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ORIGINAL ARTICLE

Investigating the Relationship Between Intimate Partner Violence and HIV Risk-Propensity in Black/African-American Women

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Abstract This study explored the relationship between Intimate Partner Violence and HIV Risk-Propensity in African-American women. An anonymous questionnaire was completed by a community based sample of 200 African American women with a varied history of intimate partner violence, to determine whether being in a violent relationship impacts HIV risk. Various statistical techniques, including structural equation modeling (SEM), bivariate correlation analyses and ANOVA were used to examine the data. A strong positive correlation was found to exist between sexual coercion and Intimate Partner Violence. In the effort to fortify prevention strategies, and reduce the rates of HIV infection in African-American women, additional factors that impact disease transmission were discussed. Implications for social work/mental health practice and suggestions for future research were made.

Keywords African-American · Black women · HIV/AIDS · Intimate partner violence · IPV · Domestic violence · DV · Health disparities

Since the beginning of the HIV/AIDS epidemic, African Americans have been disproportionately affected (Kaiser Family Foundation 2003; Thomas and Quinn 1994). Over time, the disparity has worsened. Even though African Americans account for only 13% of the U.S. population, they represent approximately 50% of all new estimated HIV infections in the United States (Centers for Disease Control 2007a). African-Americans comprise the largest group of AIDS diagnoses, and represent the largest group living with AIDS (CDC 2007a). African-American teenagers are also disproportionately impacted by HIV/AIDS. Although they make up only 17% of the teenagers (in the 33 states with confidential name based HIV reporting), African-American teenagers represent an astounding 69% of the new AIDS cases reported in 2005 (CDC 2007b). While the incidence of HIV in the United States has leveled off over the past decade, diagnoses of AIDS in the African-American population increased by 7% between 1999 and 2003 (CDC 2007a). During this same time period, AIDS diagnoses decreased by 3% among White Americans (CDC 2007a). Of the new HIV infections in women each year, 66% occur in African-American women (CDC 2007c).

The HIV/AIDS Surveillance Report released by the CDC in November, 2004 revealed that African-American women had an AIDS case rate of 48.2 per 100,000 population. This rate is 23 times greater than the rate of white women (2.1 per 100,000). HIV infection is currently reported to be among the four leading causes of death for African American women between 25–54 years of age, and is the leading cause of death for African American women aged 25–34 years (Anderson and Smith 2005). In addition to HIV infection, violence against women is also cited as a major health risk for women (WHO 1998). Violence against women has been shown to be a risk factor for numerous unfavorable health outcomes (Sorenson and Saftlas 1994) including the transmission of HIV (Campbell and Soeken 1999). Numerous medical organizations including the World Health Organization, the American Medical Association, and the International Federation of Obstetricians and Gynecologists have reported on the

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tremendous public health impact of violence against women (World Health Organization 1998).

Women who have no voice or power in their intimate relationships may be at risk for sexual abuse. In turn, exposure to sexual abuse may place these women at greater risk for HIV infection (Kalichman et al. 1998). While the prevalence of both intimate partner (IPV) violence and HIV infection in women have both been recognized as concerns in the African American community, there is a paucity of research linking IPV to increased HIV risk (Stevens and Richards 1998). This research addresses this gap in the literature by utilizing structural equation modeling in order to investigate the specific linkages between IPV and HIV risk among a sample of African American women.

Review of the Literature

Intimate partner violence (IPV) is defined as any act that is used to control, terrorize, or dominate another, within the context of an intimate relationship. IPV includes physical violence; sexual violence; psychological violence, financial neglect, verbal abuse, emotional abuse and intimidation (Saltzman et al. 1999).

While men are sometimes victims of IPV, the literature reveals that women are more likely to be injured in a domestic dispute (Tjaden and Thoennes 2000). The results of being victimized by IPV include physical injury, psychological trauma, and sometimes death (Gelles 1997; Rennison and Welchans 2000; Sorenson and Saftlas 1994). IPV has been shown to be associated with numerous negative health behaviors (Plichta 1996; Silverman 2001). These include unprotected sex, early sexual initiation, multiple sexual partners, choosing unhealthy sexual partners, and alcohol and drug use. Negative health behaviors of victims increase as the levels of violence they experience increases (National Center for Injury Prevention and Control 2007).

