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Determinants of Intimate Partner Violence Among Young Men Who Have Sex With Men: The P18 Cohort Study

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Intimate partner violence (IPV), a set of behaviors that includes acts of verbal, physical, and/or sexual aggression within the context of romantic or intimate relationships, is prevalent among adult heterosexual men and women (Black et al., 2012; Breiding, 2014; Truman & Morgan, 2015; Walters, Chen, & Breiding, 2013). Results from the National Intimate Partner and Sexual Violence Survey (NISVS), a nationally representative survey of American adults, indicate that 35% of heterosexual women and 28.7% of heterosexual men in the United States have been the victim of rape, physical violence, and/or stalking by an intimate partner in their lifetime (Black et al., 2012; Walters et al., 2013). IPV is also prevalent among adult gay and bisexual men, with findings from the NISVS indicating that 25.2% of gay men and 37.3% of bisexual men have experienced lifetime physical IPV victimization, and 59.6% of gay men and 53.0% of bisexual men have experienced psychological IPV victimization (Walters et al., 2013).

IPV also threatens the wellbeing of young gay, bisexual, and other non-identified young men who have sex with men (YMSM; Breiding, Basile, Smith, Black, & Mahendra, 2015). In previous studies of IPV among YMSM, prevalence rates of any type of lifetime IPV victimization (i.e., psychological, physical, or sexual victimization) have ranged from approximately 41% (Wong, Weiss, Ayala, & Kipke, 2010) to 57% (Freedner, Freed, Yang, & Austin, 2002). Few studies have examined lifetime IPV perpetration among YMSM, but one such study found that 12% of YMSM reported at least one type of lifetime IPV perpetration

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(Wong et al., 2010). Using cross-sectional data from the sample of YMSM that will be used in the present study, we previously found that 39.2% of YMSM reported lifetime IPV victimization and 30.5% reported at least one type of lifetime IPV perpetration (Stults, Javdani, Greenbaum, Barton, et al., 2015).

Correlates of IPV

IPV is associated with early exposure to domestic violence among heterosexual men and women (Renner & Whitney, 2012; Widom, Czaja, & Dutton, 2014). IPV is also associated with a range of health problems among heterosexual adult men and women, including depression, posttraumatic stress disorder (PTSD), and substance use (Archer, 2000; Basile & Smith, 2011; Black, 2011; Black et al., 2012; Campbell, 2002; Coker et al., 2002; Lewis & Fremouw, 2001; Tjaden & Thoennes, 2000; Truman & Morgan, 2015; Walters et al., 2013). The link between early experiences of violence and IPV later in life is also evident among adult gay and bisexual men (Craft & Serovich, 2005; Friedman, Marshal, Stall, Cheong, & Wright, 2008; Parsons, Grov, & Golub, 2012). Similarly, among adult gay and bisexual men, IPV is associated with mental health and psychosocial problems, such as depression, PTSD, and internalized stigma (Houston & McKirnan, 2007; Pantalone, Schneider, Valentine, & Simoni, 2012; Parsons et al., 2012), as well as health-risk behaviors, including substance use and condomless sex (Duncan et al., 2016; Parsons et al., 2012).

While there are fewer studies that examine IPV among YMSM, findings from previous cross-sectional studies indicate that mistreatment and exposure to violence during childhood are determinants of later experiences of IPV (Koblin et al., 2006; Stults, Javdani, Greenbaum, Barton, et al., 2015; Wong et al., 2010). Similar to those findings among adult gay and bisexual men, our previous research has demonstrated that IPV is associated with mental health and psychosocial problems among YMSM, including PTSD and gay-related stigma (Stults et al., 2015a). Additionally, previous cross-sectional studies have found that IPV is associated with health-risk behaviors among YMSM, including substance use (Stephenson, Khosropour, & Sullivan, 2010; Stults, Javdani, Greenbaum, Kapadia, & Halkitis, 2015; Wong et al., 2010) and condomless sex (Stults, Javdani, Greenbaum, Kapadia, & Halkitis, 2016).

Determinants of IPV

In addition to the aforementioned findings from cross-sectional studies, longitudinal studies of IPV among heterosexual men and women suggest that IPV is linked to histories of childhood mistreatment (Ehrensaft et al., 2003), and is associated with a range of health problems, including depression (Campbell & Soeken, 1999; Devries et al., 2013), PTSD (Silva, McFarlane, Soeken, Parker, & Reel, 1997), and substance use (Fals-Stewart, Golden, & Schumacher, 2003; Kilpatrick, Acierno, Resnick, Saunders, & Best, 1997). To our knowledge, there are no longitudinal studies that examine IPV and its association with mental health and psychosocial problems, as well as health-risk behaviors, among adult gay and bisexual men. Similarly, there are no studies that use longitudinal data to examine IPV among YMSM over time. Consequently, there is little understanding of the determinants of IPV among YMSM as they progress through emerging adulthood (i.e., the developmental

period from approximately age 18 to 25). This gap in the literature is problematic, as it limits the base of evidence that can be used to develop interventions to prevent or treat IPV. Furthermore, given the association of IPV and various health problems among YMSM (Stephenson et al., 2010; Stults et al., 2015a; Stults et al., 2015b; Stults et al., 2016; Wong et al., 2010), it is imperative to understand the ways in which these problems relate over time, in order to improve the health of YMSM.

