

**Dyadic, Partner, and Social Network influences on Intimate Partner Violence among Male-
Male Couples**

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ABSTRACT

Despite a recent focus on intimate partner violence (IPV) among men who have sex with men (MSM), the male-male couple is largely absent from the IPV literature. Specifically, research on dyadic factors shaping IPV in male-male couples is lacking. A subsample of 403 gay/bisexual men with main partners was taken from a 2011 survey of approximately 1000 gay and bisexual men from Atlanta. Logistic regression models of recent (<12 month) experience and perpetration of physical and sexual IPV examined dyadic factors, including racial differences, age differences, and social network characteristics of couples as key covariates shaping the reporting of IPV. Findings indicate that men were more likely to report perpetration of physical violence if they were a different race to their main partner, whereas main partner age was associated with decreased reporting of physical violence. Having social networks that contained more gay friends was associated with significant reductions in the reporting of IPV, whereas having social networks comprised of sex partners or closeted gay friends was associated with the increased reporting of IPV. The results point to several unique factors shaping the reporting of IPV within male-male couples and highlight the need for intervention efforts and prevention programs that focus on male couples, a group largely absent from both research and prevention efforts.

INTRODUCTION

Recently, studies have begun to look at intimate partner violence (IPV) among men who have sex with men (MSM) and have found both a similarly high prevalence to that observed among heterosexual women, and that IPV among MSM occurs at significantly higher rates in comparison to heterosexual men.^{1,2} Approximately 25-50% of gay and bisexual men in the U.S. report experiencing physical IPV, while 12-52% report experiencing sexual IPV.^{1,3-5} In a survey conducted by the National Violence Against Women (NVAW), 21.5% of men reporting a history of cohabitation with a same-sex partner reported experiencing physical abuse in their lifetimes in comparison to 7.1% of men with a history of opposite-sex cohabitation.⁴ There is evidence that MSM are especially at risk for IPV over their lifetimes, and that the risks of experiencing IPV are higher among MSM of color, HIV positive men, and MSM with lower levels of education^{6,7-10}. Several studies have found also associations between IPV and sexual risk-taking and increased risk of HIV acquisition among MSM.^{9,11} There are a wealth of studies that have examined how dyadic characteristics of heterosexual couples shape the risk of IPV and how the risk of IPV is influenced by patterns of social support despite the comparably high rates of IPV in male-male couples, there is a dearth of studies that have examined how partner and dyadic characteristics and the social network characteristics of the individual shape the experience of IPV among male-male couples.¹²⁻¹⁴

The existing evidence suggests that IPV affects approximately one-quarter to one-half of all same-sex relationships.¹⁵⁻¹⁸ The National Coalition of Anti-Violence Programs, reported 6523 cases of IPV in LGBT relationships in 2003, with most cases (83%) occurring in gay and lesbian relationships.¹⁹ Physical abuse seems to occur in a significant portion of abusive same-sex

relationships. Elliot²⁰ and De Vidas²¹ suggest that between 22-46% of lesbians have been in relationships in which physical violence has occurred. McClennen et al²² using a sample of 63 gay men, found that participants were often physically struck by their partners, and were coerced into substance abuse. Greenwood et al⁶ reported that 22% of a sample of men who had sex with men had been subjected to physical abuse from an intimate partner. Research also indicates that sexual abuse is common in IPV-afflicted same-sex relationships. Walder-Haugrud and Gratch⁵ reported that 52% of their sample of gay men experienced one or more incidents of sexual abuse. Similarly, Toro-Alfonso and Rodriques-Madera²³ found that approximately 25% of a sample of Puerto Rican gay males had experienced sexual coercion. Clearly, a large number of same-sex relationships experience IPV, and the levels experienced appear to be similar, if not higher, than those seen in heterosexual couples²⁰.

