Aggression and Violent Behavior 40 (2018) 83–90

Contents lists available at ScienceDirect

Aggression and Violent Behavior

journal homepage: www.elsevier.com/locate/aggviobeh

The intersection of men's sexual violence perpetration and sexual risk behavior: A literature review☆

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ARTICLE INFO

Keywords:
Sexual violence
Sexual aggression
Sexual risk behavior
Condom use
Sexually transmitted infections

ABSTRACT

According to the Confluence Model of Sexual Violence, men with a strong impersonal sex orientation (i.e., greater engagement in sexual activities with more casual sexual partners) are at increased risk of perpetrating sexual violence. Research from a variety of countries and samples has supported this proposition, finding that men who perpetrate sexual violence are also more likely to engage in risky sexual behavior. The present article reviews this literature, synthesizing research findings from both psychology and public health domains utilizing both domestic and international samples. In particular, this review focuses on the associations between men's perpetration of sexual violence and their sexual partners, condom use, and sexually transmitted infection status, as well as provides recommendations for future research directions and prevention and intervention programming.

1. Introduction

Sexual violence (SV; also termed sexual assault or sexual aggression) against women is a worldwide concern. The World Health Organization (WHO) multi-national study found that between 3% and 59% of women have experienced attempted or completed physically forced rape (Abrahams, Jewkes, Hoffman, & Laubsher, 2004). Estimates based on a broader definition of SV (i.e., behaviors ranging from nonconsensual sexual contact to intercourse through verbal coercion, intoxication, or physical force tactics), suggest between 25% and 57% of American men report that they have perpetrated at least one act of SV since age 14 (Abbey, Jacques-Tiura, & LeBreton, 2011; Abbey & McAuslan, 2004; Abbey, Parkhill, BeShears, Clinton-Sherrod, & Zawacki, 2006; Gidycz, Warkentin, & Orchowski, 2007; White & Smith, 2004). Given the widespread prevalence of SV across the globe, greater empirical understanding of the risk factors for men's SV against women is paramount.

One proposed risk factor in men's perpetration of SV is having a stronger orientation towards impersonal sex, which includes "having sex earlier in their relationships, more than one concurrent sexual relationship, sex with many different partners in the past, sex with partners on only one occasion, and foreseeing many different partners in the future," (Malamuth, Linz, Heavey, Barnes, & Acker, 1995, p. 354). Indeed, one of the most widely tested models of men's SV perpetration – the Confluence Model – posits that men who have a strong impersonal sex orientation combined with traits indicative of hostile masculinity (e.g., misogynistic attitudes) are the most likely to perpetrate SV (Malamuth, Sockloskie, Koss, & Tanaka, 1991). Having a strong impersonal sexual orientation is theorized to be particularly relevant for the occurrence of sexual rather than nonsexual violence (Malamuth et al., 1991).

As can be seen in the definition above, impersonal sexual behavior confers some degree of sexual risk. Sexual risk behaviors increase one's risk of a negative health outcome, with the most significant and common risks including contracting or transmitting an infection [e.g., sexually transmitted infection (STI)] and/or experiencing unwanted pregnancy (Hoyle, Fejfar, & Miller, 2000). Researchers have operationalized sexual risk behaviors in multiple ways, including: condomless sex or failure to correctly use condoms during sexual intercourse, multiple or concurrent sexual partners, and high-risk partners, such as partners with STIs (Hoyle et al., 2000). Researchers have also defined sexual risk behavior to include age at sexual initiation, one-time-only sexual intercourse partners (e.g., one-night stands), one's own STI history or symptoms of an STI, history of unplanned pregnancy, number of sexual partners, seeking and engaging in transactional sex, and risky situational factors, such as sexual activity that involves

☆ This research was supported by a grant to the first author from the National Institute on Alcohol Abuse and Alcoholism (R01AA017608).
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https://doi.org/10.1016/j.avb.2018.04.001
Received 3 May 2017; Received in revised form 27 February 2018; Accepted 4 April 2018
Available online 06 April 2018
1359-1789/ © 2018 Published by Elsevier Ltd.

alcohol or substance use (Bobashev, Zule, Osilla, & Wechsberg, 2009; Dir, Coskunpinar, & Cyders, 2014; Hoyle et al., 2000).

