



Emily R. Mouilso and Lauren F. Wilson

Definitions and Prevalence

About half of all sexual assaults involve alcohol consumption either by the victim, the perpetrator, or both (see Abbey, Zawacki, Buck, Clinton, & McAuslan, 2004; Lorenz & Ullman, 2016 for reviews). In fact, college women who monitored their alcohol use and experiences of victimization were 19 times more likely to be sexually assaulted on days when they drank heavily than on sober days (Parks, Hsieh, Bradizza, & Romosz, 2008). Similarly, for college men the odds of perpetrating sexual assault increase as alcohol consumption increases (Shorey, Stuart, McNulty, & Moore, 2014).

The term *rape* is typically defined as unwanted oral, anal, or vaginal penetration obtained by physical force (Bureau of Justice Statistics, 2016). Although state laws vary, at the federal level and in most states instances in which the victim is unable to give consent because of alcohol intoxication are included in the definition of rape. *Sexual assault* is a broader term that encompasses a wide range of unwanted sexual experiences, including attempted or completed rape, penetration obtained via verbal coercion or misuse of authority, and unwanted grabbing or fon-

dling (Bureau of Justice Statistics, 2016). Estimates of the prevalence of rape and sexual assault are based on a variety of sources, including police reports, general population surveys, and surveys of male and female college students. Conservative estimates suggest that at least 25% of American women have been sexually assaulted and at least 20% of American men have perpetrated sexual assault. Furthermore, at least 10% of American women report having been raped and at least 5% of American men report having committed rape (Abbey & McAuslan, 2004; Kilpatrick, Resnick, Ruggiero, Conoscenti, & McCauley, 2007; Tjaden & Thoennes, 2000).

The vast majority of American adults have consumed alcohol at least once and approximately half report drinking in the past month (Center for Behavioral Health Statistics and Quality, 2016). *Binge drinking* is typically defined as drinking five or more alcoholic drinks for men or four or more alcoholic drinks for women on one occasion (NIAAA, 2004; SAMHSA, 2017). Approximately 13% of American adults report engaging in binge drinking in the past year (Grant et al., 2017). When compared to other patterns of alcohol consumption, binge drinking is associated with particularly negative outcomes, including social, legal, medical, and occupational consequences (Kraus, Baumeister, Pabst, & Orth, 2009; Vicary & Karshin, 2002).

E. R. Mouilso (✉) · L. F. Wilson
University of Georgia, Athens, GA, USA

The Connection Between Sexual Assault and Alcohol Use

Alcohol use is involved in about half of all violent crimes (Collins & Messerschmidt, 1993), including sexual assault. However, the fact that alcohol consumption and sexual assault frequently co-occur does not mean that alcohol use causes sexual assault. Drinking cannot cause a person to be sexually assaulted because experiencing sexual assault differs across a number of significant dimensions, including the setting in which the assault occurs, the perpetrator's tactic(s), and victim-perpetrator relationship. It is likely that if alcohol impacts vulnerability to one kind of victimization it may not confer the same risk (or any risk) to another kind of victimization. For example, acquaintances are more likely to use alcohol as a sexual assault tactic than are intimate partners because intimate partners can rely on the greater physical access to the victim afforded by the relationship and verbal coercion (Cleveland, Koss, & Lyons, 1999). Thus it is highly unlikely that there is one way in which alcohol use confers risk for sexual assault or that alcohol use confers risk in all circumstances.

Physiological and Pharmacological Effects

Perhaps the most straightforward explanation for the link between alcohol use and sexual assault is that a perpetrator may exploit someone who is unconscious as a result of heavy drinking or may not understand what is happening or is too incapacitated to physically object or resist. Victimization of this type are generally referred to as *alcohol-facilitated* or *incapacitated* sexual assaults and are common, especially for college women (McCauley, Ruggiero, Resnick, Conoscenti, & Kilpatrick, 2009; Testa, Livingston, VanZile-Tamsen, & Frone, 2003).

Even less-significant levels of alcohol intoxication may increase a potential victim's vulnerability to sexual assault because alcohol conveys physical, so-called pharmacological, effects that may alter perception, slow reaction time, and impair

decision-making (Monks, Tomaka, Palacios, & Thompson, 2010a, 2010b). These changes may make it more difficult for a victim to identify and effectively navigate risky situations, communicate clearly, and resist physically. Pharmacological effects may also increase the risk of perpetration by altering a potential perpetrator's cognitions and decreasing impulsive control (Abbey & Ortiz, 2008; Abbey, 2011a, 2011b). These effects may interact with a perpetrator's individual traits and risk factors; for instance, higher trait impulsivity differentiated heavy drinking sexual assault perpetrators from other sexual assault perpetrators in a sample of college men (Zawacki, Abbey, Buck, McAuslan, & Clinton-Sherrod, 2003).

According to the *alcohol myopia* model, intoxication makes attending to multiple cues more difficult and focuses the individual on the most salient cues in a given situation (Steele & Southwick, 1985). Thus inhibiting cues (e.g., fear of assault, fear of punishment or rejection) become less salient and compelling cues (e.g., interest in sex, pleasure, or a relationship) dominate one's attention. For example, an intoxicated perpetrator may misinterpret friendly cues as a desire for sexual activity or an intoxicated victim may discount risk cues and not engage in self-protective behaviors.

Consistent with this model, in laboratory studies, women who have ingested a moderate amount of alcohol are less accurate in perceiving risky situations and express lower intentions to resist sexual advances (Stoner et al., 2007; Testa, Livingston, & Collins, 2000). These changes may be particularly true for women with a history of sexual assault (George et al., 2015). Laboratory studies and alcohol administration studies, specifically, also provide support for the alcohol myopia theory for perpetration. For instance, men administered alcohol generally reported greater misperceptions around women's interest in sex and their sexual arousal compared to men not administered alcohol, and alcohol-receiving men also reported a stronger entitlement to sex (see Abbey & Wegner, 2015 for a review). Although Abbey and Wegner (2015) did not review dosage effects related to misperceptions of women's interest in sex, men's feelings of

entitlement to sex was found for both low (i.e., blood alcohol content of 0.05) and high (i.e., blood alcohol content of 0.10; Davis et al., 2012). Findings via survey have corroborated these laboratory studies; for instance, a study by Parkhill, Abbey, and Jacques-Tiura (2009) found that perpetrators who reported heavy drinking also described longer periods of misperceiving their victim's behavior as signaling sexual desire than non-heavy drinkers.

Alcohol Use Expectations, Motivations, Settings, and Misperceptions

Beyond its physical effects, alcohol consumption has powerful influence on our social perceptions, experiences, and environments. In particular, Americans tend to have gendered beliefs and expectations about alcohol use that support men's sexual aggression towards women, for instance, associating alcohol consumption with perpetration of aggressive behavior (Reinarman & Levine, 1997) and, for men, sexually aggressive behavior specifically (Cowley, 2014). As a result, intoxicated men may believe that they are less able to control their behavior and more likely to aggress. These beliefs may help to explain the consistent finding that men who have been drinking are more likely than sober men to perpetrate sexual assault, especially if they believe they have been rejected, deceived, or wronged (see Abbey, 2002 for review).

There are also widely held beliefs around alcohol consumption and sexual assault victims. College men perceive women who drink in bars to be more promiscuous and believe that women use alcohol consumption to signal sexual interest (Abbey, 2002; Cowley, 2014). Together with the before-mentioned effects of alcohol myopia, these social beliefs create a particularly dangerous interaction. Intoxicated women may be vulnerable to sexual assault because men are more likely to misperceive ambiguous or friendly cues as sexual interest, make sexual advances, and ignore any attempts at resistance. In analyzing college student interviews about their experiences with unwanted sexual contact, Cowley (2014) found that most

respondents attributed the sexual assault to an interaction between alcohol use and unhealthy gendered beliefs (e.g., norms and scripts, rape myths). For example, both male and female participants described alcohol as disinhibiting existing gendered traits, such as aggression in men, and regarded alcohol use as a means of signaling sexual availability for women who would not otherwise be interested in casual sex. This was further supported in a subsample of men who reported various levels of justification of their assaultive behaviors, as their attitudes around rape and their observation of the victim's alcohol intake were both significantly associated with post-assault justification (Wegner, Abbey, Pierce, Pegram, & Woerner, 2015).