Theoretical Framework

Three theoretical frameworks are useful in understanding the determinants of IPV among YMSM and will be applied in the current study. First, social learning theory (Bandura, 1973) suggests that YMSM who experience violence indirectly (e.g., witnessing domestic violence during childhood) and/or directly (e.g., being the victim of IPV during adolescence) during earlier developmental periods are more likely to be victims and/or perpetrators of violence in their future romantic relationships. Specifically, boys learn via modeling that violence can be an effective and acceptable means of resolving conflict and asserting dominance in interpersonal relationships. This behavior is reinforced throughout childhood, solidifying into relational patterns during adolescence and emerging adulthood. Additionally, boys' individual temperament (e.g., impulsivity) may play a role in the expression or inhibition of learned violent behaviors over time.

A theory of syndemics (Halkitis, Wolitski, & Millett, 2013) is salient to understanding how IPV relates to concomitant mental and physical health problems among YMSM, as well as the development of additional health problems in this population. A syndemic refers to synergistic epidemics, wherein multiple, mutually reinforcing health problems interact to disproportionately burden the person's overall health. This framework posits that IPV, mental health problems (e.g., depression, PTSD), psychosocial problems (e.g., stigma), and health-risk behaviors (e.g., substance use, condomless sex) interact and exacerbate the effects of one another over time. Furthermore, as originally proposed by Singer (1994), syndemics are intensified by structural inequalities and disproportionately impact historically marginalized groups, thus leading to the health disparities observed in stigmatized minority groups (e.g., YMSM). Within a syndemic framework, IPV can be conceptualized as part of a larger epidemic of violence impacting YMSM and other LGBTQ subgroups (e.g., hate crimes, mass shootings; Stults, Kupprat, Krause, Kapadia, & Halkitis, 2017).

Finally, this study is informed by Arnett's (2000) understanding of emerging adulthood, a proposed developmental period, from approximately age 18 to 25, that is situated between adolescence and young adulthood. According to this theory, emerging adults face a variety of developmental challenges, such as changes in financial and housing stability, and navigating new sexual and romantic relationships, that make them vulnerable to mental, physical, and behavioral health problems. These challenges are heightened for non-heterosexual emerging adults, such as YMSM, as they have the added burden of also negotiating a stigmatized sexual minority identity.

Aims

The present study will investigate determinants of IPV victimization and perpetration over a 36-month study follow-up period among a sample of YMSM living in New York City. More specifically, these analyses will examine the individual, relationship, mental health, psychosocial, and substance use factors associated with victimization and perpetration in separate models, in order to elucidate potential differences in these profiles. Additionally, the association between IPV victimization and perpetration over time will be assessed.

Methods

Study Design and Participants

Project 18 (P18) is a prospective cohort study of YMSM in the New York City metropolitan area. The objective of the study is to examine the development of syndemic conditions that include HIV, substance use and mental health problems, among a large sample of racially/ethnically diverse YMSM. Between June 2009 and May 2011, non-probability quota sampling by race/ethnicity was used to ensure a diverse sample and to allow for analyses to examine racial/ethnic differences in health-related behaviors and states. Active (e.g., use of social media sites, gay-identified events and venues, community centers, and city streets and parks) and passive (e.g., flyers, internet advertisement, snowball sampling) recruitment methods were used. During study recruitment, 2,068 individuals were screened for eligibility. In order to be eligible for the study, prospective participants had to be 18 or 19 years of age at the time of enrollment, be born biologically male, live in the New York City metropolitan area, report having had sex with a male partner in the 6 months preceding the screening, and report an HIV-negative serostatus. A total of ($N = 600$) participants were enrolled into the study and completed the baseline assessment. Participants were asked to participate in six subsequent waves of data collection at 6-month intervals (i.e., 6-, 12-, 18-, 24-, 30-, and 36-month assessments). Participants received cash incentives for their participation that increased incrementally across the study's follow-up period. Written informed consent was obtained prior to completing the baseline assessment. The New York University Institutional Review Board approved the study protocol and the study holds a federal Certificate of Confidentiality.

Sample

The sociodemographic composition of the sample has been described in previous publications (Stults, et al., 2015a; Halkitis, Bub, Stults, Bates, & Kapadia, 2018) and is displayed in Table 1. In summary, the sample is predominantly comprised of racial/ethnic minority YMSM ($n = 421$, 70.2%). Of those who identified as nonwhite, 16.5% identified as black non-Hispanic/Latinx, 38.2% as Hispanic/Latinx, and 15.2% as Asian/API/multi/other race. The sample was approximately equally distributed across perceived familial socioeconomic status (SES), with 33.4% of the sample identifying as coming from lower-, 37.1% from middle-, and 29.4% from upper-SES families.

Measures

At each assessment point, participants completed both audio computer-assisted self-interview (ACASI) and researcher-assisted paper-and-pen measures. Participants completed measures of IPV, individual, relationship, psychosocial, and mental health factors using ACASI, due to the sensitive nature of the questions and to avoid information bias. Participants reported on substance use behaviors using the Timeline Followback (Sobell, Brown, Leo, & Sobell, 1996), a researcher-assisted calendar-based instrument.

Individual factors.

At baseline, participants provided information on their identified race and ethnicity, as well as their perceived familial socioeconomic status.

Childhood mistreatment was assessed at baseline using six items from the Mistreatment by Adults Scale from the National Longitudinal Study of Adolescent Health Wave III questionnaire (Harris & Udry, 2001). These questions assessed the frequency of parental neglect and emotional, physical, and sexual abuse that occurred before the sixth grade (e.g., “How often had your parents or other adult care-givers slapped, hit, or kicked you?”). Due to inconsistent item metrics, the items were recoded into six dichotomous variables and then summed to create a composite variable, with higher scores indicating a greater range of experiences of childhood mistreatment. This procedure has been used in previous studies among this sample (Stults et al., 2015).