The Confluence Model's impersonal sex orientation has been operationalized by researchers as latent or manifest variables comprised of many of the above mentioned sexual risk behaviors (e.g., number of one-night stands, lifetime and/or past year number of sexual partners, condomless sex) as well as sexual risk-related attitudes (e.g., positive attitudes towards casual sex, short-term mating orientation; Abbey et al., 2006; Abbey & Jacques-Tiura, 2011; Logan-Greene & Davis, 2011; Jacques-Tiura, Abbey, & Parkhill, 2007; Parkhill & Abbey, 2008; Wheeler, George, & Dahl, 2002; White, McMullin, Swartout, Sechrist, & Gollehon, 2008; Widman, Olson, & Bolen, 2013). Although the Confluence Model provides a general guideline for behaviors that characterize impersonal sexual orientation, there is no established standard within the field as to which sexual risk behaviors are most consistently used or linked with men's SV perpetration. Because this presents a challenge to both researchers and interventionists seeking to use this information to guide future empirical studies and prevention programs, one goal of the present review is to summarize these links.

2. Current review

The purpose of this review is to 1) summarize and integrate the literature regarding the association between men's sexual risk behavior and SV in order to 2) promote and guide future research regarding SV perpetration and sexual risk behavior linkages, and 3) inform risk assessment and prevention of sexual risk and SV. Additionally, we seek to bridge the gap between disconnected bodies of literature (e.g., psychology, public health) to further the common goal of elucidating the relationship between risky sexual behavior and SV perpetration by synthesizing the relevant literature in both domestic (North American) and international communities. Moreover, we aim to build on a previous review of risk factors for SV perpetration that supported the association between impersonal sexual orientation and sexual aggression but did not examine this specific connection closely or include research published after 2008 (Tharp et al., 2013). In the present review, we include more recent research and examine a wider range of sexual risk behaviors.

Relevant studies were obtained by searching the PubMed, EBSCO Host, and Google Scholar databases for combinations of key terms associated with sexual risk including: “sexual risk”, “risky sexual behaviors”, “risky sex”, “STI”, “HIV”, “unprotected sex”; and with key terms of sexual violence including: “sexual violence”, “rape”, “sexual assault”, “sexual aggression”, “non-consensual sex”, “sexual coercion”, “sex offenders”, “sex offenses”, and “perpetration”. Additionally, reference sections of obtained articles were scoured for relevant studies. A study was included in the review if it: (a) was published in a peer-reviewed journal after 1980, (b) was written in English, (c) included adult men, and (d) included at least one measure of both sexual risk and sexual violence, as well as (e) examined their association. Articles were excluded if they solely focused on the association between sexual risk and being a survivor of sexual violence. Because the focus of this review is the examination of sexual risk as a risk factor for male-perpetrated sexual violence against women, articles were excluded if they only examined men who have sex with men (MSM), adolescents, or female-perpetrated sexual violence. After removing duplicate articles, the initial search yielded over 3000 articles. We reviewed all titles and abstracts and obtained 202 articles that appeared to meet our criteria. Full articles were then reviewed for fit, and the final sample included 46 articles. We structure the review below to address the relationship between SV perpetration and sexual partners, condom use, and sexually transmitted infections, as these represented three overarching categories of sexual risk included in these studies.

3. Sexual partners and SV perpetration

Individuals who report a greater number of sexual partners (i.e., vaginal-penile intercourse) are more likely to have a short-term mating approach, which includes views of casual sex as acceptable and enjoyable, a preference for brief sexual encounters rather than long-term meaningful relationships, and low emotional investment associated with sex (Penke & Asendorpf, 2008; Simpson, Wilson, & Winterheld, 2004). Men who take a short-term mating approach may be unlikely to invest time in getting to know their partners which could result in a greater likelihood of misperceiving their partner's sexual interest (Jacques-Tiura et al., 2007; Wegner & Abbey, 2016) and subsequent unwanted sexual behavior (Abbey et al., 2011). Research has examined SV's relationship to sexual partners in a variety of ways including numbers of lifetime sexual partners, concurrent/extramarital partners, one-night stands, transactional sex partners, and higher risk sexual partners.

3.1. Lifetime sexual partners

Research with domestic and international samples has consistently demonstrated a positive association between men's number of lifetime sexual partners and SV perpetration, using both cross-sectional and longitudinal methods. In domestic research comparing perpetrators to nonperpetrators, perpetrators report a significantly higher number of sexual partners (Abbey et al., 2011; Abbey & Jacques-Tiura, 2011; Abbey, McAuslan, Zawacki, Clinton, & Buck, 2001; Davis & Logan-Greene, 2012; Peterson, Janssen, & Heiman, 2010; Zinzow & Thompson, 2015). When comparing perpetrators based on their tactics, men with a history of perpetrating both physical intimate partner violence and sexual coercion report a significantly greater number of sexual partners compared to men with a history of sexual coercion only (Casey et al., 2016). Men's number of sexual partners is also significantly positively related to their self-reported number of perpetrated SV acts (Abbey et al., 2011; Davis & Logan-Greene, 2012).