Capaldi et al²⁴ conducted a systematic review of 228 IPV-focused research articles and found that social support characteristics and the behaviors and characteristics of main partners were a strong influence on the experience of IPV. However, none of the studies that focused exclusively on same-sex couples met the criteria for inclusion in the systematic review, due primarily to small sample sizes, and only two of the studies included in the review had samples that contained both heterosexual and same-sex relationships, pointing to the lack of research examining dyadic or social support influences on IPV among same-sex couples.^{25,26} In terms of dyadic influences on IPV, among heterosexual populations a number of studies suggest that the experience of IPV decreases as the age of the partner increases, while others have shown that education and income, in particular dyadic differences in education and income, are significantly associated with the risk of IPV among heterosexual couples.²⁷⁻²⁹ Additionally, economic stress

has been shown to be a major risk factor for IPV among heterosexual couples: in a cross-sectional study of men and women in the US Air Force, researchers found that financial stress was a significant predictor of both men's and women's perpetration of IPV.³⁰ Main partners who were exposed to violence as a child, either witnessing parental IPV or experiencing early childhood abuse, have also been shown to report higher levels of violence in their relationships.³¹ Although these findings suggest that partner characteristics play an important role in the experience of IPV among heterosexual couples, information on what these characteristics look like in male-male couples is lacking. Furthermore, the majority of the research on partner characteristics involves individual level data rather than couple level data: thus largely ignoring how *differences* in dyadic characteristics (e.g. age or educational differences) may influence the risk of IPV.

Several studies have shown that social isolation or social support is a significant risk factor for experience and perpetration of IPV among heterosexual populations.^{25,32,33} Lanier and Maume examined social isolation/support among women in rural and urban areas of the US and found that women with greater levels of social support and social interaction were less likely to experience IPV.³² Similarly, Van Wyk et al³³ found that women living in economically disadvantaged neighborhoods and those receiving less social support were at a greater risk of IPV. For MSM, or gay and bisexual men, social networks may influence the risk of IPV through the provision of social support, increasing access to services and resources, by providing access to role models in the forms of successful relationships, and through the provision of social acceptance through normalizing the presence of same-sex couples in a heterosexually dominated society.³⁴⁻³⁶ However, research on social networks and social support among MSM has focused

almost exclusively on the influence of social networks in shaping sexual risk taking and risk of HIV, and we find no studies that have examined how social support or social networks shape the risk of IPV among male-male couples.^{37,38}

The majority of studies of IPV among MSM have focused on prevalence and individual-level risk factors for IPV.¹⁷⁻²³ To date, research has largely ignored the role of dyadic characteristics in shaping the risk of IPV among male-couples, and has overlooked how the risk of IPV may be shaped by the size and composition of an individual's social network. In this study, we examine how dyadic characteristics, dyadic differences and the size and composition of social networks influence the reporting of recent physical and sexual IPV among a sample of 403 gay and bisexual men with main partners in Atlanta, GA. This new information has the potential to inform the development of culturally appropriate interventions tailored to the unique contexts of male-male couples, a population largely overlooked in current research and prevention efforts.

METHODS

This study was approved by Emory University's Institutional Review Board. Between September – December 2011, participants were recruited into the study using venue-based sampling. Venue-based sampling is a derivative of time-space sampling, in which sampling occurs within prescribed blocks of time at particular venues. As a method to access hard-to-reach population, venue-based recruitment is a process in which a sampling frame of venue-time units is created through formative research with key informants and community members. After creating a list of potential venues where the target population is reported to be more prevalent than in the general community, researchers visit each venue at the times it is reported to be active (for example,

Thursdays from 9 PM – 1 AM) to confirm that the venue is active at those times and the population in question accesses the venue; this venue-time unit is then added to the sampling frame. In order to reach a diverse population of gay and bisexual men in the Atlanta area, the venue sampling frame used for this study consisted of a wide variety of gay-themed or gay-friendly venues, including Gay Pride events, gay sports teams events, gay fundraising events, downtown areas, gay bars, bathhouses, and an AIDS service organization. All venues were within the Atlanta Metro area. The sampling frame used in this study contained over 160 venue-time units, and was updated monthly as venues closed or as new venues became available. A randomized computer program assigned venue-time units monthly, with at least one recruitment event per day.