In 1997, Wingwood and DiClemente revealed that African-American women who were involved in physically abusive relationships, were less likely to use condoms and more likely to be victimized by their intimate partners as a result of requesting condom use. As a result, these women are at increased risk for HIV infection. Additionally, Simoni and Cooperman (2000), who conducted face to face interviews with women living with AIDS in New York City, determined that 59% of the sample of 373 women, had been sexually abused, and 69% had been physically abused.

Other research asserts that women who have no voice or power in their intimate relationships are at risk for numerous forms of abuse including being forced into certain sexual activities. As a result, they may be at greater risk for HIV infection (Kalichman et al. 1998). Since race itself is not a risk factor for the spread of HIV (being African American does not by itself make an individual more susceptible to contracting HIV), some argue that the root-cause of the increase in HIV/AIDS incidents in African-American women is gender inequity. Gupta (2002) believes gender inequity must be addressed for the HIV epidemic to be controlled. Gupta (2002) and Gasch et al. (1991) assert that women should be empowered because the unequal balance of power between men and women leads to controlling behavior by men. If men have control of women's bodies, the women themselves have no control of the spread of the disease.

Wingwood and DiClemente (1997), as well as Klein and Birkhead (2000) add that assessment for IPV should be routinely incorporated into HIV prevention programs. From the literature, it could be speculated that abuse of women by their intimate partners has been a factor in the spread of HIV. Since HIV has begun to spread in the general, heterosexual population, all such relationships have become more risky. Those who remain most vulnerable to infection will likely be those who suffer most from injustice, anger, and abuse (Human Rights Watch 2003).

While there have been pilot programs and initiatives to coordinate the provision of services to HIV-infected individuals and victims of domestic violence, the linkages between these two social problems have not been fully investigated (New York State Office for the Prevention of Domestic Violence 2001). The purpose of this study was to further assess the impact of IPV on HIV risk among African American women.

Method

Prior to conducting the research, the research protocol was submitted to the Institutional Review Board (IRB) at the University of Central Florida. Approval to begin the study was granted by the IRB in March 2006. Informed consent was secured from each participant prior to involvement in the research.

Participants

Between May and August, 2006, questionnaires were administered to the women who met the selection criteria for this study, namely, adult African-American females currently in an intimate relationship. With the developers' permission, the survey incorporated components of the Woman Abuse Screening Tool (WAST) and the HIV Risk Screening Inventory. Three questions from the Sexual Experiences Survey (SES), a widely used measure of sexual coercion were also included in the questionnaire.

Woman Abuse Screening Tool (WAST)

The WAST is an eight-question survey which focuses on physical, emotional, and sexual abuse (Brown et al. 1996). This instrument has been validated against the longstanding Abuse Risk Inventory (IRI). The WAST short-form which comprises the first two questions of the tool (*1. In general, how would you describe your relationship? A lot of tension, Some tension, No tension; 2. Do you and your partner work out arguments with: No Difficulty, Some Difficulty? Great difficulty?*) been shown in a small population (n=24) to have a sensitivity and specificity of 91.7% and 100%, respectively (Ibid). The WAST has been tested in various populations both small and large, as well as English and Spanish speaking and has maintained its validity. However, the sensitivity in Spanish-speaking populations was lower in primary care patients than in patients in a shelter (Fogarty and Brown 2002). Examples of questions found on the WAST include: *Do arguments ever result in you feeling down or bad about yourself? (Often, sometimes, never) Do arguments ever result in hitting, kicking or pushing? (Often, sometimes, never) Has your partner ever abused you physically? (Often, sometimes, never)*

HIV Risk Screening Instrument Revised

The HIV Risk Screening Instrument (HSI) is a valid and reliable tool (Gerbert et al. 1998) with a Kuder-Richardson-20 co-efficient for dichotomous variables (KR-20), of .73 (Ibid). The validity and reliability for this instrument was determined with a study sample of 459 participants representing high and low risk groups. The original questions was revised to seek information about risk behaviors over the last six months rather than the last 10 years, as this is a more accurate representation of current risk (Kalichman et al. 1998). The HSI is a 10-question instrument. Some of the questions included on the HSI are: *Have you had two or more sexual partners in the last 6-months? Have you had anal sex (a man puts his penis into your anus) with any of your sexual partners during the past 6 months? In the last 6 months, have you had a sexually transmitted disease such as gonorrhea, syphilis, chlamydia, genital warts, or genital herpes?*