In international research (African and Indian samples), having a greater number of sexual partners is a significant risk factor for intimate and nonintimate partner rape (D'Abreu & Krahé, 2014; Dunkle et al., 2006; Go et al., 2010; Jewkes et al., 2006; Jewkes, Nduna, Jama Shai, & Dunkle, 2012; Kalichman et al., 2005, 2007; Simbayi et al., 2006; Townsend et al., 2011; Tsai et al., 2011). For example, a history of SV is associated with an increased likelihood of having five or more partners in the past three months (Townsend et al., 2011). In both domestic and international research (samples from Brazil and South Africa), men's number of sexual partners is related to their SV perpetration prospectively and longitudinally in a variety of samples (Abbey & McAuslan, 2004; Abbey, Wegner, Pierce, & Jacques-Tiura, 2012; D'Abreu & Krahé, 2014; Jewkes et al., 2012; Thompson, Swartout, & Koss, 2013). Despite the heterogeneity in samples and measures, each of these studies found that men's number of sexual partners was positively related to their future SV behavior, with the exception of one study (Kingree & Thompson, 2013). Thus, the majority of studies support an association between lifetime number of sexual partners and SV perpetration.

3.2. Concurrent/extramarital partners

There are a number of different reasons why men who have concurrent sexual partners or engage in sexual intercourse with partners outside their relationship may be considered high risk for SV perpetration. Qualitative reports from men with concurrent sexual partners suggest that hostile and distrustful views of women are common, including feeling threatened by women's power, as well as beliefs that having multiple partners enhances their masculinity (Adimora et al., 2004; Ragnarsson, Townsend, Ekström, Chopra, & Thorson, 2010). Men who report concurrent sexual partners tend to be younger, report

earlier ages of sexual initiation, and are more likely to report an STI diagnosis or incarceration, compared to men without concurrent partners (Adimora et al., 2004).

Men's greater perceived social power and self-confidence for identifying alternative partners predict extramarital relationships (Lammers, Stoker, Jordan, Pollman, & Stapel, 2011), as does their desire for novel and exciting sexual experiences (Glass & Wright, 1992). Men with extramarital partners report lower levels of intimacy with their main partner which in turn predicts less concern for their main partners' emotional or sexual health (Allen & Rhoades, 2008). The combination of power motives, sensation-seeking, pursuit of women for sexual gratification, and low empathy for their partner, may be associated with greater likelihood that they will perpetrate SV against their own partner and/or extramarital partner(s), as these variables are well-established risk factors for SV perpetration (Abbey & Jacques-Tiura, 2011; Tharp et al., 2013).

Research finds having concurrent or extramarital sexual partners is associated with SV perpetration in international (i.e., Bangladesh and South Africa; Dunkle et al., 2006; Silverman, Decker, Kapur, Gupta, & Raj, 2007) and domestic samples (Casey et al., 2016). For example, Casey et al. found that men who perpetrate intimate partner physical violence and sexual coercion report a greater number of concurrent partners than men who perpetrate either controlling behaviors or no abuse (Casey et al., 2016). Although the existing research finds a consistent link between concurrent and extramarital partners with SV perpetration, there are only a few studies directly examining this link and all employ cross-sectional survey methodology. As well, although many studies examine individual level risk factors and motives for concurrent or extramarital relationships, few studies consider these as potential mediators of the relationship with SV. Given the prevalence of extramarital relationships (up to 25%) reported in the U.S. samples, additional domestic research is certainly warranted (DeMaris, 2013).

3.3. One-night stands

A handful of studies have found a positive association between men's number of one-night stands (i.e., one-time-only sexual intercourse partners) and their SV perpetration (Abbey et al., 2011, 2012; Peterson et al., 2010; Zawacki, Abbey, Buck, McAuslan, & Clinton-Sherrod, 2003). Two studies examined these relationships cross-sectionally and two studies examined these relationships prospectively in U.S. samples. Perpetrators of more than one SV act reported having a significantly greater number of one-night stands across their lifetime and during a one-year follow-up, as compared to nonperpetrators (Abbey et al., 2012). Men's number of one-night stands emerged as a significant risk factor for ever perpetrating SV (Peterson et al., 2010) as well as perpetrating a greater number of sexual assaults across one's lifetime (Abbey et al., 2011), providing consistent evidence that engagement in one-night stands and SV are globally associated. Additional research examining the temporal ordering of this relationship and the relationship between the victim and perpetrator is needed, as men who perpetrate physically forceful stranger rapes may erroneously label their perpetration incidents as ‘one-night-stands.’

