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A Systematic Qualitative Review of Risk and Protective Factors for Sexual Violence Perpetration

Andra Teten Tharp¹, Sarah DeGue¹, Linda Anne Valle¹,
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Abstract

The current review summarized results of 191 published empirical studies that examined the risk and protective factors for sexual violence perpetration. Studies in the review examined factors for perpetration by and against adolescents and adults, by male and female perpetrators, and by those who offended against individuals of the same sex or opposite sex. Factors associated with child sexual abuse (CSA) perpetration were not included. In all, 2 societal and community factors, 23 relationship factors, and 42 individual-level factors were identified. Of these 67 factors, consistent significant support for their association with SV was found for 35, nonsignificant effects were found for 10, 7 factors had limited or sample-specific evidence that they were associated with SV but were in need of further study, and 15 demonstrated mixed results. The factors identified in the review underscore the need for comprehensive prevention programs that target multiple risk and protective factors as well as factors that occur across the social ecology. Moreover, we identified two domains of factors—the presence and acceptance of violence and unhealthy sexual behaviors, experiences, or attitudes—that had consistent significant associations with SV but are not typically addressed in prevention programs. Therefore, SV prevention may also benefit from learning from effective strategies in other areas of public health, namely sexual health and youth violence prevention.

Keywords

adolescent victims, sexual assault, adult victims, prevention

Sexual violence (SV) refers to sexual activity where consent is not obtained or freely given; coercive strategies used in SV may be physical, verbal, or psychological (Basile & Saltzman, 2002). SV is a serious public health problem that threatens the health and well-being of individuals across the world (Jewkes, Sen, & Garcia-Moreno, 2002). The National Intimate Partner and Sexual Violence Survey found that 1 on 5 women and 1 in 71 men experience rape during their lifetimes (Black et al., 2011). Victims of SV may experience an increased risk of acute and chronic health problems, including injuries resulting from the sexual assault and subsequent health problems and health risk behaviors (e.g., binge drinking; Black & Breiding, 2008; Koss & Heslet, 1992). For perpetrators, arrest and conviction may result in social and economic costs related to incarceration or community notification and registration laws (Levenson, 2008; Levenson, D'Amora, & Hern, 2007). The economic burden of SV victimization including medical and mental health care, loss of work, and impact on quality of life was estimated in 1996 to be approximately \$126 billion annually (Miller, Cohen, & Wiersema, 1996).

Over the past three decades, substantial research has been conducted to better understand SV in the hopes of preventing it (Koss, 2005). Despite these efforts, very few primary

prevention programs have been shown to be effective in preventing sexually violent behavior (Teten Tharp et al., 2011). In the absence of an extensive evidence base of effective prevention programs, practitioners must develop, select, and implement programs that reflect the principles of prevention (Nation et al., 2003) and known risk and protective factors for perpetration (Centers for Disease Control and Prevention [CDC], 2004). Because it is clear that no single factor causes SV and it is unlikely that individual-level interventions when implemented alone will have a broad public health impact (Dodge, 2009), the principles of prevention suggest that effective prevention programs are comprehensive, such that they target multiple risk and protective factors and incorporate strategies across the social ecology. Therefore, to serve as a resource for researchers and practitioners who are developing

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and implementing comprehensive prevention programs, the current systematic review summarizes the risk and protective factors for SV that have been studied over the past 20 years. Our goal was to capture the breadth of factors associated with SV perpetration at each level of the social ecology that might be considered in developing evidence-informed prevention strategies.

Theoretical Framework for Review

Comprehensive prevention must consider risk and protective factors at the individual, relationship, community, and societal levels of the social ecology and factors for SV that influence perpetration independently or by interacting with other factors. The Malamuth Confluence Model (Malamuth, Linz, Heavey, Barnes, & Acker, 1995; Malamuth, Sockloskie, Koss, & Tananka, 1991) is an example of a comprehensive conceptualization of the diverse factors that are associated with SV. The Confluence Model was created by combining the risk factors for SV that were proposed from diverse theories (e.g., evolutionary theory, feminist theory) and combined prominent attitudinal and behavioral risk factors from each of these perspectives. For example, in the model, early risk factors (e.g., child maltreatment) give rise to a behavioral path that includes adolescent delinquency and early, impersonal sexual experience, and an attitudinal path that is comprised of attitudes supporting violence and hostile masculinity. The two paths of risk combine to create risk for SV perpetration in adulthood. Although the Confluence Model includes only specific individual- and relationship-level risk factors, our review was inspired by the Confluence Model in two ways: First, we applied a life span perspective to our search for factors, so that factors in childhood, adolescence, and adulthood were included; second, we performed a search and synthesis of the literature that cut across theoretical perspectives. We built on the conceptualization of the Confluence Model by including factors at the community and societal levels of the social ecology and by including protective factors.

Definition of Terms Used in the Review

In the literature, a variety of terms are used to capture the behaviors that constitute SV. These behaviors are measured in a variety of ways (e.g., self-report, index offense). Therefore, we will use the term sexual violence, as defined above, as a broad, overarching category that runs along a continuum from minor acts, such as street harassment, to severe acts, such as physically forced sex. Most sexually violent acts involve some type of coercion and aggression, but given the variation in the literature in the use of the terms coercion and aggression, we use the broader term sexual violence but specify the particular behavior (e.g., harassment, rape) when possible and if clearly defined in the article reviewed. For the purposes of the current review, we use the terms risk and protective factors to describe any correlate, predictor, or characteristic that differentiates between those who have perpetrated SV and those who have

Table 1. Inclusion/Exclusion Criteria for Systematic Review

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> • Reports, books/book chapters, or journal articles • Available in English • Published between 1989 and 2008 • 1+ risk factor for SV perpetration was reported • Behavioral SV outcomes were assessed • A comparison/control group was used or the sample included both SV perpetrators and nonperpetrators 	<ul style="list-style-type: none"> • Reviews, meta-analyses, and commentaries • Dissertations and other unpublished documents • Studies that <ol style="list-style-type: none"> a. Used only victim reports b. Examined only risk factors for victimization c. Examined prison rape d. Examined within group differences (e.g., typologies) e. Examined risk factors for child sexual abuse f. Used behavioral intentions or attitudes as outcomes g. Examined tertiary prevention (e.g., risk for recidivism)

Note. SV = sexual violence.

not. Risk factors are factors reported more frequently among those who perpetrate SV; protective factors buffer against the expected effect of a risk factor or are more frequent among those who do not report SV (Gutman, Sameroff, & Eccles, 2002). This approach is consistent with the conceptualization of risk and protective factors in the field of public health (Tulchinsky & Varavikova, 2009). For the remainder of our review, we will refer to risk and protective factors generally as “factors” and specify the nature of the association (e.g., protective, risk) when discussing specific results.

Method

The articles included in this review were obtained through a systematic review of the literature on factors associated with SV perpetration. Articles that met our inclusion/exclusion criteria (see Table 1) were coded by the authors to extract the same information from each article. Significant, nonsignificant, and indirect effects were aggregated by factor, and these factor-specific summaries served as the basis for our results.

Literature Search and Coding Procedures

Prior to conducting the literature search, inclusion/exclusion criteria in Table 1 were developed that were consistent with the goals of the review. Decisions for exclusion were based on our intention to include the best and most accurate data on perpetration that may be used to inform primary prevention and did not replicate recent work. For example, we excluded studies on prison rape, as we believed this unique form of SV was less relevant to guiding the development of primary prevention approaches and may be better addressed by other efforts. We

also excluded studies of risk for CSA as these were recently reviewed (Whitaker et al., 2008). Given that a substantial amount of SV is unreported and as a result, perpetrators of SV in the community may be conceptualized as “undetected” (Lisak & Miller, 2002) or “unincarcerated” (Lisak & Roth, 1990) rapists, we included studies of adjudicated offenders as well as nonadjudicated offenders as we expected some factors may be similar across these samples. We included only studies where SV behavior was measured versus proxy measures of SV such as rape proclivity. Similarly we only included studies in which nonperpetrators were included, as within-sample comparisons of offending individuals provides little information about how SV perpetrators differ from nonperpetrators.

Literature search. For quality purposes, we selected only published articles or reports to ensure that all studies had been subjected to some level of external peer review and also represented the literature that is most accessible to practitioners when informing the development and implementation of prevention (i.e., dissertations were excluded). In Spring 2008, we conducted a search of the Pubmed, PsychInfo, Sociofiles, Anthrosource, and Anthropology Plus databases using the following key words: sexual AND (aggression OR coercion OR violence OR assault OR rape) AND perpetration. We limited our search to English documents with human samples published between 1989 and 2008, in order to capture what at the time of our search was research conducted over the last 20 years. This search yielded over 11,000 articles. We reviewed all abstracts and obtained articles that appeared to meet our criteria. Full articles were reviewed again for fit once obtained. Several months later, we updated our search by reviewing violence and women’s journals (e.g., *Journal of Interpersonal Violence*, *Violence against Women*) for newly released articles that may not yet have been indexed in databases. We also obtained studies that were not identified in our database searches from the reference lists of previously identified articles and chapters, including 69 reviews or meta-analyses identified during our search. Our final list of abstracts was then vetted by internal CDC SV subject matter experts and external experts to identify missing articles or gaps. The vetting procedure resulted in another literature search specifically of same-sex SV articles and articles examining arousal and SV. The new search yielded no additional same-sex SV articles and three additional articles related to arousal.

Coding. All authors participated in coding and used a standardized coding sheet (available from first author on request) to code the articles that met our criteria. The coding sheet was developed based on domains of risk factors that comprise the Confluence Model, the social ecological model, and knowledge of common risk and protective factors. At the individual level, we captured factors related to psychosocial functioning, substance use, attitudes/beliefs, and sexual behaviors. However, the coding procedure also allowed us to capture any other factor via open-ended fields. Therefore, the coding sheet increased the ease of coding for common factors but also

Table 2. Sample Characteristics of Studies Included in Review (N = 191)

	Adolescent	Adult	Collegiate	Adolescent + adult
Sex offenders				
Male	43 (22.5%)	25 (13.1%)		
Female				
Male and female	1 (0.5%)			
Community samples				
Male	3 (1.6%)	17 (8.9%)	63 (33.0%)	9 (4.7%)
Female			2 (1.1%)	
Male and female	9 (4.7%)	6 (3.1%)	11 (5.7%)	2 (1.1%)
Total	56 (29.3%)	48 (25.1%)	76 (39.8%)	11 (5.8%)

Note. Studies including sex offenders as any portion of the sample were captured as studies of sex offenders. 119 (62.3%) studies involve U.S. samples, 72 (37.7%) involve international samples.

captured factors that may have been infrequently examined. We did not include individual demographic factors (e.g., race) in the current review as these factors are most reliably examined in representative samples and most of the samples in our review were convenience samples or samples with limited demographic variation, which led to conclusions not supported by epidemiological research. For each coded article, we also captured methodological and sample characteristics (e.g., sample age, recruitment strategy, analytic strategy, nature of comparison group), the nature of the effects (e.g., indirect or direct), and whether the results were significant or not.

Results

Our final sample included 191 articles; of these, 119 involved U.S. samples and 72 involved international samples. The characteristics of these articles are presented in Table 2. The majority of studies using nonadjudicated samples employed middle school, high school, or collegiate samples. Some adult community-based studies also drew samples from specific locations, such as the military or sexually transmitted infection clinics. The majority of adjudicated samples were comprised of currently incarcerated individuals or records reviews.

Our review yielded 67 risk and protective factors, which were classified into 16 domains: community/societal factors (2 factors), family environment and history (5 factors), family characteristics (4 factors), family relationships (4 factors), peer attitudes and behaviors (3 factors), hypermasculine/all-male peer groups (2 factors), association with antisocial peers (2 factors), intimate partner processes and characteristics (2 factors), partner relationship conflict (1 factor), sexual behaviors and other noncognitive sex-related factors (15 factors), psychosocial factors (8 factors), sex-related cognitions (5 factors), interpersonal skill factors (5 factors), gender-based cognitions (4 factors), violence-related cognitions (3 factors), and substance use (2 factors). The domains are presented from the outer levels

of the social ecology to the individual-level, and within each level the domains with the most factors are described first followed by domains with fewer factors. In the results, we only present the domain overviews that provide a brief description of the theories or conceptual background that have guided research on the factors within the domain, a summary of the results for the factors in the Appendix and any quality issues observed.

Results for specific factors are presented in the Appendix. In the Appendix, factors within the domains are presented according to the amount of research conducted, with well-studied factors followed by factors for which less empirical work is available. Given the nature of results and differences in volume of work conducted for factors at different levels of the social ecology, the factor summaries in the Appendix are organized slightly differently for individual versus relationship, community, and societal levels. For example for individual-level factors, we describe significant direct effects, followed by significant moderated or mediated effects, followed by mixed and nonsignificant effects, whereas family factor descriptions are organized by offender type. We also highlight, when available, results based on sex of the perpetrator and victim (same-sex or heterosexual perpetration), adjudication status of the perpetrator (adjudicated sex offenders or community samples), and age of the perpetrator (adolescent or adult). The ways in which factors were operationalized in studies and explanations of mixed or null results are also included in many factor descriptions. A snapshot of the results by factor can be found in Table 3 (described in detail in the discussion). Because most studies involved male-perpetrated SV, we refer to male perpetration unless otherwise noted.

Overview of Community and Societal Level Factors

Few studies examining community and societal level risk factors for SV perpetration were identified. The factors that have been studied fall into two broad categories, gender-based factors and structural/environmental factors. Both categories have been suggested as potential risk factors for SV in the theoretical literature (e.g., Baron & Straus, 1987; Jewkes et al., 2002; Sanday, 1981). However, the available evidence provided little empirical support for an association between these factors and SV. For example, in terms of gender-based factors, Koenig, Stephenson, Ahmed, Jejeebhoy, and Campbell (2006) examined female educational levels and men's attitudes toward gender roles and domestic violence (all measured at the community level) and found no association with community SV rates. In terms of structural factors, higher levels of SV against intimate partners were found in areas with concurrently high homicide rates (Koenig, Stephenson, Ahmed, Jejeebhoy, & Campbell, 2006). Another study found higher rates of SV among men raised in communist East Berlin than in those from West Berlin, but this study did not control for socioeconomic status (SES), employment, or other possible differences between the samples (Krahé, 1998). Therefore, the evidence

is limited on how community and societal level factors are associated with SV, and the existing evidence shows either nonsignificant or mixed effects.

Overview of Relationship-Level Factors

Family Environment and History

Child maltreatment. Child maltreatment¹ refers to physical, sexual, and emotional abuse as well as neglect experienced during childhood. Although the majority of abused and neglected children do not go on to perpetrate violence, research strongly suggests that child maltreatment can increase the risk for violence perpetration (Widom, 2001). Our review suggests that the effects of childhood victimization on SV perpetration may vary by type of maltreatment and population studied. The most consistent evidence was found for childhood emotional abuse, although only a few studies examined this form of maltreatment (e.g., DeGue & DiLillo, 2004; Zakireh, Ronis, & Knight, 2008). Significant effects were also reported for physical abuse and composite measures of child maltreatment (e.g., Fineran & Bolen, 2006; Zakireh et al., 2008). Multiple studies examined childhood sexual abuse victimization as a risk factor for SV perpetration (e.g., White & Smith, 2004), and the findings were significant in a majority of studies. However, the evidence was not consistent and results may be sample dependent. Specifically, studies that included offenders against both children and adults were more likely to find significant effects than those in which perpetrators had only peer (i.e., similar age) or adult victims, suggesting that significant findings were driven by the inclusion of perpetrators who offended against children (e.g., Zakireh et al., 2008). Findings for neglect were mostly nonsignificant, but few studies have examined neglect (e.g., Johnson-Reid & Way, 2001).