During recruitment, two or more study recruiters wearing study t-shirts stood adjacent to the venue during the time period prescribed by the computer program. Recruiters then drew an imaginary line on the ground and then approached every n th man who crossed it; n varied between one and three depending on the volume of traffic at the venue. After introducing themselves, the recruiter would ask if the man was interested in seeing if he was eligible for a research study at Emory University. If he agreed to be screened, he was then asked a series of eight questions to assess his eligibility, including his sexual orientation, recent sex with a man, race, age, and residence in the Atlanta Metro Area. Responses for all persons were recorded on palm-held computers, including whether or not a person agreed to be screened for eligibility. Eligible men were then read a short script that described the study process: a web-based survey approximately 20 minutes in length that could be completed at home, or, in the case of five venues (the AIDS service organization, the drop-in center, Atlanta Pride, In the Life Pride, and a

National Coming Out Day event), at the venue itself on a tablet computer. Men interested in study participation were then given a card with a web address and a unique identifier that would link their recruitment data to their survey data. Participants who completed the survey at the venue were compensated with a gift card; participants who completed the survey at home were compensated with the same value of gift card that was sent to them electronically.

The self-administered, web-based survey contained several domains of questions regarding demographics, recent sexual behavior with male partners, intimate partner violence (IPV), couples coping and communication, social network characteristics, and minority stress (e.g., internalized homophobia). Of 4,903 men approached, 2,936 (59.9%) agreed to be screened for the study. Of these, 2,093 (71.3%) were eligible for study participation. Men were eligible for study participation if they reported being 18 years of age or older, being male, identifying as gay/homosexual or bisexual, living in the Atlanta Metro Area, and having had sex with a man in the previous six months. Of eligible participants, 1,965 (93.9%) were interested in study participation. A total of 1,075 men completed the survey; thus 21.9% of men approached and 51.4% of eligible men completed the survey. Approximately one-third (33.7%) completed the survey at a venue, while the remaining two-thirds (66.3%) of respondents completed the survey at home. Of the 1,075 men who completed the survey, approximately half (49.3%) reported having a main partner (*“Are you currently in a relationship? Is this male partner someone who you feel committed to above all others? You might call this person a boyfriend, life partner, husband, or significant other.”*). Of the men that responded that they had a main partner, a total of 403 had complete data for all covariates of interest and were included in the final analysis sample.

Survey participants were assessed for recent intimate partner violence from a male partner, either physical (“*In the last 12 months, have any of your partners ever tried to hurt you? This includes pushing you, holding you down, hitting you with a fist, kicking you, attempting to strangle you, and/or attacking you with a knife, gun or other weapon*”) or sexual (“*In the last 12 months, have any of your partners ever used physical force or verbal threats to force you to have sex when you did not want to?*”). The same questions were used to measure perpetration of IPV in the last 12 months. The analysis examines four outcomes, each of them self-reported: experience of physical violence, experience of sexual violence, perpetration of physical violence, and perpetration of sexual violence in the 12 month period prior to the survey. Covariates of interest were grouped into three categories: dyadic differences, main partner characteristics, and social network characteristics. The dyadic differences consisted of three covariates of interest including differences in race, differences in sexual orientation and the age difference between the main partner and the participant. The main partner characteristics consisted of covariates related to the participant’s main partner including race, age, and their sexual orientation.

To capture data on social networks, respondents were asked about up to five of their closest friends, which were classified as “*people that you talk to at least once a month*”. Respondents were asked to provide the age, gender, perceived sexual orientation, whether their friend was out to others if they were gay or bisexual, and relationships status of each of the friends they listed. To measure the age difference within the network of friends, the average age of the network was subtracted from the respondent’s age then categorized into four categories based on the distribution of the quartiles: 3.4-2 years older, 3.25-0.2 years older, 0-3 years younger, and 3.2

years or more younger than the respondent. The analysis also considered the proportion of the respondent's network that was comprised of gay friends, gay friends in relationships, closeted gay friends, out gay friends, straight friends in relationships, and sexual partners. The analysis also considered the number of friends with same race as the respondent. For individual characteristics, the analysis considered, education, employment, age (continuous variable), race (White, Black/African American, or Latino/ other), sexual orientation (homosexual/gay or bisexual) and HIV status (positive, negative or unknown/ never been tested).

The data were analyzed using STATA 12. Using a backwards stepwise procedure, four separate logistic regression models were created for the four outcomes of interest: with each model including individual characteristics, dyadic differences, main partner characteristics and social network characteristics.