Sexual Experiences Survey

The Sexual Experiences Survey (SES) is a commonly used 14-item instrument. The instrument measures degrees of sexual victimization and assesses whether victimization occurred due to threats, coercion, and use of force, authority or drugs (Koss and Gidycz 1985). The following three questions were taken from the SES for use in this research: *Have you ever had sexual intercourse with your partner even though you really didn't want to because he threatened to end your relationship otherwise? Have you ever had sexual intercourse with your partner when you didn't want to because he threatened to use physical force (twisting your arm, holding you down etc.) if you didn't cooperate? Have you ever been in a situation where your partner obtained sexual acts with you such as anal or oral intercourse when you didn't want to by using threats of physical force (twisting your arm, holding you down etc.)?* Two questions from Kalichman et al. (1998) study on sexual coercion and negotiating condom use were also utilized. *Would you be afraid to ask your partner to use a condom because you are afraid he might leave you? Would you be afraid to ask your partner to use a condom because you are afraid he might hit you?*

Surveys were administered in Neighborhood Centers for Families (NCF) across Orange County, Florida. The NCFs are a dynamic collaborative of social service agencies available to residents in 13 communities throughout Orange County, Florida. A variety of providers are available to clients of the NCF. No two NCFs are the same, as each NCF is individually developed to meet the needs of the surrounding community. Three (3) NCFs were utilized for data collection purposes. Two of the three NCFs utilized were in areas with a large percentage of African-American/Black residents.

Approximately 300 women were asked to participate in the research. Sixty-six percent of those approached (200) agreed to participate. Upon completion of the survey, each woman received a $10 gift card to a local superstore. Three surveys were excluded because comments handwritten on the form by respondents indicated that they did not meet the criteria for inclusion in the study, namely, currently being in a relationship. As such 197 survey results were included in the analysis.

Research Question

The overarching research question examined during this research process is: Does IPV impact the HIV risk of African American women? The following Hypotheses were tested:

- There is a significant relationship between the frequency of abuse, sexual Coercion and condom negotiation.
- There is a significant relationship between sexual coercion, condom negotiation, and HIV Risk.

Design

Structural equation modeling was used to examine the relationship between Intimate Partner Violence and HIV

Table 1 Operational definitions of exogenous study variables

Variable	Description
Intimate partner violence	A latent exogenous variable measured by the following indicators:
Sexual coercion	Acts ranging from nonphysical forms of pressure that induce women to engage in sexual acts unwillingly, to rape.
Physical abuse	History of pushing, punching, hitting, slapping, or withholding vital medicine.
Emotional abuse	The recurring use of harmful and controlling behaviors by an intimate partner for the purpose of controlling a woman.

Risk Propensity. Structural Equation Models, also referred to as the analysis of Linear Structural Relations (LISREL), are extensions of regression methods (Wan 2002). Structural equation modeling is used to confirm relationships and test hypotheses. These models verify how and how strongly variables affect each other Structural Equation Models have been demonstrated to be extremely useful in understanding and profiling HIV-related risk factors (e.g., Burkholder and Harlow 1996). SPSS® 14 was used to conduct descriptive statistics and bivariate statistics including bivariate correlation and ANOVA.

Specification of the Analytical Model

AMOS (Analysis of Moment Structure) 6.0, a multivariate statistical package, was used to validate the measurement models of the exogenous latent variable (Intimate Partner Violence) and the endogenous latent variable (HIV Risk Propensity). Operational definitions of Intimate Partner Violence and HIV Risk Propensity can be seen below in Tables 1 and 2. The models were validated independently via confirmatory factor analysis. Additionally, covariance structure modeling was used to test the structural relationship between Intimate Partner Violence and HIV Risk Propensity.

Once measurement models of HIV and IPV were correctly specified, the full covariance structure model exploring the relationship between of Intimate Partner Violence and HIV Risk was developed. Since all three variables measuring sexual coercion were highly correlated, the most frequently reported form of sexual coercion, COERCE 1(women who reported that they had sex with a partner when they did not want to because their partner threatened to end the relationship) was used as a mediating variable between IPV and HIV Risk. This was done, because, consistent with the Feminist theoretical framework used to guide this study, being in an abusive relationship affects the woman's choice. The revised model fit the data as indicated by the non-significant chi-squared result. Other goodness-of-fit indices such as Tucker-Lewis Index (.995), GFI (.969), AGFI (.941) and RMSEA (.019) indicated a good fit. The revised model and the goodness-of-fit statistics are shown below in Fig. 1 and Table 3.

Results

Demographic Information

Although all participants in this research are Black, additional information was requested about cultural or ethnic group. Information was also collected on income, age, and employment status. A breakdown of the results is shown in Table 4.