Social situations, locations, and experiences are also shaped by individuals' alcohol beliefs. For instance, if it is true that social expectations tell men that women who drink are more promiscuous, men may purposefully seek out situations where alcohol is served, such as bars or parties, intending to have sex (Purcell & Graham, 2005; Zawacki et al., 2003). Additionally, beliefs surrounding alcohol may permit sexually aggressive behavior in these spaces, for instance groping may be seen by perpetrators and bystanders as more permissible in bars than in other social situations (Becker & Tinkler, 2015).

Exposure to risky drinking settings, such as bars or fraternity parties, may be a stronger predictor of sexual victimization than alcohol consumption itself (Parks & Miller, 1997; Schwartz & Pitts, 1995). Because drinking can only confer risk for assault in the presence of a potential perpetrator, the setting in which alcohol is consumed is an important factor in the link between alcohol use and sexual assault. Consistent with this idea, Schwartz and Pitts (1995) proposed a feminist version of *routine activities theory* (Cohen & Felson, 1979), which suggests that frequent drinking confers risk for sexual assault by exposing individuals to situations that include a high number of potential perpetrators and few suitable guardians (e.g., parents, teachers). Research supports the idea that sexual assaults often occur after drinking in bars or parties (Mohler-Kuo, Dowdall, Koss, & Wechsler, 2004;

Testa et al., 2003) and particularly fraternity parties (Chevalier & Einolf, 2009) relative to other drinking settings. These hypotheses are further supported by findings related to perpetration, such as Testa and Cleveland's (2017) longitudinal studies finding that frequency of party attendance predicted sexual assault perpetration.

Long-Term Associations and Reciprocity

It is important to not assume that the relationship between alcohol and sexual assault is unidirectional. Since alcohol has arousal- and anxiety-reducing properties, it may be used by a victim as a means of self-medication following a traumatic event (Stewart & Conrod, 2003). Experiencing a sexual assault (or other traumatic event) may lead to initiation or increase in alcohol consumption, which may increase the risk of future sexual assault (Lorenz & Ullman, 2016). Although it is not clear that victimization increases alcohol use generally, consumption does seem to increase for some victims (see Lorenz & Ullman, 2016; Testa & Livingston, 2009 for reviews). Women with a history of victimization are more likely than other women to use alcohol to cope with distress (Ullman, Filipas, Townsend, & Starzynski, 2005). Exposure to personalized trauma cues has been found to prompt craving for alcohol in alcohol-dependent individuals (Coffey et al., 2002). In a sample of men with a history of sexual assault victimization, drinking to cope partially mediated the link between victimization and problematic drinking behavior (Fossos, Kaysen, Neighbors, Lindgren, & Hove, 2011). Fossos et al. (2011) found both direct and indirect relationships between victimization history and consequences of drinking for men but only indirect relationships for women. Thus, some elements of the self-medication model have been supported.

Empirically testing the possible bidirectional relationship will require prospective studies measuring how sexual assault and drinking influence each other over time. To date several such studies have been described but results are inconsistent. For example, in a large sample of

young women Bryan et al. (2015) found that history of childhood sexual abuse and/or adult sexual assault predicted alcohol use, alcohol use predicted later victimization, and victimization in turn predicted increased alcohol use. Additionally, there is evidence that previous victimization may influence behaviors, such as decreasing protective behaviors, when intoxicated and/or when faced with risky interpersonal situations (George et al., 2015; Gilmore, Stappenbeck, Lewis, Granato, & Kaysen, 2015). Among studies that did not support a bidirectional relationship, some concluded that sexual assault was not predictive of increased alcohol use (Gidycz et al., 2007) while others concluded that post-assault drinking did not predict revictimization (Parks, Hsieh, Taggart, & Bradizza, 2014). Additionally some studies have found that alcohol use did not predict revictimization but alcohol problems (Testa & Livingston, 2000) or binge drinking (Mouilso, Fischer, & Calhoun, 2012) did. Given these conflicting results, it seems a bidirectional relationship may exist only for some individuals and/or only under some circumstances; however, additional data are necessary.

How Are Alcohol-Involved Sexual Assaults Different?

Sexual assaults that involved alcohol use by the victim, perpetrator, or both often differ in important ways from assaults that do not involve alcohol use. Contrary to the "stranger danger" stereotype, the vast majority of sexual assaults are perpetrated by someone known to the victim, such as a romantic partner, friend, or acquaintance (Abbey & McAuslan, 2004; Tjaden & Thoennes, 2000). As noted above, assaults that involve alcohol are more likely to be perpetrated by acquaintances (e.g., classmate, friend-of-a-friend, first date) rather than romantic partners (Kilpatrick et al., 2007; Testa & Livingston, 2009). In sexual assaults when the victim is drinking, offenders are virtually always drinking, but around half of assaults involve drinking by the perpetrator alone (Ullman & Brecklin, 2000). Drinking by either the victim or perpetrator is

associated with more severe assaults (e.g., more physical injuries, multiple perpetrators) relative to assaults that do not involve drinking. Perpetrator-only drinking is associated with the most severe physical injury and greatest perceived threat of death for the victim (Ullman & Najdowski, 2009). Indeed, perpetrators who are heavy drinkers are more likely to use more aggressive perpetration tactics and to engage in behaviors designed to isolate and control their potential victims (Abbey et al., 2004; Parkhill et al., 2009). However, higher levels of perpetrator intoxication reduce the likelihood of completed rape (Testa, VanZile-Tamsen, & Livingston, 2004), perhaps because victims more effectively resist perpetrators who are physically and mentally compromised by alcohol. Regarding victims, binge drinking seems to increase risk for sexual assault relative to other patterns of alcohol consumption (McCauley, Calhoun, & Gidycz, 2010; Mouilso, Fischer, & Calhoun, 2012).

Victims of alcohol-involved sexual assaults seem to experience more post-assault distress and self-blame, especially if they were drinking (Littleton, Grills-Taquechel, & Axsom, 2009; Ullman & Najdowski, 2009). However, if the assault involved alcohol, victims are less likely to label their experience as rape or acknowledge that a crime has been committed (Bondurant, 2001; Littleton et al., 2009). Instead, they may consider the experience to be a miscommunication or a bad date or be unsure how to label the experience at all. Perhaps this difference is due to the generally accepted myth that rape always involves a stranger and use of physical force, which is rarely the case in alcohol-involved sexual assaults. Labeling is important because it is linked to seeking and receiving support (e.g., from friends, family, medical professionals, mental health professionals, police). Despite the possible positive outcomes of disclosure (e.g., access to social and practical support), there are often negative outcomes as well (e.g., disbelief, blame). Victims of alcohol-involved sexual assault seem to be more likely than other victims to experience negative outcomes when they disclose (Ullman & Najdowski, 2009) although

this pattern may not exist for college women (Littleton et al., 2009) or in cases of perpetrator-only drinking (Ullman & Najdowski, 2009).

Continued Misunderstandings, Key Gaps, and Future Directions

Study Design and Measurement

Many different types of studies have been used to understand the link between alcohol use and sexual assault. Cross-sectional studies ask participants if they drink and if they have experienced or perpetrated a sexual assault. Event-based studies ask participants to report whether drinking occurred at the time of a sexual assault. Prospective studies measure drinking and sexual assault overtime to determine if earlier behavior or experiences predict later behavior or experiences. Laboratory studies generally test the impact of drinking on participants' beliefs, behaviors, or behavioral intentions in a laboratory setting. Each type of study provides a different type of information and has its own strengths and weaknesses. The majority of studies in this area are cross-sectional, which is helpful in establishing that a link exists but does not provide much useful information about the nature or directionality of the link between alcohol and sexual assault.