RESULTS

The sample of 403 participants reflected a diverse sample with 59.8% white non-Hispanic, 25.6% Black/African-American, and 14.6% Latino/Other. In addition, 54.8% reported having a college education or more, 29.0% reported some college or a two year degree, and 16.1% reported a high school education or less. The mean age was 36.1 years (18-71years) with the majority reporting homosexual/gay sexual orientation (93.6%), negative HIV status (72.7%), and current employment (83.7%). Reporting of physical IPV was higher than sexual IPV: 10.2% of respondents reported experiencing physical IPV in the last 12 months, while .48% reported perpetrating physical IPV. Fewer participants reported experiencing (3.7%) or perpetrating (3.5%) sexual IPV (Figure One).

TABLE ONE & FIGURE ONE

The results of the logistic models are shown in Table 2. Of the demographic variables, only age, race and employment status were found to be associated with two of the four outcomes. Older men were significantly less likely to report perpetration of physical violence (OR: 0.92, 95%CI: 0.88, 0.97). Black/African American men were 7.91 times (95% CI: 1.45, 43.23) more likely to report perpetration of sexual violence when compared to White men. Unemployed men had significantly higher odds of reporting recent perpetration of sexual violence (OR 3.65, 95%CI: 1.03, 12.89) than employed men.

TABLE TWO

Of the dyadic factors, men who were the same race as their main partner had significantly lower odds of reporting perpetration of physical violence towards their partner in the past year compared to men in inter-racial dyads (OR 0.32 95% CI: 0.14, 0.73). Of the main partner characteristics, only the main partner's age was found to be associated with experience of physical violence: men with older main partners were significantly less likely to report experiencing physical IPV.

Several social network factors were significantly associated with IPV. The greater the proportion of their network that was comprised of closeted gay friends, the more likely they were to report experience of sexual violence (OR: 8.90, 95% CI: 1.46, 54.37). Conversely, the greater the proportion of their network that was comprised of gay friends, the less likely they were to report perpetration of sexual violence (OR: 0.12, 95% CI: 0.02, 0.75). Men whose social networks had a high proportion of sex partners were more likely to report perpetration of physical violence

(OR: 4.47, 95% CI: 1.11, 17.94) and sexual violence (OR: 8.85, 95% CI: 1.45, 54.09).

Respondents whose social network was on average slightly younger than them (0.2-3.25 years) were significantly less likely to report experiencing physical IPV (OR: 0.28 95%CI 0.08, 0.89).

DISCUSSION

Studies of IPV among gay and bisexual men are relatively new, at least relative to the wealth of studies on male-female IPV, and previous studies have shown rates of male to male IPV ranging between 11% and 44%.³⁹ This variability largely reflects different definitions of partner abuse across studies, making cross-study comparisons very difficult. In a systematic review of the literature around IPV among MSM, Finneran and Stephenson (in press) note that across 28 studies identified, 16 different definitions of IPV were used by researchers in various combinations.⁴⁰ The most commonly used scale measures of IPV were the Conflict Tactics Scale or its derivatives, the Revised Conflicts Tactics Scale or the CTS2S.⁴¹⁻⁴³ Ten studies used definitions of IPV that were unique to the study or did not provide a reference to a validated scale, while several studies used binary measures of the presence of IPV based on the CDC definition of violence. However, none of these measures were developed specifically for gay and bisexual men; hence, it remains unknown whether or not these measures accurately represent IPV in gay and bisexual men. In addition, few studies have examined multiple forms of IPV, with most focusing on one specific form of violence – most commonly physical IPV - in isolation. The results presented here are unique in their focus on IPV among male-male dyads, and the inclusion of covariates beyond the individual level to include dyadic differences, partner characteristics, and social network size and composition. The results show slightly lower levels of physical IPV than have been shown in some previous studies, yet show relatively high levels

of reporting of the experience of and perpetration of sexual IPV: interestingly, similar percentages of participants reported experience or perpetration of sexual IPV.