Levels of Intimate Partner Violence

The first two questions of the WAST (known as the WAST short-form) have been demonstrated in small samples to have a high degree of sensitivity and specificity. The questions inquire about the "level of tension in the relationship" and the "level of difficulty working out arguments" and are excellent tools to detect possible abuse. Of the 197 women who participated in this study, 35.5% (n=70 reported *no tension*, 41.6% (n=82) reported *some tension* and 22.8% (n=45) reported *a lot of tension*. In addition, 31% (n=61), reported *no difficulty*, 51.3% (n=101) reported *some difficulty*, and 17.8% (n=35) reported *great difficulty*. The results reported on the remaining 5 elements of the WAST are shown below in Table 5.

Bivariate correlation analyses were performed to examine the relationship between the frequency of abuse, sexual coercion, condom negotiation, and HIV Risk. Levels of correlation are usually interpreted as being large or strong if

Table 2 Operational definitions of endogenous study variables

Variable	Description
HIV risk propensity	A Latent endogenous variable measured by the following indicators:
Substance abuse frequency	The frequency with which drugs are used
Risky sexual behavior	Overall involvement in risky sexual behavior
Sexually transmitted diseases	History of sexually transmitted diseases
Partner's risk	Lack of recognition of intimate partner's HIV risk

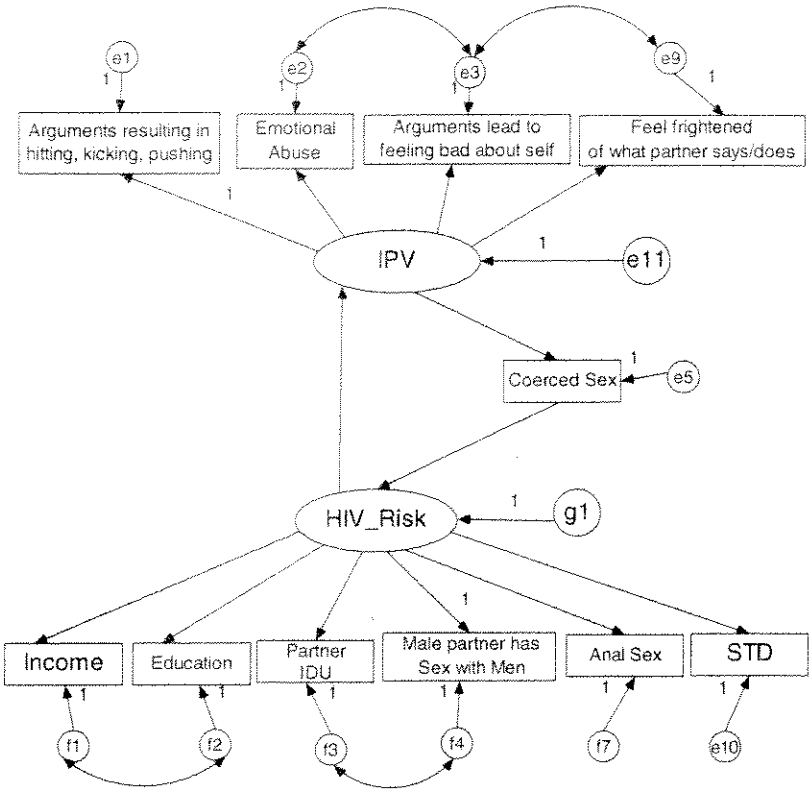

Fig. 1 Revised covariance structure model of HIV risk, sexual coercion and intimate partner violence

they are greater than .50, moderate or medium between .30 and .49, and low or weak between .1 and .29 (Cohen 1988). The correlation matrix for the variables measuring IPV, sexual coercion and the ability to negotiate condom use is below, in Table 6.

A strong correlation was found to exist between frequency of physical abuse and sexual coercion (women who engaged in sexual activities with their partner even though they didn't want to, because he either threatened to end the relationship or threatened to use force if they did not). Moderate levels of correlations were also found between sexual coercion (women who engaged in a sexual act with their partner because he used force) and the frequency of being emotionally abused, as well as the frequency of an argument resulting in hitting, kicking or pushing.

Analysis of variance (ANOVA) was conducted to explore if the frequency of abuse impacted HIV risk through the mediating variable, sexual coercion. A test of homogeneity of variances revealed that the groups were heteroscedastic. Post-Hoc multiple comparisons was conducted. Tamhane's post hoc statistics revealed that women who reported that they *sometimes* had arguments that resulted in being hit, kicked, or pushed were more likely to be sexually coerced than women who reported that they *never* had arguments that result in being hit, kicked or pushed. Results were significant at the $p<.001$ level.