To establish true causality, laboratory studies, such as alcohol administration studies, are required because only these studies can employ random assignment to control for possible alternative explanations (Abbey, 2017). However, laboratory studies may lose real world applicability by overlooking important variables due to sampling limitations and the necessity of relying on proxies for sexual assault (see Abbey & Wegner, 2015, for a review). Additionally, gaps remain in the types of completed or published laboratory studies. For instance, laboratory studies to date have tended to focus on casual sexual relationships (meaning intimate and stranger relationships are less well understood) and have tended to rely on physical pressure rather than the more commonly used verbal pressure or alcohol

tactics for sexual assault perpetration (Abbey & Wegner, 2015). Further understanding of the role alcohol plays in sexual assault may be achieved through laboratory paradigms that address these gaps along with expanding their methods to better account for a variety of potential victim reactions, validating new and innovative methods, and expanding upon the individual difference variables that are measured (Abbey & Wegner, 2015).

This review has highlighted the importance of additional prospective studies measuring how sexual assault and drinking influence each other over time. In order to provide the richest data, such studies should include a multitude of individual and situational variables that may moderate, intensify, or explain the alcohol and sexual assault connection. Diary studies and timeline followback methodologies provide a promising perspective means of establishing temporal relationship between sexual assault and alcohol use. Both timeline follow back and diary studies provide data that can be sequenced in order to identify antecedents and their consequences; this type of approach enables better understanding of which alcohol consumption effects are proximal to and which are distally predictive of sexual assault, as well as increase understanding of other factors that may amplify the connection between alcohol and sexual assault. Diary studies also provide a means of collecting in vivo data, which can help elucidate factors that predict sexual assault without the bias of retrospective report. Diary methods have been used to both understand the relationship between alcohol use and perpetration (e.g., Shorey et al., 2014) and alcohol use and victimization, along with its associated deleterious sequelae (e.g., Neal & Fromme, 2007; Parks & Fals-Stewart, 2004; Parks, Hsieh, et al., 2008). Lastly, the nuanced aspects of human belief, social norms, attitudes, and thought are difficult to fully capture in standardized surveys and retrospective reports. Therefore, nuance and key elements may be found through qualitative methods, such as analyzing interviews (e.g., Becker & Tinkler, 2015; Cowley, 2014; Koo, Nguyen, Andrasik, & George, 2015).

Regardless of the type of study, part of the confusion around the relationship between alcohol use and sexual assault lies in measurement

limitations. Different operationalizations of the variables of interest lead to conflicting results. This may be in part because different measures are confounded with other important factors (e.g., impulsivity). For instance, alcohol use may be conceptualized in a variety of ways, with so-labeled distal, proximal, and event-level effects (see Abbey, Wegner, Woerner, Pegram, & Pierce, 2014 for a review). Even within each of these categories, there are a variety of metrics used for both distal (e.g., alcohol problems, dependency symptoms) and proximal (e.g., heavy episodic drinking, binge drinking) measures. Different metrics may influence understanding of causal relationships or prevalence rates, such as the example of mixed findings between sexual assault victimization and later drinking. Therefore, researchers should carefully consider what labels they use and what conclusions are drawn based on their methods. Additionally, reliance on distal and proximal measures is insufficient for drawing causal conclusions not only because of potential confounds but also because it is unclear if alcohol was used (and in what quantities) during the sexual assault, as would be captured with event-level measurement. Measurement precision for sexual assault outcomes is equally essential and just as varied within the existing literature. Many different types of and labels for sexual assault exist (e.g., sexual coercion, sexual aggression, sexual assault, rape, forced penetration, sodomy), and the findings related to prevalence rates, risk factors, and related environmental variables depend on the definitions used (see Bouffard, Bouffard, Goodson, & Goodson, 2017 for a review). Therefore, it is clear that, without measurement precision and clarity, findings are muddled.

Of course, alcohol is not the only substance associated with sexual assault. Hindmarch and Brinkmann (1999) conducted urinalysis of 1033 samples supplied by victims of rape where drugs were allegedly involved and 37% of samples tested positive for alcohol, 19% tested positive for cannabinoids, 5% tested positive for other substances [e.g., gamma-hydroxybutyrate (GHB), cocaine, morphine, flunitrazepam (Rohypnol)].

Similar to the research on alcohol, sexual assault victims are more likely to report use of illicit substances cross-sectionally (McCauley, Ruggiero, Resnick, & Kilpatrick, 2010; Zinzow et al., 2012) and at the time of the assault (Resnick et al., 2012) and experiencing a sexual assault may be associated with initiation of or increased substance use (Sturza & Campbell, 2005). Illicit drug use also shares a relationship with sexual assault perpetration, though findings are mixed or weak compared to alcohol effects (Testa, 2004). Amongst adolescents, perpetrators are much more likely to report illicit drug use than non-perpetrators (Borowsky, Hogan, & Ireland, 1997). In a sample of young adults, illicit drug use, both directly before the encounter and distally, has been linked to increased severity of sexual aggression, even after controlling for proximal alcohol use (Swartout & White, 2010). However, epidemiological studies have found that illicit drugs appear to be commonly used alongside alcohol and uncommonly used in comparison to alcohol alone (Hurley, Parker, & Wells, 2006).

Given that alcohol and marijuana seem to be the substances most frequently involved in drug-facilitated or incapacitated rape (Hindmarch & Brinkmann, 1999; Kilpatrick et al., 2007), recent changes in laws related to marijuana that impact its availability may impact the occurrence of sexual assault, and this could be a topic for future research. Additionally, despite media attention given to illicit drugs, such as so called date-rape drugs like GHB and Rohypnol, alcohol is much more frequently related to sexual assault (Abbey & Jacques-Tiura, 2011). Given the influential role of alcohol, it is important that future research investigating the relationship between substance use and sexual assault also assess alcohol use. Generally, a best practice for future research is to engage with multiple types of methodologies with heavy focus on experimental, longitudinal, diary, and qualitative studies. Combining tactics helps identify nuance, isolate driving variables, and clarify areas of confusion. Additionally, future research must be clear and precise regarding how variables are operationalized, and event-level measurements will provide more causal understanding than proximal or distal variations on the same theme.

Study Sample Selection

Of course, even with appropriate methods, research findings are limited by the study sample. Frequently, studies in this area lack diversity in participants. For instance, although most sexual assaults involve a male perpetrator and a female victim, individuals of all genders can be victims and perpetrators (see Turchik, Hebenstreit, & Judson, 2016 for review). Nearly 5% of American men report rape victimization (Centers for Disease Control and Prevention, 2011), and sexual assault victimization is even more common (Bureau of Justice Statistics, 2016; Navarro & Clevenger, 2017). Approximately half of male victims report the sexual assault was perpetrated by a female intimate partner (Centers for Disease Control and Prevention, 2011), and a substantial minority of women report perpetrating sexual assault (Russell, Doan, & King, 2017; Struckman-Johnson, Struckman-Johnson, & Anderson, 2003). Although data are limited, alcohol use seems to increase risk of victimization for men (Navarro & Clevenger, 2017), and women report exploitation of intoxication as a common perpetration tactic (Russell et al., 2017). However, theories and research focus almost exclusively on male perpetrators and female victims (Turchik et al., 2016). Similarly, the majority of perpetration studies have focused on college men. The limited data that do exist suggest variable rates of reported sexual assault perpetration in other groups (e.g., 22–27% in community samples, 15% in US Navy recruits, and 3–8% in youth under 18; Abbey et al., 2004).