Unique to this study is the inclusion of dyadic differences, partner characteristics and social network measures in the modeling of IPV. Those factors that were significantly associated with the reporting of IPV point to the role of minority stress in shaping the risk of experience or perpetration of violence among male-male couples: and there is evidence of minority stress at the individual, dyadic and social network levels. MSM respondents who identified as a racial minority (Black/ African American) or experienced financial stress (unemployed men) were more likely to report increased perpetration of sexual IPV. Lower levels of income may be reflective of a lack of access to social capital and resources, creating an economic stress that manifests as perpetration of or vulnerability to IPV. MSM who identify as a racial minority may face stress through exposure to racism, both in the MSM community and beyond, or through increased levels of homophobia known to exist in communities of color in the US.^{44,45} However, the sample for this study was predominantly white, with too few numbers in each of the ethnic and racial groups to allow a deeper investigation other than white versus other of the racial differences in IPV among MSM (as noted by the large confidence intervals around estimate for Black/ African American men). At the dyadic level, being in an inter-racial dyad was associated with increased levels of perpetration of physical IPV: again, the suggested causal pathway lies in the stress that may be placed on the relationship due to either perceived or experienced racism or homophobia in the LGBT community or communities of color. Of the main partner characteristics, main partner's age was found to be significantly associated with a reduction in

experiencing physical IPV. This finding is similar to studies of heterosexual couples, where violence decreases as the main partner's age increases.^{27,28}

The majority of the research on the social networks of gay and bisexual men has focused on how social networks influence sexual risk-taking behaviors.³⁴⁻³⁶ The results of this study point to minority stress operating at the social network level to shape the risk of IPV within male-male couples. Men with more closeted gay friends in their network were more likely to experience sexual violence, and men with more sex partners in their network were more likely to perpetrate physical and sexual violence. The latter result is similar to other studies that have linked perpetration of violence to a greater number of sexual partners among heterosexual individuals.^{47,47} Both of these results could be interpreted as minority stress: men whose social networks are primarily composed of non-out gay men may have less access to the wider LGBT community, as such may have lower access to positive role models, social support and culturally appropriate services. Additionally, these men may themselves be experiencing difficulties in disclosing their own sexual orientation, and this stress may manifest as IPV in relationships. Men whose social networks are largely composed of sex partners may have fewer opportunities to create positive social bonds and interactions, they may be less social visible in the LGBT community, may have fewer positive LGBT role models, or may themselves be struggling with issues around their sexual orientation, all of which may reduce their access to information and resources in the LGBT community. However, it is possible that the experience of IPV may act as a barrier to involvement or participation in social aspects of the LGBT community. Surprisingly, men whose network was slightly younger than them were less likely to experience physical IPV, perhaps suggesting that access to peers acts as a source of information and resources. Further

research is needed to understand the causal mechanisms between these social network measures and IPV. However, men with more gay friends in their network were less likely to perpetrate sexual IPV, further suggesting that access to the LGBT community, social support and resources may reduce the stressors that lead to IPV within male-male couples.

LIMITATIONS

There are several limitations to the current study. Venue based sampling was used to recruit the participants instead of random sampling; however previous studies have demonstrated that this form of sampling results in a sample of similar diversity as is found when using random sampling methods, and is a useful tool for sampling hard to reach populations – such as gay/bisexual men – for whom no pre-existing sample frame is available.⁴⁸ The small sample size and possible selection bias in both the decision to complete the questionnaire and the decision to answer the questions on IPV are also limitations. Kaschak⁴⁹ refers to the “*double closet*” that surrounds IPV in same-sex relationships; the dual burden of shame and silence surrounding both the discussion of IPV and the discussion of sexuality, hence it is possible that IPV may be under-reported. Additionally, the cross-sectional nature of the data means that only associations between dyadic characteristics and the reporting of IPV can be drawn, there are no causal relationships identified here. Further work, using longitudinal data, is required to further understand the relationships between dyadic and social network characteristics and IPV among gay and bisexual men.

CONCLUSION

The results highlight that there are influences on IPV within male-male couples that stretch beyond the commonly examined individual characteristics to include the characteristics of the partner, the differences in characteristics between partners, and the social networks within which individuals socialize. Clearly examining individual risk factors alone is not sufficient in addressing IPV among gay and bisexual men; this has already been shown for studies of IPV among heterosexual populations. There is clearly a need for further research into issues surrounding IPV in same-sex male relationships, who are a population vulnerable to high levels of IPV, and to understand the complex relationships that exist between IPV, dyadic characteristics and social networks. Many of the results point to the role of minority stress in shaping the risk of IPV in male-male couples: and future areas of research and intervention should focus on how structural stressors such as racism, homophobia and heteronormativity may manifest as IPV in same-sex dyads. Such information is vital for the development of effective interventions to reduce violence and improve health among gay and bisexual men in the US.