Family characteristics. Family characteristics include parental SES, mental health, substance use, and criminal background, as well as family structure. As described in the Appendix, there is little consistent evidence implicating parent or family characteristics in SV perpetration. With a few exceptions, the studies suggested that parent characteristics including criminal behavior (e.g., van Wijk, Vreugdenhil, van Horn, Vermeiren, & Doreleijers, 2007), substance abuse (e.g., Borowsky, Hogan, & Ireland, 1997), and mental health (e.g., Awad & Saunders, 1991) were unrelated to SV perpetration. Indicators of family structure were also unrelated to SV perpetration in most studies (e.g., Hosser & Bosold, 2006). Findings were mixed for indicators of family SES (e.g., DeSouza & Ribeiro, 2005). However, the majority of research in this area compared adolescent sexual offenders (ASOs) with adolescent nonsexual offenders (who may also have heightened levels of these risk characteristics; e.g., Oliver, Hall, & Neuhaus, 1993). Thus, it may be that family characteristics represent more general risk factors for criminal or violent behavior rather than SV-specific factors.

Family relationships. Family relationships refer to interactions among family members including parental conflict,

Table 3. Summary of Factors across Levels of the Social Ecology With Consistent, Nonsignificant, Sample-Specific, Limited, or Mixed Results

Level	Domain	Factor	Summary of effects
Community and societal Relationship	Family environment and history	Gender-Based Factors	Nonsignificant in 1 of 1 study
		Structural and Environmental Factors	Mixed
Relationship	Family characteristics	Child sexual abuse ^a	Significant in 20 of 34 studies
		Child physical abuse	Significant in 15 of 21 studies
		Child neglect	Nonsignificant in 3 of 4 studies
		Child emotional abuse	Significant in 4 of 5 studies
		Child maltreatment (composite)	Significant for college/community only
Relationship	Family relationships	Parent socioeconomic status	Mixed
		Family structure	Nonsignificant in 8 of 11 studies
		Parental mental health	Nonsignificant in 4 of 5 studies
Relationship	Peer Attitudes and Behaviors	Parental criminal behavior/substance abuse	Nonsignificant in 6 of 7 studies
		Exposure to parental violence/family conflict	Significant in 18 of 22 studies
		Family functioning	Mixed
		Parent-child relationship quality	Significant for adults only
Relationship	Hypermasuline/all male peers	Parenting style	Mixed
		Peer approval for forced sex	Significant in 4 of 4 studies
Relationship	Association with antisocial peers	Peer pressure for sexual activity	Significant in 6 of 7 studies
		Peer sexual aggression	Significant in 3 of 3 studies
Relationship	Intimate partner processes and characteristics	Fraternity membership	Significant in 8 of 11 studies
Relationship	Partner conflict	Sports participation	Significant in 8 of 12 studies
Relationship	Sexual behaviors and other noncognitive sex-related factors	Delinquent peers	Mixed
Individual	Psychosocial factors	Gang membership	Significant in 2 of 2 studies
		Relationship processes	Significant in 5 of 5 studies
		More casual relationship status	Significant in 2 of 2 studies
		Relationship conflict/partner violence	Significant in 7 of 8 studies
		Multiple sexual partners	Significant in 21 of 25 studies
		Impersonal sex	Significant in 12 of 13 studies
		Early initiation of sex	Significant in 7 of 7 studies
		Exposure to sexually explicit media	Significant in 6 of 9 studies
		Arousal to deviant/aggressive stimuli	Mixed
		Sexual orientation/identity	Significant for ASOs only
		Sexual risk taking	Significant in 4 of 5 studies
		Motivation for sex/sex drive	Significant in 4 of 5 studies
		SV victimization during adolescence or adulthood	Significant in 2 of 3 studies
		Individual	Sex-related cognitions
Deviant sexual behavior	Significant for ASOs only		
Perpetrator positive for STI	Significant in 3 of 3 studies		
Age at coming out	Nonsignificant in 1 of 1 study		
Testosterone	Nonsignificant in 1 of 1 study		
Sexual discomfort	Significant for ASOs only		
General adjustment difficulties/psychopathology	Mixed		
Delinquency/conduct disorder	Mixed		
Aggression	Significant in 16 of 24 studies		
School/academic/behavior problems	Mixed		
Impulsivity attention problems	Mixed		
Self-esteem	Mixed		
Religious affiliation	Nonsignificant in 6 of 6 studies		
Suicide attempts	Significant in 3 of 4 studies		
Sexual fantasies	Significant in 4 of 7 studies		
Willingness to commit SV	Significant in 7 of 11 studies		
Victim blame	Significant in 4 of 4 studies		
Rape and sexual knowledge	Mixed		
Denial or displacing blame	Nonsignificant in 1 of 1 study		

(continued)

Table 3. (continued)

Level	Domain	Factor	Summary of effects
Individual	Interpersonal factors	Social skills/interactions Empathic deficits Intimacy deficits/isolation/attachment problems	Mixed Significant in 13 of 20 studies Mixed
Individual	Gender-based cognitions	Social desirability Cue misinterpretation Rape myth acceptance Hostility towards women/Adversarial sexual beliefs	Nonsignificant in 4 of 6 studies Significant in 6 of 7 studies Significant in 31 of 36 studies Significant in 32 of 42 studies
Individual	Violence-related cognitions	Traditional gender role adherence Hypermasculinity Acceptance of violence Dominance	Significant in 19 of 21 studies Significant in 12 of 18 studies Significant in 9 of 13 studies Significant in 4 of 6 studies
Individual	Substance use	Competitiveness Alcohol use Drug use	Significant in 1 of 1 study Significant for adults only Mixed

Note. Significant factors had significant associations with sexual violence in the majority of studies examined and across types of perpetrators and adolescent and adult samples. Nonsignificant factors were not associated with sexual violence in a majority of studies examined. Factors associated with SV in specific samples had significant effects in particular samples, were only examined in specific samples, or were examined in only one study. Mixed factors had approximately equivalent numbers of significant and nonsignificant findings or had significant effects in multiple directions (e.g., sex offenders > nonoffenders and nonoffenders > sex offenders) as well as some nonsignificant effects. ASO = adolescent sexual offender; SV = sexual violence.

^a Findings for child sexual abuse were significant in a majority college/community samples and overall, but tended to be mixed in adjudicated samples.

parent-child relationship quality, parenting style, and family functioning. Examination of family relationship quality and functioning as potential SV risk factors is supported by social learning theory, which emphasizes the family as a model for the child's own behavior, and by attachment theory which points to the nature and quality of early parent-child relationships as critical to a child's psychosocial development (e.g., Burton, Miller, & Shill, 2002; Ward, Hudson, & Marshall, 1996). Indeed, findings reviewed here provided consistent support for exposure to family conflict and parental violence (e.g., Borowsky et al., 1997). Parent-child relationship quality was identified as a consistent predictor of SV in community and adult sex offender samples (e.g., McCormack, Hudson & Ward, 2002) but not among ASOs when compared to other adolescent offenders (e.g., Miner & Munns, 2005). Evidence for the influence of family functioning and parenting style on SV was mixed. Notably, having parents who use reasoning to resolve family conflicts may serve as a protective factor for SV (e.g., Forbes & Adams-Curtis, 2001), though other parenting styles were not significantly associated with SV perpetration (e.g., Aberle & Littlefield, 2001).

Peer Influences

Peer attitudes and behaviors. Association with peers who condone SV-supportive attitudes, beliefs, and behaviors has been examined as a risk factor for SV perpetration (e.g., DeKeseredy & Kelly, 1995). Peer groups in which one or more individuals actively support or engage in SV may create the perception of social norms supportive of SV, normalizing and justifying these behaviors. Further, individuals who perceive

pressure by their friends to have sex may view SV as having social benefits that outweigh the personal risks. Indeed, findings from several studies with community samples (e.g., Abbey, Parkhill, Clinton-Sherrod, & Zawacki, 2007; Jewkes et al., 2006; Krahe, 1998) consistently supported SV-supportive peer sexual attitudes and behaviors as risk factors for perpetration. These factors have not been examined in adjudicated populations.

Hypermasculine/all-male peer groups. Association with male peer groups with strong masculine ideologies, including some athletic teams or fraternities, has been linked to increased endorsement of SV-supportive attitudes and increased risk of SV perpetration (Murnen & Kohlman, 2007). This type of group participation or membership may influence SV perpetration by reinforcing and providing social support for the use of violence, objectification of women, hostile attitudes toward women, hypermasculine ideals, or excessive alcohol use (e.g., Godenzi, Schwartz, & DeKeseredy, 2001; Humphrey & Kahn, 2000; Murnen & Kohlman, 2007). Although the connection between male peer groups/sports participation and SV has been explored in the literature, the majority of studies examine SV-supporting attitudes rather than behavior (e.g., Forbes, Adams-Curtis, Pakalka, & White, 2006; Murnen & Kohlman, 2007). In the current review, participation in fraternities and sports was associated with increased risk for SV perpetration behavior in more studies than not (e.g., Boeringer, Shehan, & Akers, 1991; Loh, Gidycz, Lobo, & Luthra, 2005), but the results were notably mixed. A few studies found that this relationship may be moderated by characteristics of the fraternity, sport, or individual participant (e.g., Caron, Halteman, &

Stacy, 1997; Gage, 2008; Humphrey & Kahn, 2000). This is consistent with suggestions by several authors that this relationship may depend on the risk characteristics of specific fraternities or teams rather than participation in such groups generally (e.g., Casey & Lindhorst, 2009).

Association with antisocial peers. Association with antisocial or delinquent peers has been identified as one of the strongest risk factors for serious violence in adolescence (Herrenkohl et al., 2000). Despite this, relatively few studies examined peer delinquency as a risk factor for SV. Available evidence for association with delinquent peers was mixed; there is limited but consistent support for gang membership (one extreme form of affiliation with high-risk peers) as a risk factor for SV perpetration (e.g., Borowsky et al., 1997). Additional research is needed to clarify and strengthen empirical evidence for these risk factors.

Intimate Partner Relationships

Intimate partner processes and characteristics. Intimate partner processes and characteristics refer to couples' relationship dynamics and the seriousness of a relationship (e.g., casual or serious). Certain characteristics of a perpetrator's intimate relationships may serve as indicators of increased risk for SV, such as the minimization of conflict through avoidance (Scott & Straus, 2007) and the use of controlling behaviors and emotional withdrawal by partners (Katz, Carino, & Hilton, 2002). Although based on a limited number of studies with community and adjudicated adult men, evidence suggests the nature, quality, and type of one's intimate relationships are associated with the risk for SV within those relationships.

Relationship conflict. SV that co-occurs with physical violence or emotional abuse may represent a strategy for exerting power and control over intimate partners (Gage & Hutchinson, 2006). Alternatively, it may be that men who resort to physical or verbal tactics to resolve other relationship conflicts may also use these strategies when faced with an unwilling sexual partner (Loh & Gidycz, 2006). Findings suggested that relationship conflict consistently predicted SV against partners in college and community samples (e.g., Loh & Gidycz, 2006). In addition, several studies found that relationship conflict predicted SV generally (e.g., Jewkes et al., 2006), including victimization of partners and nonpartners, suggesting that both behaviors may be associated with an adversarial approach to interactions with women.

Overview of Individual-Level Factors

Sexual behaviors and other noncognitive sex-related factors. This domain captures having multiple sexual partners, impersonal sex, early initiation of sex, exposure to sexually explicit media, arousal to deviant/aggressive stimuli, sexual orientation/identity, sexual risk taking, motivation for sex/sex drive, SV victimization during adolescence or adulthood, past SV

perpetration, deviant sexual behavior, perpetrator who is positive for a sexually transmitted infection, age at coming out, testosterone, and sexual discomfort. An evolutionary perspective suggests male and female differences in mating behaviors may pose a risk for SV. Evolutionary theorists suggest male mating effort seeks to maximize the chance of reproduction by increasing the number of sexual partners and using coercive strategies when traditional methods of attraction (e.g., appearance, financial status) are ineffective or unavailable (Malamuth & Malamuth, 1999). In a different vein, social learning theories suggest dysfunctional sexual behaviors may be learned through maladaptive developmental events such as premature exposure to sexual material (Christopher, Madura, & Weaver, 1998). The results from our review provide support for these theories; across samples, multiple sexual partners, impersonal sex/casual attitudes toward sex, early initiation of sex, a history of either sexual victimization during adolescence or adulthood or past SV perpetration, exposure to sexually explicit media, and higher sex drive were directly or indirectly associated with SV perpetration (see Appendix for specific studies that support each factor). Other factors were consistently supported but were only examined in circumscribed samples. For example, bisexual orientation (Daleiden, Kaufman, Hilliker, & O'Neil, 1998), sexual discomfort (preoccupation and conflict with sexuality; Zakireh et al., 2008), and deviant sexual behavior (Daleiden et al., 1998; van Wijk et al., 2007) were significantly associated with SV in ASO samples. Sexual risk taking and sexually transmitted infection (STI) status were associated with SV in groups at particularly high risk for these risk factors (e.g., individuals seeking treatment at STI clinics, Kalichman et al., 2007; Simbayi et al., 2006). Because these samples were not representative, further study is required to determine the applicability of these factors to the broader population. Results were mixed for arousal to deviant stimuli. Age at coming out was nonsignificant in one study (Krahé, Scheinberger-Olwig, & Schutze, 2001), and one study that examined testosterone levels did not support high levels of testosterone as a risk factor (Aromäki, Lindman, & Eriksson, 2002). Although much more work on testosterone as a risk factor has been conducted, these studies were excluded because they were published prior to 1989 or because they included only samples of male sex offenders. In general, many sexual behaviors or related factors were consistently associated with SV.

Psychosocial factors. A substantial amount of work has suggested links between psychopathology, other indicators of poor emotional functioning, and violence, with oppositional or antisocial disorders being particularly predictive of violence in general (Boots & Wareham, 2009; Eronen, Angermeyer, & Schulze, 1998). Violence may be a symptom of a personality or disruptive behavior disorder or may be a strategy used to cope with psychosocial dysfunction. With regard to SV, the available evidence suggests suicide attempts (Bagley & Shewchuk-Dann, 1991; Borowsky et al., 1997; Christoffersen, Soothill, & Francis, 2005) and aggression (e.g., Bagley & Shewchuk-Dann, 1991; DeSouza & Ribeiro, 2005; Gidycz,

Warkentin, & Orchowski, 2007; Smallbone & Dadds, 2000; Ullman, Karbatsos, & Koss, 1999) may occur at a higher rate among SV perpetrators than nonperpetrators. As described in detail in the Appendix, the evidence is mixed for general adjustment difficulties/psychopathology, delinquency, self-esteem, impulsivity, and poor school achievement. Religious affiliation was consistently not associated with SV. Somewhat surprisingly, many factors in this domain had both negative and positive effects, such that perpetrators fared both worse and better than comparison groups on some variables. For example, conduct problems/delinquency were positively associated with SV (e.g., Bagley & Shewchuk-Dann, 1991) and negatively associated with SV (e.g., Blaske, Borduin, Henggeler, & Mann, 1989) among ASOs.

A major limitation in this area is the wide variety of factors that have been examined within each category; in addition to major Axis I and II disorders, more nuanced variables such as hypochondrial preoccupation, self-absorption, repressed hostility, and concern with inner destructive impulses were also studied (McCraw & Pegg-McNab, 1989). Such variation made succinct comparisons across studies difficult and may have resulted in mixed and null effects in some of the domains. The mixed and equivocal findings for aggression and delinquency may also be the result of the overrepresentation of ASO studies in this domain and the tendency to use nonsexual adolescent offenders as a comparison group for ASOs. Because variables like poor academic performance are related to violent behavior in general (e.g., Crapanzano, Frick, & Terranova, 2010; Graham, Bellmore, & Mize, 2006), this variable may not distinguish two adjudicated samples, although both these groups may have poorer achievement than community samples of youth. Compared to the other factor domains we examined, some of which show consistency across diverse samples, the evidence for factors in this domain may represent sample-specific characteristics.

Sex-related cognitions. Sex-related cognitions refer to sexual fantasies and attitudes that blame the victim or are supportive of SV. Because substantial research has demonstrated that thoughts, attitudes, and beliefs are associated with behavior in varying degrees (Glasman & Albarracin, 2006; Kraus, 1995), differences in cognitions between SV perpetrators and nonperpetrators have been active areas of study. Trends suggested victim blame (e.g., Maxwell, Robinson, & Post, 2003), sexual fantasies (Knight & Sims-Knight, 2003), and willingness to commit SV (e.g., Abbey, McAuslan, & Ross, 1998) have been associated with SV perpetration. Lower levels of legal knowledge of rape were associated with SV among high school students (Maxwell et al., 2003). Inadequate sexual knowledge and greater denial of offenses were not associated with SV and were examined only in adjudicated samples (Milloy, 1994; Racey, Lopez, & Schneider, 2000).