Some evidence exists that factors such as race, ethnicity, or background play important roles in alcohol-involved sexual assault rates, reporting, and consequences. Koo et al. (2015) found that Asian-identifying college students reported a low likelihood to report alcohol-involved rape. Another study found that Asian-identifying college women with a history of incapacitated rape had fewer drinking problems than White-identifying college women with a similar history (Nguyen, Kaysen, Dillworth, Brajcich, & Larimer, 2010). Monks et al. (2010a, 2010b) found that, in a sample of predominantly Hispanic students, alcohol use and expectancies

predicted sexual victimization reports, but, notably, sensation seeking also independently predicted sexual victimization. Importantly, these studies suggest that better understanding racial, ethnic, and cultural factors, particularly when there may be culturally specific alcohol expectancies. The possible impact of sexual orientation has also been understudied. In a national sample of lesbian and bisexual-identifying women, experiencing sexual assault victimization predicted higher levels of alcohol use and more alcohol-related problems (Rhew, Stappenbeck, Bedard-Gilligan, Hughes, & Kaysen, 2017). Clearly, demographic factors and identity play a role in how alcohol and sexual assault interrelate; thus, fully capturing the complex interplay between alcohol and sexual assault requires research with diverse samples.

Prevention Implications

Researchers who study risk factors for sexual assault, including factors related to alcohol, are often accused of blaming the victim (Abbey, 2011a, 2011b). Victim blaming is a pernicious reality in our society that contributes to many negative outcomes, including increased distress and self-blame for victims and decreased reporting of sexual assault. Rather than conferring blame on victims, identification of risk factors provides information that can empower victims and, perhaps, contribute to empirically supported risk reduction and prevention efforts.

Despite being thoroughly debunked, the myth that most sexual assaults are perpetrated by a deranged stranger who ambushes his victim in a dark alley and overwhelms her with physical force persists. More than 30 years of research has consistently concluded that most sexual assaults are committed by someone known to the victim and physical force is often absent. As a result of this common misunderstanding, the role of alcohol consumption is often undervalued as a perpetration tactic and risk factor. One consequence is that many sexual assault risk reduction programs do not include information about the role of alcohol use or teach alcohol-related self-protection behaviors (Testa & Livingston, 2009). Instead, many

programs include components like self-defense training that are better suited to resisting physical attacks.

Because binge drinking may confer additional risk for sexual assault beyond frequency and volume of alcohol consumed, this pattern seems to be a particularly important intervention target. In the substance use literature, many strategies have been shown to reduce binge drinking in college students (Larimer & Cronce, 2002, 2007) and these strategies can be incorporated into sexual assault risk reduction programs. For example, Gilmore, Lewis, and George (2015) conducted a randomized control trial of a web-based sexual assault risk reduction program with binge drinking college women. Among participants at highest risk of revictimization, receiving personalized feedback and recommendations related to sexual assault risk and drinking behavior reduced revictimization (both alcohol involved and non-alcohol involved) and the frequency of binge drinking reported at follow up. Bystander strategies that address the role of alcohol beliefs, expectancies, and scripts in sexual assault are another promising approach to sexual assault prevention. Existing strategies that are supported by evidence include a range of methodologies, such as online training (e.g., RealConsent; Salazar, Vivolo-Kantor, Hardin, & Berkowitz, 2014), performance-based programs (e.g., Sex Signals; Rothman & Silverman, 2007), and workshops (The Men's Program; Foubert & Marriott, 1996).

The growing concern about alcohol use, particularly on college campuses, has spurred the development and implementation of many drinking reduction programs. There is some evidence that interventions focusing on reducing alcohol use also reduce sexual assault (Clinton-Sherrod, Morgan-Lopez, Brown, McMillen, & Cowells, 2011). However, 26% of the high school students report having been drunk at least once (Johnston, O'Malley, Miech, Bachman, & Schulenberg, 2017), and there seems to be a high degree of stability between an individual's high school and college pattern of alcohol use (Reifman & Watson, 2003; Wechsler, Davenport, Dowdall, Moeykens,

& Castillo, 1994). Thus intervention efforts that occur before college seem likely to have the most impact on alcohol use and, by extension, sexual assault. Given that a history of sexual victimization (either child sexual abuse or adult victimization) is a consistent and strong risk factor for revictimization (see Arata, 2002; Classen, Paresh, & Aggarwal, 2005 for reviews), early intervention may be the most effective method of breaking this cycle. Despite this evidence, a review of adolescent intimate partner and sexual violence prevention programs found none that addressed alcohol use (Lundgren & Amin, 2015).

Prevention strategies targeting broader community and societal-level factors yield promising results. To date, alcohol and sexual assault policies are variable. A review of state legislation from Richards and Kafonek (2016) found that many institutes of higher education lack sexual misconduct policies, including affirmative consent standards (i.e., explicitly stating that consent must be given for each specific sexual engagement rather than implied). Additionally, legal statues continue to vary dramatically across states in terms of whether consent and incapacity are defined and whether/how the gender of victims and perpetrators is addressed (DeMatteo, Galloway, Arnold, & Patel, 2015). Previous work has suggested that policy change recommendations may include limiting the availability of alcohol at certain times or in certain places (e.g., college campuses), increasing prices or taxes of alcohol, reducing the density of alcohol outlets in certain locations, intervening to reduce alcohol use by problem users, reducing overservice or refusing service to aggressive individuals, changing alcohol marketing, and implementing community interventions to manage individuals in alcohol-use situations (Lippy & DeGue, 2016; World Health Organization, 2009). Further evaluation of policies is required to understand their effectiveness with contextual nuances, local practices, and alcohol scripts (Lippy & DeGue, 2016).

Together, these prevention strategies provide intervention points at multiple levels (e.g., individually, relationally, community-wide, societally). Because of its complexity, preventing alcohol-related sexual assault will likely require

a multifaceted approach that utilizes many strategies at these various levels. This is in alignment with findings from the literature; for instance, a review of interventions for reducing and preventing violence against women found that interventions with the most promise to achieve widespread prevention also provided comprehensive programming at multiple levels of the social ecology (e.g., at individual, relational, community, and societal levels) and continuously engaged with diverse stakeholders (Arango, Morton, Gennari, Kiplesund, & Ellsberg, 2014). Therefore, preventions with the highest impact will likely be multifaceted, addressing the behaviors, attitudes, and policies that all contribute to alcohol-related sexual assault perpetration.

Clinical Implications

Sexual assault can result in negative outcomes for victims, including increased negative affect, self-blame, and posttraumatic stress disorder symptoms (Littleton et al., 2009; Ullman & Najdowski, 2009). Several interventions have been found to effectively reduce these symptoms and improvements are generally maintained (Kline, Cooper, Rytwinski, & Feeny, 2017). Given the differences between alcohol-involved and other types of sexual assaults, one might expect treatment outcomes to differ based on assault type. Treatment outcomes have not been found to differ based on related dimensions (e.g., child vs. adult victimization, sexual vs. physical victimization, Kline et al., 2017), but the role of alcohol involvement as a predictor of treatment outcome has not been widely studied. Regardless, it seems likely that treatment tailoring may be important for victims of alcohol-involved assaults. For example, exposure-based treatments in which victims recount the trauma in detail may be ill suited to victims of incapacitated rape who have limited memory of the event. Higher rates of self-blame among victims of alcohol-involved assaults may require specific challenging of societal myths that view women as sexually available

and, thus, appropriate targets if drinking or drunk. Finally, the disconnect between what is considered a “typical” or “legitimate” rape and the experience of an alcohol-involved assault likely contributes to the tendency of victims to discount or explain away this type of victimization and to victims experience of more negative reactions when they do disclose. Challenging the underlying myths, attitudes, and expectations at a societal level would likely help reduce the frequency of these assaults and improve outcomes for victims.