3.4. Transactional sex partners

Men's engagement in transactional sex includes the act of exchanging, goods, money, or lifestyle rewards (e.g., place to stay) with women for sex. Structural economic inequalities that disproportionately affect women contribute to women's engagement in transactional sex (Elmes et al., 2017; Kiernan, Mishori, & Masoda, 2016). Women may engage in transactional sex as a means to support their families (Mbonye et al., 2012) and gain access to resources, such as fuel, food, and water, particularly during periods where such resources are scarce (Béné & Merten, 2008; Fiorella et al., 2015; Samuels, Harvey, & Bergmann, 2008). Thus, the gender-based power differential is clearly defined in this form of sexual interaction, with men holding the power over women's ability to refuse unwanted sex (Kiernan et al., 2016). Women who attempt to advocate for their sexual safety within these situations may have their attempts met with strong resistance from the male, and potentially SV (Kiernan et al., 2016; Mbonye et al., 2012).

Several studies have examined whether transactional sex is associated with SV through both cross-sectional and prospective methods. Within population samples, a range from 8% to 77% of men had ever engaged in transactional sex (Kalichman et al., 2007; Townsend et al., 2011). Studies varied to the extent they distinguished between informal exchange of sex for goods, money, or services (Jewkes et al., 2012; Townsend et al., 2011) and more formal commercial sex work (Casey et al., 2016).

Overall, SV perpetrators were more likely to have exchanged money, goods, or a place to stay for sex compared to nonperpetrators (Casey et al., 2016; Dunkle et al., 2006; Jewkes et al., 2006, 2012; Kalichman et al., 2005, 2007; Simbayi et al., 2006; Townsend et al., 2011; Tsai et al., 2011). One study examined data from a follow-up study to a larger HIV prevention study and found that men who committed SV at a two-year follow-up were more likely to have had transactional sex (Jewkes et al., 2012). Within a domestic sample, 26% of men who had perpetrated both physical violence and sexual coercion against an intimate partner reported transactional sex compared to 9% of men who had not perpetrated (Casey et al., 2016). Men who perpetrated sexual coercion only (18%) did not significantly differ from nonperpetrators or perpetrators of both physical violence and sexual coercion. It should be noted that such bivariate associations may not hold after controlling for other factors. For instance, in one study the positive association between transactional sex and SV was no longer significant when HIV risk behaviors, including number of sex partners, were included (Simbayi et al., 2006). The majority of transactional sex and SV research comes from the public health field and focuses on international samples; thus, additional domestic and psychology-based research is needed.

3.5. Higher risk sexual partners

Having sex with a high risk sexual partner was examined in three studies (Kalichman et al., 2005; Teten, Hall, & Capaldi, 2009; Townsend et al., 2011). One study inquired about men's perceptions of their partner's unfaithfulness (Townsend et al., 2011), finding that greater perceptions of partner unfaithfulness were associated with having perpetrated any IPV (sexual or physical) in the past 12 months (Townsend et al., 2011). In another study, a composite variable, that included sex with blood contact in the previous three months and sex with someone who uses intravenous drugs (IDU), was positively associated with sexual assault perpetration (Kalichman et al., 2005). However, Teten et al.'s (2009) 10-year longitudinal study indicated that having sex with an IDU partner, a nonmonagamous partner, and a partner "you didn't know well" was not associated with the use of sexually coercive tactics over time when physical aggression towards a partner was also included in the model. These authors note that the association between higher risk sexual behavior and SV may only surface when considering more severe forms of SV perpetration, such as rape (Teten et al., 2009).

4. Condom use and SV perpetration

In addition to the sexual risk conferred by number and type of partners, sexual risk behavior is also assessed through consideration of whether or not condoms are used during sexual encounters. Research examining the linkages between SV perpetration and condom use has focused on nonconsensual sex without a condom, resistance of condom use, and consistency of condom use.