Impulsivity was measured at the baseline, 12-, 24-, and 36-month waves using the Dysfunctional Impulsivity Scale (Dickman, 1990), which consists of 12 true or false items (e.g., “I will often say whatever comes into my head without thinking first”). For the purposes of these analyses, for assessment waves where impulsivity was not measured (i.e., the 6-, 18-, and 30-month assessments), participants’ impulsivity scores were carried forward from the previous assessment wave. This procedure has been used in previous studies regarding impulsivity (Hollander, Pallanti, Allen, Sood, & Rossi, 2005) and it is deemed to be an appropriate method of data imputation for the purposes of multivariable modeling (Engels & Diehr, 2003). A total impulsivity score was calculated by summing the 12 items, and the measure demonstrated high internal consistency in the current study (Cronbach’s alphas ranged from .80 to .86).

Relationship-level factor.

Relationship status was measured at every time point using a single dichotomous item that assessed whether the participant was in a relationship with a male partner in the last 6 months (e.g., “Have you had a boyfriend, male partner, or male lover in the last 6 months?”). A modified version of this item was used in previous studies using this sample to assess lifetime relationship status (Stults et al., 2015).

Psychosocial factors.

Gay-related stigma was measured at every study wave using Wright’s modified version of Berger’s Revised HIV Stigma Scale (Wright, Naar-King, Lam, Templin, & Frey, 2007). Each item was measured using a 4-point Likert scale from *strongly disagree* to *strongly*

agree. Scores were summed for each subscale, with higher scores indicating greater personal and public gay-related stigma. The personal gay-related stigma subscale demonstrated high internal consistency (Cronbach's alphas ranged from .81 to .87) and the public gay-related stigma demonstrated acceptable internal consistency (Cronbach's alphas ranged from .75 to .86) across assessment waves.

Mental health factors.

Depression was measured at the baseline, 12-, 24-, and 36-month waves using the 21-item Beck Depression Inventory (BDI; Beck, Steer, & Carbin, 1988). The BDI consists of 21 statements with answer choices ranging from 0–3, with higher numbers reflecting greater levels of depressive symptoms experienced in the last two weeks. For the purposes of these analyses, for assessment waves where depression was not measured (i.e., the 6– 18-, and 30-month assessments), participants' depression scores were carried forward from the previous assessment wave. This procedure has been used in previous studies of depression (Shelton et al., 2001) and it is deemed to be an appropriate data imputation method to complete multivariable modeling (Engels & Diehr, 2003). Item values were summed to create a depression composite variable, which demonstrated high internal consistency across study waves (Cronbach's alphas ranged from .81 to .87).

PTSD was also measured at the baseline, 12-, 24-, and 36-month time points using the 10-item Trauma Awareness and Treatment Center (TATC) Posttraumatic Stress Questionnaire (TATC, 2014). Like for depression and impulsivity, for assessment waves where PTSD was not measured, participant's previous scores were carried forward (Engels & Diehr, 2003). Items were measured on a 5-point Likert scale, with responses regarding symptoms of PTSD ranging from 1 (*not at all*) to 5 (*extremely*). Item values were summed to create a PTSD composite variable, which demonstrated high internal consistency across assessment points (Cronbach's alphas ranged from .88 to .91).

Substance Use Behaviors.

Substance use in the last 30 days was measured using the Timeline Followback (TLFB; (Sobell et al., 1996), a measure that captures the total number of days that various substances were used by participants in the 30 days preceding the assessment. Based on previous analyses using this sample (Stults et al., 2015b), as well as the low base rates of use of substances other than alcohol and marijuana, substances were grouped into three categories: alcohol, marijuana, and other substances [cocaine, crack cocaine, methamphetamine, ecstasy, heroin, gammahydroxybutyric acid (GHB), ketamine, rohypnol, and misuse of prescription drugs (i.e., opiates, benzodiazepines, barbiturates, stimulants)]. The three recent substance use variables were treated as continuous variables for these analyses.

Intimate partner violence.

Lifetime history of IPV was assessed at baseline using three yes/no questions pertaining to IPV victimization (*Have you ever been insulted or verbally abused by a lover or boyfriend? Have you ever been hit, kicked, or slapped by a lover or boyfriend? Have you ever been sexually abused or raped by a lover or boyfriend?*) and three pertaining to perpetration

(Have you ever insulted or verbally abused a lover or boyfriend? Have you ever hit, kicked, or slapped a lover or boyfriend? Have you ever sexually abused or raped a lover or boyfriend?), Feldman, Díaz, Ream, & El-Bassel, 2008). This measure has been used in previous studies of IPV using this sample (Stults et al., 2015a; Stults et al., 2015b) and was selected because it captures multiple dimensions (e.g., psychological, physical, sexual) of IPV victimization and perpetration. For the purposes of these analyses, the three victimization and three perpetration items were collapsed to create one dichotomous composite variable that captures any type of lifetime experience of IPV at baseline, hereafter referred to as lifetime IPV. This categorization of lifetime IPV allows for an examination of the relative influence of any past IPV exposure on future IPV experiences.

Last 6 month IPV was measured at every follow-up assessment (i.e., excluding baseline) using modified versions of the lifetime IPV questions that were asked at baseline. Thus, three questions pertaining to experiences of IPV victimization in the last 6 months (e.g., “Have you been hit, kicked, or slapped by a lover or boyfriend in the last 6 months?”) and three questions pertaining to IPV perpetration in the last 6 months (e.g., “Have you been sexually abused or raped a lover or boyfriend in the last 6 months?”) were asked at each follow-up wave. The three victimization questions were collapsed to create a dichotomous variable measuring last 6 month IPV victimization. The three perpetration questions were collapsed to create a dichotomous variable measuring last 6 month IPV perpetration.