Interpersonal skill factors. Interpersonal skills refer to a broad domain of factors that include social skills, empathy, intimacy deficits, cue misinterpretation, and social desirability. Some

theories of sexual offending suggest deficits in interpersonal functioning lead to negative internal states, such as loneliness, which then contribute to SV perpetration (Marshall, 1989). In other words, an inability to negotiate social relationships leads to the development of maladaptive or coercive strategies to satisfy a need for intimacy. Although cue misinterpretation was consistently associated with SV (e.g., Abbey et al., 1998; Shea, 1993; Yescavage, 1999), as discussed in the Appendix results were mixed for social skills deficits and intimacy. Results were nonsignificant across studies for social desirability (e.g., Abbey, McAuslan, Zawacki, Clinton, & Buck, 2001). Empathy had few direct significant effects (e.g., Farr, Brown, & Beckett, 2004), but several moderated effects (e.g., Christopher, Owens, & Stecker, 1993; Malamuth, 1998; Wheeler, George, & Dahl, 2002), suggesting this factor may work in concert with other risk factors to increase or decrease SV risk. For example, some studies suggested empathy and loss of face served as protective factors and buffered the effect of other risk factors (Abbey, Parkhill, BeShears, Clinton-Sherrod, & Zawacki, 2006). Empathy and loss of face may exert inhibitory control when decision making is compromised by other situational risk factors, such as intoxication, anger, or anxiety. Interpersonal factors have been conceptualized in a variety of ways across studies, making it difficult to summarize and compare results; this variability may have contributed to several null and mixed effects in this domain. A substantial portion of this work has been conducted in adjudicated samples with effects varying based on comparison group, victim characteristics, and aspect of empathy examined with nonsex offending comparison groups (e.g., Burke, 2001; Fernandez & Marshall, 2003; Lindsey, Carlozzi, & Eells, 2001).

Gender-related cognitions. Gender-related cognitions refer to rape myth acceptance, hostility toward women, traditional gender role adherence, and hypermasculinity. Among domains reviewed and as illustrated in Table 3 and the Appendix, gender-related thoughts, attitudes, and beliefs were the most studied risk factors. Much of this research stems from feminist theory, which suggests men's sexual aggression is propagated by patriarchal societies, which seek to maintain power and control over women through their sexual victimization (Walker, 1989). Across studies as described in the Appendix, traditional, rape-supportive, hypermasculine, and adversarial sexual beliefs and attitudes demonstrated associations with SV. A particular strength of this literature is that many studies have examined the interaction of these and other factors, suggesting factors work in concert to increase the risk for SV. In Malamuth's Confluence Model of sexual aggression (Malamuth et al., 1995), for example, attitudes supporting violence against women interact with violent and sexual behaviors to give rise to SV. Although some exceptions exist (e.g., Hall, DeGarmo, Eap, Teten, & Sue, 2006; Malamuth et al., 1995), this literature is limited by its overreliance on college samples, use of self-report methodology, and cross-sectional designs. For example, with cross-sectional data, it is unclear whether negative

attitudes toward women develop after SV perpetration or preceded and potentially contributed to SV perpetration.

General violence-related cognitions. General violence-related cognitions include feelings of dominance, competitiveness, and attitudes accepting of violence. Acceptance of violence in general consistently has been associated with SV across samples (e.g., Sears, Byers, & Price, 2007). Although less well-studied, the available evidence suggests higher levels of competitiveness may also be a significant risk factor for SV (Caron et al., 1997). Need for dominance had several significant indirect effects on SV (e.g., Fineran & Bolen, 2006; Martin, Vergeles, Acevedo, Sanchez, & Visa, 2005), suggesting it interacts with other variables to increase the risk for perpetration. Violence-related thoughts, attitudes, and beliefs have been operationalized in a variety of ways across studies, making it difficult to directly compare findings. Studies also relied almost exclusively on self-report, which may be affected by social desirability biases.

Substance use. Substantial work on the association between substance use and SV has been conducted based on the epidemiological overlap of SV and substance use, the tendency for substance abusers to exhibit a variety of aggressive behaviors, and research demonstrating that substance use alters social information processing (e.g., sex cue interpretation; Abbey et al., 1998; Testa, 2002, 2004). Across most adult samples, consistent effects were found for alcohol (e.g., Abbey et al., 1998; Abbey & McAuslan, 2004) but not for drug use (see Appendix for explanation of mixed effects). ASOs tended to report less alcohol use than non-ASO delinquent comparison groups (e.g., Awad & Saunders, 1991; Milloy, 1994), and the results for adolescent drug use were mixed (e.g., Zakireh et al., 2008). In addition to direct effects between alcohol and SV in adulthood, methodologically sophisticated studies have identified complex associations (e.g., Hall, Sue, Narang, & Lilly, 2000). Indirect and moderated effects suggest that the strongest effects for alcohol and SV involve the pharmacological effects that alcohol has on factors such as likelihood of sexual aggression perpetration. The complexity and richness of this literature cannot be captured in this brief section, but we attempt to highlight nuances and refer the reader to other reviews focused on this body of literature (e.g., Testa, 2002).

Summary and Conclusions

To date, the research on SV has uncovered a host of risk factors and a few protective factors related to SV perpetration. However, the translation of this knowledge into effective primary prevention strategies has been a challenge (Teten Tharp et al., 2011). To serve as a resource for practitioners who are developing, selecting, and implementing comprehensive prevention programs, we conducted a systematic review of the literature on factors associated with SV perpetration across each level of the social ecology (CDC, 2004). Our review identified 25 factors at the relationship, community, and societal levels and 42 factors at the individual level. The risk and protective

factors that hold the most promise as primary prevention targets are those factors with consistent significant associations with SV perpetration across well-designed and rigorous studies and across diverse samples.

Among the 67 factors we examined, consistent significant associations with SV perpetration were found for 35 (52.2%) factors. Ten (14.9%) factors were not supported as risk or protective factors for SV, and 7 (10.4%) showed some positive effects (e.g., examined in only one study, significant for a specific sample) but were in need of more research. For 15 (22.4%) factors, the evidence was mixed; such mixed effects often resulted from methodological differences across studies, different conceptualizations of the factor, or different comparison groups, which are discussed subsequently in more detail and highlighted for each factor summary in the Appendix where applicable. The effect across studies of each factor is summarized in Table 3². Multiple interactions among factors were identified, suggesting that multiple risk factors combine in different ways to increase the likelihood of SV perpetration. Results suggest the need to take a comprehensive approach to prevention by targeting multiple, modifiable factors (factors that can be changed by intervention) that are most consistently associated with SV.

Our review identified only a few protective factors, most of which were examined in only a few studies or applied only to specific groups. Borowsky, Hogan, and Ireland (1997) found emotional health and connectedness were protective factors for high school boys' perpetration, and academic achievement was a protective factor for high school girls' perpetration. Hall and colleagues (Hall et al., 2006; Hall et al., 2000; Hall, Teten, DeGarmo, Sue, & Stephens, 2005) identified "loss of face,"—a concern for how one's actions affect others—as a protective factor for SV among Asian American men, although the effect varied by risk factor; for example, loss of face, but not hostile masculinity, protected against the effect of early risk factors on SV. In terms of family factors, some evidence suggests that having parents who use reasoning to resolve family conflicts may be associated with a lower risk for SV perpetration by males (Forbes & Adams-Curtis, 2001). In general, empathy had several direct (e.g., Abbey et al., 2007; Farr et al., 2004) and indirect effects (e.g., Abbey et al., 2006) on SV, suggesting greater empathy may be a potential protective factor. The nuanced nature of protective factors may suggest that these factors, like many risk factors, are activated in certain situations and may be most relevant during particular developmental periods. The results of the review suggest our current knowledge of protective factors within the SV literature is extremely limited and hampers our ability to develop and identify prevention strategies that can take more of a health promotion or resiliency approach.

As described above, the Confluence Model inspired our review, such that risk and protective factors from across the social ecology and from diverse theories were included. Like the Confluence Model that offered a unified conceptualization of paths to SV, we looked for patterns, trends, or commonalities among factors that were significant at the individual, relationship, and community or societal levels. To identify

constellations, we examined the factors identified as consistently significant in Table 3. Constellations of factors that have effects across the social ecology may support the development of comprehensive and cohesive prevention strategies that are organized around a particular constellation of risk. Two constellations emerged as promising targets for comprehensive approaches to SV prevention.

The first constellation was the *presence and acceptance of violence*. At the individual level, this constellation was comprised of risk factors such as acceptance of violence, past SV perpetration, and SV victimization as an adolescent or adult. At the family level, this constellation included risk factors such as conflict in the family of origin and different forms of child maltreatment. At the peer level, this constellation included peers that perpetrate SV, peer support for SV, and gang membership, as well as relationship conflict at the intimate partner relationship level. Many of these factors were supported across samples and developmental phases. Studies have not yet examined the cumulative effect on SV of sexual and non-SV experienced and promoted in multiple contexts; however, the factors identified in our review suggest that individuals who experience violence in their family of origin, have peers who support violence, and have relationships characterized by violence may have attitudes that support the use of violence and subsequently are at higher risk for perpetrating SV. As we discuss in detail below, the presence and acceptance of violence has been extensively examined in other areas of violence research, such as youth violence. Drawing from other violence literatures may be useful in identifying additional risk and protective factors that may be associated with SV.

The second promising constellation involves *unhealthy sexual behaviors, experiences, or attitudes*. Factors associated with this constellation were consistently supported at the individual and peer level and included risk factors such as multiple sexual partners, impersonal sex, early initiation of sex, adversarial heterosexual beliefs, CSA victimization, exposure to sexually aggressive peers, and peer pressure to have sex. Sex-related factors have not been examined at the community or societal levels, although some theoretical work suggests community level variables, such as norms promoting the delay of sexual activity in Asian cultures, may protect against SV (Hall, Windover, & Maramba, 1998). Future empirical work is needed to validate such theoretical propositions and to identify other risk and protective effects of sex-related variables at the outer levels of the social ecology. As we discuss in detail below, the potential role of unhealthy sexual behaviors, experiences, or attitudes in the etiology of SV suggests the development of evidence-informed SV prevention strategies may benefit from drawing on other public health research and programming that targets risky sexual behaviors (Vivolo et al., 2010).

The constellations also resemble constructs of risk in Malamuth's Confluence Model (Malamuth et al., 1995; Malamuth & Sockloskie, 1991) and mirror those in a model of adult-perpetrated SV that has been replicated and empirically supported (Hall et al., 2005; Lim & Howard, 1998). The evidence

of the constellations and the research underlying the Confluence Model suggests it may be a useful model in guiding SV prevention development.

Two major benefits exist to expanding the study of risk and protective factors and the development of effective prevention strategies to include research on youth violence and sexual risk behaviors. First, youth violence and sexual risk prevention offer a cadre of effective and promising prevention strategies implemented at multiple levels of the social ecology that may be adapted or integrated into SV prevention (e.g., Center for the Study and Prevention of Violence, 2010; Herbst et al., 2007). Second, the risk and protective factor literature in these areas is vast, well established, often methodologically rigorous, and may offer new avenues for the study of SV.

Using youth violence as an example (for further discussion see DeGue, Massetti, Holt, Tharp, Valle, Matjasko, et al., 2012 with the appropriate reference citation.), some SV risk and protective factors overlap with those associated with youth violence, including acceptance of violence, but most SV studies were not informed by the large and rich youth violence developmental literature. Including risk and protective factors that have a long-established relationship with youth violence (e.g., lack of parental monitoring) and at the outer levels of the social ecology (e.g., living in neighborhoods characterized by high concentrations of poverty and unemployment or with lower levels of collective efficacy; Sampson, Raudenbush, & Earls, 1997) in models of SV will yield important information and linkages among different forms of violence. For example, recent work has found that individuals who engage in bullying are more likely to also engage in SV (DeSouza & Ribeiro, 2005; Pellegrini, 2001; Pepler et al., 2006), and SV and bullying have some shared risk factors (Basile, Espelage, Rivers, McMahon, & Simon, 2009; Espelage, 2009). It is also possible that well-established SV risk factors will not maintain their significance when key youth violence risk and protective factors are considered. Similarly, substantial work in youth violence has identified developmental trajectories of problem behavior and the interaction of trajectories with risk factors (e.g., Herrenkohl, Hill, Hawkins, Chung, & Nagin, 2006), which has informed the developmentally appropriate implementation of prevention strategies and identification of youth at elevated risk for violence. SV research may benefit both from considering effective prevention strategies for youth violence and from the methodological and conceptual advances in this field.

Methodological Considerations and Recommendations

In the course of conducting this review, our team identified several methodological and other issues in the literature that need to be considered when interpreting the findings of our review and in conducting future research. Our recommendations focus on issues of definition, research design, sampling, measurement, analyses, and gaps in the samples studied. Our assessment of the mixed results for some factors suggests these methodological considerations may account for some of the variable results across studies. Although many of the

methodological issues we raise are common to etiological research, in general, SV research seems to have progressed more slowly than other areas of violence, so we describe these limitations in light of our review and as a call for more rigorous studies.

First, there is a need to clearly define SV and to try to increase the consistency of definitions used in the research. Studies operationalized SV differently; and often the types of SV perpetration captured were not described (e.g., in studies of sex offenders), vaguely described, or focused on more extreme forms of SV (i.e., rape). The particular form of SV examined also varied by developmental phase of the participants, such that studies of youth often measured less severe forms of SV, such as sexual harassment (e.g., Pellegrini, 2001), and studies of adults often measured a variety of forms of forced or coerced sex (e.g., White, McMullin, Swartout, Sechrist, & Gollehon, 2008). The tendency to assess less severe forms of SV in younger samples may reflect reluctance to ask children and youth questions about sexual behavior; nonetheless, these differences make it difficult to summarize results across studies or to examine whether specific types of SV (e.g., sexual harassment, use of coercion, rape) are associated with different risk and protective factors. Although the need for a consistent definition has been voiced before (e.g., Basile & Saltzman, 2002), our review reiterates this need. In our review, we utilized the CDC definition for SV and would recommend this definition as a starting point to gain consistency in the field.

Second, there is a need to use longitudinal methodology across the life span to identify developmental trajectories of SV behavior, critical periods for intervention, and populations at elevated developmental risk for SV perpetration during different developmental periods. Because effective prevention often capitalizes on opportunities to intervene at earlier stages in developmental processes, it is critical to understand the development and expression of risk and protective factors for SV at early ages and how this expression changes over time. In addition, research is needed that identifies risk and protective factors for SV using research designs that can demonstrate, at a minimum, temporal patterns of the factors on SV. In terms of design, the majority of the studies in our review were cross sectional. Cross-sectional designs, while useful for determining associations between SV and different risk and protective factors, do not allow temporal or developmental timing of these associations to be determined. Longitudinal studies are often more expensive to conduct than cross sectional and a starting point for addressing this weakness may be to add SV measures to ongoing longitudinal studies.

Third, future work requires well-matched, well-measured comparison groups, particularly for adjudicated samples. The public health approach to prevention that targets risk and protective factors in hopes of preventing problem behavior relies on the identification of factors that clearly discriminate offenders from nonoffenders, which is only possible in well-designed studies with carefully matched comparison groups. Sampling procedures used in many of the studies for factors with mixed effects contributed to difficulties in generalizing

across studies. Most studies focused on a limited number of risk factors within the circumscribed context of a particular theory or sample. As a result, some risk and protective factors were examined only within specific groups. For example, gender-based cognitions were examined primarily among college students, and psychosocial and interpersonal factors were examined primarily in adjudicated samples. Therefore, it is unclear how generalizable some of these factors are to other types of SV perpetrators. Many studies, particularly those with college students, used convenience samples, and it is unclear how well these results translate to other populations.