APPENDIX

Table 1. Distribution of covariates used in final models among men with main partners (n=403).

<u>Exposure</u>	<u>Mean/Range</u>	<u>%</u>
Respondent Characteristics		
<i>Age</i>	36.1 (18-71)	--
<i>Race</i>		
White	--	59.8
Black	--	25.6
Latino/Other	--	14.6
<i>Sexual Orientation</i>		
Homosexual/Gay	--	93.6
Bisexual	--	6.5
<i>HIV Status</i>		
Negative	--	72.7
<i>Education Level</i>		
High school or less	--	16.1
Some college or 2-year degree	--	29.0
College or more	--	54.8
<i>Employment Status</i>		
Employed	--	83.9
Social Network Characteristics		
<i>Network age Difference Ratio</i>		
3.4 or more years younger	--	29.0
3.25-0.2 years younger	--	18.6
Same age to 3 years older	--	28.8
3.2 or more years older	--	23.6
<i>Proportion of network comprised of friends in the closet</i>	0.1 (0-1)	--
<i>Proportion of network comprised of sex partners</i>	0.1 (0-1)	--
<i>Proportion of network comprised of gay friends</i>	0.7 (0-1)	--
<i>Proportion of network comprised of out gay friends</i>	1.0 (0-1)	--
<i>Proportion of network comprised of straight friends in relationships</i>	0.2 (0-1)	--
<i>Proportion of network comprised of gay friends in relationships</i>	0.3 (0-1)	--
<i>Proportion of network comprised of friends of the same race</i>	0.8 (0-1)	--
Main Partner Characteristics		
<i>Main Partner age</i>	35.9 (16-73)	--
<i>Main Partner Race</i>		
White	--	60.1
Black	--	27.5
Latino/Other	--	12.4
<i>Main Partner Sexual Orientation</i>		
Homosexual/Gay	--	92.8
Bisexual	--	5.2
Heterosexual/Straight/Unsure/Questioning/Other/Don't know	--	2.0
Dyadic Characteristics		
<i>Age Difference between Respondent and Main Partner</i>		
Main partner 5+ years younger	--	25.6

Main partner 1-4 years younger	--	22.1
Main partner same age to 4 years older	--	27.8
Main partner 5+ years older	--	24.6
<i>Same Race</i>	--	67.7
<i>Same Sexual Orientation</i>	--	88.6

Figure 1. Reported prevalence of experience or perpetration of physical and sexual intimate partner violence (IPV) among gay/bisexual men with main partners (n=403).