Analytic Plan

First, descriptive statistics were computed for all variables of interest. Descriptive statistics for all independent and dependent variables can be found in Table 1. Second, bivariable associations between last 6 month IPV victimization and perpetration were calculated for each study follow-up wave, using Pearson product-moment correlation statistics. Next, generalized estimating equation (GEE) analyses were used to separately assess the independent associations between each predictor variable and the dependent variables of interest (last 6 month IPV victimization and last 6 month perpetration). Those variables significantly associated with victimization and perpetration were used in the multivariable modeling, although the PTSD variable was dropped from the final models due to multicollinearity with depression ($r = .707, p < .001$). Given the widespread acceptance of the BDI for use in research and clinical applications (Beck et al., 1988), this measure of mood symptomology was retained for the multivariable GEE models in lieu of the measure of PTSD. Finally, fully adjusted GEE models were constructed to assess the association between the relevant independent variables and IPV across the 6 time points. SPSS Version 25 was used for all analyses. GEE was selected for the present study because of the robustness of this approach in accounting for the dependency of observations resulting from multiple measurements of the same individual taken over time (Hardin & Hilbe, 2003; Ziegler, 2011).

Results

As shown in Table 1, prevalence of last 6 month IPV victimization ranges from 8.9–13.1%, with a mean prevalence rate of 11.2%. Similarly, prevalence of last 6 month IPV

perpetration ranges from 7.2–10.6%, with a mean prevalence rate of 9.3%. Additionally, IPV victimization and perpetration were highly correlated at each wave of the study's 36-month follow-up period ($r = .65-.81, p < .001$).

IPV Victimization

As shown in Table 2, unadjusted odds ratios indicate significant independent associations between nearly all of the independent variables with last 6 month IPV victimization, with the exception of alcohol use. Results from the multivariable model predicting last 6 month IPV victimization from the retained independent variables demonstrated that IPV victimization was associated with individual, relationship, mental health, psychosocial, and substance use behavior factors across the 36-month study follow-up period. Specifically, black YMSM were 59% less likely to experience IPV victimization (AOR = 0.41, 95% CI = 0.24, 0.70), as compared to Hispanic/Latinx YMSM. YMSM who reported lifetime IPV at baseline were much more likely to experience IPV victimization during the study follow-up period (AOR = 3.20, 95% CI = 2.22, 4.60), as compared to those who had no history of IPV at baseline. Relationship status (i.e., having a boyfriend, male partner, or male lover in the last 6 months) was also strongly associated with last 6 month IPV victimization over time (AOR = 2.97, 95% CI = 2.08, 4.24). With regards to mental health and psychosocial problems, higher levels of depression (AOR = 1.02, 95% CI = 1.01, 1.04) and public gay-related stigma (AOR = 1.19, 95% CI = 1.07, 1.32) were also associated with IPV victimization. Finally, more frequent other substance use was associated with IPV victimization across the study follow-up period (AOR = 1.07, 95% CI = 1.04, 1.10).

IPV Perpetration

Also as shown in Table 2, unadjusted odds ratios indicate significant independent associations between most of the independent variables and last 6 month IPV perpetration, with the exception of personal gay-related stigma and alcohol use. Results from the multivariable model predicting last 6 month IPV perpetration from the retained independent variables demonstrated that IPV perpetration was associated with individual, relationship, mental health, psychosocial, and substance use behavior factors across the 36-month study follow-up period. Specifically, black YMSM were 55% less likely and white YMSM were 56% less likely to report IPV perpetration (AOR = 0.45, 95% CI = 0.25, 0.78; AOR = 0.44, 95% CI = 0.25, 0.78), as compared to Hispanic/Latinx YMSM. YMSM who reported lifetime IPV at baseline were much more likely to report IPV perpetration during the study follow-up period (AOR = 3.20, 95% CI = 2.09, 4.90), as compared to those who had no history of IPV at baseline. Relationship status (i.e., having a boyfriend, male partner, or male lover in the last 6 months) was also strongly associated with last 6 month IPV perpetration over time (AOR = 3.70, 95% CI = 2.40, 5.71). With regards to mental health and psychosocial problems, higher levels of depression (AOR = 1.02, 95% CI = 1.00, 1.04) and public gay-related stigma (AOR = 1.16, 95% CI = 1.04, 1.29) were also associated with IPV perpetration. Finally, more frequent marijuana (AOR = 1.02, 95% CI = 1.01, 1.04) and other substance use (AOR = 1.05, 95% CI = 1.01, 1.09) were associated with IPV perpetration across the study follow-up period.

Discussion

In this paper, we sought to examine longitudinal determinants of IPV victimization and perpetration among YMSM. First, we found that IPV victimization and perpetration are prevalent and highly correlated throughout emerging adulthood. These findings are consistent with our previous cross-sectional studies among this population (Stults et al., 2015a; Stults et al., 2015b) and suggest that patterns of victimization and perpetration may be mutually reinforcing. Further, these findings also indicate that the profiles of victims and perpetrators are not discrete. Rather, YMSM both perpetrate and are the victims of abuse in their romantic relationships.

Second, we found that while differences by socioeconomic status diminished after controlling for other relevant factors, some differences by race/ethnicity remained. Namely, black YMSM were less likely to report IPV victimization and perpetration, and white YMSM were less likely to report perpetration, as compared to their Hispanic/Latinx peers over time. The reasons for these differences are unclear. While the finding that, in comparison to their white peers, Hispanic/Latinx YMSM are at greater risk for IPV is consistent with the minority stress model (Meyer, 1995), the finding that black YMSM are at reduced risk is not. Thus, the differences by race/ethnicity may be best explained by factors that were not examined in the present study.