For perpetrators who have some engagement with the legal system, proven or at least promising treatments exist for reducing recidivism (Kim, Benekos, & Merlo, 2016). While surgical castration and hormonal medication have significantly larger effects, psychological treatments consistently produce small reductions in recidivism (Kim et al., 2016). Cognitive behavioral therapy and relapse prevention (CBT-RP; Moster, Wnuk, & Jeglic, 2008) is the most commonly used psychological treatment for sexual offenders (Losel & Schmucker, 2005). CBT-RP includes various techniques to correct thoughts, feelings, and behaviors that promote sexual assault and develop more prosocial patterns, including challenging cognitive distortions and teaching empathy and social skills. The goal of RP is to teach offenders to recognize high-risk situations and to use coping skills to reduce the likelihood of reoffending. Results of the current review suggest the importance of challenging alcohol-related offense-supportive cognitive distortions (e.g., I can’t control myself when I drink, Women use alcohol to signal sexual interest). The physical effects of alcohol (e.g., impaired decision-making, alcohol myopia) should be considered as they relate to an offender’s likelihood of effectively implementing a RP plan. Finally, regardless of whether the offender is drinking, exposure to risky drinking setting should be considered a high-risk behavior and should be addressed in treatment.

Conclusion

Sexual assault is an endemic problem in our society, and alcohol use is consistently connected to sexual assault perpetration and victimization. However, the link between alcohol use and sexual assault is complex with a host of associated factors likely contributing to the relationship (e.g., gendered scripts around alcohol use, being in places where alcohol is served). The complexity of this relationship is in part confused by the varied and inconsistent means of measuring, labeling, and describing both alcohol use and sexual assault. Additionally, when the linkage between alcohol use and sexual assault is only studied in limited samples, it is more difficult to draw meaningful conclusion. To better understand this multifactorial association, future research will benefit from diverse samples, experimental paradigms to parse apart pharmacological effects of alcohol from social scripts surrounding its use, and prospective, longitudinal designs to understand the interplay between alcohol and sexual assault over time in context of other influential variables.

From what we do understand about alcohol’s role in sexual assault, population-level prevention will require careful programming that addresses multiple levels of the social ecology. A combination of bystander interventions, norms change, and local and statewide policies will likely be required. Intervening early in adolescence to address alcohol use and its relationship to sex and gender-related beliefs will likely be important. When sexual assaults do occur, addressing the role of alcohol with victims and perpetrators may be helpful for reducing negative outcomes for victims and continued unhealthy expectations from perpetrators. As researchers, preventionists, and clinicians, we must cease to undervalue the role that alcohol plays in sexual assault and become more accustomed to discussing gendered social scripts and alcohol use patterns that are closely tied to alcohol use.

References

- Abbey, A. (2002). Alcohol-related sexual assault: A common problem among college students. *Journal of Studies on Alcohol, 14*, 118–128.
- Abbey, A. (2011a). Alcohol and dating risk factors for sexual assault: Double standards are still alive and well entrenched. *Psychology of Women Quarterly, 35*(2), 362–368. <https://doi.org/10.1177/0361684311404150>
- Abbey, A. (2011b). Alcohol's role in sexual violence perpetration: Theoretical explanations, existing evidence, and future directions. *Drug and Alcohol Review, 30*, 481–489. <https://doi.org/10.1111/j.1465-3362.2011.00296.x>
- Abbey, A. (2017). Moving beyond simple answers to complex questions: How does context affect alcohol's role in sexual assault perpetration? A commentary on Testa and Cleveland (2017). *Journal of Studies on Alcohol and Drugs, 78*(1), 14–15. <https://doi.org/10.15288/jsad.2017.78.14>
- Abbey, A., & Jacques-Tiura, A. J. (2011). Sexual assault perpetrators' tactics: Associations with their personal characteristics and aspects of the incident. *Journal of Interpersonal Violence, 26*(14), 2866–2889. <https://doi.org/10.1177/0886260510390955>
- Abbey, A., & McAuslan, P. (2004). A longitudinal examination of male college students' perpetration of sexual assault. *Journal of Consulting and Clinical Psychology, 72*, 747–756. <https://doi.org/10.1037/0022-006x.72.5.747>
- Abbey, A., & Ortiz, L. G. (2008). *Alcohol and sexual violence perpetration*. Harrisburg, PA: VAWnet, a project of the National Resource Center on Domestic Violence/Pennsylvania Coalition Against Domestic Violence.
- Abbey, A., & Wegner, R. (2015). Using experimental paradigms to examine alcohol's role in men's sexual aggression: Opportunities and challenges in proxy development. *Violence Against Women, 21*(8), 975–996. <https://doi.org/10.1177/1077801215589378>
- Abbey, A., Wegner, R., Woerner, J., Pogram, S. E., & Pierce, J. (2014). Review of survey and experimental research that examines the relationship between alcohol consumption and men's sexual aggression perpetration. *Trauma, Violence & Abuse, 15*(4), 265–282. <https://doi.org/10.1177/1524838014521031>
- Abbey, A., Zawacki, T., Buck, P. O., Clinton, A. M., & McAuslan, P. (2004). Sexual assault and alcohol consumption: What do we know about their relationship and what types of research are still needed? *Aggression and Violent Behavior, 9*, 271–303. [https://doi.org/10.1016/s1359-1789\(03\)00011-9](https://doi.org/10.1016/s1359-1789(03)00011-9)
- Arango, D. J., Morton, M., Gennari, F., Kiplesund, S., & Ellsberg, M. (2014). *Interventions to prevent or reduce violence against women and girls: A systematic review of reviews*. Washington, DC: World Bank. <https://openknowledge.worldbank.org/handle/10986/21035>
- Arata, C. M. (2002). Child sexual abuse and sexual revictimization. *Clinical Psychology: Science and Practice, 9*, 135–164. <https://doi.org/10.1093/clipsy.9.2.135>
- Becker, S., & Tinkler, J. (2015). “Me getting plastered and her provoking my eyes” young people's attribution of blame for sexual aggression in public drinking spaces. *Feminist Criminology, 10*(3), 235–258. <https://doi.org/10.1177/1557085114541142>
- Bondurant, B. (2001). University women's acknowledgment of rape: Individual, situational, and social factors. *Violence Against Women, 7*, 294–314. <https://doi.org/10.1177/1077801201007003004>
- Borowsky, I. W., Hogan, M., & Ireland, M. (1997). Adolescent sexual aggression: Risk and protective factors. *Pediatrics, 100*(6), e7–e7.
- Bouffard, L., Bouffard, L., Goodson, A., & Goodson, A. (2017). Sexual coercion, sexual aggression, or sexual assault: How measurement impacts our understanding of sexual violence. *Journal of Aggression, Conflict and Peace Research, 9*(4), 269–278. <https://doi.org/10.1108/jacpr-05-2017-0292>
- Bryan, A. E., Norris, J., Abdallah, D. A., Stappenbeck, C. A., Morrison, D. M., Davis, K. C., ... Zawacki, T. (2015). Longitudinal change in women's sexual victimization experiences as a function of alcohol consumption in sexual victimization history: A latent transition analysis. *Psychology of Violence, 6*(2), 271–279. <https://doi.org/10.1037/a0039411>
- Bureau of Justice Statistics. (2016). *Criminal Victimization*. (NCJ 251150). Washington, DC: Department of Justice.
- Center for Behavioral Health Statistics and Quality. (2016). 2015 National Survey on Drug Use and Health: Detailed Tables. Substance Abuse and Mental Health Services Administration.
- Centers for Disease Control and Prevention. (2011). *National intimate partner and sexual violence survey: 2010 Summary report*. Atlanta, GA: Centers for Disease Control and Prevention.
- Chevalier, M. J., & Einolf, C. J. (2009). Sorority participation and sexual assault risk. *Violence Against Women, 15*, 835–851. <https://doi.org/10.1177/1077801209334472>
- Classen, C. C., Palesh, O. G., & Aggarwal, R. (2005). Sexual revictimization: A review of the empirical literature. *Trauma, Violence & Abuse, 6*, 103–129. <https://doi.org/10.1177/1524838005275087>
- Cleveland, H. H., Koss, M. P., & Lyons, J. (1999). Rape tactics from the survivors' perspective. *Journal of Interpersonal Violence, 14*, 532–547. <https://doi.org/10.1177/088626099014005005>
- Clinton-Sherrod, M., Morgan-Lopez, A., Brown, J. M., McMillen, B. A., & Cowells, A. (2011). Incapacitated sexual violence involving alcohol among college women: The impact of a brief drinking intervention. *Violence Against Women, 17*, 135–154. <https://doi.org/10.1177/1077801210394272>
- Coffey, S. F., Saladin, M. E., Drobos, D. J., Brady, T., Dansky, B. S., & Kilpatrick, D. G. (2002). Trauma and substance cue reactivity in individuals with comorbid posttraumatic stress disorder and cocaine or alcohol dependence. *Drug and Alcohol Dependence, 65*, 115–127. [https://doi.org/10.1016/s0376-8716\(01\)00157-0](https://doi.org/10.1016/s0376-8716(01)00157-0)