Adjudicated samples were often small, and comparison groups were often convenience samples of incarcerated nonsex offenders. Group membership often was determined by the nature of the index offense (i.e., SV or nonsex offense resulting in incarceration), which introduces the possibility that individuals with undocumented sexual offenses may have been included in the comparison group. Studies with adjudicated samples often resulted in null effects on factors common to both sexual and nonsexual offending groups (e.g., delinquency), which could reflect true shared risk factors in adjudicated populations or undetected SV perpetration histories in the comparison offenders. Future work with adjudicated sex offenders might consider gathering additional information (e.g., self-report) on SV perpetration across all groups and including matched incarcerated and community comparison groups to disentangle factors associated with general offending and factors specific to SV perpetration.

Fourth, measurement of SV and other factors needs to be conducted using well-designed, comprehensive measures. There was a tendency across studies to use retrospective self-report instruments to assess SV perpetration behaviors and risk and protective factors. Although validated instruments such as the Sexual Experiences Survey (Koss & Oros, 1982) were often used, other measures of SV were commonly embedded in instruments that assess a variety of relationship or risk behaviors (e.g., Conflict in Adolescent Dating Relationships Inventory, Wolfe et al., 2001; Youth Risk Behavior Surveillance System, CDC, 2007) and may have included only a few items that measure only the most severe forms of SV. Future work should focus on the development and use of well-validated instruments that measure the range of SV behaviors as well as the context of the violence. Finally, in terms of measurement, studies assessing factors at the relationship, community, and societal levels of the social ecology often used individual level surveys rather than assessing the factor at the level of the social ecology being examined (e.g., community-level data for community factors; assessment of relationship factors as opposed to one individual's report of relationship factors). We acknowledge that there are significant, though not insurmountable, methodological hurdles involved in measuring risk factors at the community and societal levels. These challenges may contribute to the particularly sparse literature at these levels and explain why few of the outer-level risk factors hypothesized in the theoretical literature have been empirically examined. These potential risk factors, many supported by

qualitative or victimization data, are in need of rigorous empirical investigation to identify promising targets for the prevention of SV perpetration.

Fifth, research should be conducted that examines multiple risk and protective factors and utilize analyses that allow for the examination of interactions and mediating and moderating effects. Protective factors were rarely examined. With respect to analyses, the analytic techniques used in most studies often relied on correlations or tests of mean differences and examined the factors in isolation rather than in relation to each other. Although the nested nature of the social ecological model suggests the interplay of risk and protective factors among levels and reflects the fact that factors within and across levels frequently co-occur with each other and with outcomes, few analytic approaches were used that could capture these interactions (e.g., hierarchical linear modeling). Moreover, it is unclear what the cumulative effect over development of multiple risk factors are and how and when protective factors may influence this risk. Future work should employ multimethod assessment of multiple factors associated with SV as well as analytic techniques that can account for the complex interplay between factors and levels of the social ecology.

Sixth, there are extensive gaps in our knowledge of factors associated with SV in certain demographic groups. The final sample of articles reflected the diversity of SV perpetrators (see Table 2), but overrepresented samples comprised exclusively of male college students ($n = 63$, 33.0%) and tended to include mostly male perpetrators ($n = 160$, 83.7%). Four primary groups were underrepresented in our review: men in the community; lesbian, gay, bisexual, and transgender (LGBT) individuals; military personnel; and girls/women. Although not represented in our review and not discussed here, several groups also exist that experience particularly high rates of SV victimization (e.g., economically disadvantaged individuals, some ethnic and cultural minorities; National Center for Injury Prevention and Control, 2009); however, because no perpetration research has been conducted with these groups, it is unclear whether both perpetration and victimization are elevated.

Community samples of men. A substantial number of studies used college student samples, despite the fact that SV occurs across age groups and settings. College samples are often used because of the convenience of data collection and because of the documented frequency of SV that takes place on college campuses (Fisher, Cullen, & Turner, 2000). The major drawback of these samples is that, for the most part, they do not represent the general population, in that collegiate samples are often predominantly Caucasian, young, and relatively affluent (e.g., Gidycz et al., 2007). Moreover, some risk factors, such as excessive alcohol use, may be concentrated in collegiate samples, whereas other risk factors, such as gang membership, may be more common in noncollegiate samples. In one of the few studies that directly compared collegiate and community samples of men, a different pattern of results for each sample was found for traditional gender role adherence (Walker, Rowe, &

Quinsey, 1993). More work with representative samples of noncollegiate men is needed to understand the generalizability of risk factors that have been examined primarily in collegiate samples and to identify factors that may be unique to community samples.

LGBT individuals. Similarly, very little work has been conducted with LGBT samples or with same-sex SV. In our review, 3 (1.6%) studies specifically examined same-sex SV (Krahé et al., 2001; Kwon, Lee, Kim, & Kim, 2007; Strike, Myers, Calzavara, & Haubrich, 2001), although a few additional articles included individuals with both heterosexual and homosexual orientations (e.g., Daleiden et al., 1998; Segurado et al., 2008). Two primary forms of SV involving this group are in need of further study: harassment or SV between same-sex individuals due to homophobia or bullying, and SV within same-sex relationships that occur in the context of intimate partner violence. Both forms of violence present unique research challenges. For the former, perpetrators or victims of homophobic bullying may not consider the behavior a form of SV, and stigma may prevent reporting of such acts. For the latter, it is logistically difficult to recruit a representative sample of same-sex couples to ensure sufficient statistical power, although a variety of recruitment methods in other areas of public health are being evaluated for this purpose (Fisher et al., 2010; Johnston et al., 2008). As an alternative to representative samples, some research utilizes convenience samples of LGBT individuals; the limitation of using convenience samples is that factors identified in circumscribed samples may not generalize to the population. For example, Strike and colleagues (2001) conducted focus groups with LGBT individuals who were currently homeless or at one time had been homeless. While this approach was useful in describing the particular needs of this group, the study's results may have conflated risk for SV with factors associated with homelessness.

The studies in our review that examined risk factors for same-sex SV examined some risk factors that we did not encounter in other studies, such as exchanging money for sex (Krahé et al., 2001). Because these factors have not been examined in heterosexual samples, it is unclear whether this is a sample-specific risk factor or whether it is associated with heterosexual SV as well. Future work is needed to clarify which risk and protective factors are unique to same-sex SV and which may be applicable to other groups. As a step toward clarifying risk and protective factors that pertain to heterosexual and same-sex SV, studies should at a minimum assess the sexual orientation of their participants and the sex of the target of the violence.

Military personnel. A third area in need of further study is SV perpetration during military service. In the United States, according to the 2000 census, approximately 1.4 million individuals were serving as active duty or reserve military, and approximately 26.4 million were military veterans (U.S. Census Bureau, 2003). In 2003, the number of veterans and military constituted over 13% of U.S. citizens over the age of 18 (U.S. Census Bureau, 2003), but only 1.6% of the studies we reviewed ($n = 3$, Kwon et al., 2007; Merrill, Thomsen, Gold,

& Milner, 2001; Stander, Merrill, Thomsen, Crouch, & Milner, 2008) involved this group. Of the three studies that examined military samples, two U.S. studies examined pre-military male-to-female sexual assault (Merrill et al., 2001; Stander et al., 2008). The other military study involved male-on-male SV in the South Korean military (Kwon et al., 2007). Recently, sexual assault in the military has received substantial attention (e.g., Defense Task Force on Sexual Assault in the Military, 2009), resulting in large-scale prevention efforts; however, most of the research with this group has examined the mental and physical health consequences of victimization (e.g., Haskell et al., 2010) rather than risk for perpetration. Reports of SV victimization indicate men as well as women are at risk for military sexual assault (Suris & Lind, 2008) and suggest research on both male-on-female and male-on-male SV is needed. Therefore, in order to better guide the selection, adaptation, and development of prevention strategies for the military, we must understand whether the existing evidence on risk and protective factors from incarcerated, college, and community samples is applicable, and if not, what factors may be unique to military and veteran populations.

Girls and women. The final group that was underrepresented in our review and requires more study is women. Consistent evidence suggests women are less likely to perpetrate SV than men. For example, in 2008, women accounted for 1.2% of arrests for forcible rape and 8.5% of arrests for other sex crimes (Federal Bureau of Investigation, 2008). However, a smaller, sometimes negligible difference exists between the prevalence of men's and women's nonphysical forms of coercion (Anderson & Melson, 2002). Despite this, very little rigorous work has focused on risk and protective factors for women's perpetration. Although some SV prevention programs target only men and boys (e.g., *Men Can Stop Rape*, www.mencanstoprape.org; *The Men's Program*, www.onein-fourusa.org), many programs, particularly those for adolescents, include both sexes in the intervention. These programs often address known risk and protective factors for SV; however, as our review has demonstrated, this literature has predominantly been obtained from studies of male samples. We do not discourage the inclusion of men and women in the same prevention interventions, as this strategy has proven effective and mutually beneficial for some programs (e.g., *Safe Dates*, Foshee et al., 2004). However, without an evidence base that supports the comparability of risk factors for men and women, the justification for the universal application of these programs is unclear. As mentioned above, the four groups highlighted as in need of further study are those that were underrepresented in our review.

Limitations

Our review was limited in several ways: First, our exclusion criteria produced a select subset of the SV risk or protective factor research that was most relevant to primary prevention of perpetration. Rigorous work on other levels of prevention

(e.g., risk factors for SV recidivism) has been completed but was not a focus of this review. Further, we did not examine the risk factors for sexual victimization due to our focus on the prevention of perpetration. Second, the results provide a snapshot of the amount of research for each factor, but the quality issues we encountered suggest all results should not be equally weighted. Because our goal was to be inclusive of multiple factors, we did not pursue a meta-analysis, as the data needed for this analysis was not found in many of the studies. However, only a meta-analysis could provide information about the robustness of the association between SV and the factors. Third, due to the cross-sectional nature of most studies, causal links between the factors and SV could not be established, meaning that preventing one of these risk factors may not necessarily influence SV perpetration. Fourth, while we included numerous articles on factors associated with SV, it is inevitable that our search may have failed to detect some relevant articles, particularly those that did not use our keyword search terms or that were not indexed in the databases we searched. Finally, for quality purposes we selected only published articles or reports to ensure that all studies had been subjected to some level of peer review; this process excluded other potential sources of information, such as foundation reports and dissertations.

Implications for Prevention

Our review has several implications for SV prevention, including considerations in translating etiological research into practice. In order for the factors we identified to be useful in preventing SV, they must be able to impact changes in SV, they must be targeted at key times in development, and they must be modifiable. Due to the cross-sectional designs used in the majority of the studies we reviewed, we have only scant evidence of what factors precede SV and thereby can reasonably be expected, if changed, to subsequently impact SV. Therefore, prevention strategies that target many of the risk and protective factors we reviewed may or may not influence SV behaviors.

The methods of our review also provided little information about which factors are most strongly associated with SV, leaving it unclear which factors should be prioritized in prevention. The multiple interactions we identified and some differences in factors between adolescent and adult samples suggest that some of the factors may be activated in the presence of other factors or only salient at certain developmental phases. For example, alcohol use was significantly associated with SV only in adult samples, suggesting adolescence may be a key time for primary prevention efforts targeting alcohol use, SV, or the intersection of the two. This observation, in addition to the multiple significant factors we identified, suggests programs must be comprehensive, appropriately and developmentally timed, and should reflect the breadth of factors associated with SV.

The factors that have been examined in different age groups and samples provide clues about the predominant theories employed by the practitioners who work with these groups. For example, the majority of collegiate studies examined at least

one gender-based cognition suggesting feminist theory may be a foundation for much SV prevention or research on college campuses. However, some of the consistently supported risk factors we identified, such as suicide attempts/self-harm, may be inconsistent with or omitted from some SV theories in practice. That significant risk factors are inconsistent with theory does not negate their effects, but challenges the field to expand preexisting conceptualizations of SV to include the multiple factors across levels of the social ecology that increase risk for perpetration. Advancing SV prevention may require revisiting or expanding traditional theories and developing inclusive models of risk and prevention that are widely applicable. Additionally, an overarching theory or framework may be needed that incorporates factors associated with SV across different developmental phases, as well as factors at multiple levels of the social ecology. As mentioned before, the Confluence Model provides an example of the explanatory power gained from a multitheory approach. However, it has been over 15 years since the Confluence Model was supported in a 10-year study, and at the time of this writing this work has not been translated into a cohesive prevention program or strategy. The existence of risk factor research, such as the Confluence Model, that could be but is not being used in programming, suggests the need to reduce the time lag that typically occurs in translating research into practice.

Our review also underscores the need to develop comprehensive SV prevention programs that target multiple, interacting risk and protective factors in comprehensive, behaviorally relevant ways. While many rape prevention psychoeducational programs attempt to change multiple risk and protective factors in one to two hours (e.g., Gidycz et al., 2001), it is unlikely that this strategy for presenting such complex information in a single session will result in lasting behavior change, as the complexity of the factors associated with SV suggests skills training may be needed to change entrenched behaviors and attitudes and prevent SV. As the factors we reviewed demonstrate, SV risk is a confluence of developmental antecedents, peer influences, attitudes, sexual behaviors, and relationship factors. Therefore, comprehensive SV prevention must be of sufficient dosage and delivered in such a way as to allow participants to learn and incorporate the skills and knowledge to prevent violence across development (Nation et al., 2003). In addition, current prevention approaches tend to focus primarily on change at the individual level and typically fail to change the broader systems that may facilitate and maintain SV (Swift & Ryan-Finn, 1995), which may account for these programs failing to demonstrate evidence of effectiveness in reducing SV (Breitenbecher, 2000).

Taken together, our review suggests that while some additional risk and protective factor research is needed, particularly at the outer levels of the social ecology, and some methodological limitations need to be addressed, the existing SV literature and that of other areas (e.g., youth violence, sexual health) provide a strong foundation for improving primary prevention efforts. A number of issues must be considered in translating this research into practice, including the nature of the

association between the factors and SV, accurately operationalizing research factors into prevention targets, understanding the modifiability of factors, considering the appropriate time for intervention, and fostering theoretical flexibility and ingenuity.

This review sought to summarize risk and protective factors associated with SV and serve as a resource to practitioners developing and implementing comprehensive SV prevention programs. To date, very few programs have shown an impact on SV behavior and effective SV prevention is sorely needed. By targeting the modifiable factors that are most consistently associated with SV perpetration at appropriate developmental periods and applying knowledge gained from other fields, existing programs potentially can be strengthened and new prevention strategies can be developed. The resulting efforts to prevent SV may have greater impact in stopping violence before it begins.

Appendix

Community and Societal Level Factors

Gender-based factors. In one study, Koenig et al. (2006) found that sexual violence (SV) perpetration by men was not associated with the mean education level of women in their community in a large, national survey of mostly low-income, rural men in northern India. Koenig et al. (2006) also created two community-level indices assessing men's attitudes toward gender roles and domestic violence by aggregating men's responses within several Indian communities and included these measures in a multilevel model, with several other individual- and community-level factors. These authors found that more conservative gender role norms and accepting attitudes toward domestic violence at the community level did not predict SV perpetration against intimate partners by individual men in the community when accounting for other factors. The use of only three items with unknown reliability and validity per index to assess these constructs may have limited their ability to identify effects in this study; however, the authors did detect significant effects of community norms regarding domestic violence on physical (but not sexual) abuse of a partner.

Structural and environmental factors. Koenig et al. (2006) reported that Indian men living in areas with a higher district murder rate were more likely to perpetrate SV against an intimate partner after controlling for other individual and community level factors. However, the same study did not find a significant relationship between SV perpetration against intimate partners and community economic development. Another study found that German adolescent and young adult men who grew up in communist East Berlin reported significantly higher rates of SV perpetration than young men who grew up in West Berlin (Krahé, 1998). However, this study did not control for SES, employment, or other possible differences between the samples.