Perhaps most notably, we found that early experiences of IPV were the most robust predictor of later experiences of IPV. Specifically, YMSM who reported lifetime IPV at baseline were more than 3 times as likely to report IPV victimization and perpetration during the study's 36-month follow-up period. The strong association between early experiences of IPV and later experiences of IPV has been observed in longitudinal studies of adult heterosexual women and men (Field & Caetano, 2003), as well as in studies of young women as they transition from adolescence to emerging adulthood (Smith, White, & Holland, 2003). Thus, IPV during adolescence appears to be especially influential in shaping a pattern of violence that continues into emerging adulthood among YMSM. Consistent with social learning theory (Bandura, 1973), YMSM may learn that violence can be instrumental in resolving conflict and asserting control within their romantic relationships. This finding also suggests that it may be difficult to interrupt cycles of violence among YMSM with histories of early IPV, if these behaviors have hardened into fixed patterns during emerging adulthood.

Relationship status was also related to IPV victimization and perpetration across time. More specifically, YMSM who reported being in a romantic relationship in the last 6 months were more likely to report IPV in the last 6 months. Given the labels used in the relationship status item (e.g., boyfriend, male partner, or male lover), this finding suggests that IPV may primarily occur within the context of defined romantic relationships, as opposed to undefined casual relationships or hookups. However, given that we did not ask participants to categorize the relationship(s) in which violence occurred, these data do not allow us to compare different relationship types in relation to IPV. Future studies may be improved by gathering more specific relationship-level information, in order to determine if certain relationship types confer greater risk for IPV.

Depressive symptomology was also related to IPV throughout emerging adulthood. This finding is consistent with the results of a review of longitudinal studies of IPV and depression among heterosexual men and women which found that IPV was associated with incident depression and that depression often predicted experiences of IPV (Devries et al., 2013). The social isolation that is common during episodes of depression may limit the number of opportunities for friends and family to intervene and to provide much needed support during periods of relationship tumult (Carlson, McNutt, Choi, & Rose, 2002). Depression may also reduce one's sense of self-efficacy to resolve conflicts and to stop incidents of violence. Previous research has demonstrated that perceived powerlessness is associated with IPV among heterosexual women (Filson, Ulloa, Runfolo, & Hokoda, 2010). Finally, as in other populations, feelings of hopelessness may make it harder for YMSM to seek appropriate help or to leave violent relationships (Clements, Sabourin, & Spiby, 2004).

Gay-related stigma, the internalized negative beliefs about being gay or bisexual, is also a significant predictor of IPV during emerging adulthood among YMSM. The relationship between stigma and IPV has been previously documented in a study of adult gay men and lesbian women (Carvalho, Lewis, Derlega, Winstead, & Viggiano, 2011). Gay-related stigma may be associated with depression and lowered self-esteem among YMSM, as has been observed in adult gay men (Lewis, Derlega, Griffin, & Krowinski, 2003), and it may shape their beliefs regarding their ability to interrupt cycles of violence. Furthermore, gay-related stigma may lead to increased hostility toward same-sex partners, making acts of violence more likely.

Finally, marijuana and other substance use was associated with IPV across time among this sample of YMSM. The relationship between marijuana use and IPV has been observed in a nationally representative longitudinal study of adolescent and emerging adult men and women (Reingle, Staras, Jennings, Branchini, & Maldonado-Molina, 2012). The association of illicit substance use and IPV has been documented in other longitudinal studies of adolescents and emerging adults (Temple & Freeman Jr, 2010; Temple, Shorey, Fite, Stuart, & Le, 2013). While the present study does not identify the mechanisms that underlie the relationship between IPV and substance use, it is possible that some substances may be used to cope with experiences of IPV. Alternatively, the disinhibition resulting from some substances may lead to increased aggression. Using a syndemic framework (Halkitis et al., 2013), it is perhaps most likely that the two behavioral health problems are synergistic and exacerbate the effects of one another. Future studies may be improved by gathering event-level information on IPV and substance use, in order to better understand how these patterns of behaviors relate to one another.

Taken together, these findings are consistent with the theoretical frameworks undergirding this study. Specifically, these findings support the importance of early learning in relation to aggressive behavior later in life posited by social learning theory (Bandura, 1973). Also, consistent with Arnett's (2000) conceptualization of emerging adulthood, these findings underline the vulnerability of this developmental period, as early experiences of IPV were strongly linked to later experiences of IPV throughout this developmental period. Finally, these findings provide further evidence of a syndemic among YMSM, as experiences of IPV

were significantly associated with depression, gay-related stigma, and substance use among this sample of YMSM over time.

Implications

These findings provide the basis for several suggestions for researchers, practitioners, health organizations, and policymakers. First, given the prevalence of IPV victimization and perpetration over time, these findings underscore the importance of raising awareness about IPV among YMSM. For example, a social media campaign, like the It Gets Better Project, whose videos have been viewed more than 50 million times, might be useful in bringing more attention to this behavioral health epidemic among YMSM (It Gets Better Project, 2010). Given our findings regarding the connection between early experiences of IPV and later experiences of IPV, prevention and intervention efforts should target YMSM early during their development, before their first experiences with relationship violence, in order to be most impactful. Indeed, HIV-prevention programs, such as Mpowerment Projects, have leveraged the benefits of early intervention in order to reduce sexual risk behaviors among YMSM, and they may be a promising venue for IPV prevention programming (Kegeles, Hays, & Coates, 1996). College/university counseling centers should also consider adding IPV prevention and intervention programming to their portfolio of services, given the prevalence of IPV among college-aged sexual minority men. Also, YMSM may benefit from learning how IPV is manifested among young men. Specifically, it may help YMSM to learn how to recognize the signs of psychological abuse in male same-sex relationships, as well as signs of physical and sexual abuse. Additionally, increasing awareness of IPV may help to reduce the stigma associated with IPV and the resultant isolation experienced by YMSM victims and/or perpetrators. Furthermore, local organizations that provide IPV-related services (e.g., domestic violence shelters) should increase their efforts to reach YMSM and to make them aware of the resources that they may be eligible for.