- Cohen, L. E., & Felson, M. (1979). Social change and crime rate trends: A routine activity approach. *American Sociological Review*, *44*, 488–608.
- Collins, J. J., & Messerschmidt, P. M. (1993). Epidemiology of alcohol-related violence. *Alcohol Health & Research World*, *17*, 93–100. <https://doi.org/10.1002/9781118411094.ch16>
- Cowley, A. (2014). “Let’s get drunk and have sex”: The complex relationship of alcohol, gender, and sexual victimization. *Journal of Interpersonal Violence*, *29*, 1258–1278. <https://doi.org/10.1177/0886260513506289>
- Davis, K. C., Schraufnagel, T. J., Jacques-Tiura, A. J., Norris, J., George, W. H., & Kiekel, P. A. (2012). Childhood sexual abuse and acute alcohol effects on men’s sexual aggression intentions. *Psychology of Violence*, *2*, 179–193. <https://doi.org/10.1037/a0027185>
- DeMatteo, D., Galloway, M., Arnold, S., & Patel, U. (2015). Sexual assault on college campuses: A 50-state survey of criminal sexual assault statutes and their relevance to campus sexual assault. *Psychology, Public Policy, and Law*, *21*(3), 227–238. <https://doi.org/10.1037/law0000055>
- Fossos, N., Kaysen, D., Neighbors, C., Lindgren, K. P., & Hove, M. C. (2011). Coping motives as a mediator of the relationship between sexual coercion and problem drinking in college students. *Addictive Behaviors*, *36*(10), 1001–1007. <https://doi.org/10.1016/j.addbeh.2011.06.001>
- Foubert, J. D., & Marriott, K. A. (1996). Overcoming men’s defensiveness toward sexual assault programs: Learning to help survivors. *Journal of College Student Development*, *37*, 470–472. <https://doi.org/10.1353/csd.2006.0016>
- George, W. H., Davis, K. C., Masters, N. T., Jacques-Tiura, A. J., Heiman, J. R., Norris, J., ... Andraisk, M. P. (2015). Sexual victimization, alcohol intoxication, sexual-emotional responding, and sexual risk in heavy episodic drinking women. *Archives of Sexual Behavior*, *43*, 645–658. <https://doi.org/10.1007/s10508-013-0143-8>
- Gidycz, C. A., Loh, C., Lobo, T., Rich, C., Lynn, S. J., & Pashdag, J. (2007). Reciprocal relationships among alcohol use, risk perception, and sexual assault: A prospective analysis. *Journal of American College Health*, *56*, 5–14. <https://doi.org/10.3200/JACH.56.1.5-14>
- Gilmore, A. K., Lewis, M. L., & George, W. H. (2015). A randomized controlled trial targeting alcohol use and sexual assault risk among college women at high risk for victimization. *Behaviour Research and Therapy*, *7*(4), 38–49. <https://doi.org/10.1016/j.brat.2015.08.007>
- Gilmore, A. K., Stappenbeck, C. A., Lewis, M. A., Granato, H. F., & Kaysen, D. (2015). Sexual assault history and its association with the use of drinking protective behavioral strategies among college women. *Journal of Studies on Alcohol and Drugs*, *76*, 459–464. <https://doi.org/10.15288/jsad.2015.76.459>
- Grant, B. F., Chou, S. P., Saha, T. D., Pickering, R. P., Kerridge, B. T., Ruan, W. J., ... Hasin, D. S. (2017). Prevalence of 12-month alcohol use, high-risk drinking, and DSM-IV alcohol use disorder in the United States, 2001–2002 to 2012–2013: Results from the national epidemiologic survey on alcohol and related conditions. *JAMA Psychiatry*, *74*(9), 911–923. <https://doi.org/10.1001/jamapsychiatry.2017.2161>
- Hindmarch, I., & Brinkmann, R. D. (1999). Trends in the use of alcohol and other drugs in cases of sexual assault. *Human Psychopharmacology*, *14*, 225–231. [https://doi.org/10.1002/\(SICI\)1099-1077\(199906\)14:4<225::AID-HUP92>3.0.CO;2-3](https://doi.org/10.1002/(SICI)1099-1077(199906)14:4<225::AID-HUP92>3.0.CO;2-3)
- Hurley, M., Parker, H., & Wells, D. L. (2006). The epidemiology of drug facilitated sexual assault. *Journal of Clinical Forensic Medicine*, *13*(4), 181–185. <https://doi.org/10.1016/j.jcfm.2006.02.005>
- Johnston, L. D., O’Malley, P. M., Miech, R. A., Bachman, J. G., & Schulenberg, J. E. (2017). *Monitoring the Future national survey results on drug use, 1975–2016: Overview, key findings on adolescent drug use*. Ann Arbor, MI: Institute for Social Research, The University of Michigan.
- Kilpatrick, D. G., Resnick, H. S., Ruggiero, K. J., Conoscenti, L. M., & McCauley, J. (2007). *Drug-facilitated, incapacitated, and forcible rape: A national study (NCJ 219181)*. Charleston, SC: Medical University of South Carolina, National Crime Victims Research & Treatment Center.
- Kim, B., Benekos, P. J., & Merlo, A. (2016). Sex offender recidivism revisited: Review of recent meta-analyses on the effects of sex offender treatment. *Trauma, Violence & Abuse*, *17*(1), 105–117. <https://doi.org/10.1177/1524838014566719>
- Kline, A. C., Cooper, A. A., Rytwinski, N. K., & Feeny, N. C. (2017). Long-term efficacy of psychotherapy for posttraumatic stress disorder: A meta-analysis of randomized controlled trials. *Clinical Psychology Review*, *59*, 30–40. <https://doi.org/10.1016/j.cpr.2017.10.009>
- Koo, K. H., Nguyen, H. V., Andrasik, M. P., & George, W. H. (2015). The cultural context of nondisclosure of alcohol-involved acquaintance rape among Asian American college women: A qualitative study. *The Journal of Sex Research*, *52*(1), 55–68. <https://doi.org/10.1080/00224499.2013.826168>
- Kraus, L., Baumeister, S. E., Pabst, A., & Orth, B. (2009). Association of average daily alcohol consumption, binge drinking and alcohol-related social problems: Results from the German Epidemiological Surveys of Substance Abuse. *Alcohol and Alcoholism*, *44*(3), 314–320. <https://doi.org/10.1093/alcalc/agn110>
- Larimer, M. E., & Cronce, J. M. (2002). Identification, prevention, and treatment: A review of individual focused strategies to reduce problematic alcohol consumption by college students. *Journal of Studies on Alcohol*, (Suppl 14), 148–163. <https://doi.org/10.15288/jsas.2002.s14.148>
- Larimer, M. E., & Cronce, J. M. (2007). Identification, prevention, and treatment revisited: Individual focused college drinking prevention strategies 1999–2006. *Addictive Behaviors*, *32*, 2439–2468. <https://doi.org/10.1016/j.addbeh.2007.05.006>

