the use of the Chi-square statistic, having had sex was significantly associated with IPV (X^2 (1, N = 526) = 8.937, p = .003). Of those who reported ever having sex, 41.5% of them also reported experiencing IPV. This percentage is higher than that of the adolescent and young WSMW that denied ever having sex and reported IPV (26.4%).

This can be interpreted to mean that it is unlikely that the relationship between being sexually active and IPV for this sample of adolescent and young WSMW is unlikely due to chance. Age of sexual debut also appeared to be significantly associated with IPV (X^2 (1, N = 526) = 13.843, p = .0001). Of those participants that identified having sex at age 13 years and younger, 51.5% reported IPV compared to 33.4% of those participants that began having sex at age 14 years and older. The relationship between number of lifetime sexual partners and IPV was not significant (X^2 (1, N = 526) = 3.379, p = .066), therefore indicating no association between IPV and total number of sexual partners. Current sexual activity as defined by having a sexual partner within the past three months was significantly associated with IPV (X^2 (1, N = 526) = 4.888, p = .027). It would appear that 42.1% of adolescent and young WSMW who are currently sexually active reported IPV compared to 32.6% of adolescent and young WSMW who had not had any sexual partners in the past three months. The use of alcohol and/or drugs before last act of sexual intercourse was also significantly associated with IPV (X^2 (1, N = 526) = 7.013, p = .008). Of those participants that reported use of drugs and/or alcohol prior to sex, 48.3% reported IPV compared to 35.0% of participants that did not use drugs and/or alcohol at last episode of sex. Lastly, the relationship between sex without the use of a condom was also significantly associated with IPV (X^2 (1, N = 526) = 20.747, p = .0001). Within this sample, 48.9% of adolescent and young WSMW who did not use a condom at last act of sexual intercourse reported IPV versus 29.5% of adolescent and young WSMW who did use a condom and reported IPV.

Table 1.4 examines the relationships between IPV, HIV-related risk behaviors, and depression. Depression was tested as a moderator between the relationship of HIV-

related risk behaviors and IPV. In other words, this analysis was conducted to determine if depression could influence the strength of the association between HIV-related risk behaviors and IPV. When stratifying the variables by whether depression was endorsed or not, the relationship between HIV-related risk behaviors and IPV remained significant for the following variables: having had sex (X^2 (1, N = 526) = 5.862, p = .016); sexual debut at age 13 or younger (X^2 (1, N = 526) = 9.968, p = .002); and using drugs and/or alcohol before last act of sexual intercourse (X^2 (1, N = 526) = 4.598, p = .032). The relationship between condom use at last sexual act and IPV was significant regardless of whether depression was reported "(X^2 (1, N = 526) = 9.047, p = .003) or not (X^2 (1, N = 526) = 8.325, p = .004).

Table 1.1: Demographics for females that reported having sexual contact with females and males in their lifetime (WSMW) from 2013 YRBS National States Dataset

Total Participants (*n* = 526)	**Percent (*n*)**
Age	
12 years old or younger	0.4% (2)
13 years old	0.4% (2)
14 years old	9.3% (49)
15 years old	22.2% (117)
16 years old	25.1% (132)
17 years old	27.8% (146)
18 years old or older	14.8% (78)
Grade	
9	21.7% (114)
10	25.5% (134)
11	27.0% (142)
12	25.5% (134)
Missing	0.4% (2)
Race/Ethnicity	
American Indian/Alaskan Native	1.5% (8)
Asian	4.0% (21)
Black or African American	12.5% (66)
Native Hawaiian/Other Pacific Islander	5.5% (29)
White	44.1% (232)
Hispanic/Latino	21.9% (115)
Multiple – Non-Hispanic/Latino	8.7% (46)
Missing	1.7% (9)
Sexual Identity	
Heterosexual (straight)	30.4% (160)
Gay or Lesbian	6.5% (34)
Bisexual	48.3% (254)
Not Sure	7.0% (37)
Missing	7.8% (41)