Second, these findings indicate the importance of intervening early to interrupt cycles of violence once they have started. Given the significant overlap between experiences of victimization and perpetration among YMSM, interventions should target both sets of behaviors, as they may be mutually reinforcing. Given the association of depression and IPV over time, interventions that target perceived helplessness, hopelessness, and social isolation may assist YMSM in ending cycles of abuse in their relationship or leaving violent relationships altogether. Also, given our findings regarding gay-related stigma, interventions may be improved by addressing the internalized negative attitudes about being gay or bisexual, and assisting YMSM in adopting more LGBTQ-affirming beliefs (Craig, Austin, & Alessi, 2013; Pachankis, Hatzenbuehler, Rendina, Safren, & Parsons, 2015). Furthermore, given the association of IPV and other syndemic health problems among adult gay and bisexual men, such as substance abuse and HIV/STI infection (Houston & McKirnan, 2007; Pantalone et al., 2012; Parsons et al., 2012), IPV interventions should also address substance use and sexual risk behaviors, as these have been successfully incorporated into school-based IPV interventions for adolescents (Foshee et al., 2004; Wolfe, Crooks, Jaffe, & et al., 2009).

Finally, given our findings regarding gay-related stigma and IPV, policymakers should advocate for policies that improve the sociopolitical climate for LGBTQ people. Specifically, policymakers should support anti-discrimination measures and bolster hate crime laws, as these and other social climate efforts have measurable impacts on the health of LGBTQ adults (Hatzenbuehler, Keyes, & Hasin, 2009; Hatzenbuehler, McLaughlin, Keyes, & Hasin, 2010) and youth (Hatzenbuehler, 2011). Also, lawmakers should support increased access to culturally competent healthcare for young LGBTQ people (Mayer et al., 2008). Additionally, adult LGBTQ people should consider careers in public service, in order to provide younger people with positive LGBTQ role models. Such positive LGBTQ visibility could potentially dampen the impact of gay-related stigma and the resultant behavioral health problems during adolescence and emerging adulthood.

Strengths and Limitations

The present study of longitudinal determinants of IPV among YMSM is strengthened by several design characteristics and positively contributes to the extant literature. First, to our knowledge, this is the first study to use longitudinal data to examine IPV among young gay, bisexual, or other non-identified YMSM. As such, this study provides much needed data regarding IPV over time among YMSM, thus filling in gaps in the existing knowledgebase. Second, this study went beyond a descriptive longitudinal analysis of IPV among YMSM, by identifying determinants of IPV over time. This distinction is important, as these determinants of IPV may be helpful in creating IPV interventions, tailored for the unique needs of YMSM. These findings may also be helpful modifying existing interventions for use with YMSM populations. A third strength of this study is its use of a racially/ethnically and socioeconomically diverse sample. By using a more diverse sample, we were able to capture a wider range of IPV and IPV-related experiences among YMSM.

The strengths of this study should be considered in light of its limitations. First, it is important to note that our measure of IPV did not capture the frequency or severity of IPV victimization and perpetration experiences. Also, given that our measure of IPV contains items that refer to both observable behaviors (e.g., “Have you ever been hit, kicked, or slapped by a lover or boyfriend?”), as well perceptions of abuse (e.g., “Have you ever sexually abused or raped a lover or boyfriend?”), there may be some measurement error, as some of our participants may have over-reported experiences of IPV, while others may have under-reported. Further, by collapsing our three victimization and three perpetration items into two dichotomous variables for the purposes of these analyses, we may have lost some information related to the correlates of specific experiences of IPV victimization and perpetration. Future researchers may wish to use more comprehensive measures of IPV, in order to reduce potential measurement error. It should also be noted that our measures of relationship status and IPV do not capture partner-level information. Thus, it is unclear if participants are reporting violence in a relationship with the same person over time, or if IPV is occurring within relationships with multiple different partners. Future studies can be improved by capturing relationship and partner-specific information, in order to better elucidate patterns of violence over time among YMSM.

Additionally, given that some variables were not measured at every time point (e.g., impulsivity, depression, PTSD), previous scores were carried forward into waves with incomplete information, in order to conduct these multivariable analyses. While this method has been used in previous longitudinal studies measuring similar constructs (Engels & Diehr, 2003; Hollander et al., 2005; Shelton et al., 2001), future studies may be improved by ensuring that all variables of interest are measured at every time point.

Finally, while we view the racial/ethnic diversity of this sample as a major strength, we recognize that grouping non-Hispanic Asian, Pacific Islander, Native American, and multiracial participants together into a single category lacks specificity and reduces our ability to understand potential differences in the experiences of these men. While this grouping decision was made in order to improve our multivariable modeling and to increase the ease with which these findings may be interpreted, we encourage future researchers to consider disaggregating such groupings into more specific racial/ethnic categories.