4.1. Nonconsensual sex without a condom

The association between condom use and sexual violence can be examined at the global level as well as at the event level. Sexual assaults that do not involve the use of a condom pose greater risk to the victim's sexual health. Moreover, because genital injuries are commonly experienced by victims of forced sex (Anderson & Sheridan, 2012), likelihood of STI transmission is even greater in these events. Raj and colleagues reported that 24% of their sample of young men attending an urban community health center reported having forced unprotected sex in their lifetimes (16% within the past year; Raj et al., 2006), while Purdie and colleagues noted that 47% of their sample of sexually coercive undergraduate men reported a lifetime history of forced unprotected sex (Purdie, Abbey, & Jacques-Tiura, 2010).

In examining sexual assault events, Peterson et al. (2010) found that 47% of sexually aggressive acts did not involve condom use. One study of young, heterosexual male non-problem drinkers found that 41% of perpetrators reported never using condoms during penetrative acts of sexual aggression, while 29% reported always using condoms during such events (Davis, Schraufnagel, George, & Norris, 2008). The remainder (29%) reported inconsistent condom use across penetrative sexually aggressive events. Additionally, alcohol consumption was positively correlated with condom nonuse during forcible rape. A similar study by Davis and colleagues (2012) noted that condoms were not used in 70% of penetrative sexual assaults, and that condom nonuse was positively associated with perpetrator alcohol consumption across all types of sexual assault. Condom use during sexual assault events also varies by type of sexual act, with oral and anal nonconsensual sex involving lower rates of condom use than vaginal nonconsensual sex (Davis, Danube, Stappenbeck, Norris, & George, 2015). Finally, a study of 841 sexual assault complaints to 3 law enforcement agencies in the U.S. reported that, across the sites, condom use rates ranged from 12% to 16% (O'Neal, Decker, Spohn, & Tellis, 2013). Moreover, condoms were more likely to be used in assaults involving younger suspects, suspects who used a weapon, and suspects who had not consumed alcohol.

Qualitative data from two international samples also suggest an event-level relationship between SV and condom nonuse. For example, Wechsberg et al. (2013) conducted 10 focus groups with South African men and women in which they discussed sexual activity that occurs in the shebeen environment where alcohol is sold, typically without a license. Participants reported that nonconsensual sex does occur in this environment, and that it typically is unprotected (e.g., does not involve condom use). In particular, it was noted that gang rapes often occur after the female victim has been drugged and that situations in which either party has been drinking or using drugs often do not involve condom use. In a study involving semi-structured interviews with 111 men accused of rape in Uganda, only 4% of sexual assault events involved condom use, and condom use rates did not differ across rapes of acquaintances and strangers (Kaye, Kakaire, & Osinde, 2011). Altogether, existing research highlights that nearly half of perpetrators report having forced unprotected sex at least once, that condom use varies across SV events, and alcohol and drug use are associated with increased likelihood of unprotected SV.

4.2. Condom use resistance behavior

The majority of men report that they prefer condomless sex (Randolph, Pinkerton, Bogart, Cecil, & Abramson, 2007), and evidence suggests that attempts to avoid use are considered normative in some groups (Davis et al., 2014). Condom use resistance behaviors range from direct requests to not use a condom and reassuring one's partner of the limited risks of unprotected sex, to using seduction and voicing concern over the loss of physical pleasure from their usage, and have been associated with SV perpetration (Davis et al., 2014). It may be perceived as socially acceptable for men to initially attempt to convince their partner to forgo a condom as a part of the condom negotiation process; however, the majority of men do not engage in coercive tactics to achieve their goal (Davis, Schraufnagel, et al., 2014).

That noted, recently investigators have begun to focus on the ways in which some men may use coercive tactics to avoid using condoms with partners who would like to use one. Men who engage in repeated or coercive attempts to have unprotected sex with a partner who wants to use a condom are likely engaging in these behaviors as a means of asserting their dominance and power, and thus, are high risk for perpetrating sexual aggression. For example, Davis and Logan-Greene (2012) reported that 35% of men in a national U.S. sample reported using coercive tactics, including arguments or pressure; lies or false promises; guilt, sulking or anger; intoxication of the sexual partner; or physical force, to obtain unprotected sex. This study also demonstrated that coercive condom use resistance was predicted by misogynistic attitudes towards women, inconsistent condom use, and number of sexual partners. Raiford and colleagues noted that 38% of their sample of young African American men reported having responded to their partners' condom use requests in either physically or emotionally abusive ways, which was also related to their more general engagement in physical, sexual, and emotional abuse (Raiford, Seth, Braxton, & DiClemente, 2013). In another study of young heterosexual men, almost 25% reported using deception (e.g., lying about not having an STI) and almost 10% reported engaging in condom sabotage (e.g., intentionally breaking or surreptitiously removing the condom) to have unprotected sex (Davis, Stappenbeck, et al., 2014). Moreover, focus groups conducted with young men have demonstrated that such coercive condom use resistance tactics are viewed as normative or “part of the game” in their sexual interactions with women (Davis, Schraufnagel, et al., 2014). Studies also suggest that alcohol intoxication may exacerbate men's use of coercion to obtain unprotected sex (Abbey, Parkhill, Jacques-Tiura, & Saenz, 2009; Davis, 2010; Davis et al., 2012). This topic has been studied almost exclusively in domestic samples; thus, additional research with international samples is needed.