Relationship-Level Factors

Family Factors

Family Environment and History

Sexual abuse. Eight studies reported higher rates of child sexual abuse (CSA) victimization among adolescent sexual offenders (ASOs) than other offender groups (Burton et al., 2002; Milloy, 1994; Monto, Zgourides, & Harris, 1998; Truscott, 1993; Zakireh et al., 2008), nonoffenders (Monto, Zgourides, Wilson, Harris, 1994), adolescents with a diagnosis of oppositional defiant disorder (Moody, Brissie, & Kim, 1994), or adolescents in residential treatment (Bagley & Shewchuk-Dann, 1991). In contrast, eight studies found no differences between ASOs and other delinquent youth on history of sexual abuse (Awad & Saunders, 1991; Baker, Tabacoff, Tornusciolo, & Eisenstadt, 2003; Burton et al., 2002; Ford & Linney, 1995; Johnson-Reid & Way, 2001; Rubenstein, Yeager, Goodstein, & Lewis, 1993; Spaccarelli, Bowden, Coatsworth, & Kim, 1997; van Wijk et al., 2007). Notably, several studies of ASOs used mixed samples of offenders who perpetrated against children or their adolescent peers (e.g., Milloy, 1994; Moody et al., 1994; Zakireh et al., 2008). In several studies, the sample was not described well enough to determine the age of the victim (e.g., Bagley & Shewchuk-Dann, 1991; Burton et al., 2002; Monto et al., 1998; Truscott, 1993). Because the studies with mixed or undefined samples tended to report significantly higher rates of sexual abuse victimization among ASOs, these findings may be attributable to the presence of offenders who perpetrated against children in these samples. Studies of ASOs who offended against only peers or adults tended to report null findings.

History of CSA victimization was associated with SV perpetration by males and females in high school (Borowsky et al., 1997; Lodico, Gruber, & DiClemente, 1996) and college samples (Loh & Gidycz, 2006; White & Smith, 2004). However, the relationship between CSA victimization and SV perpetration may vary by gender and tactics used. For instance, Anderson, Kontos, and colleagues (2005) reported that female college students who reported SV perpetration were *less* likely to have a history of CSA victimization than nonperpetrating women. Among college men, CSA victimization was significantly related to sexually harassing behaviors (Menard, Hall, Phung, Erian Ghebrial, & Martin, 2003) but not the use of verbally coercive tactics to obtain sex with an unwilling partner (DeGue & DiLillo, 2004).

CSA victimization was also related to SV perpetration in three adult community samples (Knight & Sims-Knight, 2003; Krahé et al., 2001; Lim & Howard, 1998), though two other studies found no direct relationship (Abbey et al., 2006; Merrill et al., 2001). Findings for sexual offenders with only adult victims (i.e., rapists) were mixed, with one study reporting a higher likelihood of CSA victimization among rapists compared to nonsex offenders (Dhawan & Marshall, 1996) and another finding no difference between these groups (McCormack et al., 2002). CSA was associated with SV perpetration in two studies in which the sample included both convicted

rapists and child molesters (Dutton & Hart, 1992; Weeks & Widom, 1998), but not in a study in which the perpetrator type was unspecified (Lee, Jackson, Pattison, & Ward, 2002). As with the ASO samples, it is possible that the significant effects found here are attributable to the inclusion of CSA perpetrators in these sex offender samples.

Physical abuse. Four studies reported a higher likelihood of child physical abuse victimization among ASOs than other juvenile offenders (Spaccarelli et al., 1997; Zakireh et al., 2008) and nonoffending youth (Bagley & Shewchuk-Dann, 1991; Monto et al., 1998). In contrast, three studies reported no differences between sexual and nonsexual juvenile offender groups on history of child physical abuse (Awad & Saunders, 1991; Johnson-Reid & Way, 2001; Truscott, 1993).

Child physical abuse victimization was not significantly associated with SV perpetration in a large study of high school students, using a 1-item measure ($N = 71,594$; Borowsky et al., 1997). In contrast, findings suggested a consistent relationship between child physical abuse and SV perpetration in three college samples (Lyndon, White, & Kadlec, 2007; White et al., 2008; White & Smith, 2004) and five samples of community adults (Abrahams, Jewkes, Hoffman, & Laubsher, 2004; Knight & Sims-Knight, 2003; Krahé et al., 2001; Lim & Howard, 1998; Merrill et al., 2001). Official reports of child physical abuse were not associated with adult rape conviction in another study (Christoffersen et al., 2005).

Three studies found higher rates of child physical abuse among adult sexual offenders than nonsexual offenders (Dutton & Hart, 1992; Lee et al., 2002; McCormack et al., 2002) but not when the adult sex offender sample included both rapists and child molesters (Weeks & Widom, 1998). In contrast to the pattern observed for CSA, it may be that physical abuse victimization is associated with SV perpetration by rapists but not child molesters; thus, the inclusion of CSA offenders in mixed samples might obscure these effects.

Neglect. In a prospective study of incarcerated youth, Johnson-Reid and Way (2001) found that youth who were initially reported to child welfare for neglect were more likely to be non-ASOs than ASOs. However, youth who were initially reported to child welfare for neglect and had experienced multiple forms of abuse were more likely to be ASOs than non-ASOs. In another study of delinquent youth, neglect was not a significant predictor of ASO status when controlling for other factors (Monto et al., 1998). In addition, childhood neglect was not significantly related to SV perpetration in studies of college men (DeGue & DiLillo, 2004), community men (Christoffersen et al., 2005), and a combined sample of adult male sex offenders with child and/or adult victims (Weeks & Widom, 1998).

Emotional abuse. One study of ASOs found higher rates of childhood emotional abuse among ASOs than nonsexual offenders (Zakireh et al., 2008), while another study found no association (Monto et al., 1998). However, childhood emotional

abuse was significantly associated with an increased risk for SV perpetration in studies of college (DeGue & DiLillo, 2004) and community men (Krahé et al., 2001) as well as a sample of adult sexual offenders (Lee, Jackson, Pattison, & Ward, 2002).

Child maltreatment (composite). Several studies used a composite measure assessing a history of multiple forms of childhood maltreatment. ASOs were not more likely than other adolescent offender groups to have a history of abuse based on official records in one study (Johnson-Reid & Way, 2001). Another study found no differences between ASOs against peers/adults and other adolescent offenders on a combined history of physical or sexual abuse sample (Ronis & Bourdin, 2007). In a high school sample, a composite measure of childhood emotional and physical abuse was associated with SV perpetration for boys directly, and for girls indirectly through SV victimization (Fineran & Bolen, 2006). Child maltreatment was significantly related to SV perpetration in seven studies of college men (Carr & Van Deusen, 2004; Hall, 2005; Lyndon et al., 2007; Malamuth, Sockloskie, Koss, & Tanaka, 1991; Renaud & Byers, 2005; Stevenson & Gajarsky, 1991; White & Smith, 2004), but not in one study of SV perpetration by college women (Stevenson & Gajarsky, 1991). Significant associations between child maltreatment and SV were also identified in two community samples (Jewkes et al., 2006; Senn, Desmarais, Verberg, & Wood, 2000) but not in a sample of adult sex offenders (Weeks & Widom, 1998).

Family Characteristics

Parental socioeconomic status (SES). Studies examining indicators of family income and SES among ASOs produced mixed results; however, the patterns may vary depending on whether the comparison group includes violent or nonviolent offenders. Two studies reported that ASOs had lower family incomes than nonviolent offenders but did not differ from violent offenders (Bischof, Stith, & Wilson, 1992; same data reported in Bischof, Stith, & Whitney, 1995; Oliver et al., 1993). In contrast, Bagley and Shewchuk-Dann (1991) found that ASOs were less likely to have parents who were unemployed than other adolescent offenders. In a prospective study, van Wijk, Loeber, and colleagues (2005) reported that ASOs were less likely to live in a socioeconomically distressed neighborhood but more likely to live in poor housing conditions and have a young, poorly educated mother than violent nonsex offenders. Three studies found no differences between ASOs and violent offenders on parental SES, assessed by parental education, occupation, and/or employment (Bischof et al., 1995; Truscott, 1993; van Wijk, Loeber, et al., 2005).

Brazilian high school males enrolled in an expensive private school—a potential proxy for SES—reported more sexual harassment perpetration than males who attended public school (DeSouza & Ribeiro, 2005). Similarly, in a study of South African men, higher income and maternal education was associated with greater risk for SV perpetration (Jewkes et al., 2006). In

contrast, a study of Danish men found that parental unemployment was not associated with SV; but, having a father with no vocational training, an indicator of lower SES, was associated with rape conviction in adulthood (Christoffersen et al., 2005).

Family structure. Two studies found that ASOs had larger families (Awad & Saunders, 1991) and were more likely to come from intact and stable families (Bagley & Shewchuk-Dann, 1991) than nonsexual offenders. However, four studies reported no differences between ASOs and other offenders on family structure (Ford & Linney, 1995; Hosser & Bosold, 2006; Johnson-Reid & Way, 2001), family size (Hosser & Bosold, 2006; Oliver et al., 1993), or parental divorce (van Wijk, Loeber et al., 2005). Studies of ASOs reporting null effects tended to be of somewhat greater methodological rigor with larger samples, more rigorous designs, or more reliable measures than those with significant effects. Family structure was also not a significant risk factor for SV perpetration in a study of high school students (Borowsky et al., 1997). Among adults, Koenig et al. (2006) found that married men in northern India in childless relationships (a characteristic associated with lower social status) were more likely to perpetrate SV against their wives. However, the number of people living in the home (Kalichman et al., 2007) and parental divorce during childhood (Christoffersen et al., 2005) were not associated with SV perpetration in two other non-U.S. samples.

Parental mental health. Parental mental illness was associated with ASO status in one study of adjudicated adolescents (Bagley & Shewchuk-Dann, 1991), but three studies reported no differences between ASOs and other offender groups on history of parental mental illness (Awad & Saunders, 1991; van Wijk et al., 2007), stress, anxiety/depression, or problem behaviors (van Wijk, Loeber et al., 2005). Parental mental illness did not predict adult rape convictions in a prospective community sample (Christoffersen et al., 2005).

Parental criminal behavior/ substance abuse. One study found that ASOs had fewer immediate family members who had been convicted of a crime than violent nonsex offenders (Oliver et al., 1993), although two studies reported no differences between ASOs and other offenders on family criminal history (Ford & Linney, 1995; van Wijk, et al., 2007). Further, two studies with ASOs (Awad & Saunders, 1991; van Wijk et al., 2007), one study of male and female high school students (Borowsky et al., 1997), and one prospective study of community males (Christoffersen et al., 2005) found no association between parental substance use and SV perpetration.

Family Relationships

Exposure to parental violence/family conflict. Two studies, using the Conflict Tactics scale (Straus, 1979), reported that ASOs were exposed to less parental violence than violent nonsex offenders (Ford & Linney, 1995) but more serious parental violence involving weapons than nonviolent offenders

(Spaccarelli et al., 1997). In contrast, two studies did not find significant differences between ASOs and other offenders on their exposure to parental violence (van Wijk et al., 2007) or general conflict between family members (Bischof et al., 1995).

Family conflict was consistently identified as a significant risk factor for SV among high school students, college students, and community men. Witnessing physical abuse between family members predicted SV perpetration among male but not female high school students (Borowsky et al., 1997). Self-reported fear of experiencing physical violence from a family member was associated with SV perpetration in dating relationships (Sears et al., 2007). Exposure to verbal or physical fighting between family members was associated with SV perpetration for high school boys directly and for girls indirectly through delinquency and SV victimization (Fineran & Bolen, 2006). Eight studies with college samples also identified a significant relationship between SV perpetration and exposure to family conflict or parental violence (Dean & Malamuth, 1997; Forbes & Adams-Curtis, 2001; Lyndon et al., 2007; Malamuth et al., 1995; Malamuth et al., 1991; Ouimette & Riggs, 1998; White et al., 2008; White & Smith, 2004). However, two studies found null effects for exposure to family conflict (Aberle & Littlefield, 2001) or parental violence (DeGue & DiLillo, 2004). The null effects in these studies may be accounted for by the small sample of SV perpetrators in the former study ($n = 17$; Aberle & Littlefield, 2001), and the focus on SV perpetrators who used only nonphysical coercive tactics (e.g., manipulation) in the latter study (DeGue & DiLillo, 2004). Exposure to family violence or conflict was consistently associated with SV for community men in studies from five countries, including the United States (Knight & Sims-Knight, 2003), the Netherlands (Christoffersen et al., 2005), China (Lim & Howard, 1998), South Africa (Abrahams et al., 2004), and India (Koenig et al., 2006).

Family functioning. Various characteristics of family functioning, including family cohesion, adaptability, and communication, have been assessed among ASO populations. The results of five studies suggest that ASOs generally do not differ from other juvenile offenders on characteristics of family functioning, although ASOs did tend to report worse family functioning than nonoffending youth (Bischof et al., 1995; Blaske et al., 1989; Milloy, 1994; Ronis & Borduin, 2007; van Wijk, Loeber et al., 2005). A large study of U.S. high school students found that family cohesion was not associated with SV perpetration (Borowsky et al., 1997).

Parent-child relationship quality. One study, which used an observational measure, found that ASOs had lower quality mother-son relationships than nonoffenders but did not differ from other delinquents (Blaske et al., 1989). In two studies, ASOs did not differ significantly from other juvenile offenders or nonoffenders on willingness to deviate from social norms to maintain acceptance from parents (Miner & Munns, 2005) and did not differ from violent nonsex offenders on parent-child

relationship quality (van Wijk, Loeber et al., 2005). In two college samples (Lisak, 1994; Ouimette & Riggs, 1998) and one sample of adult sex offenders (Smallbone & Dadds, 1998), SV perpetrators reported worse relationships with their fathers than nonperpetrators. Adult sex offenders also tended to have less responsive fathers, looser parental boundaries, and less perceived safety in childhood (McCormack et al., 2002).

Parenting style. Van Wijk, Loeber et al. (2005) found no differences between violent ASOs and violent nonsex offenders on reports of positive parenting. Among college students, SV perpetration was unrelated to authoritarian family style or enmeshment (Aberle & Littlefield, 2001) but was negatively correlated with parents' use of reasoning to resolve family conflicts, suggesting this may be a potential protective factor (Forbes & Adams-Curtis, 2001).

Peer Factors

Peer Attitudes and Behaviors

Peer approval for forced sex. Among college students, three studies found significant associations between SV perpetration and perceived male peer support for SV (DeKeseredy & Kelly, 1995; Humphrey & Kahn, 2000) or between SV and using alcohol to have sex with women (Schwartz & Norgrady, 1996). Abbey, Parkhill, Clinton-Sherrod, and Zawacki (2007) found that community men who reported SV perpetration were more likely than nonperpetrators to perceive peer norms supportive of forced sex.

Peer pressure for sexual activity. Three studies reported a significant association between SV and perceived peer pressure to engage among young men. Perceived peer pressure to have sex was not associated with SV in a study of college students (DeKeseredy & Kelly, 1995) but was associated with SV perpetration in two studies of community males (Abbey et al., 2006; Krahe, 1998). A study of young men in South Africa also found that lower resistance to sexual peer pressure was associated with rape of nonpartners but not rape of intimate partners (Jewkes et al., 2006).

Peer sexual aggression. In a sample of dating high school students, self-reported knowledge that one's friends had engaged in physical or sexual dating violence was associated with sexual, but not physical, dating violence (Sears et al., 2007). Also, college students who reported having friends who engaged in SV behaviors were more likely to have perpetrated SV themselves in two studies (Christopher et al., 1998; DeKeseredy & Kelly, 1995).

Hypermasculine/All-Male Housing

Fraternity membership. Fraternity involvement was significantly related to SV in five studies of college males (Boeringer et al., 1991; Brown, Sumner, & Nocera, 2002; Lackie & de Man, 1997; Loh et al., 2005; Tyler, Hoyt, & Whitbeck,

1998). In two studies, fraternity members were more likely than nonmembers to report the use of verbally coercive tactics or drug- or alcohol-facilitated SV but were not more likely to report using physical force (Boeringer, 1996; Tyler et al., 1998). In one study, only members of “high-risk” fraternities (i.e., those that have parties creating a higher risk for sexual assault) reported more SV perpetration (Humphrey & Kahn, 2000). Two studies found no association between fraternity involvement and SV perpetration (Gidycz et al., 2007; Koss & Gaines, 1993). Boeringer (1996) found no differences in SV perpetration between college men (fraternity or nonfraternity) living in co-ed settings versus all-male housing, or between fraternity members who lived in the fraternity house and members who did not live in the house. Mixed findings for fraternity membership may be explained, in part, by significant variation in the other variables measured and controlled for in multivariate analyses across studies (e.g., alcohol use, prior SV, SV-related attitudes, aggressiveness, etc.).