Conclusion

The prevalence of IPV among YMSM across the period of emerging adulthood is troubling and warrants additional attention from researchers, practitioners, health organizations, and policymakers. The present study corroborated past research which indicates that early experiences of violence are highly predictive of later experiences of violence. The present study also extends previous research by identifying factors that are associated with IPV victimization and perpetration longitudinally (e.g., depression, gay-related stigma).

These findings may be useful in creating IPV awareness campaigns for YMSM, as well as in developing IPV-related interventions. They may also inform future research projects, aimed at improving our understanding of IPV among YMSM. Finally, policymakers may use these findings to further bolster an evidence base to advocate for LGBTQ-affirming policies.

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Table 1.

Sociodemographic Characteristics, Prevalence Of Last 6 Month IPV, And Descriptive Statistics Of Mental Health And Psychosocial Factors, By Assessment Wave, Among A Sample Of (N = 600) YMSM In New York City During A 36-month Study Follow-Up Period.

| | 6 Month (n = 514) | | 12 Month (n = 504) | | 18 Month (n = 498) | | 24 Month (n = 497) | | 30 Month (n = 468) | | 36 Month (n = 484) | |
|--------------------------|-------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|
| | Vic N (%) | Perp N (%) | Vic N (%) | Perp N (%) | Vic N (%) | Perp N (%) | Vic N (%) | Perp N (%) | Vic N (%) | Perp N (%) | Vic N (%) | Perp N (%) |
| Total | 67 (13.1) | 51 (10.0) | 63 (12.5) | 53 (10.6) | 52 (10.5) | 43 (8.7) | 56 (11.3) | 49 (9.9) | 52 (11.1) | 43 (9.2) | 43 (8.9) | 35 (7.2) |
| Race/ethnicity | | | | | | | | | | | | |
| Hispanic/Latinx | 31 (46.3) | 22 (43.1) | 33 (52.4) | 29 (54.7) | 27 (51.9) | 23 (53.5) | 29 (51.8) | 31 (63.3) | 25 (48.1) | 24 (55.8) | 19 (44.2) | 20 (57.1) |
| Black | 10 (14.9) | 11 (21.6) | 4 (6.3) | 5 (9.4) | 9 (17.3) | 8 (18.6) | 5 (8.9) | 3 (6.1) | 6 (11.5) | 5 (11.6) | 6 (14.0) | 4 (11.4) |
| Asian/API/Multi | 8 (11.9) | 5 (9.8) | 9 (14.3) | 10 (18.9) | 4 (7.7) | 5 (11.6) | 3 (5.4) | 7 (14.3) | 7 (13.5) | 5 (11.6) | 6 (14.0) | 5 (14.3) |
| White | 18 (26.9) | 13 (25.5) | 17 (27.0) | 9 (17.0) | 12 (23.1) | 7 (16.3) | 19 (33.9) | 8 (16.3) | 14 (26.9) | 9 (20.9) | 12 (27.9) | 6 (17.1) |
| SES | | | | | | | | | | | | |
| Lower | 32 (47.8) | 24 (47.1) | 26 (41.3) | 22 (41.5) | 23 (44.2) | 19 (44.2) | 21 (37.5) | 19 (38.8) | 23 (44.2) | 20 (46.5) | 19 (44.2) | 18 (51.4) |
| Middle | 23 (34.3) | 18 (35.3) | 23 (36.5) | 18 (34.0) | 15 (28.8) | 13 (30.2) | 15 (26.8) | 17 (34.7) | 18 (34.6) | 12 (27.9) | 10 (23.3) | 9 (25.7) |
| Upper | 12 (17.9) | 9 (17.6) | 14 (26.9) | 13 (24.5) | 14 (26.9) | 11 (25.6) | 20 (35.7) | 13 (26.5) | 11 (21.2) | 11 (25.6) | 14 (32.6) | 8 (22.9) |
| Lifetime IPV | | | | | | | | | | | | |
| No | 17 (25.4) | 13 (25.5) | 20 (31.7) | 16 (30.2) | 18 (34.6) | 13 (30.2) | 16 (28.6) | 14 (28.6) | 15 (28.8) | 12 (27.9) | 15 (34.9) | 12 (34.3) |
| Yes | 50 (74.6) | 38 (74.5) | 43 (68.3) | 37 (69.8) | 34 (65.4) | 30 (69.8) | 40 (71.4) | 35 (71.4) | 37 (71.2) | 31 (72.1) | 28 (65.1) | 23 (65.7) |
| Relationship Status | | | | | | | | | | | | |
| No | 9 (13.4) | 5 (9.8) | 7 (11.5) | 8 (15.7) | 7 (13.7) | 6 (14.3) | 6 (10.7) | 5 (10.2) | 6 (11.5) | 4 (9.3) | 4 (9.3) | 3 (8.6) |
| Yes | 58 (86.6) | 46 (90.2) | 54 (88.5) | 43 (84.3) | 44 (86.3) | 36 (85.7) | 50 (89.3) | 44 (89.8) | 46 (88.5) | 39 (90.7) | 39 (90.7) | 32 (91.4) |
| Correlation (r) vic-perp | .66** | | .65** | | .81** | | .65** | | .76** | | .67** | |
| | M(SD) | | M(SD) | | M(SD) | | M(SD) | | M(SD) | | M(SD) | |
| Impulsivity | 8.92 (2.76)* | | 8.72 (2.92) | | 8.72 (2.92)* | | 9.22 (2.79) | | 9.22 (2.79)* | | 9.08 (2.81) | |
| Depression | 9.95 (8.79)* | | 9.11 (9.10) | | 9.11 (9.10)* | | 8.26 (9.06) | | 8.26 (9.06)* | | 8.26 (9.44) | |
| PTSD | 16.85 (7.07)* | | 15.41 (6.73) | | 15.41 (6.73)* | | 14.77 (6.54) | | 14.77 (6.54)* | | 14.47 (6.45) | |
| Personal GRS | 6.23 (2.24) | | 5.71 (2.31) | | 6.22 (2.20) | | 5.36 (2.24) | | 5.99 (2.22) | | 5.64 (2.36) | |
| Public GRS | 4.33 (1.43) | | 3.94 (1.55) | | 3.86 (1.43) | | 3.70 (1.466) | | 3.81 (1.46) | | 3.57 (1.46) | |
| Alcohol | 4.23 (4.68) | | 4.76 (5.25) | | 5.16 (5.19) | | 5.63 (6.09) | | 6.03 (6.26) | | 6.59 (6.49) | |
| Marijuana | 5.17 (8.88) | | 5.60 (9.41) | | 6.86 (10.47) | | 6.90 (10.60) | | 7.66 (11.03) | | 8.14 (11.53) | |