- Lippy, C., & DeGue, S. (2016). Exploring alcohol policy approaches to prevent sexual violence perpetration. *Trauma, Violence & Abuse, 17*(1), 26–42. <https://doi.org/10.1177/1524838014557291>
- Littleton, H., Grills-Tauchel, A., & Axsom, D. (2009). Impaired and incapacitated rape victims: Assault characteristics and post-assault experiences. *Violence and Victims, 24*, 439–457. <https://doi.org/10.1891/0886-6708.24.4.439>
- Lorenz, M. A., & Ullman, S. E. (2016). Alcohol and sexual assault victimization: Research findings and future directions. *Aggression and Violent Behavior, 31*, 82–94. <https://doi.org/10.1016/j.avb.2016.08.001>
- Losel, F., & Schmucker, M. (2005). The effectiveness of treatment for sexual offenders: A comprehensive meta-analysis. *Journal of Experimental Criminology, 1*, 117–146. <https://doi.org/10.1007/s11292-004-6466-7>
- Lundgren, R., & Amin, A. (2015). Addressing intimate partner violence and sexual violence among adolescents: Emerging evidence of effectiveness. *Journal of Adolescent Health, 56*(1), S42–S50. <https://doi.org/10.1016/j.jadohealth.2014.08.012>
- McCauley, J. L., Calhoun, K. S., & Gidycz, C. A. (2010). Binge drinking and rape: A prospective examination of college women with a history of previous sexual assault. *Journal of Interpersonal Violence, 25*, 1655–1668. <https://doi.org/10.1177/0886260509354580>
- McCauley, J. L., Ruggiero, K. J., Resnick, H. S., Conoscenti, L. M., & Kilpatrick, D. G. (2009). Substance abuse among college women as a function of rape experiences: Results from a national study of college women. *Addictive Behaviors, 34*, 458–462.
- McCauley, J. L., Ruggiero, K. J., Resnick, H. S., & Kilpatrick, D. G. (2010). Incapacitated, forcible, and drug/alcohol-facilitated rape in relation to binge drinking, marijuana use, and illicit drug use: A national survey. *Journal of Traumatic Stress, 23*, 132–140. <https://doi.org/10.1002/jts.20489>
- Mohler-Kuo, M., Dowdall, G. W., Koss, M. P., & Wechsler, H. (2004). Correlates of rape while intoxicated in a national sample of college women. *Journal of Studies on Alcohol, 65*, 37–45. <https://doi.org/10.15288/jsa.2004.65.37>
- Monks, S. M., Tomaka, J., Palacios, R., & Thompson, S. E. (2010a). Sexual assault in female and male college students: Examining the roles of alcohol use, alcohol expectancies, and sexual sensation seeking. *Substance Use & Misuse, 45*, 2258–2280. <https://doi.org/10.3109/10826081003694854>
- Monks, S. M., Tomaka, J., Palacios, R., & Thompson, S. E. (2010b). Sexual victimization in female and male college students: Examining the roles of alcohol use, alcohol expectancies, and sexual sensation seeking. *Substance Use & Misuse, 45*(13), 2258–2280. <https://doi.org/10.3109/10826081003694854>
- Moster, A., Wnuk, D. W., & Jeglic, E. L. (2008). Cognitive behavioral therapy interventions with sex offenders. *Journal of Correctional Health Care, 14*(2), 109–121. <https://doi.org/10.1177/1078345807313874>
- Mouilso, E. R., Fischer, S., & Calhoun, K. S. (2012). A prospective study of sexual assault and alcohol use among first-year college women. *Violence and Victims, 27*(1), 78–94. <https://doi.org/10.1891/0886-6708.27.1.78>
- National Institute on Alcohol Abuse and Alcoholism. (2004). *Helping patients who drink too much: A clinician's guide*. Rockville, MD: National Institutes of Health.
- Navarro, J. N., & Clevenger, S. (2017). Calling attention to the importance of assisting male survivors of sexual victimization. *Journal of School Violence, 16*(2), 222–235. <https://doi.org/10.1080/15388220.2017.1284478>
- Neal, D. J., & Fromme, K. (2007). Event-level covariation of alcohol intoxication and behavioral risks during the first year of college. *Journal of Consulting and Clinical Psychology, 75*, 294–306. <https://doi.org/10.1037/0022-006x.75.2.294>
- Nguyen, H. V., Kaysen, D., Dillworth, T. M., Brajcich, M., & Larimer, M. E. (2010). Incapacitated rape and alcohol use in White and Asian American college women. *Violence Against Women, 16*(8), 919–933. <https://doi.org/10.1177/1077801210377470>
- Parkhill, M. R., Abbey, A., & Jacques-Tiura, A. J. (2009). How do sexual assault characteristics vary as a function of perpetrators' level of intoxication? *Addictive Behaviors, 34*, 331–333. <https://doi.org/10.1016/j.addbeh.2008.11.003>
- Parks, K. A., & Fals-Stewart, W. (2004). The temporal relationship between college women's alcohol consumption and victimization experiences. *Alcoholism: Clinical and Experimental Research, 28*, 625–629. <https://doi.org/10.1097/01.alc.0000122105.56109.70>
- Parks, K. A., Hsieh, Y.-P., Bradizza, C. M., & Romosz, A. M. (2008). Factors influencing the temporal relationship between alcohol consumption and experiences with aggression among college women. *Psychology of Addictive Behaviors, 22*, 210–218. <https://doi.org/10.1037/0893-164x.22.2.210>
- Parks, K. A., & Miller, B. A. (1997). Bar victimization of women. *Psychology of Women Quarterly, 21*, 509–525. <https://doi.org/10.1111/j.1471-6402.1997.tb00128.x>
- Parks, K. A., Hsieh, Y.-P., Taggart, C., & Bradizza, C. M. (2014). A longitudinal analysis of drinking and victimization in college women: Is there a reciprocal relationship? *Psychology of Addictive Behaviors, 28*(4), 943–951. <https://doi.org/10.1037/a0036283>
- Purcell, J., & Graham, K. (2005). A typology of Toronto nightclubs at the turn of the millennium. *Contemporary Drug Problems, 32*(1), 131–167. <https://doi.org/10.1177/009145090503200109>
- Reifman, A., & Watson, W. K. (2003). Binge drinking during the first semester of college: Continuation and desistance from high school patterns. *Journal of American College Health, 52*(2), 73–81. <https://doi.org/10.1080/07448480309595727>
- Reinarman, C., & Levine, H. G. (1997). *Crack in America: Demon Drugs and Social Justice*. Berkeley, CA: University of California Press.
- Resnick, H. S., Walsh, K., McCauley, J. L., Schumacher, J. A., Kilpatrick, D. G., & Acierno, R. E. (2012). Assault related substance use as a predictor of sub-