Furthermore, women who reported that they engaged in sexual activities with their partner even though they didn't want to (because he threatened to end the relationship otherwise) was shown to be moderately correlated to being afraid to ask partner to use a condom for fear he would leave or hit.

Table 3 Goodness of fit statistics for the original and revised covariance structure models of HIV, sexual coercion and intimate partner violence

	Original	Revised
Chi-squared (degrees of freedom	58.154 (38)	30.959 (29)
Probability	.019	.367
Goodness of fit index (GFI)	.948	.969
Adjusted goodness of fit index (AGFI)	.909	.941
Root mean square approximated (RMSEA)	.958	.019
Tucker-Lewis Index (TLI)	.052	.995

Table 4 Demographic information

	Total	
	n	Percent
Employment status		
Unempl.(not seeking employment)	19	9.6
Unempl (seeking employment)	11	5.6
Stay at home Mom	9	4.6
Employed full time	129	4.2
Employed part time	28	65.5
Missing	1	5
Education		
Less than high school	10	5.1
High HS	77	39.1
Some college	29	14.7
Associates degree	29	14.7
Bachelors degree	21	10.7
Masters degree	29	14.7
Missing	2	1.0
Income		
$0–15,000	58	29.4
$15,001–25,000	49	24.9
$25,001–35000	47	23.9
$35,000–45,000	24	12.2
$45,000 and above	15	7.6
Missing	4	2.0
Age		
18–24	30	15.2
25–34	69	35.0
35–44	46	23.4
45–54	26	13.2
55–64	5	2.5
65+	2	1.0
Missing	19	9.6
Cultural background		
Black American	156	79.2
Haitian	11	5.6
Jamaican	19	9.6
Trinidadian	1	.5
Other	10	5.1

Finally, the statistically significant standardized regression weight of Intimate Partner Violence on sexual coercion (.334; $p<.01$) indicates that for each standard deviation that Intimate Partner Violence increases, sexual coercion also increases by .334 standard deviations. The standardized regression weight of .655 ($p<.001$) indicates that for each standard deviation that sexual coercion increases, HIV risk also increases by .655 standard deviation (Table 7).

Limitations

The limitations of the study include the non-representative volunteer nature of the sample. External validity may be limited because the study sample may not be representative of the African American population at large. Nevertheless, this research was able to get Black/African-American women from different ethnic groups, with different levels of income and education.

Another limitation stems from the fact that the study utilized self-administered surveys which asked several questions of a sensitive nature. As a result, social desirable answers may have been provided. The social desirability effect is the tendency of some respondents to lean their answers in a direction which is more accepted by society either to make a favorable impression on the researcher or to enhance their feelings about themselves (Singleton and Straits 1999). This would have lead to under-reports of the actual occurrence of physical abuse, emotional abuse, sexual coercion, substance abuse and other risk behaviors.

Discussion

Despite the limitations mentioned, the findings of this study have significant implications for social service and health providers treating women with HIV and women who are abused. One of the strengths of this study is that it employed sound statistical methods to demonstrate how Intimate Partner Violence might lead to increased HIV risk in African-American women. More specifically, this is one of the first pieces of research to utilize Structural Equation modeling to explore the mechanisms by which IPV might lead to increased HIV risk in African-American women.

Table 5 Indicators of abuse from the WAST (in percentages)

	Frequency of physical abuse	Frequency of emotional abuse	Arguments result in hitting, kicking, or pushing	Feel frightened by what partner says/does	Frequency arguments cause to feel down/bad about oneself
Never	74.6	41.6	69.0	70.6	39.1
Sometimes	20.3	44.2	23.4	19.8	43.7
Often	5.1	13.7	7.6	9.6	17.3

Table 6 Correlation matrix for the variables measuring IPV, sexual coercion and the ability to negotiate condom use

Hit	Pabuse	Eabuse	Coerce1	Coerce2	Coerce3	Fearaskl	Fearaskh
1.000							
.756**	1.000						
.509**	.561**	1.000					
.454**	.524**	.397**	1.000				
.445**	.522**	.349**	.550**	1.000			
.394**	.411**	.300**	.567**	.707**	1.000		
.201**	.255**	.183**	.411**	.517**	.607**	1.000	
.371**	.410**	.276**	.407**	.669**	.694**	.431**	1.000