| | 6 Month (n = 514) | | 12 Month (n = 504) | | 18 Month (n = 498) | | 24 Month (n = 497) | | 30 Month (n = 468) | | 36 Month (n = 484) | |
|------------------|-------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|------------|
| | Vic N (%) | Perp N (%) | Vic N (%) | Perp N (%) | Vic N (%) | Perp N (%) | Vic N (%) | Perp N (%) | Vic N (%) | Perp N (%) | Vic N (%) | Perp N (%) |
| Other substances | 0.68 (2.45) | | 0.65 (2.23) | | 0.82 (2.85) | | 0.96 (3.71) | | 0.62 (1.89) | | 0.72 (2.18) | |

Vic, Victimization; Perp, Perpetration; GRS, gay-related stigma; PTSD, posttraumatic stress disorder;

* value carried forward from previous assessment wave

Table 2.

Unadjusted OR (95% CI) And Parameter Estimates [Adjusted OR (AOR), 95% CI] From Generalized Estimating Equation (GEE) Analyses Examining Determinants Of Last 6 month IPV Victimization And Perpetration Among (n = 526) YMSM In New York City During A 36-month Study Follow-Up Period.

| | Victimization | | Perpetration | |
|------------------------|---------------------|--------------------------------|---------------------|---------------------|
| | UOR (CI) | AOR (CI) | UOR (CI) | AOR (CI) |
| Race/ethnicity | | | | |
| Hispanic/Latinx | 1 | 1 | 1 | 1 |
| Black | 0.64* (0.42, 0.96) | 0.41** (0.24, 0.70) | 0.53* (0.31, 0.90) | 0.45** (0.25, 0.78) |
| Asian/API/multi | 0.55* (0.33, 0.94) | 0.71 (0.38, 1.32) | 0.65 (0.39, 1.10) | 0.86 (0.44, 1.67) |
| White | 0.49** (0.30, 0.83) | 0.86 (0.55, 1.34) | 0.40** (0.24, 0.64) | 0.44** (0.25, 0.78) |
| SES | | | | |
| Lower | 1 | 1 | 1 | 1 |
| Middle | 0.65* (0.43, 0.98) | 0.85 (0.56, 1.29) | 0.61* (0.40, 0.93) | 0.93 (0.59, 1.48) |
| Upper | 0.60* (0.40, 0.90) | 0.89 (0.55, 1.43) | 0.58* (0.36, 0.94) | 1.00 (0.56, 1.79) |
| Lifetime IPV | 4.25** (3.03, 5.96) | 3.20** (2.22, 4.60) | 4.47** (3.09, 6.47) | 3.20** (2.09, 4.90) |
| Childhood mistreatment | 1.26** (1.11, 1.43) | 1.01 (0.87, 1.17) | 1.37** (1.20, 1.56) | 1.08 (0.91, 1.27) |
| Relationship status | 2.73** (1.99, 3.75) | 2.97** (2.08, 4.24) | 2.99** (2.05, 4.35) | 3.70** (2.40, 5.71) |
| Impulsivity | 1.08** (1.04, 1.13) | 0.98 (0.93, 1.03) | 0.91** (0.87, 0.95) | 0.95 (0.90, 1.01) |
| Depression | 1.04** (1.03, 1.05) | 1.02** (1.01, 1.04) | 1.03** (1.02, 1.05) | 1.02** (1.00, 1.04) |
| PTSD | 1.06** (1.04, 1.08) | | 1.06** (1.04, 1.08) | |
| Personal GRS | 1.07* (1.00, 1.14) | 1.05 (0.98, 1.12) | 1.05 (0.98, 1.12) | |
| Public GRS | 1.21** (1.11, 1.31) | 1.19** (1.07, 1.32) | 1.18** (1.07, 1.29) | 1.16* (1.04, 1.29) |
| Alcohol | 1.01 (0.99, 1.03) | | 1.00 (0.98, 1.03) | |
| Marijuana | 1.02* (1.00, 1.03) | 1.01 [^] (1.00, 1.03) | 1.03** (1.01, 1.04) | 1.02** (1.01, 1.04) |
| Other substances | 1.07** (1.04, 1.10) | 1.07** (1.04, 1.10) | 1.03* (1.00, 1.06) | 1.05** (1.01, 1.09) |
| Intercept | 0.13** (0.10, 0.15) | 0.01** (0.00, 0.03) | 0.10** (0.09, 0.12) | 0.01** (0.00, 0.04) |

* $p < 0.01$;

** $p < 0.001$; UOR, unadjusted odds ratio; AOR, adjusted odds ratio; CI, 95% confidence interval; GRS, gay-related stigma;

[^] $p = 0.076$.