Sports participation. High school or college athletic team membership was significantly related to SV perpetration in two studies of college students (Forbes et al., 2006; Koss & Gaines, 1993). In two studies, Crosset and colleagues (1995, 1996) found that male college Division I athletes were overrepresented in official SV complaints to campus authorities. However, risk may vary by characteristics of the athlete and sport. For instance, Humphrey and Kahn (2000) found that risk of SV perpetration was higher for members of “high-risk” athletic teams, which were recognized by other students as having parties which created atmospheres conducive to SV but not for athletes on “low-risk” teams. Also, college athletes playing high-profile team sports, such as football, reported significantly more SV than athletes involved in less prominent sports, such as tennis and track/field, or nonathletes (Gage, 2008). Paradoxically, another study found that college men who participated in contact sports were less likely to report SV than those engaged in noncontact sports (Brown et al., 2002); however, because participation in noncontact sports was significantly associated with fraternity membership in this study, this may have served as a confound in analyses. Also, athletes who scored highest on a competitiveness scale were the most likely to report SV (Caron et al., 1997). Four studies found no relationship between athletic participation and SV perpetration (Gidycz et al., 2007; Lackie & de Man, 1997; Locke & Mahalik, 2005; Smith & Stewart, 2003). Given the role of mediating or moderating factors in several studies, mixed findings for athletic participation may be due to the covariates included.

Antisocial Peers

Delinquent peers. Ford and Linney (1995) found that ASOs were less likely than violent nonsex offenders to report having peers who got into trouble. However, a prospective study found no differences between violent ASOs and violent nonsex offenders with regard to self-reporting “bad” friends or unconventional peers, levels of peer delinquency, or levels of peer

substance use (van Wijk, Loeber et al., 2005). These studies did not compare ASOs to nonoffender populations. Among college students, SV perpetration was significantly associated having delinquent peers before the age of 15 (Ouimette & Riggs, 1998).

Gang membership. Gang membership was associated with SV perpetration among U.S. male and female high school students (Borowsky et al., 1997) and young men in South Africa (Jewkes et al., 2006).

Relationship Factors

Intimate Partner Processes and Characteristics

Relationship processes. Various processes or interaction styles within relationships have been linked to SV perpetration risk. In college samples, the minimization of conflict through avoidance (Scott & Straus, 2007) and the use of controlling behaviors and emotional withdrawal by partners (Katz et al., 2002) were significantly associated with SV perpetration. In a community sample, SV in the context of a nonmarital relationship was correlated with relationship ambivalence but not level of relationship commitment (Christopher et al., 1998). Poor communication with an intimate partner was more common among SV perpetrators than nonperpetrators (Jewkes et al., 2006). Ward, Hudson, and Marshall (1996) found that adult sexual offenders were more insecurely attached in their romantic relationships than community men; however, they were not significantly different from other offender groups.

Casual Relationship status. One study with college students found that men who reported using physical force to obtain sex were less likely to report that the victim was their girlfriend than men who used manipulative tactics or had only consensual sex; however, there were no differences between groups on whether the perpetrator had prior sexual contact with the victim (Lyndon et al., 2007). In a South African sample, Abrahams, Jewkes, Hoffman, and Laubsher (2004) found that SV perpetration against cohabiting girlfriends was more likely than SV against wives or noncohabiting girlfriends.

Relationship Conflict

Relationship conflict/partner violence. Ozer, Tschann, Pasch, and Flores (2004) found that SV and physical dating violence perpetration were correlated for boys and girls in the United States and Mexican adolescent samples. In college samples, relational conflict predicted SV perpetration (Christopher et al., 1998), and the use of verbal and physical aggression to resolve relationship disputes was linked prospectively to SV perpetration against a partner (Loh & Gidycz, 2006). College males who perpetrated partner emotional abuse were also more likely to perpetrate SV against a partner, but this relationship was not significant for female perpetrators of emotional partner abuse (Katz et al., 2002). Current relationship distress was not a significant predictor of SV perpetration by college men when

controlling for other factors (Malamuth et al., 1995). In a study of community couples, partner emotional abuse significantly predicted the use of verbally coercive tactics, but not the use of physical force or threats to obtain sex (Marshall & Holtzworth-Munroe, 2002). Frequent relationship conflict with a partner was associated with SV perpetrated toward that partner in one study (Abrahams et al., 2004), while another found that physical intimate partner violence was associated with SV toward partners and nonpartners (Jewkes et al., 2006).

Individual-Level Variables

Sexual Behaviors and Other Noncognitive Sex-Related Factors

Multiple sexual partners. In samples of high school boys (Maxwell et al., 2003) and middle school boys and girls (Pellegrini, 2001), dating frequency was positively associated with SV perpetration. One study of female perpetrators (Anderson, Kontos, Tanigoshi, & Struckman-Johnson, 2005) and 17 studies of collegiate and community samples of men (Byers & Eno, 1991; Christopher et al., 1993; Dean & Malamuth, 1997; DeGue & DiLillo, 2004; Dunkle et al., 2006; Jewkes et al., 2006; Kalichman et al., 2007; Malamuth et al., 1995; Malamuth & Sockloskie, 1991; Maxwell et al., 2003; Merrill et al., 2001; Parkhill & Abbey, 2008; Sarwer, Kalichman, Johnson, Early, & Ali, 1993; Senn et al., 2000; Simbayi et al., 2006; Tyler et al., 1998; Zawacki, Abbey, Buck, McAuslan, & Clinton-Sherrod, 2003) reported significant associations between multiple dating or sexual partners and perpetration of SV. Results suggest that in addition to a direct effect, sexual promiscuity may interact with other risk factors such as alcohol use (Hall et al., 2000) and a history of child abuse (Merrill et al., 2001) to increase the risk for SV perpetration. Byers and Eno (1991) found mixed effects, such that boys reporting a higher frequency and duration of dating experiences were more likely to report verbal coercion but less likely to report physical coercion. Nonsignificant effects for dating frequency and promiscuity have been reported among ASOs (van Wijk, Loeber, et al., 2005), in a community sample of heterosexual men (Calhoun, Bernat, Clum, & Frame, 1997), in a German sample of heterosexual adolescent and young adult men (Krahé, 1998), and in a sample of German homosexual men (Krahé et al., 2001).

Impersonal sex/casual attitudes toward sex. Impersonal sex or casual attitudes toward sex refer to practices and beliefs that support sex outside of a relationship. Four U.S. studies (Abbey et al., 2006; Abbey et al., 2007; Hall et al., 2005; White, Darcy, Swartout, Sechrist, & Gollehon, 2008) and four international studies (Lalumiere & Quinsey, 1996; Lim & Howard, 1998; Martin et al., 2005, 1999) found significant associations between casual attitudes toward sex and/or impersonal sex and perpetration of SV. Two international studies found premarital sex and/or a husband's extramarital relationships were associated with SV perpetration (Koenig et al., 2006; Silverman,

Decker, Kapur, Gupta, & Raj, 2007). Similarly, impersonal sex interacted with hypermasculinity to predict sexual coercion in two studies (Vega & Malamuth, 2007; Wheeler et al., 2002). However, one study reported ASOs, compared to nonsex offenders, were less likely to report sexual disinhibition defined as a constellation of "nonconformist lifestyles" and liberal sexual morals (van Wijk et al., 2007).

Early initiation of sex. Three U.S. studies of adult male-to-female SV (Abbey & McAuslan, 2004; Berkowitz, 1992; Malamuth et al., 1995), one German study of male-to-male SV among adults in the community (Krahé et al., 2001), one German study of male-to-female SV among adolescents (Krahé, 1998), and one US study of collegiate women's female-to-male SV (Anderson et al., 2005) found younger age at first consensual intercourse and early dating and sexual experiences were associated with higher risk for SV perpetration. One study also reported ASOs were younger than violent offenders at age of first sexual intercourse, but it was not clear whether this sexual experience occurred in the context of their own childhood sexual abuse (Rubinstein, Yeager, Goodstein, & Lewis, 1993).

Exposure to sexually explicit media. In collegiate and community samples of adolescents and adults, pornography use (Bonino, Ciairano, Rabaglietti, & Cattelino, 2006; Cornett & Shuntich, 1991; Demare, Lips, & Briere, 1993) and visiting strip clubs (Carr & Van Deusen, 2004) were positively associated with SV. Pornography may also act as a moderator, in that pornography use had a significant effect on SV perpetration when it interacted with hypermasculinity (Vega & Malamuth, 2007), hostility, and promiscuity (Malamuth, 1998). In a collegiate sample of adults, pornography use was not associated with SV perpetration (Warkentin & Gidycz, 2007). Ford and Linney (1995) reported ASOs were more likely to be exposed to pornographic magazines at younger ages than nonsex offenders, but ASOs were less likely to be exposed to movies and television (TV) containing sex associated with violence. Similarly, one study reported mixed results for ASOs and nonsex offenders for pornography use depending on the type of pornography and placement of the offender (residential vs. outpatient: Zakireh et al., 2008). Ford and Linney (1995) also reported no differences among groups on exposure to X-rated pornographic movies or sexually explicit TV.

Arousal to deviant/aggressive stimuli. Arousal to deviant stimuli refers to a man's sexual arousal to vignettes or other sexual material depicting rape versus consensual sex. One study with adult sex offenders (Rice, Chaplin, Harris, & Coutts, 1994) and three studies with college students (Marx, Gross, & Adams, 1999; Petty & Dawson, 1989; Renaud & Byers, 2005) found a significant association between arousal to sexual aggression and SV. In one Canadian study, rapists and controls were similar in terms of most indices of deviant sexual arousal, although rapists were significantly more aroused to a female rape scenario than controls (Howes, 1998). Another Canadian study of adult sex offenders found offenders who were nonsexually

violent toward women, and community men were more aroused to consensual versus forced sex, whereas adult sex offenders were not differentially aroused to different types of stimuli (Lalumiere, Quinsey, Harris, Rice, & Trautrimas, 2003). In contrast, two studies with small sample sizes found rapists ($n = 19$ and $n = 18$) did not differ from nonrapists ($n = 19$ and $n = 18$) in arousal to depictions of rape (Eccles, Marshall, & Barbaree, 1994; Seto & Barbaree, 1993).

Sexual orientation/identity. In a study that compared ASOs to delinquents and nonoffending youth, ASOs more often reported having bisexual orientations and less often reported heterosexual orientations, but ASOs were not more likely to report homosexual orientations (Daleiden et al., 1998). ASOs were also more likely to have problems with sexual identity than nonsex offenders (Milloy, 1994). A limitation in interpreting these findings is that the sex of the victim was not clear in the studies, such that it is unclear whether bisexual orientations among ASOs were associated with perpetration against men or women.

Sexual risk taking. Based on focus groups with lesbian, gay, and bisexual (LGB) young adults who had at one time been homeless or lived in shelters, Strike, Myers, Calzavara, and Haubrich (2001) reported SV perpetrators indicated they were not concerned about condom use when perpetrating. In two studies of South African adult men, unprotected/unsafe sex and exchanging money for sex were associated with SV perpetration (Kalichman et al., 2007; Simbayi et al., 2006). In a German community sample of adult men who have sex with men, paying for sex and accepting money for sex increased the risk for perpetration, but having sex in anonymous places did not (Krahé et al., 2001). Inconsistent condom use was not associated with SV perpetration among adult men in Bangladesh (Silverman et al., 2007).

Motivation for sex/sex drive. Across three adult samples in the United States and Canada, Cortoni and Marshall (2001) found sex offenders, compared to nonsex offenders, more often used sex as a coping strategy when upset or stressed and were more sexually preoccupied in adolescence, as evidenced by masturbation rates. Among college men, those who viewed sex as the goal of a date were more likely to report SV (Craig, Kalichman, & Follingstad, 1989). One longitudinal study with a Canadian community sample found higher sex drive (Malamuth et al., 1995) was associated with SV perpetration; among adolescents, sex offenders in residential treatment reported significantly more sexualization (e.g., sex drive; sexual compulsivity) than nonsex offenders in residential treatment and nonsex offenders and sex offenders in outpatient treatment (Zakireh et al., 2008). In a Chinese sample higher sex drive was not associated with SV (Lim & Howard, 1998).

History of sexual victimization in adolescence or adulthood. Sexual victimization by peers was associated with subsequent male-on-male SV in the South Korean military (Kwon et al.,

2007). Sexual victimization in adulthood was significantly related to collegiate women perpetrating sexual harassment and collegiate men perpetrating sexual coercion (Menard et al., 2003). Experiencing sexual victimization by a dating partner as an adolescent was associated with an increased risk for dating violence (including physical and SV) perpetration; however, sexual victimization did not predict sexual perpetration against a dating partner when examined in isolation (Sears et al., 2007).

Past SV perpetration. In six longitudinal studies (Hall et al., 2006; Loh & Gidycz, 2006; Loh et al., 2005; Malamuth et al., 1995; Ozer, Tschann, Pasch, & Flores, 2004; White & Smith, 2004) and three cross-sectional studies (Gidycz et al., 2007; Loh, Orchowski, Gidycz, & Elizaga, 2007; Warkentin & Gidycz, 2007), prior sexual aggression predicted sexual aggression among collegiate and community samples of adults.

Deviant sexual behavior. Studies reported ASOs had more paraphilic behaviors (Daleiden et al., 1998; van Wijk et al., 2007), more tendencies toward voyeurism, and more atypical consensual sexual behaviors (Daleiden et al., 1998) than nonoffending comparison groups. One study with ASOs and nonsex offenders found mixed results for paraphilias depending on the placement of the offender (residential vs. outpatient treatment; Zakireh et al., 2008).

Perpetrator sexually transmitted infection (STI) positive status. Three international studies found an association between having an STI and SV perpetration (Kalichman et al., 2007; Martin et al., 1999; Simbayi et al., 2006); however, two (Kalichman et al., 2007; Simbayi et al., 2006) of the three studies recruited participants from STI clinics, suggesting the samples were not representative.

Age at coming out. In a community sample of homosexual men in Germany (Krahé et al., 2001), age at coming out was not a risk factor for SV perpetration.

Testosterone. Aromäki, Lindman, and Eriksson (2002) found no significant differences in testosterone levels between adjudicated rapists and a comparison sample of community men.

Sexual discomfort. One study found ASOs reported significantly more sexual discomfort (preoccupation and conflict with sexuality) than nonsex offenders (Zakireh et al., 2008).

Psychosocial Factors

General adjustment difficulties/psychopathology. ASOs were more likely than comparison groups to have worse emotional functioning on a variety of constructs including Axis I and Axis II disorders (Bagley & Shewchuk-Dann, 1991; Blaske et al., 1989; Losada-Paisey, 1998; McCraw & Pegg-McNab, 1989; Milloy, 1994; Valliant & Bergeron, 1997). Similarly, sexually violent adults in collegiate and community samples reported

more anger, antisocial, and psychopathic traits than comparison groups (Berkowitz, 1992; Christoffersen et al., 2005; Christopher et al., 1993; Dean & Malamuth, 1997; DeGue & DiLillo, 2004; Goetz & Shakelford, 2006; Hersh & Gray-Little, 1998; Knight & Sims-Knight, 2003; Kosson, Kelly, & White, 1997; Petty & Dawson, 1989; Senn et al., 2000; Spence, Losoff, & Robbins, 1991; White et al., 2008; Zawacki et al., 2003). Adult sex offenders compared to nonsex offenders had more symptoms of antisocial personality disorder (Aromäki, Lindman, & Eriksson, 2002), anger, and anxiety (Lyn & Burton, 2005), and collegiate men who perpetrated SV were characterized by histrionic/preoccupied and antisocial characteristics (Monson & Langhinrichsen-Rohling, 2002).