Table 1.2: Reported frequencies of IPV, HIV-related risk behaviors, and depression within a sample of WSMW from 2013 YRBS National States Dataset

Total Participants (*n* = 526)	**Percent (*n*)**
IPV Variable	
Any Type of IPV	
Yes	38.0% (200)
No	62.0% (326)
HIV-related Risk Variables	
Sexual Activity	
Yes	77.0% (405)
No	23.0% (121)
Sex at Age 13 and Younger	
Yes	25.5% (134)
No	75.4% (392)
Four or More Sexual Partners	
Yes	32.7% (172)
No	67.3% (354)
Sexual Partners in Past 3 months	
Yes	57.4% (302)
No	42.6% (224)
Drug and/or Alcohol Use	
Yes	22.8% (120)
No	77.2% (406)
Condom Use	
Yes	56.1% (295)
No	43.9% (231)
Depression Variable	
Feel Sad or Hopeless in 12 months	
Yes	62.2% (327)
No	37.8% (199)

Table 1.3: Associations of HIV-related risk behaviors and IPV within a sample of WSMW from 2013 YRBS National States Dataset

HIV-related Risks	**IPV** Percent (*n*)		**Proportion**	X^2	***p***
Sexually Active	*Yes*	*No*		8.937	**.003**
Yes	41.5% (168)	58.5% (237)	77.0%		
No	26.4% (32)	73.6% (89)	23.0%		
Sexual Debut	*Yes*	*No*		13.843	**.0001**
Yes	51.5% (69)	48.5% (65)	25.5%		
No	33.4% (131)	66.6% (261)	74.5%		
Lifetime Partners	*Yes*	*No*		3.379	.066
Yes	43.6% (75)	56.4% (97)	32.7%		
No	35.3% (125)	64.7% (229)	67.3%		
3-month Sex Partners	*Yes*	*No*		4.888	**.027**
Yes	42.1% (127)	57.9% (175)	57.4%		
No	32.6% (73)	67.4% (151)	42.6%		
Sex w/ Drugs	*Yes*	*No*		7.013	**.008**
Yes	48.3% (58)	51.7% (62)	22.8%		
No	35.0% (142)	65.0% (264)	77.2%		
Sex w/ Condoms	*Yes*	*No*		20.747	**.0001**
Yes	29.5% (87)	70.5% (208)	56.1%		
No	48.9% (113)	51.1% (118)	43.9%		

Table 1.4: Moderating effects of depression on associations with HIV-related risk behaviors and IPV within a sample of WSMW from 2013 YRBS National States Dataset

Depression	**HIV-related**	**IPV**		**Proportion**	X^2	***p***
	Sexually Active	*Yes*	*No*			
Yes	Yes	50.0% (128)	50.0% (128)	78.3%	5.862	**.016**
	No	66.2% (24)	33.8% (47)	28.7%		
No	Yes	26.8% (40)	73.2% (109)	74.9%	2.406	.121
	No	16.0% (8)	84.0% (42)	25.1%		
	Sexual Debut	*Yes*	*No*			
Yes	Yes	61.2% (52)	38.8% (33)	26.0%	9.968	**.002**
	No	41.3% (100)	58.7% (142)	74.0%		
No	Yes	34.7% (17)	65.3% (32)	24.6%	3.971	.046
	No	20.7% (31)	79.3% (119)	75.4%		
	Lifetime Partners	*Yes*	*No*			
Yes	Yes	49.5% (54)	50.5% (55)	33.3%	0.615	.433
	No	45.0% (98)	55.0% (120)	67.8%		
No	Yes	33.3% (21)	66.7% (42)	31.7%	4.275	.050
	No	19.9% (27)	80.1% (109)	68.3%		
	3-month Sex	*Yes*	*No*			
Yes	Yes	50.5% (96)	49.5% (94)	58.1%	2.980	.084
	No	40.9% (56)	59.1% (81)	41.9%		
No	Yes	27.7% (31)	72.3% (81)	56.3%	1.772	.183
	No	19.5% (17)	80.5% (70)	43.7%		
	Sex w/ Drugs	*Yes*	*No*			
Yes	Yes	57.0% (45)	43.0% (34)	24.2%	4.598	**.032**
	No	43.1% (107)	56.9% (141)	75.8%		
No	Yes	31.7% (13)	68.3% (28)	20.6%	1.924	.203
	No	22.2% (35)	77.8% (123)	79.4%		
	Sex w/ Condoms	*Yes*	*No*			
Yes	Yes	38.5% (65)	61.5% (104)	51.7%	9.047	**.003**
	No	55.1% (87)	44.9% (71)	48.3%		
No	Yes	17.5% (22)	82.5% (104)	63.3%	8.325	**.004**
	No	35.6% (26)	64.4% (107)	36.7%		