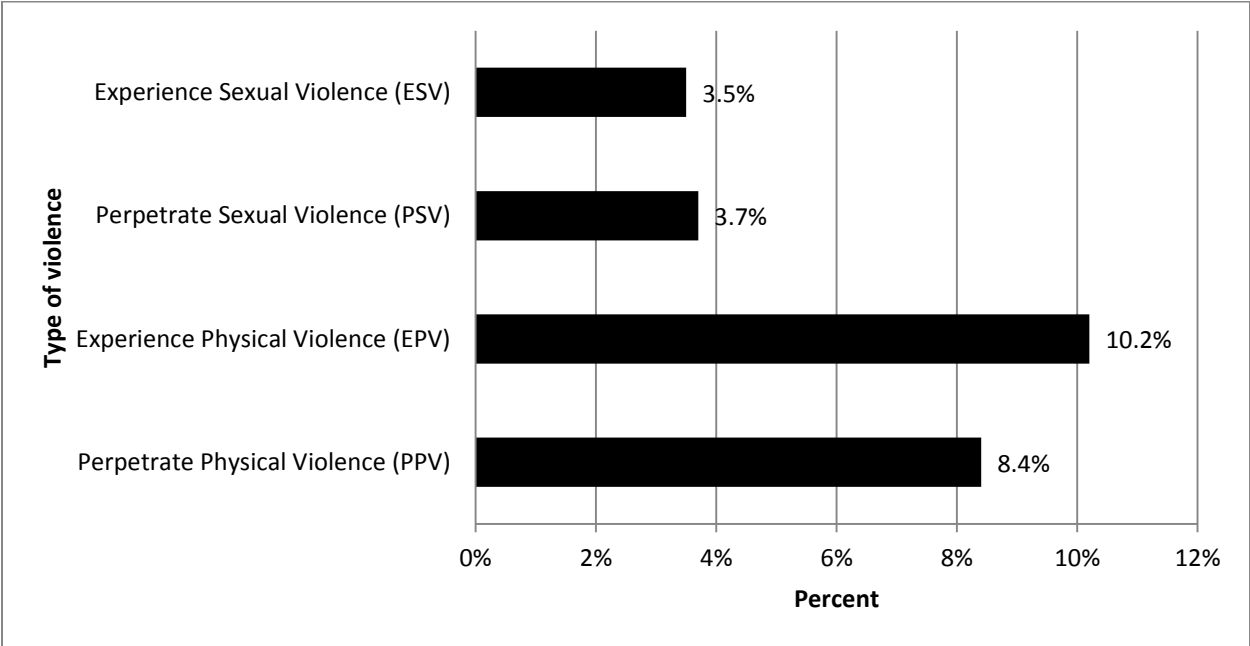


Table 2. Backwards Stepwise Logistic Regression modeling of experience and perpetration of physical and sexual IPV among gay/bisexual men with main partners (n=403).

Figures shown are Odds Ratios and 95% Confidence Intervals. Figures in *bold italics* are significant at the 5% level.

<u>Exposure</u>	<u>Experience Physical Violence</u>	<u>Experience Sexual Violence</u>	<u>Perpetrate Physical Violence</u>	<u>Perpetrate Sexual Violence</u>
	<u>OR (95% CI)</u>	<u>OR (95%)</u>	<u>OR (95%)</u>	<u>OR (95%)</u>
Age				
Age	0.69 (0.21, 2.31)	0.97 (0.91, 1.03)	0.92 (0.88, 0.97)	0.98 (0.93, 1.04)
Race				
White	1.00	1.00	1.00	1.00
Black	1.51 (0.66, 3.45)	2.33 (0.59, 9.18)	0.99 (0.41, 2.41)	7.91 (1.45, 43.23)
Latino/Other	1.03 (0.35, 3.08)	1.33 (0.22, 8.20)	0.62 (0.18, 2.07)	5.94 (0.91, 38.97)
Sexual Orientation				
Homosexual/Gay	1.00	1.00	1.00	1.00
Bisexual	0.69 (0.21, 2.31)	0.42 (0.05, 3.77)	1.49 (0.45, 4.91)	0.72 (0.12, 4.17)
HIV status				
Negative	1.00	1.00	1.00	1.00
Positive/Never tested/unknown	0.55 (0.24, 1.30)	0.63 (0.16, 2.45)	0.68 (0.27, 1.70)	0.78 (0.22, 2.75)
Education				
High school or less	1.00	1.00	1.00	1.00
Some college or 2-year degree	1.03 (0.42, 2.53)	2.44 (0.57, 10.34)	1.50 (0.55, 4.10)	1.53 (0.39, 6.02)
College or more	0.40 (0.15, 1.11)	0.45 (0.06, 3.41)	0.50 (0.16, 1.59)	0.41 (0.06, 2.95)
Employment Status				
Employed	1.00	1.00	1.00	1.00
Unemployed	0.74 (0.28, 2.00)	2.78 (0.74, 10.44)	0.60 (0.19, 1.89)	3.65 (1.03, 12.89)
Social Network Characteristics				
Network age difference ratio				
3.4 or more years younger	1.00	--	--	--
3.25-0.2 years younger	0.28 (0.08, 0.89)	--	--	--
Same age to 3 years older	0.73 (0.30, 1.77)	--	--	--
3.2 or more years older	0.71 (0.22, 2.24)	--	--	--
Proportion of network comprised of friends in the closet	--	8.90 (1.46, 54.37)	--	--
Proportion of network comprised of sex partners	--	--	4.47 (1.11, 17.94)	8.85 (1.45, 54.09)
Proportion of network comprised of gay friends	--	--	--	0.12 (0.02, 0.75)
Main Partner Characteristics				
Main partner age	0.93 (0.88, 0.99)	--	--	--
Dyadic Characteristics				
Same race	--	--	0.32 (0.14, 0.73)	--

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