4.3. Inconsistent condom use

In general, available studies indicate that a history of sexual aggression is associated with inconsistent condom use. Three studies have examined this relationship cross-sectionally in domestic samples. Peterson et al. (2010) reported that sexually aggressive men who had perpetrated more than once had more unprotected sexual partners than did non-perpetrators or men who reported perpetrating sexual assault on only one occasion. A survey of Latino men in the U.S. found that sexual coercion was correlated with lower condom use (Marín, Gómez, Tschann, & Gregorich, 1997). More specifically, men who reported sexual coercion also had lower condom use self-efficacy which predicted decreased rates of condom use, suggesting that self-efficacy may be an important additional variable to consider in these relationships. A large national study of young adults (18–25) found that men with a history of both sexual coercion and physical violence against an intimate partner used condoms less frequently than men with histories of controlling behaviors or no violence history (Casey et al., 2016).

International studies have reported mixed findings regarding sexual aggression history and condom use. Simbayi et al. (2006) found that sexually aggressive men were not significantly different from non-aggressive men in their rates of condom use during the previous three months. In a community sample of South African men, Kalichman et al. (2007) found no differences between sexually aggressive men and non-aggressive men in their histories of ever using condoms, but did find that sexually aggressive men reported a lower percentage of condom use in the past six months. Men reporting “any IPV” in the past twelve months, including both physical and sexual, reported lower condom use than men without any IPV perpetration in the past year (Townsend et al., 2011). Finally, Hoffman, O'Sullivan, Harrison, Dolezal, and Monroe-Wise (2006) examined the relationship between “pressured”

sex and condom use through a three week daily diary in a sample of male and female secondary students in rural South Africa. By combining women's and men's reports, they created a variable that included the use of verbal or physical threat or coercion by the male partner. Sexual coercion was correlated with unprotected sex; however event-level analyses revealed that sexual coercion and unprotected sex did not necessarily occur in the same event. Overall, most studies demonstrate that SV perpetrators have lower rates of consistent condom use than do nonperpetrators, thereby further increasing their sexual risk regarding unplanned pregnancies and STI transmission.

5. Sexually transmitted infections and SV perpetration

Men who have engaged in the aforementioned sexual risk behaviors (e.g., more sexual partners, inconsistent condom use) are more likely to have been tested or diagnosed with an STI/HIV; thus, research has examined rates of infection in SV perpetrators. Two domestic cross-sectional studies examined whether STI diagnosis was associated with SV perpetration (Casey et al., 2016; Peterson et al., 2010). Men who perpetrated multiple acts of SV were more likely than men who had never perpetrated SV to report a lifetime diagnosis of an STI (Peterson et al., 2010). Another large online study found that men who had perpetrated both sexual coercion and physical violence against an intimate partner were more likely to report an STI diagnosis than men who used controlling behavior or sexual coercion only against an intimate partner (Casey et al., 2016).

Cross-sectional international studies (samples from India and South Africa) generally demonstrate a positive association between having a history of STI diagnosis or symptoms and SV perpetration (Go et al., 2010; Kalichman et al., 2005, 2007; Sambisa, Angeles, Lance, Naved, & Curtis, 2010; Simbayi et al., 2006; Townsend et al., 2011). For example, higher scores on a composite variable including lifetime history of STI and genital ulcers were positively associated with perpetrating SV (Kalichman et al., 2005). In an international longitudinal study, a 30-month assessment of an HIV prevention randomized controlled trial targeting wine shops in India found that STI symptoms in the last 6 months were associated with increased likelihood of perpetrating forced sex in the last three months (Go et al., 2010).