In terms of nonsignificant effects, 11 studies reported no differences between ASOs and comparison groups on measures of emotional functioning or physical health (Awad & Saunders, 1991; Butler & Seto, 2002; Freeman, Dexter-Mazza, & Hoffman, 2005; Jacobs, Kennedy, & Meyer, 1997; Milloy, 1994; Ronis & Borduin, 2007; Shaw et al., 1993; Truscott, 1993; Valiant & Bergeron, 1997; van Wijk, Loeber, et al., 2005; van Wijk et al., 2007). Among collegiate and community adults (Calhoun et al., 1997; Forbes & Adams-Curtis, 2001; Menard et al., 2003), male adult sex offenders (Fernandez & Marshall 2003; Lee et al., 2002; Porter et al., 2000), and ASOs (Zakireh et al., 2008) emotional functioning and unstable, psychopathic personality traits were not associated with SV. In contrast, some studies demonstrated ASOs (Herkov, Gynther, Thomas, & Myers, 1996; Kempton & Forehand, 1992; Oliver et al., 1993) had better psychological functioning than comparison groups, and emotional connectedness was a protective factor for SV among male high school students (Borowsky et al., 1997). Similar to the mixed effects for social skills above, we expect that some of the null results and overall mixed results for this factor are a result of the multiple ways emotional functioning and psychological variables were operationalized and measured across studies. Some differences on nuanced variables may exist, but these effects could not be reliably explored in the current review, given the wide variety of measures and variables included in this factor.

Delinquency/conduct disorder. Conduct problems and delinquency have been associated with SV among ASOs (Bagley & Shewchuk-Dann, 1991; Monto et al., 1998; Oliver et al., 1993; van Wijk, Loeber, et al., 2005), community boys (Fineran & Bolen, 2006; Lacasse & Mendelson, 2007), community girls (Lacasse & Mendelson, 2007), college and community men (Abbey & McAuslan, 2004; Calhoun et al., 1997; Christoffersen et al., 2005; Lyndon et al., 2007; Malamuth et al., 1995; Parkhill & Abbey, 2008; White et al., 2008), and adult sexual offenders (Lalumiere & Quinsey, 1996; Lee et al., 2002). Several studies also reported indirect/interaction effects between delinquency and other variables for ASOs (Johnson-Reid & Way, 2001), collegiate and community adults (Hall et al., 2005, 2006; Zawacki et al., 2003), and community adolescents (Fineran & Bolen, 2006; Malamuth et al., 1991). For example, delinquency interacted with loss of face

among Hawaiian Asian Americans, such that men with high levels of delinquency and loss of face reported less SV than those with low loss of face. Among ASOs, an interaction between number of convictions in juvenile court and a secondary drug charge significantly predicted sexual offending compared to nonviolent offending (Johnson-Reid & Way, 2001). Nonsignificant effects between SV and disruptive behavior disorders or delinquency have been reported in many studies of ASOs (Blaske et al., 1989; Oliver et al., 1993; Ronis & Borduin, 2007; Shaw et al., 1993; van Wijk, Loeber, et al., 2005; van Wijk et al., 2007), and in one international (Lim & Howard, 1998) and two U.S. studies (Abbey et al., 2006, 2007) of community adults. In contrast, several studies reported ASOs (Blaske et al., 1989; Butler & Seto, 2002; Jacobs et al., 1997; Johnson-Reid & Way, 2001; Milloy, 1994; van Wijk, van Horn, Bullens, Bijleveld, & Doreleijers, 2005; Zakireh et al., 2008) had lower rates of delinquency and other problem behaviors than comparison groups. These mixed results may be an artifact of the comparison groups used in these studies. For example, most studies of adjudicated samples utilized nonsexual violent and nonviolent comparison groups. These results suggest that young sex offenders compared to young violent or nonviolent offenders report comparable or less delinquency and conduct problems. This pattern of effects could reflect the different types of offenses sex and nonsex offenders commit and the overlap between these offenses and the criteria for delinquency and conduct disorder. For example, only one criterion for conduct disorder involves sexual behavior, whereas multiple criteria involve non-SV or property offenses.

Aggression. While aggressive attitudes and beliefs were reviewed earlier, the following studies examined behavioral aspects of aggression. Studies have found that ASOs (Bagley & Shewchuk-Dann, 1991; Moriarty, Stough, Tidmarsh, Eger, & Dennison, 2001; Spaccarelli et al., 1997; Zakireh et al., 2008), community samples of girls and boys (DeSouza & Ribeiro, 2005; Ozer et al., 2004), and collegiate and community samples of adults (Christopher et al., 1998; DeGue & DiLillo, 2004; Gidycz et al., 2007; Hogben, Byrne, Hamburger, & Osland, 2001; Knight & Sims-Knight, 2003; Lackie & de Man, 1997; Malamuth et al., 1995; Marshall & Holtzworth-Munroe, 2002; Smallbone & Dadds, 2000; Ullman et al., 1999) are more likely to report aggressive traits/bullying than comparison groups who did not report SV. One study with rural middle school girls and boys found bullying was associated with SV but not after controlling for dating frequency (Pellegrini, 2001). Five studies found no differences between ASOs and delinquent/violent samples on a variety of aggression-related variables (Awad & Saunders, 1991; Hosser & Bosold, 2006; Milloy, 1994; Ronis & Borduin, 2007; van Wijk et al., 2007). Two studies reported ASOs were less cognitively or behaviorally aggressive than nonsex offenders (Hosser & Bosold, 2006; Kempton & Forehand, 1992). Similar to the effects for delinquency, the mixed results for aggression could be attributed to the comparison groups used for ASO studies, in

that young violent offenders were often used as the comparison and may report more violent behavior than young sexual offenders. Furthermore, studies with nonadjudicated samples found consistent evidence for aggression as a risk factor for SV.

School/academic/behavior problems. Several studies reported ASOs had lower academic achievement than comparison groups in a variety of domains (Awad & Saunders, 1991; Bagley & Shewchuk-Dann, 1991; Kelly, Richardson, Hunter, & Knapp, 2002; Moody et al., 1994; Ronis & Borduin, 2007; Shaw et al., 1993; van Wijk, van Horn, et al., 2005). However, among nonadjudicated male high school students (Borowsky et al., 1997; Maxwell et al., 2003) and among ASOs (Awad & Saunders, 1991; Bagley & Shewchuk-Dann, 1991; Baker et al., 2003; Bischof et al., 1995; Ford & Linney, 1995; Jacobs et al., 1997; Johnson-Reid & Way, 2001; Kelly et al., 2002; Milloy, 1994; Moody et al., 1994; Oliver et al., 1993; Ronis & Borduin, 2007; Shaw et al., 1993; Truscott, 1993; Valliant & Bergeron, 1997; van Wijk, Loeber, et al., 2005; van Wijk, van Horn, et al., 2005; van Wijk et al., 2007), SV and a variety of achievement domains were not associated. In one study, academic achievement was a protective factor for SV among high school girls (Borowsky et al., 1997).

Impulsivity/attention problems. One study with ASOs (Bagley & Shewchuk-Dann, 1991) and five studies with collegiate and community samples of adults (Krahé, 1998; Ouimette & Riggs, 1998; Petty & Dawson, 1989; Spence et al., 1991; White et al., 2008) reported SV perpetration was associated with hyperactivity/restlessness, impulsivity, impulsive control problems, and/or loss of control. In contrast, many studies reported SV and impulsivity, hyperactivity, or thrill seeking were not associated for ASOs (Hosser & Bosold, 2006; Moody et al., 1994; van Wijk, Loeber, et al., 2005; van Wijk et al., 2007), college samples of adults (Warkentin & Gidycz, 2007), and adult sex offenders (Lee et al., 2002). Three studies reported ASOs demonstrated fewer attention problems and were less impulsive than other offending comparison groups (Blaske et al., 1989; Kempton & Forehand, 1992; van Wijk et al., 2007). One study found the association between impulsivity and offending varied based on the construct measured and the placement of the offender (residential vs. outpatient; Zakireh et al., 2008).

Self-esteem. Low self-esteem and related constructs were significantly associated with SV perpetration among male, but not female, community members (Fineran & Bolen, 2006) and among ASOs (Bagley & Shewchuk-Dann, 1991; Hosser & Bosold, 2006; Monto et al., 1998). One study of collegiate men found high sexual self-esteem, that is, confidence in one's sexual skills, was a significant predictor of coercion (Martin et al., 2005). In contrast, one study with high school students (Borowsky et al., 1997), three studies with ASOs (Ford & Linney, 1995; Valliant & Bergeron, 1997; van Wijk, van Horn, et al., 2005), and one study of community adults (Forbes & Adams-Curtis, 2001) found self-esteem or self-concept and SV were not associated. Unexpectedly, ASOs reported lower self-

depreciation than delinquent and nonoffending youth (Valliant & Bergeron, 1997). No clear differences between studies with significant and nonsignificant effects were observed, which suggests mixed results may not be an artifact of methodological or measurement differences across studies.

Religious affiliation. Three studies with ASOs reported no significant differences in religious background, emphasis, or observance (Awad & Saunders, 1991; Bischof et al., 1995; van Wijk, Loeber, et al., 2005). In two high school samples (DeSouza & Ribeiro, 2005; Maxwell et al., 2003) and a sample of male college athletes (Gage, 2008), religiosity, religious preference, and/or religious service attendance were not significantly associated with SV.

Suicide attempts. A study with high school students (Borowsky et al., 1997), a study with ASOs (Bagley & Shewchuk-Dann, 1991), and a study with a community sample of adults in Denmark (Christoffersen et al., 2005) found history of self-harm and/or suicide attempts were more common among perpetrators than nonperpetrators. However, Milloy (1994) found no differences between ASOs and nonsex offenders on suicidal tendencies. These results most likely suggest that young perpetrators evidence a variety of violent behaviors, including self-directed violence, rather than suggesting self-harm predicts SV.

Sex-Related Cognitions

Sexual fantasies/preoccupation. Among collegiate and community samples of adults, having more sexual fantasies and aggressive/coercive sexual fantasies have been associated with SV perpetration (Knight & Sims-Knight, 2003; Malamuth et al., 1995). Sex offenders report more planned and well-developed fantasies about their crimes than nonoffenders (Deu & Edelmann, 1997). Similarly, sex offenders reported more sexual fantasies with sado-masochistic themes during their adolescence and more rape fantasies during adulthood than nonsex offenders (Cortoni & Marshall, 2001). Studies of ASOs reported mixed effects for youths' sexual cognitions (Daleiden et al., 1998; Racey et al., 2000) and sadistic tendencies (Zakireh et al., 2008).

Willingness to commit SV. Behavioral intentions regarding SV have been assessed in a variety of ways, including self-reported likelihood of committing rape if assured one would not be punished. Rape proclivity, willingness to commit SV if unpunished and/or likelihood to commit rape were associated with SV perpetration in a sample of homosexual men in Germany (Krahé et al., 2001) and among college students (Abbey et al., 1998; Carr & Van Deusen, 2004; Demare et al., 1993; Petty & Dawson, 1989). Similarly, men who reported a willingness to use manipulative tactics were more likely to report SV (Craig et al., 1989). One German study of adolescents and young adults found propensity to commit SV was associated with SV among men (Krahé, 1998). ASOs did not differ from

comparison groups on attraction to sexual aggression (Calhoun et al., 1997), attitudes regarding the legitimacy of sexual aggression, and beliefs that sexual aggression increases self-image (Spaccarelli et al., 1997). Coercive compared to non-coercive college men did not differ in their likelihood to use physical or nonphysical coercion to perpetrate SV (Lalumiere & Quinsey, 1996). Willingness of college men to confront the inappropriate sexual behavior of other men was not significantly related to SV perpetration in another study (Loh et al., 2005).

Victim blame. Attitudes that place blame for sexual victimization on the victim rather than the perpetrator have been associated with SV perpetration among male high school students (Maxwell et al., 2003), collegiate samples of adult men (Caron et al., 1997; Scott & Straus, 2007), and adult male rapists (Garlick, Marshall, & Thornton, 1996).

Rape and sexual knowledge. In a sample of high school students, having accurate knowledge of the legal definition of rape was a protective factor for male students (Maxwell et al., 2003). Two studies of ASOs (Milloy, 1994; Racey et al., 2000) reported sex offenders were not more likely than nonsex offenders to be identified as needing sexual education or to have differences in sexual knowledge.

Denial or displacing blame. One study reported no differences between ASOs and nonsex offenders on denial or minimization of their offenses (Hosser & Bosold, 2006).

Interpersonal Skill Factors

Social skills/interactions. Studies have found that ASOs (Awad & Saunders, 1991; Kempton & Forehand, 1992; Milloy, 1994; Moody et al., 1994; Moriarty et al., 2001; Racey et al., 2000; Ronis & Borduin, 2007; van Wijk, van Horn, et al., 2005), adult male sex offender (Baker & Beech, 2004; Gudjonsson & Sigurdsson, 2000), and a collegiate sample of men (Christopher et al., 1993) had deficits in a variety of areas of social and emotional competence compared to nonsex offenders or nonoffenders; however, a comparable number of studies with ASOs (Blaske et al., 1989; Ford & Linney, 1995; Hollin & Swaffer, 1993; Milloy, 1994; Miner & Munns, 2005; Moody et al., 1994; Racey et al., 2000; Spaccarelli et al., 1997; van Wijk, van Horn, et al., 2005; van Wijk et al., 2007; Zakireh et al., 2008) and one study of male rapists (Fernandez & Marshall, 2003) found no differences between offenders and nonsex offending groups on a variety of similar factors. The comparable number of studies with and without significant effects likely results from the wide variety of social skills and various ways social skills have been operationalized and measured. For example, one study found ASOs convicted of rape had lower extraversion but more problems with peers than non-SV comparison groups (van Wijk, van Horn, et al., 2005). Additionally, many studies with adjudicated samples utilized nonsexually violent

but adjudicated comparison groups, which could account for the lack of significant differences.

Empathic deficits. Two studies with ASOs (Farr et al., 2004; Oliver et al., 1993), four studies with collegiate and community samples of adults (Abbey et al., 2007; Christopher et al., 1993; Lisak & Ivan, 1995; Martin et al., 2005), and three studies of adult sex offenders (Hanson & Heather, 1995; Hudson et al., 1993; Rice et al., 1994) found deficits in empathy and related constructs (e.g., perspective taking) were associated with SV. Four studies of adults in college and in the community found complex associations between empathy and other risk factors for SV (Abbey et al., 2006; Christopher et al., 1993, Malamuth, 1998; Wheeler et al., 2002); for example, Abbey and colleagues (2006) reported empathy buffered the association between sexual dominance and SV, such that men with low levels of empathy perpetrated more SV as their self-reported sexual dominance increased.

Two studies with ASOs and one study with rapists found the effects for empathy varied based on the aspect of empathy that was examined, the nature of the comparison group, and victim characteristics (Burke, 2001; Fernandez & Marshall, 2003; Lindsey et al., 2001). Among male adult sex offenders, the effect of empathy on SV was nonsignificant when educational differences between offenders and nonoffenders were controlled (Seto & Barbaree, 1993). Four studies found no differences in empathy and related constructs (e.g., perspective taking) between adolescent or adult sex offenders and nonoffending comparisons (Hosser & Bosold, 2006; Monto et al., 1998; Moriarty et al., 2001; van Wijk, Loeber, et al., 2005).

Intimacy deficits/social isolation/adult attachment problems. One study reported ASOs were more likely than comparison groups to be isolated at school and from peers (Miner & Munn, 2005). One US (Bumby & Hanson, 1997), and one international study (Siedman, Marshall, Hudson, & Robertson, 1994) reported adjudicated rapists had more intimacy deficits and fewer intimate relationships than nonrapists. One U.S. (Bumby & Hanson, 1997) and two international (Garlick, et al., 1996; Seidman, Marshall, Hudson, & Robertson, 1994) studies found incarcerated rapists were lonelier than comparison groups. Among collegiate and community samples of adults, childhood attachment problems (Smallbone & Dadds, 2001) and adult attachment problems (Abbey et al., 2007) have been associated with SV perpetration. In contrast, nonsignificant effects have also been reported for social isolation, intimacy deficits, loneliness, and/or emotional neediness among ASOs (Awad & Saunders, 1991; van Wijk et al., 2007), a collegiate sample of adults (Malamuth & Sockloskie, 1991), and male sexual offenders (Baker & Beech, 2004; Garlick et al., 1996; Hudson & Ward, 1997); and one study found adolescent nonsexual offenders reported more social insensitivity than ASOs (Zakireh et al., 2008).