Discussion

This study attempted to explore the relationship between the predictor of IPV and the outcome of HIV-related risk behaviors when the variable of depression was introduced. In this sample of adolescent and young WSMW, there does appear to be a relationship between many of the HIV-related risk behaviors and IPV. The study revealed significant relationships between IPV and sexual activity, early sexual debut, being currently sexually active, using alcohol and/or drugs before sex, and use of condoms during sex. This is consistent with previous research indicating that WSMW engaged in high-risk sex and drug-related behavior, such as drinking and drug use, commonly experienced violence. [4,34] Depression appeared to also have an association with IPV and some HIV-related risk behavior outcomes such as sexual activity, sexual debut, and use of alcohol and/or drugs at last act of sexual intercourse. These results also align with previous research that supports an association between high rates of violence, HIV infection, substance use, and depression.[2, 5] This research attempted to elucidate the connection between IPV and HIV-related risks exposures for adolescent and young WSMW as well as offer additional insight into the role that depression may play within this relationship. This study was conducted as a means to contribute to the paucity of research being dedicated to the examination of the complex interplay between sexual identity, mental hygiene, violence, and HIV-risk behaviors for WSMW. This study was unique due to the fact that it was specific to adolescent and young WSMW.

Whereas the health disparities among sexual minority groups has been recognized and documented, more studies are needed. Current research has pointed to the distinctive experiences of WSMW that may place them at increased risk for declining physical

health, substance use, limited health access, and negative mental health outcomes.[2,5] While most of this previous work has focused solely on adult WSMW, some studies focused on examining similar factors among girls and young women have produced comparable results underscoring increased risks of HIV and violence.[31,32] There is still a need to examine the lives of adolescent and young WSMW in order to address the mental health, violence, and HIV syndemic.

This research has numerous implications for improving the health of WSMW and other women existing outside of the so-called 'heteronormative box.' Identifying and acknowledging the differences in health risks specific to adolescent and young WSMS can help deconstruct the one-size-fits-all approach to prevention, clinical services, and research. Considering the association between IPV, HIV-related risks, and depression, interventions that increase an awareness towards encouraging sensitive and appropriate care to adolescent and young WSMS within schools, health service systems, and community agencies is essential. The cultural landscape of the U.S. is becoming more diverse and pluralistic and underscores the need for initiatives in primary prevention to provide supportive environments in educational and civic settings, such as schools. These mechanisms can lead to the deterrence of stigma and discrimination by cultivating a sense of belonging and acceptance of all students and community members. Substance abuse treatment and mental health management that takes into account sexual minority status can be pivotal to combating the limited support, marginalization, and unique stressors encountered by WSMW. Increased awareness of the risks of violence and mental health issues that befall adolescent and young WSMW can facilitate better coordination between clinicians, treatment programs, schools, civic organizations, health

systems, and communities in order to conduct screenings and assessments of abuse, violence, and mental health issues, such as depression and anxiety. This could ultimately lead to the prevention of or early detection of mental health issues during adolescence and young adulthood.