- stance use over time within a sample of recent victims of sexual assault. *Addictive Behaviors*, 37, 914–921. <https://doi.org/10.1016/j.addbeh.2012.03.017>
- Rhew, I. C., Stappenbeck, C. A., Bedard-Gilligan, M., Hughes, T., & Kaysen, D. (2017). Effects of sexual assault on alcohol use and consequences among young adult sexual minority women. *Journal of Consulting and Clinical Psychology*, 85(5), 424–433. <https://doi.org/10.1037/ccp0000202>
- Richards, T. N., & Kafonek, K. (2016). Reviewing state legislative agendas regarding sexual assault in higher education: Proliferation of best practices and points of caution. *Feminist Criminology*, 11(1), 91–129. <https://doi.org/10.1177/1557085115621163>
- Rothman, E., & Silverman, S. (2007). The effect of a college sexual assault prevention program on first-year students' victimization rates. *Journal of American College Health*, 55(5), 283–290. <https://doi.org/10.3200/JACH.55.5.283-290>
- Russell, T. D., Doan, C. M., & King, A. R. (2017). Sexually violent women: The PID-5, everyday sadism, and adversarial sexual attitudes predict female sexual aggression and coercion against male victims. *Personality and Individual Differences*, 111, 242–249. <https://doi.org/10.1016/j.paid.2017.02.019>
- Salazar, L. F., Vivolo-Kantor, A., Hardin, J., & Berkowitz, A. (2014). A web-based sexual violence bystander intervention for male college students: Randomized controlled trial. *Journal of Medical Internet Research*, 16(9). <https://doi.org/10.2196/jmir.3426>
- Schwartz, M. D., & Pitts, V. L. (1995). Exploring a feminist routine activities approach to explaining sexual assault. *Justice Quarterly*, 12, 9–31. <https://doi.org/10.1080/07418829500092551>
- Shorey, R. C., Stuart, G. L., McNulty, J. K., & Moore, T. M. (2014). Acute alcohol use temporally increases the odds of male perpetrated dating violence: A 90-day diary analysis. *Addictive Behaviors*, 39(1), 365–368. <https://doi.org/10.1016/j.addbeh.2013.10.025>
- Steele, C. M., & Southwick, L. (1985). Alcohol and social behavior. I: The psychology of drunken excess. *Journal of Personality and Social Psychology*, 48, 18–34. <https://doi.org/10.1037/0022-3514.48.1.18>
- Stewart, S. H., & Conrod, P. J. (2003). Psychosocial models of functional associations between posttraumatic stress disorder and substance use disorder. In P. C. Ouimette & P. J. Brown (Eds.), *Trauma and substance abuse: Causes, consequences, and treatment of comorbid disorders* (pp. 29–55). Washington, DC: American Psychological Association.
- Stoner, S. A., Norris, J., George, W. H., Davis, K. C., Masters, N. T., & Hessler, D. M. (2007). Effects of alcohol intoxication and victimization history on women's sexual assault resistance intentions: The role of secondary cognitive appraisals. *Psychology of Women Quarterly*, 31, 344–356. <https://doi.org/10.1111/j.1471-6402.2007.00384.x>
- Substance Abuse and Mental Health Services Administration. (2017). Key substance use and mental health indicators in the United States: Results from the 2016 National Survey on Drug Use and Health (HHS Publication No. SMA 17-5044, NSDUH Series H-52). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from <https://www.samhsa.gov/data/>
- Struckman-Johnson, C., Struckman-Johnson, D., & Anderson, P. (2003). Tactics of sexual coercion: When men and women won't take no for an answer. *The Journal of Sex Research*, 40(1), 76–86. <https://doi.org/10.1080/00224490309552168>
- Sturza, M. L., & Campbell, R. (2005). An exploratory study of rape survivors' prescription drug use as a means of coping with sexual assault. *Psychology of Women Quarterly*, 29, 353–363. <https://doi.org/10.1111/j.1471-6402.2005.00235.x>
- Swartout, K. M., & White, J. W. (2010). The relationship between drug use and sexual aggression in men across time. *Journal of Interpersonal Violence*, 25(9), 1716–1735. <https://doi.org/10.1177/0886260509354586>
- Testa, M. (2004). The role of substance use in male-to-female physical and sexual violence: A brief review and recommendations for future research. *Journal of Interpersonal Violence*, 19(12), 1494–1505. <https://doi.org/10.1177/0886260504269701>
- Testa, M., & Cleveland, M. J. (2017). Does alcohol contribute to college men's sexual assault perpetration? Between-and within-person effects over five semesters. *Journal of Studies on Alcohol and Drugs*, 78(1), 5–13. <https://doi.org/10.15288/jsad.2017.78.5>
- Testa, M., & Livingston, J. A. (2000). Alcohol and sexual aggression: Reciprocal relationships over time in a sample of high risk women. *Journal of Interpersonal Violence*, 15, 413–427. <https://doi.org/10.1177/088626000015004005>
- Testa, M., Livingston, J. A., & Collins, R. L. (2000). The role of women's alcohol consumption in evaluating vulnerability to sexual aggression. *Experimental and Clinical Psychopharmacology*, 8, 185–191. <https://doi.org/10.1037/t38000-000>
- Testa, M., Livingston, J. A., VanZile-Tamsen, C., & Frone, M. R. (2003). The role of women's substance use in vulnerability to forcible and incapacitated rape. *Journal of Studies on Alcohol*, 64, 756–764. <https://doi.org/10.15288/jsa.2003.64.756>
- Testa, M., & Livingston, J. A. (2009). Alcohol consumption and women's vulnerability to sexual victimization: Can reducing women's drinking prevent rape? *Substance Use & Misuse*, 44, 1349–1376. <https://doi.org/10.1080/10826080902961468>
- Testa, M., VanZile-Tamsen, C., & Livingston, J. A. (2004). The role of victim and perpetrator intoxication on sexual assault outcomes. *Journal of Studies on Alcohol*, 65, 320–329. <https://doi.org/10.15288/jsa.2004.65.320>
- Tjaden, P., & Thoennes, N. (2000). Full report of the prevalence, incidence, and consequences of violence against women: Findings from the National Violence

- against Women Survey (NCJ 183781). National Institute of Justice and the Centers for Disease Control and Prevention.
- Turchik, J. A., Hebenstreit, C. L., & Judson, S. S. (2016). An examination of the gender inclusiveness of current theories of Sexual violence in adulthood: Recognizing male victims, female perpetrators, and same-sex violence. *Trauma, Violence & Abuse, 17*(2), 133–148. <https://doi.org/10.1177/1524838014566721>
- Ullman, S. E., & Brecklin, L. R. (2000). Alcohol and adult sexual assault in a national sample of women. *Journal of Substance Abuse, 11*, 405–420. [https://doi.org/10.1016/S0899-3289\(00\)00036-5](https://doi.org/10.1016/S0899-3289(00)00036-5).
- Ullman, S. E., Filipas, H. H., Townsend, S. M., & Starzynski, L. (2005). Trauma exposure, PTSD, and problem drinking among sexual assault survivors. *Journal of Studies on Alcohol, 66*, 610–619.
- Ullman, S. E., & Najdowski, C. J. (2009). Revictimization as a moderator of psychosocial risk factors for problem drinking in female sexual assault survivors. *Journal of Studies on Alcohol and Drugs, 70*(1), 41–49. <https://doi.org/10.15288/jsad.2009.70.41>
- Vicary, J. M., & Karshin, C. M. (2002). College alcohol abuse: A review of the problems, issues, and prevention approaches. *The Journal of Primary Prevention, 22*(3), 299–331. <https://doi.org/10.1023/A:1013621821924>
- Wechsler, H., Davenport, A., Dowdall, G., Moeykens, B., & Castillo, S. (1994). Health and behavioral consequences of binge drinking in college: A national survey of students at 140 campuses. *Journal of the American Medical Association, 272*(21), 1672–1677. <https://doi.org/10.1001/jama.1994.03520210056032>
- Wegner, R., Abbey, A., Pierce, J., Pegram, S. E., & Woerner, J. (2015). Sexual assault perpetrators' justifications for their actions: Relationships to rape supportive attitudes, incident characteristics, and future perpetration. *Violence Against Women, 21*(8), 1018–1037. <https://doi.org/10.1177/1077801215589380>
- World Health Organization. (2009). Preventing violence by reducing the availability and harmful use of alcohol. Retrieved from http://apps.who.int/iris/bitstream/10665/44173/1/9789241598408_eng.pdf
- Zawacki, T., Abbey, A., Buck, P. O., McAuslan, P., & Clinton-Sherrod, A. M. (2003). Perpetrators of alcohol-involved sexual assaults: How do they differ from other sexual assault perpetrators and nonperpetrators? *Aggressive Behavior, 29*, 366–380. <https://doi.org/10.1002/ab.10076>
- Zinzow, H. M., Resnick, H. S., McCauley, J. L., Amstadter, A. B., Ruggiero, K. J., & Kilpatrick, D. G. (2012). Prevalence and risk of psychiatric disorders as a function of variant rape histories: Results from a national survey of women. *Social Psychiatry and Psychiatric Epidemiology, 4*, 893–902. <https://doi.org/10.1007/s00127-011-0397-1>