Social desirability. Among college students (Kosson et al., 1997), SV was negatively associated with internalization of

social norms. In one study of ASOs (Miner & Munn, 2005) and three studies of collegiate and community samples of men, SV and social desirability/norms were not significantly associated (Abbey et al., 2001; Loh et al., 2005; Warkentin & Gidycz, 2007). Hall and colleagues (2000, 2005) and Hall, DeGarmo, Eap, Teten, and Sue (2006) demonstrated that “loss of face,” a characteristic of many Asian cultures denoting damaging one’s reputation or fear of making others feel uncomfortable, has a protective effect on SV perpetration among Asian and European American men, although the nature of the interactions varied by ethnic group—mainland Asian American, Hawaiian Asian American, and European American—and by risk factor (Hall et al., 2005). For example, loss of face buffered the effect of early risk factors on SV in both Asian American groups, but not among European Americans; loss of face did not protect against the effects of hostile masculinity on SV among any ethnic group.

Cue misinterpretation. Among college students, three studies (Abbey et al., 1998; Shea, 1993; Yescavage, 1999) reported SV perpetration was associated with misperception of sexual intent, such as mistaking friendliness as sexual interest or perceiving a woman’s resistance as “token resistance.” One study of community and collegiate men found SV perpetrators had more difficulty discriminating a woman’s cues than nonperpetrators, particularly when hostility and suspicion were involved (Malamuth & Brown, 1994). One study found moderated effects, such that alcohol-involved SV included some misperception of women’s sexual intentions (Zawacki et al., 2003). Similarly, collegiate men who indicated that SV was a rational response to being led on reported more SV (Dudley, 2005). Only one study of male college students found the association was nonsignificant (Abbey & McAuslan, 2004).

Gender-Related Cognitions

Rape myth acceptance. Rape myths are beliefs that a woman’s behaviors excuse or justify SV in some situations; for example, some rape myths suggest that a woman who has been drinking or is dressed in a sexy way is “asking” to be raped. Two studies with community samples of adolescents (Lanier, 2001; Maxwell et al., 2003) reported endorsement of rape myths predicted male-to-female (but not female-to-male) SV perpetration both cross sectionally and longitudinally. In 1 study of men in aggressive sports (Forbes et al., 2006) and in 26 studies with collegiate and community samples of adults (Abbey et al., 1998, 2007; Abrahams et al., 2004; Berkowitz, 1992; Bohner, Jarvis, Eyssel, & Siebler, 2005; Byers & Eno, 1991; Caron et al., 1997; Carr & Van Deusen, 2004; Christopher et al., 1998; Collings, 1994; Dean & Malamuth, 1997; DeGue & DiLillo, 2004; Hersh & Gray-Little, 1998; Kalichman et al., 2007; Koralewski & Conger, 1992; Lisak & Ivan, 1995; Locke & Mahalik, 2005; Martin et al., 2005; Marx et al., 1999; Maxwell et al., 2003; Simbayi et al., 2006; Spence et al., 1991; Tyler et al., 1998; Vega & Malamuth, 2007; White,

Donat, & Humphrey, 1996; Zawacki et al., 2003) endorsement of rape myths was associated with SV perpetration.

In addition to direct effects, among Asian American college men, the effect of loss of face on SV was moderated by rape myth acceptance, such that men who reported loss of face, or a belief that acting in certain ways (e.g., criticizing, asking questions) will make others feel uncomfortable, and who reported rape myth acceptance, were more likely to report SV (Hall et al., 2000). The authors suggest that for men who report loss of face and accept rape myths may “lose face” by *not* perpetrating SV. However, other work has shown loss of face can function as a protective factor or a risk factor depending on one’s peer group norms. Rape myth acceptance also interacted with casual attitudes about sex for male and female aggressors, such that men with high endorsement of a composite variable that included rape myth acceptance, and women with very low endorsement of the composite, who also reported casual sexual attitudes, were more likely to report SV (Yost & Zurbriggen, 2006). Two studies reported there were no differences between ASOs and delinquent adolescents in attitudes toward women or rape myth acceptance (Epps, Haworth, & Swaffer, 1993; Racey et al., 2000), which may be a function of comparing attitudes between two offending groups rather than an offending and nonoffending group. Three studies of community samples of adults reported endorsement of rape myths and SV perpetration were not associated (Forbes & Adams-Curtis, 2001; Forbes, Adams-Curtis, & White, 2004; Loh et al., 2005). Cross-sectional studies that did not find a significant association used adequate sample sizes, but employed newer measures of rape myths (Forbes et al., 2004) rather than Burt’s (1980) measures or found that rape myth acceptance was not significant when other, significant predictors were included in a stepwise regression (Forbes & Adams-Curtis 2001). The prospective study with null effects (Loh et al., 2005) was able to establish temporal ordering of variables, but utilized a 7-month follow-up, which may have precluded detection of new SV; moreover, men who reported SV at time one compared to men who did not, were significantly more likely to drop out of the study by 7 months.

Hostility toward women/adversarial sexual beliefs. Anger, hostility, suspiciousness toward women, and adversarial sexual beliefs (i.e., belief that sexual relationships are exploitative) have been associated with SV in 25 studies with collegiate and community samples of adults (Abbey et al., 2001; Abbey & McAuslan, 2004; Berkowitz, 1992; Byers & Eno, 1991; Caron et al., 1997; Carr & Van Deusen, 2004; Christopher et al., 1998; Collings, 1994; Dean & Malamuth, 1997; DeGue & DiLillo, 2004; DeMare et al., 1993; Goetz & Shakelford, 2006; Hersh & Gray-Little, 1998; Humphrey & Kahn, 2000; Kalichman et al., 2007; Koss & Gaines, 1993; Krahe, 1998; Loh et al., 2005; Lyndon et al., 2007; Malamuth, 1998; Malamuth & Sockloskie, 1991; Parkhill & Abbey, 2008; Smith & Stewart, 2003; Spence et al., 1991; Vega & Malamuth, 2007), 1 study with ASOs (Farr et al., 2004), and 1 study of adult convicted rapists (Seidman et al., 1994).

Several studies reported mixed results (Hall et al., 2005; Menard et al., 2003; Walker et al., 1993) or moderated/interaction effects (Christopher et al., 1993; Hall et al., 2000, 2006; Malamuth et al., 1995; Wheeler et al., 2002) between hostility toward women and other variables, such as greater alcohol use (Hall et al., 2000) and having impersonal sex (Wheeler et al., 2002). Hostility toward women and SV were not associated in five studies with collegiate and community samples (Abbey et al., 2007; Calhoun et al., 1997; Craig et al., 1989; Lackie & de Man, 1997; Lim & Howard, 1998), in one study with convicted rapists (Hudson & Ward, 1997), and one study of ASOs (Zakireh et al., 2008). Null effects may be attributed to different measurement methods (computer administered questionnaires rather than paper-pencil self-report; Abbey et al., 2007) and the use of multivariate models, including stepwise regressions (Calhoun et al., 1997; Lackie & de Man, 1997; Lim & Howard, 1998), in which hostile or adversarial attitudes were not significant when their effects were considered in the context of other variables.

Traditional gender role adherence. Beliefs supporting traditional gender roles suggest women should embrace feminine traits and roles and men espouse masculine traits and roles. One study with a community sample of adolescents (Sears et al., 2007) and 18 studies of college and community samples of male perpetrators (Abrahams et al., 2004; Berkowitz, 1992; Boeringer et al., 1991; Brown, et al., 2002; Carr & Van Deusen, 2004; Forbes et al., 2004; Gage, 2008; Kalichman et al., 2007; Lackie & de Man, 1997; Loh et al., 2005; Lyndon et al., 2007; Muehlenhard & Falcon, 1990; Quimette & Riggs, 1998; Santana, Raj, Decker, La Marche, & Silverman, 2006; Spence et al., 1991; Walker et al., 1993; Warkentin & Gidycz, 2007; White et al., 2008) found belief in traditional gender roles was associated with SV perpetration. Walker, Rowe, and Quinsey (1993) found a significant effect for men in the community but not for men in college. One study with a community sample of adolescents found no effects for sexism (DeSouza & Ribeiro, 2005), and Lacasse and Mendelson (2007) reported female perpetrators were less likely to have sexist attitudes than comparison groups.

Hypermasculinity. Among community samples of adults, endorsement of masculine traits, greater insecurity about one's masculinity, and/or hypermasculinity have been associated with men's perpetration of SV in nine studies with collegiate and community samples (Abrahams et al., 2004; Carr & Van Deusen, 2004; Koralewski & Conger, 1992; Lackie & de Man, 1997; Locke & Mahalik, 2005; Malamuth et al., 1995; Truman, Tokar, & Fisher, 1996; Walker et al., 1993; White et al., 2008). In one study, ASOs in outpatient treatment reported significantly more hypermasculinity than nonsex offenders (Zakireh et al., 2008). Some studies have also found mixed (Farr et al., 2004; Walker et al., 1993), moderated (Malamuth et al., 1995), indirect (Gage, 2008), or mediated associations (Murnen & Kohlman, 2007) between hypermasculinity and

SV. For example, hypermasculinity was a significant risk factor for SV in a community sample but not a college sample (Walker et al., 1993), while the overall hypermasculinity composite was not different between ASOs and nonoffending youth, the aspects of the construct associated with adversarial beliefs were significantly higher among ASOs (Farr et al., 2004). Hypermasculinity (Martin et al., 2005) or masculinity (Christopher et al., 1998; Lisak & Ivan, 1995; Sarwer et al., 1993) and SV were not associated in four studies with community and college men. Therefore, null effects for this factor apply primarily to studies measuring masculinity rather than hypermasculinity.

General Violence-Related Cognitions

Acceptance of violence. Attitudes accepting of violence describe beliefs that violence and SV are instrumental and acceptable. One study of community adolescent boys (Sears et al., 2007) found acceptance of violence/SV was associated with SV. Three U.S. studies of collegiate male-to-female SV (Abbey & McAuslan, 2004; Christopher et al., 1993; Hogben et al., 2001) and two international studies found an association between acceptance of violence, adult male-to-female SV (Abrahams et al., 2004) and adult male-on-male SV (Kwon et al., 2007). In collegiate samples, Hall and colleagues (Hall et al., 2005, 2006) found acceptance of violence was mediated by other risk factors and that its effect varied by ethnic group and over time; Vega and Malamuth (2007) found general hostility had a link to sexual aggression through hypermasculinity. Mixed effects were found for ASOs, such that they were less likely than nonviolent offenders (but not violent offenders) to believe sexual aggression harms the victim but were more likely to have attitudes supporting physical aggression (Spaccarelli et al., 1997). Similarly, one Chinese study of adolescents and adults found an effect for acceptance of using force in sexual relationships but not for acceptance of violence in general (Lim & Howard, 1998). Hogben and colleagues (Hogben et al., 2001) found the association between acceptance of violence and SV was not supported for female-to-male SV among college students. Finally, one German study with adolescents and young adults did not find an effect for acceptance of violence in relationships and SV (Krahé, 1998).

Dominance. One study reported that adult men's beliefs supporting authoritarianism (i.e., submission to societal authority) had a direct positive effect on sexual aggression (Walker et al., 1993). Other studies found need for dominance had an indirect association with SV perpetration that was mediated by a variety of factors such as empathy (Martin et al., 2005), delinquency (for boys but not girls; Fineran & Bolen, 2006), having casual sexual relationships, and a childhood history of sexual abuse (Abbey et al., 2006). One study reported that the association between dominance cognitions and SV was not significant among adolescents (Krahé, 1998). One study found the association between collegiate men's negative (e.g., upsetting or inappropriate) sexual dominance cognitions was nonsignificant

when the frequency of positive (e.g., pleasant) sexual dominance cognitions was controlled (Renard & Byers, 2005).

Competitiveness. Caron, Halteman, and Stacy (1997) reported greater self-reported propensity for competitiveness (i.e., *I thrive on competition*) was associated with SV among male college students and student athletes.

Substance Use

Alcohol use. A direct association between alcohol use and SV perpetration has been found for high school students (Borowsky et al., 1997), for ASOs (Bagley & Shewchuk-Dann, 1991), in 12 U.S. studies with collegiate and community men (Abbey et al., 1998; Abbey & McAuslan, 2004; Abbey et al., 2006; Berkowitz, 1992; Carr & Van Deusen, 2004; Koss & Gaines, 1993; Locke & Mahalik, 2005; Menard et al., 2003; Parkhill & Abbey, 2008; Schwartz & Nogrady, 1996; Ullman et al., 1999; White et al., 2008), in international studies with community men (Abrahams et al., 2004; Jewkes et al., 2006; Kalichman et al., 2007), among male sex offenders (Abracen, Looman, & Anderson, 2000; Aromäki & Lindman, 2001), in a community sample of male and female perpetrators (Ramisetty-Mikler, Caetano, & McGrath, 2007), and among men and women in same-sex relationships (Strike et al., 2001). Mediated or moderated effects with alcohol use have also been reported in a sample of Navy recruits (Merrill et al., 2001), among Asian American men (Hall et al., 2000) and among college men (Abbey et al., 1998; Zawacki et al., 2003). Six studies with community and collegiate samples of adults reported alcohol use and perpetration were not associated (Calhoun et al., 1997; Lackie & de Man, 1997; Loh et al., 2005; Lyndon et al., 2007; Segurado et al., 2008; Simbayi et al., 2006). Four studies reported ASOs demonstrated less alcohol use/abuse history than delinquent/violent samples (Awad & Saunders, 1991; Milloy, 1994; van Wijk et al., 2007). Although 19 studies with adult samples reported significant effects for alcohol use, 6 adult studies did not. Of those with null results, two used stepwise regressions (Lackie & de Man, 1997; Loh et al., 2005) and two employed samples from STI clinics in other countries (Segurado et al., 2008; Simbayi et al., 2006). Stepwise regressions may obscure significant effects by selecting only the most salient predictors in multivariate analyses. Results from STI samples may not generalize to other samples. Moreover, studies with null effects often measured alcohol use in terms of overall frequency of use, whereas alcohol use prior to SV may be a more predictive factor.

Drug use. One study of high school students (Borowsky et al., 1997), five international studies with community samples of adults (Abrahams et al., 2004; Jewkes et al., 2006; Kalichman et al., 2007; Segurado et al., 2008; Simbayi et al., 2006), and one U.S. study with community samples of adults (Shannon et al., 2008) reported a significant association between drug use and SV perpetration. Indirect effects for drug use have been identified among high school boys and girls (Fineran &

Bolen, 2006). In contrast, one international study found mixed results for substance use, such that use of marijuana, sedatives, and “other drugs” was associated with SV, but use of alcohol and cocaine were not (Simbayi et al., 2006). One study of ASOs and nonsex offenders also found mixed results for substance use based on placement of the offender (residential vs. outpatient treatment; Zakireh et al., 2008). Three studies found no differences between ASOs and delinquent, violent, and normal comparison groups on drug abuse (Awad & Saunders, 1991; Valliant & Bergeron, 1997; van Wijk, Loeber, et al., 2005). One international study with a community sample also reported a nonsignificant effect (Christoffersen et al., 2005), although only a small proportion of this sample reported SV. In the studies with delinquent and violent comparison groups, null effects for ASOs may be an artifact of the comparison groups selected, given the associations between delinquency, youth violence, and substance use.

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Authors' Note

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Notes

1. We defined the relationship level as those factors that occur in the context of a defined relationship between the perpetrator and his or her family, peers, or intimate partners. In the majority of the studies, relationship-level factors were measured through self-report surveys completed by the participant. Rarely did studies employ multiple-measurement models in which both the participant and his or her family, intimate partner, or peers completed relationship indices. We acknowledge the use of only individual self-report data to measure relationship characteristics is problematic from a conceptual level, and method invariance may account for some of the results. Without true relationship-level data, it is not possible to parcel out the unique contribution of the individual's relationships above and beyond individual characteristics. However, because the factors included here reflect the nature of the individual's relationships and may be addressed through preventive interventions aimed at changing these relationship characteristics or the behavior of people other than the

perpetrator (e.g., parents at risk for child maltreatment), we opted to consider these factors as facets of one's family, peer, and intimate partner relationships rather than personal characteristics.

- The categorizations in Table 3 summarize the trends we observed for each factor but should be interpreted with some caution, given the variability in the number and quality of studies that have been conducted.

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