Other studies, however, have not found a relationship between SV and STI status. In a study of South African men, SV perpetration was not associated with HIV status; however, 31% of HIV-positive men reported having perpetrated rape (Jewkes, Sikweyiya, Morrell, & Dunkle, 2011). Similarly, Simbayi et al. (2006) found neither HIV testing nor test results were associated with SV against women; however, SV men did report more sex events that involved genital bleeding, suggesting an increased STI transmission risk. Further, in a study of Bangladeshi men, men who perpetrated both physical and sexual IPV in the past year reported more STI symptoms and diagnoses within the past year, however this association was not found for men who only reported past-year SV (Silverman et al., 2007). Thus, additional research should examine sociocultural factors that could moderate these relationships.

6. Implications and future directions

The current review advances the state of the literature by integrating both public health and psychological research examining the relationship between sexual risk behavior and SV perpetration through a consideration of a wider variety of sexual risk behaviors not examined in other reviews (e.g., Tharp et al., 2013). Below, we summarize our findings and discus their implications for future research and intervention efforts.

6.1. SV perpetration and sexual risk behavior linkages

Of the sexual risk-taking indicators examined in prior research, the vast majority of studies found a positive relationship between SV and sexual risk behaviors. The majority of studies demonstrated that the following indicators of sexual risk taking were consistently positively associated with SV perpetration: number of lifetime sexual partners, number of concurrent/extramarital sexual partners, number of one-night stands, condom use in domestic samples, and resistance to condom use. Additionally, research has found that sexually coercive tactics may be utilized to avoid condom use, and both domestic and international studies have demonstrated that nonconsensual sex overwhelmingly occurs without a condom. Findings for other sexual risk indicators including transactional sex partners, higher risk sex partners, condom use in international samples, and STI diagnoses had inconsistent associations with SV perpetration. Importantly though, findings in these areas were based on limited research involving quite varied construct operationalizations, which might in part account for their mixed results.

6.2. Future research directions

Understanding the mechanisms underlying the sexual risk-taking and SV relationship remains a critical gap in both psychology and public health fields. SV and sexual risk behaviors may co-exist due to certain trait and attitudinal characteristics. For example, impulsivity is associated with both SV (Zawacki et al., 2003) and sexual risk-taking (Davis et al., 2016), suggesting that certain dispositional factors may underlie both sets of behaviors. Similarly, attitudinal constructs, such as gender inequity norms (Shannon et al., 2012) and hypermasculinity (Corprew & Mitchell, 2014), may contribute to beliefs that masculinity is demonstrated through both sexual promiscuity and sexual entitlement. Indeed, endorsement of hegemonic masculinity norms is negatively associated with condom use (Leddy, Chakravarty, Dladla, de Bruyn, & Darbes, 2016) and positively associated with SV (Locke & Mahalik, 2005). Gender-transformative programming for men is a proposed approach to decrease intimate partner violence (Lundgren & Amin, 2015) and overcome men's barriers to sexual health behaviors (e.g., STI testing, condom use; Fleming, Colvin, Peacock, & Dworkin, 2016). Future research should identify how such underlying constructs may contribute to both types of behaviors and develop interventions to target these shared mechanisms.

Several methodological concerns were identified in this literature review that highlight potential future research directions. First, the majority of the reviewed studies utilized cross-sectional methodology. Prospective designs that enable establishment of the temporal sequence of sexual risk-SV associations may enrich theoretical and intervention implications. Additionally, future research should examine relevant mediating and moderating factors to ascertain the developmental trajectories of SV perpetration and sexual risk behavior. Moreover, situation-level variables, such as alcohol, are commonly associated with both sexual assault perpetration and sexual risk-taking, yet only a few studies (e.g., Davis, 2010; Davis et al., 2012; Davis, Schraufnagel, et al., 2012; Logan-Greene & Davis, 2011; Zawacki et al., 2003) have examined men's alcohol use, either globally or at the event-level, within the analyses. Further, men's sexual risk-taking and SV may vary by relationship status, which also changes over time. Longitudinal methods could be utilized to examine how SV and sexual risk behaviors shift over time, as well as vary by changes in relationship status, alcohol/drug use, and other potential mediators and moderators.