Limitations

Although this research aspired to contribute new knowledge to the academy of health disparities research focused on adolescent and young WSMW, it is not without its limitations. Some of the most critical limitations of this study involved the cross-sectional study design, small sample size, abbreviated measures, and the use of self-report measures. The YRBS is a survey administered to select public schools and to select samples of students present at these school on the dates of survey administration. These students are likely not representative of other youth of similar ages and social locations that were not in attendance at the school on the dates that the surveys were administered. Additionally because of the cross-sectional design of gathering data during a single point in time, it is difficult to detect a temporal relationship. Another limitation of this study, was the presence of missing data that drastically reduced the number of viable participants with complete data for analysis from 1,320 to 526 resulting in a small sample size. Lastly, a reliance on self-report measures is prone to incidents of underreporting and overreporting of sexual identity, sexual contact, and health-risk behavior information.

Adolescent and young WSMW engage in a variety of health-risk behaviors. Although WSMW and other sexual minority adolescents and youth represent a small proportion of participants in the YRBS dataset, it is still important to examine the health

and health-related risks of these understudied females in order to improve their wellbeing, health, and safety. More large-scale population studies are needed to increase the likelihood of these adolescent and young women leading long, healthy, and productive lives.

References

1. Green KE, Feinstein BA. Substance use in lesbian, gay, and bisexual populations: An update on empirical research and implications for treatment. Psychol Addict Behav. 2012;26(2):265-278. doi:10.1037/a0025424.

2. Kerr DL, Santurri L, Peters P. A comparison of lesbian, bisexual, and heterosexual college undergraduate women on selected mental health issues. J Am Coll Health. 2013;61(4):185-94. doi: 10.1080/07448481.2013.787619.

3. Pyra M, Weber K, Wilson TE, Cohen J, Murchison L, Goparaju L, Cohen MH. Sexual minority status and violence among HIV infected and at-risk women. J Gen Intern Med. 2014;29 (8):1131-1138.

4. Pyra M, Weber KM, Wilson TE, et al. Sexual minority women and depressive symptoms throughout adulthood. Am J Public Health. 2014;104(12):e83-e90. doi:10.2105/AJPH.2014.302259.

5. Przedworski JM, McAlpine DD, Karaca-Mandic P, VanKim NA. Health and health risks among sexual minority women: An examination of 3 subgroups. Am J Public Health. 2014;104(6):1045-1047. doi:10.2105/AJPH.2013.301733.

6. World Health Organization, Department of Reproductive Health and Research, London School of Hygiene and Tropical Medicine, South African Medical Research Council. Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence. 2013.

7. Black MC, Basile KC, Brieding MJ, Smith SG, Walters ML, Merrick MT, Chen J, Stevens MR (2011). *The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 Summary Report*. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

8. Campbell JC, Baty ML, Ghandour RM, Stockman JK, Francisco L, Wagman J. The intersection of intimate partner violence against women and HIV/AIDS: a review. Int J Inj Control Saf Promot. 2008;15(4):221–31.

9. Austin SB, Roberts AL, Corliss HL, Molnar BE. Sexual violence victimization history and sexual risk indicators in a community-based urban cohort of "mostly heterosexual" and heterosexual young women. Am J Public Health. 2008;98(6):1015-1020. doi:10.2105/AJPH.2006.099473.

10. Roberts AL, Austin SB, Corliss HL, Vandermorris AK, Koenen KC. Pervasive trauma exposure among US sexual orientation minority adults and risk of posttraumatic stress disorder. Am J Public Health. 2010;100(12):2433-2441. doi:10.2105/AJPH.2009.168971.

11. Todahl J, Linville D, Bustin A, Wheeler J, Gau J. (2009). Sexual assault support services and community systems-understanding critical issues and needs in the LGBTQ community. Violence Against Wom. 2009;15:952-976.

12. Walters, ML, Chen J, Breiding, MJ. The national intimate partner and sexual violence survey (NISVS): 2010 Findings on victimization by sexual orientation. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. 2013.

13. Basile, KC. Sexual violence in the lives of girls and women. In K. Kendall-Tackett (Ed.), *Handbook of women, stress, and trauma* New York, NY: Brunner-Routledge;2005. 101-122p.