**Correlation is significant at the 0.01 level (2-tailed)

Variable descriptions: (**Hit**= Arguments resulting in hitting, kicking, pushing; **PAbuse**=frequency of physical abuse; **Eabuse**=Frequency of emotional abuse; **Coerce1**= Had sex with partner when she didn't want to because he threatened to leave; **Coerce2**= Had sex with partner when she didn't want to because he threatened to leave; **Coerce3**= Had oral or anal sex with partner when she didn't want to because he threatened to leave; **Fearaskl**= Afraid to ask partner to use a condom because he might leave her; **Fearaskh**= Afraid to ask partner to use a condom because he might hit her; **Fright**= Feels frightened by what partner says or does)

This study strongly suggests that efforts must be made to educate practitioners working with women about the HIV risk propensity of African-American women experiencing Intimate Partner Violence. Furthermore, community education programs highlighting the relation between HIV risk propensity and Intimate Partner Violence might be enhanced. HIV prevention methods have principally focused on two areas, consistent and correct condom use and mutual monogamy. In cases where Intimate Partner Violence occurs, women usually are stripped of the authority to make safe-sexual decisions. Social service providers should remain cognizant of the numerous barriers (sexual coercion, reduced ability to negotiate condom use etc.) that victims of Intimate Partner Violence experience when trying to protect themselves from HIV and other sexually transmitted infections.

The results reiterate the importance of recognizing and addressing gender-related issues in HIV prevention education. Policies need to be developed on the national, state and organizational levels to address these correlated issues.

Table 7 Standardized regression weights of the revised model of intimate partner violence, sexual coercion and HIV risk

			Estimate
HIT	<—	IPV	.839***
EAbuse	<—	IPV	.499***
Education	<—	HIV Risk	−.230**
Income	<—	HIV Risk	−.136
Fright	<—	IPV	.792**
HIV Risk	<—	Coerce1	.655***
Coerce1	<—	IPV	.334***
IPV	<—	HIV Risk	.231*

***$p<.001$; **$p<.01$; *$p<.05$

Another implication is the need to develop culturally competent HIV-prevention strategies. It is very important to recognize that a one-size-fits-all approach to HIV prevention is not ideal. For programs to be effective, they have to be tailored to the needs of the target group.

Suggestions for Future Research

Understanding the cultural factors that impact the spread of HIV is vital to the developing culturally competent intervention and prevention strategies. Culturally competent services are critical in the quest to reduce health disparities. As such, future research needs to more closely examine the within group differences in the rates of infection in the black community. The African-American community of females is not a homogenous group. It is comprised of women from a variety of backgrounds and cultures, including native born Black-Americans, West Indians, Africans, and Black Hispanics and others who have immigrated to the United States. Differences in the modes of infection and the need for different intervention and prevention methods may be realized if cultural factors that impact disease transmission are identified. Demographic information should be broken down further than African-American.

Future research should also couple quantitative and qualitative techniques to further tease out information to improve treatment and prevention. On the surveys that were completed, some women chose to add unsolicited handwritten comments. While they may have been more inclined to add comments due to the anonymous nature of the survey, perhaps a highly structured confidential interview could be beneficial. Additionally, to further elucidate the impact of race on the relationship between IPV and HIV Risk, future research should survey, White, Latina, and

Asian women as well. This will clarify the impact of race/ethnicity on the model.

Conclusion

Evidence of health disparities can be seen no more evidently than in the incidence and prevalence of HIV/AIDS in African Americans. The Centers for Disease Control reports that African Americans are the most severely impacted of all the racial/ethnic groups from diagnosis until death. While attempts to reduce the rate of infections in other high risk groups have been somewhat successful, the infection rates continue to rise in African American females. The stigma associated with HIV in the black community, and the concept of the down-low (double-lives of African-American men who pose as heterosexuals while secretly engaging in sex with other men) contribute to the high rates of infection. Other factors that affect the disparity rates include poverty, lack of access to care, and unwillingness to seek care due to the distrust of the health care system.

This study adds to the body of knowledge about HIV among African-Americans by highlighting a variety of ways in which the IPV intertwines with the HIV epidemic. Fear of abandonment and fear of violence were shown to impact women's ability to negotiate condom-use. This can have a detrimental effect on HIV risk. Violence perpetuated against women by their intimate partners was also shown to impact sexual decision-making, free-choice, and ultimately increase the risk for HIV. Comprehensive and culturally competent intervention strategies to address the dual concerns of Intimate Partner Violence and HIV-risk should be developed.

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