It is also noteworthy that there was significant variation in operationalizations of SV. The majority of studies utilized a version of the Sexual Experiences Survey (Koss et al., 2007). Far fewer studies used the Conflict Tactics Scale-2 (Straus, Hamby, Boney-McCoy, & Sugarman, 1996), the WHO violence against women instrument (WHO, 2005), or a single- or two-item assessment of SV created by the researchers. These brief measures may possess excellent face validity and have the advantage of allowing researchers to assess a broad range of health-related factors while limiting participant burden; however, there is concern that they do not capture the spectrum of sexually violent

behavior. Moreover, several studies grouped SV with other forms of violence against women, including physical and psychological violence, which may obscure some relations between SV perpetration and sexual risk-taking. Future research efforts would benefit from the consistent use of comprehensive, reliable, and valid measures of violence that distinguish between multiple types of violence in culturally appropriate ways with limited participant burden.

Regarding the study samples and research site locations, the vast majority of studies were conducted with United States community/college samples or HIV clinic samples in African countries. Future research is needed to ascertain whether these associations exist in more varied samples in different geographic and cultural contexts. As SV and sexual risk-taking interventions are developed, there is an overwhelming need to take cultural context into account.

Finally, further research on specific sexual risk behaviors is warranted. For example, engaging in transactional sex was associated with SV perpetration in international samples; however, few domestic studies have examined this relationship despite research indicating 15% to 20% of U.S. men have paid for a sex act at least once in their lives (Shively et al., 2008). Perpetrator STI status was also understudied in domestic samples. Studies measuring number of sexual partners typically do not discriminate between consensual and nonconsensual sexual partners, which makes the nature of this relationship difficult to interpret. Additional research should continue to elucidate the associations between SV and sex with high-risk partners, numbers of consensual vs. nonconsensual partners, and perpetrator's STI status.

6.3. Future prevention and intervention programming

Results of this review support the assertion that a focus on both sexual risk-taking and SV in future prevention and intervention efforts are warranted. Rather than orthogonal constructs that require separate programming, the results of the current review support prevention and intervention programming that conceptualizes sexual risk-taking and SV as interrelated (Tharp et al., 2013). As interventions continue to be developed, implemented, evaluated, and replicated, it is vital that they assess and address empirically identified risk factors for both sexual risk-taking and SV. For example, sexual health clinics should conduct broader risk assessments of SV behaviors and incorporate SV into existing sexual risk-taking psychoeducation. Interventions targeting SV perpetrators should also assess their sexual risk behaviors and incorporate broader sexual risk-taking psychoeducation as part of their SV intervention. Such programming should gather evidence as to how reduction in one group of behaviors (e.g., sexual risk-taking) is associated with reduction in the other (e.g., SV). Additionally, rather than focusing exclusively on 'what not to do,' programming must also provide information on healthy sexual relationships and encourage open sexual communication. Finally, the development and dissemination of evidence-supported interventions necessitates consideration of whether the intervention will fit the needs and preferences of community members (Castro, Barrera, & Steiker, 2010). There is a need to consider implementing an intervention with fidelity and adapting it to the needs of specific subgroups (Kumpfer, Alvarado, Smith, & Bellamy, 2002). It is recommended that partnerships and collaborations between intervention developers or implementers, those delivering the intervention, and program participants and stakeholders who can represent the community's concerns be developed to ensure the mechanisms of action are delivered with fidelity and enhanced through adaptation to the needs of the community (Donovan et al., 2011; Hecht et al., 2003). This is particularly important to consider given the need for prevention and intervention programming both domestically and internationally.

The results of this review confirm the Confluence Model's theory that impersonal sex orientation plays a vital role in SV perpetration. While the Confluence Model is the most widely studied and replicated model of SV, existing prevention and intervention programs have, in general, not utilized this model in program development. This may be because the Confluence Model does not identify easily malleable mechanisms to target in intervention programming. Continued research and intervention development is needed to more fully understand the underlying mechanisms of the association between sexual risk-taking and SV and to shift interventions to target the mechanisms that may be amenable to change.

6.4. Conclusions

Sexual violence is a complex phenomenon for which there are multiple risk factors. By examining existing investigations of the association between SV and sexual risk behavior, we sought to consolidate the empirical findings, identify methodological limitations, and propose recommendations for future research, intervention, and theory development. Overall, there is evidence supporting the positive association between sexual risk behavior and SV perpetration. This relationship was found across cross-sectional, experimental, and prospective studies in US and international samples. Future research examining these constructs across the developmental lifespan, across situational contexts, and with varied samples is needed to further understand these associations. Theoretically grounded research that examines underlying contributors to men's sexual risk behavior and SV towards women could significantly enhance prevention and intervention efforts targeted towards improving sexual health and reducing sexual violence worldwide.

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