14. Centers for Disease Control and Prevention. Diagnoses of HIV infection in the United States and dependent areas, 2014(http://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-us.pdf). HIV Surveillance Report 2015; 26.

15. Lemp GF, Jones M, Kellogg TA, et al. HIV seroprevalence and risk behaviors among lesbians and bisexual women in San Francisco. Am J Public Health. 1995;85:1549-1552.

16. Bauer GR, Jairam JA, & Baidoobonso SM. Sexual health, risk behaviors, and substance use in heterosexual-identified women with female sex partners: 2002 US National Survey of Family Growth. Sex Trans Dis 2010;37:531-537.

17. Reisner S, Mimiaga M, Case P, Grasso C, O'Brien CT, Harigopal P, et al. Sexually transmitted disease (STD) diagnoses and mental health disparities among women who have sex with women screen at an urban community health center, Boston, Massachusetts, 2007. Sex Trans Dis 2010;37:5-12.

18. Everett BG. Sexual Orientation Disparities in Sexually Transmitted Infections: Examining the Intersection Between Sexual Identity and Sexual Behavior. Arch Sex Behav. 2013;42(2):225-236. doi:10.1007/s10508-012-9902-1.

19. Balsam KF, Molina Y, Blayney JA, Dillworth T, Zimmerman L, Kaysen D. Racial/ethnic differences in identity and mental health outcomes among young sexual minority women. Cult Divers Ethn Min; 2015;21(3):380-390. http://dx.doi.org/10.1037/a0038680

20. Bostwick WB, Boyd CJ, Hughes TL, West B. Discrimination and mental health among lesbian, gay, and bisexual adults in the United States. Am J Orthopsychiat. 2014;84(1):35-45. doi:10.1037/h0098851.

21. Bostwick WB, Boyd CJ, Hughes TL, McCabe SE. Dimensions of sexual orientation and the prevalence of mood and anxiety disorders in the United States. Am J Public Health. 2010;100(3):468-475. doi:10.2105/AJPH.2008.152942.

22. Meyer IH. Minority stress and mental health in gay men. J Health Soc Behav. 1995; 36:38–56.

23. Meyer IH. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. Psychol Bull. 2003;129(5):674-697. doi:10.1037/0033-2909.129.5.674.

24. King M, Semlyen J, Tai SS, et al. A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay and bisexual people. BMC Psychiatry. 2008;8:70. doi:10.1186/1471-244X-8-70.

25. Conron KJ, Mimiaga MJ, Landers SJ. A population-based study of sexual orientation identity and gender differences in adult health. Am J Public Health. 2010;100(10):1953-1960. doi:10.2105/AJPH.2009.174169.

26. Koh AS, Ross LK. Mental health issues: A Comparison of lesbian, Bisexual, and Heterosexual Women. J Homosexual; 2006;51(1):33-57.

27. Fredriksen-Goldsen KI, Kim H-J, Barkan SE, Balsam KF, Mincer SL. Disparities in health-related quality of life: A comparison of lesbians and bisexual women. Am J Public Health. 2010;100(11):2255-2261. doi:10.2105/AJPH.2009.177329.

28. Koh AS. Use of preventive health behaviors by lesbian, bisexual, and heterosexual women: questionnaire survey. West J Med. 2000;172(6):379–384.

29. Bostwick W. Assessing bisexual stigma and mental health status: a brief report. J Bisex. 2012;12(2):214–222.

30. Bauer GR, Jairam JA. Are lesbians really women who have sex with women (WSW)? Methodological concerns in measuring sexual orientation in health research. Women Health. 2008; 48(4):383–408.

31. Udry JR, Chantala K. Risk assessment of adolescents with same-sex relationships. J Adolescent Health. 2002;31:84–92.

32. Robin L, Brener ND, Donahue SF, Hack T, Hale K, Goodenow C. Associations between health risk behaviors and opposite-, same-, and both-sex sexual partners in representative samples of Vermont and Massachusetts high school students. Arch Pediatr Adolesc Med. 2002; 156:349–355.

33. Ko JY, Farr SL, Dietz PM, Robbins CL. Depression and treatment among U.S. pregnant and nonpregnant women of reproductive age, 2005–2009. J Womens Health. 2012;21(8):830-836. doi:10.1089/jwh.2011.3466.

34. Muzny CA, Sunesara IR, Martin DH, Mena LA. Sexually transmitted infections and risk behaviors among African American women who have sex with women: does sex with men make a difference? Sex Trans Dis. 2011;38(12):118-125.

35. Ludgren R, Amin A. Addressing intimate partner violence and sexual violence among adolescents: emerging evidence of effectiveness. J Adolescent Health. 2015;56:542-550.

36. Smith PH, White JW, Holland LJ. A longitudinal perspective on dating violence among adolescent and college-age women. Am J Public Health. 2003;93(7):71-78.

37. Shearer A, Herres J, Kodish T, Squitieri H, James K, Russon J, Atte T, Diamond GS. Differences in mental health symptoms across lesbian, gay, bisexual, and questioning youth in primary care setting. J Adolescent Health. 2016; 59:38-43.

38. Centers for Disease Control and Prevention. Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, Sexual Transmitted Diseases and Tuberculosis Prevention. HIV among youth. April 2016. http://www.cdc.gov/hiv/group/age/youth/

39. D'augelli AR. Mental health problems among lesbian, gay, and bisexual youths ages 14 to 21. Clin Child Psychol Psychiatry 2002; 7:433-456

40. Bostwick WB, Meyer I, Aranda F, Russell S, Hughes T, Birkett M, Mustanski B. Mental health and suicidality among racially/ethnically diverse sexual minority youths. Am J Public Health 2014; 104:1129-1136

41. Centers for Disease Control and Prevention. Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, Sexual Transmitted Diseases and

Tuberculosis Prevention, Division of Adolescent and School Health. 2015 YRBS Data User's Guide. June 2014.

42. IBM Corp. Released 2013. IBM SPSS Statistics for Macintosh, Version 22.0. Armonk, NY: IBM Corp.

Biographical Sketch

Dr. Krystal S. Frieson is originally from Rockmart, Georgia but currently resides in Atlanta, Georgia. Dr. Frieson received her BS in Psychology from the University of Georgia and received her MS, EdS, and PhD in Counseling Psychology from the University of Kentucky. Dr. Frieson completed her predoctoral internship at the Tuscaloosa Veterans Affairs Medical Center in Tuscaloosa, Alabama and completed her postdoctoral fellowship at Emory University School of Medicine within the Department of Pediatrics at the Grady Infectious Disease Program. She is currently a clinical psychologist at the Atlanta Veterans Affairs Medical Center in Atlanta, Georgia. She is a member of the American Psychological Association (APA), the Association of Black Psychologist (ABPsi), the Society of Counseling Psychology, the Society of Health Psychology, and the Association of Psychologists in Academic Health Centers (APAHC). She also serves on APAHC's Health Disparities and Diversity Task Force.

Address correspondence to:

Krystal S. Frieson
Atlanta VAMC #116
1670 Clairmont Road
Decatur, GA 30033
Email: krystal.frieson@va.gov

ACKNOWLEDGEMENTS

First and foremost, I would like to thank God for leading me on this journey and always showing me the way. I would like to express my appreciation and gratitude to my committee chair, Dr. Corrine Williams. Because of her insight, helpful advice, and guidance on this project, I was able to complete this final requirement for my MPH. I would like to thank my committee members, Dr. Angela Carman and Dr. Katherine Eddens, for agreeing to serve as my committee team. In addition, I would like to express my gratefulness to those who helped me on this journey: Mr. Anthony Bonaparte, Mrs. Brandy Frieson, Mr. Jerik Davis, Ms. Eden Brown-Frieson, Mrs. Betty Larimore, Dr. Timothy Crawford, and Mr. Blake Flaugher.